AN EXAMINATION OF THE EFFECTS OF GEOLOGICAL AND GLACIGENIC CONTROLS ON THE ENGINEERING PROPERTIES OF TILL USING A DOMAIN BASED APPROACH

By

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ABSTRACT

Glacial deposits as a whole are some of the most widespread near surface soils in the northern hemisphere, covering large areas of Canada and the United States, eastern and northern Europe and Asia . In Britain during the final Devensian glaciation, significant accretions of stationary ice developed over most upland areas. The resulting materials derived from the attritional action of the base of the moving ice were deposited as till over approximately 60% of the UK. These soils are generally heterogeneous and unsorted, containing varying proportions of clay to boulder size material. This variation in composition has a commensurate effect on the engineering properties of tills.

Commercial investigation data from seven sites in Cumbria overlying different bedrock geology were examined in detail using a variety of statistical and graphical techniques to determine whether differences occurred due to bedrock and glacigenic origin. The results of the data analysis confirm the thesis that the bedrock geology, the history of glacigenic deposition and the post glacial history all affect the geotechnical properties of the resulting till. As a corollary, the commonly used empirical relationship between SPT and shear strength used in deriving undrained shear strength was found not to hold for Cumbrian tills.

DEDICATION

To my Wife, Mary, for her patience and encouragement during the time taken to complete this research.

"It has been said that when God made England his finger touched but did not press, but that is not true of Cumberland and Westmorland. He pressed there alright. What is more he used his nails. And his nails were ice."

Norman Nicholson

Portrait of the Lakes

(London, Robert Hale, 1963)

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TABLE of CONTENTS

LIST of FIGURES in TEXT

Chapter 6

Chapter 7

LIST of TABLES in TEXT

Chapter 1. INTRODUCTION

1.1. BACKGROUND TO RESEARCH

1.1.1. Introduction of Eurocodes and the impact on ground investigations and design

The introduction of limit state analysis into geotechnical engineering by the Eurocode harmonisation programme (BS EN 1997 Part 1 (2004) and Part 2 (2007)) means that for the first time mandatory and prescribed execution of geotechnical investigation and design is included in a code of practice in the United Kingdom. There is also a change in the approach to geotechnical design practice away from the application of a global factor of safety in permissible stress design towards limit state design using partial factors applied to 'characteristic' values of actions, parameters and resistances. Whilst this brings the design of the substructure into harmony with the design of the superstructure, it does represent a significant change in philosophy for many practicing geotechnical engineers (Driscoll et al., 2008).

The clauses contained within all structural Eurocodes fall into two categories:

Principles (prefixed P following the clause number) which are general statements, definitions, requirements and analytical models for which no alternatives are permitted unless specifically mentioned.

Application rules (with no prefix following the clause number) being examples of generally recognised rules which follow and satisfy the requirements of the Principles, but may, in certain circumstances and with suitable caveats, be replaced by suitable equivalent alternatives.

The chief requirements with regard to the planning and execution of ground investigations, stated as 'Principles' within the code, are contained in Section 3 of BS EN 1997-1, which presupposes a staged approach to investigations. The salient rules may be summarised as follows, with the relevant clause numbers included after each point:

- "Careful collection, recording and interpretation of geotechnical information shall always be made." (§3.1 [1]P)
- "Geotechnical investigations shall provide sufficient data concerning the ground and the groundwater conditions at and around the construction site for a proper description of the essential ground properties and a reliable assessment of the characteristic values of the ground parameters to be used in design calculations." (§3.2.1 [1]P)
- One of the purposes of a preliminary investigation is to plan further investigations, termed 'design' and 'control' investigation, including determining the extent of ground which may significantly influence the behaviour of a structure (§3.2.2 [1]P).
- "The design investigation shall identify in a reliable way the disposition and properties of all ground relevant to or affected by the proposed construction." (§3.2.3 [2]P)

The (design) investigation should be carried out in sufficient detail such that the sub-surface profile is fully defined, including the differentiation of the formations present (BS EN 1997-1, §3.4.3 [2]). As part of the mandatory prescribed reporting of the investigation(s) characteristic values of soil and rock parameters are to be derived. Among a number of methods for deriving characteristic values, the use of statistics is allowed; in this context the mean is the only mentioned measure, implying the intended use of parametric statistics (BS EN 1997-1, §2.4.5.2 [9] to [11]). Where relevant, data histograms for parameters should be included (BS EN 1997-1, §3.4.3 [2]).

Where correlations are used in the evaluation of geotechnical parameters the overall suitability of such correlations must be considered together with their relevance to the local ground conditions (BS EN 1997-1, §2.4.1 [10]P; BS EN 1997-2, §4.2.3 [4]P). This requirement is particularly important when adopting existing published correlations which may have been derived for quite different soils and site conditions.

Both geotechnical Eurocodes are supported by a series of informative Annexes, and in the case of BS EN 1997-1 a normative Annex stating values of partial factors to be adopted in design: these factors can be varied by reference to a National Annex implementing the standard. Annex B of BS EN 1997-2 provides guidance on the planning of geotechnical investigations, and detailed guidance on the number of test specimens from each identified soil type is included in BS EN 1997-2 Annex L to W.

1.1.2. Till as a geotechnical material

Glacial deposits as a whole are some of the most widespread near surface soils in the northern hemisphere, covering large areas of Canada and the United States, eastern and northern Europe and Asia (Flint and Sharp, 1971; Stephenson et al, 1988, Ehlers and Gibbard, (eds.) 2004 a,b,c). In the United Kingdom it is believed that between eleven and sixteen different glaciation events occurred during the Pleistocene including the three major glaciations of the Anglian, c 480,000 - 420,000 years before present (BP); the Wolstonian, c 300,000 - 250,000 BP; and the Devensian, c 90,000 – 10,000 BP (DoE, 1994). In northern Britain, significant 'ice centres', or accretions of thicknesses of stationary ice from which radial ice flows emanated, developed over upland areas in Scotland, the Teviot Hills, Pennines and Cumbrian Mountains: these are estimated to have been in excess of 1,800 metres (Mitchell and Clark, 1994). The resulting materials derived from the attritional action of the base of the sliding ice mass were deposited as till over much of the area away from the ice centres, including in the major river valleys and lowland areas of Cumbria. These soils are generally heterogeneous and unsorted, containing large boulders, cobbles, gravel, sand, silt and clay in varying proportions. This wide variation in composition has a commensurate effect on the engineering properties, and leads to potential difficulties when designing and constructing engineering works in tills (Trenter, 1999). A typical exposure in West Cumbrian till is shown in Figure 1.1

Figure 1.1: Typical exposure in West Cumbrian till

Note wide variation in clast size, and generally unsorted nature of the soil.

These till deposits have in the past variously been named ‘boulder clay’ and ‘glacial till’, and the dialect term ‘pinnel’ often appears on historic records: ‘diamicton’ is frequently used in modern descriptions, although it does not necessarily imply a soil of glacial origin. In this research ‘till’ is used alone as an inclusive term to describe all forms of glacially derived soils, with additional qualifying descriptions to differentiate till types if required by the context.

1.1.3. Previous research

Much published research links the glacial environment to the range of properties anticipated in the resulting till (Fookes et al., 1975a; Derbyshire et al., 1976, 1985; McGown and Derbyshire, 1977; Trenter, 1999). Further refinements of these models also concentrate on the glacigenic rather than the geological environment (Eyles and Dearman, 1981; Eyles and Sladen, 1981; Eyles, 1983). Many published studies refer to lowland deposits in the north and east of England, most notably tills from North East Yorkshire, North Norfolk and Holderness (Bell, 1991; Bell and Forster, 1991; Marsland, 1975; Marsland 1977), Durham (Bishop and Vaughan, 1962a; 1962b; Eyles and Sladen, 1981; Vaughan et al., 1975), Northumberland (Robertson et al., 1994), central and southern Scotland (McGown et al., 1975; Hossain and McKinley, 1991) and North Yorkshire, (Marsland, 1977; Marsland and Powell, 1991). In addition, some detailed studies of engineering parameters exist on valley lodgement tills of South Wales, (Fookes et al., 1975b) and Dublin boulder clay (Skipper et al., 2005) but these make no direct comparison of results for tills from different bedrock areas. McMillan et al (2000) described a domain-based approach to characterising the hydrogeological properties of tills in West Cumbria. The domains were defined by the underlying Quaternary geology distinguished by distinctive landform-sediment associations and represent areas of sediments with common depositional histories. This was supported by a small number of boreholes and hydraulic measurements targeted to refine the vertical lithological profile, but no other geotechnical parameters were examined (McMillan et al., 2000).

1.2. AIMS AND OBJECTIVES OF RESEARCH

1.2.1. Domain based approach

The previous published research indicates a correlation between glacigenic processes and the engineering properties of the resulting till, but without considering differences in bedrock geology. Therefore, the stated principal aim of this study was to determine whether, for sites extending across more than one bedrock type, the underlying bedrock geology also affects the properties of till. As one of the objectives it was decided to use existing data sets derived from commercial ground investigations to ascertain whether any effects were detectable under 'normal' conditions obtaining during routine investigations.

As a corollary to the main proposition the research also considers whether subdivision of tills into domains based on the underlying bedrock geology could form a useful starting point for the design of ground investigations. In the course of examining this proposition various disciplines have been brought to bear on the problem, including geology, geomorphology, glaciology, geotechnical engineering and statistics.

As a result, apart from testing the main hypothesis, this study leads to the formation of important conclusions relating to the applicability of using statistical means to summarise geotechnical data and the applicability of some published empirical correlations between index properties and soil shear strength.

1.2.2. Site selection

The wide variation in rock types within the Cumbrian region makes this an ideal area of the United Kingdom in which to study the potential impacts of these variations on the properties of till. In all, seven sites were selected for detailed examination, on the basis of providing a range of bedrock geology and their location relative to the main Lake District ice centre. The approach was trialled at one site in the upper Eden Valley (Chapter 4), and extended into other sites in the south and west Cumbria (Chapter 5). The locations selected are shown in Figure 1.2.

Sites studied were:

1. Kirkby Stephen
2. Wythop Wood
3. Sowerby Wood
4. Askam-in-Furness
5. High and Low Newton
6. Parton to Lillyhall
7. Cleator Moor

The investigations were all of an engineering nature, and targeted towards the acquisition of data for foundation and slope design in a variety of infrastructure schemes. It is not common practice to determine mineralogy or chemical composition of natural soils in commercial investigations for projects of this type: in-situ and laboratory testing of physical properties predominates, with chemical testing limited to the classification of the risk of sulphate attack on buried concrete, and the analysis of potentially harmful anthropogenic contaminants. This study is therefore limited to physical test results.

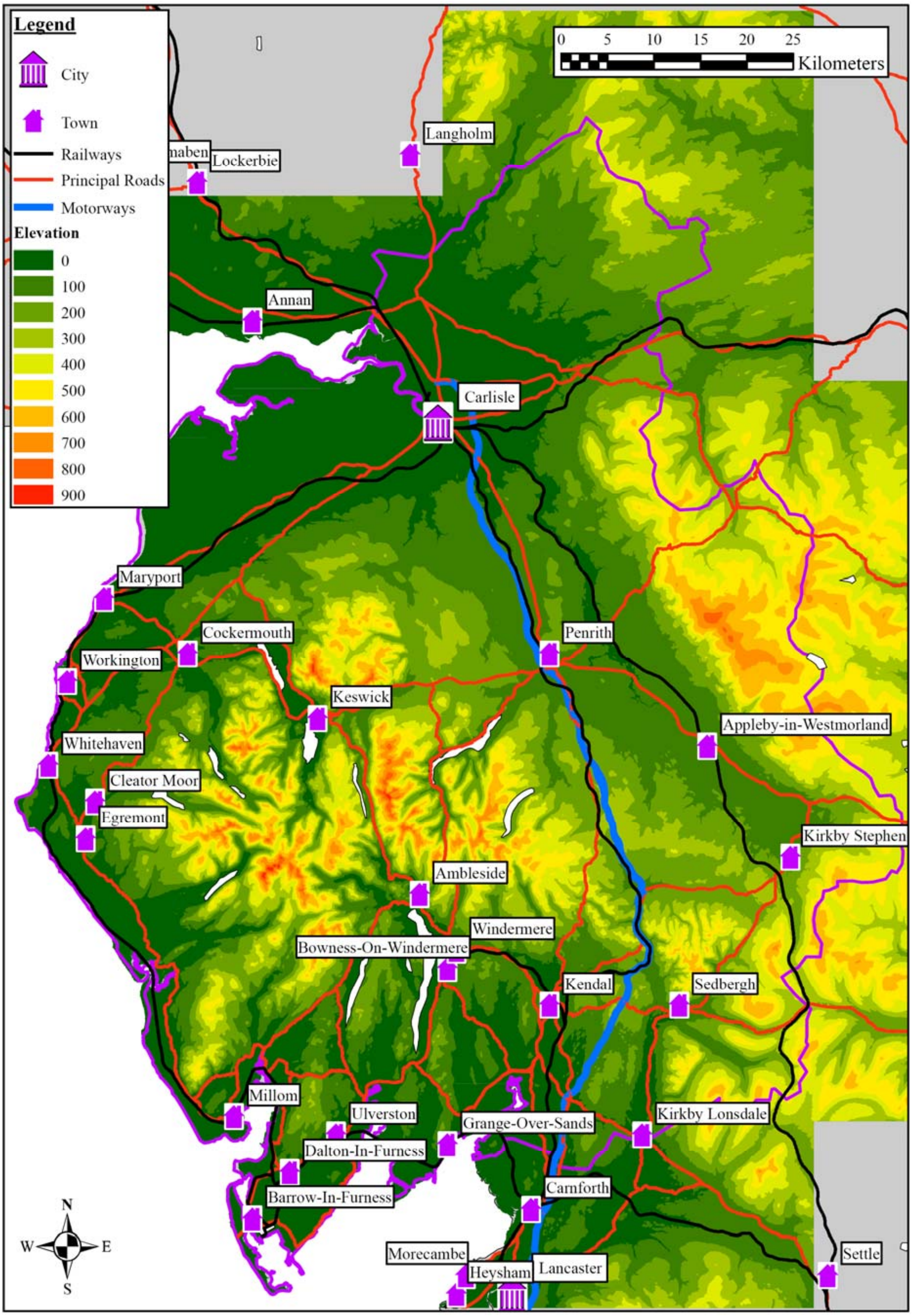


Figure 1.2: Geography of Cumbria, with locations of major centres of population and principal transport network

1.3. THESIS OUTLINE

1.3.1. Thesis text

The chapter headings and contents outline for the remainder of the thesis are as follows:

Chapter 2: Types and Properties of Till

Contents: *Description and engineering behaviour of till:*- extent of till deposits in UK; applicability and limitations of previous studies

Impact of glacial and geological controls:- till type related to glacigenic process; classification and fabric.

Geotechnical properties:- grading; plasticity; shear strength under total and effective stress conditions; empirical relationships between shear strength and index properties.

Glacial controls:- description of glacial history and processes in the region; peri- and post-glacial history.

Geological controls:- bedrock geology; occurrence and extent of different glacial deposits; post-glacial effects.

Chapter 3: Statistical Techniques and Application to Geotechnics

Contents: Application of statistical analysis to geotechnical data sets; statistical terminology and the framing of the null hypothesis; preliminary data analysis; parametric and non-parametric statistics; geostatistics; regression analysis.

Chapter 4: Application to Real Data

Contents: Data sources and selection of data for initial study; site description (Site 1, Kirkby Stephen); data handling and preliminary analysis; parametric statistics; non-parametric statistics; geostatistics; shear strength parameters.

Chapter 5: Development of the Domain Model

Contents: Selection of additional sites; data handling and preliminary analysis; parametric and non-parametric statistical analysis for each site; comparisons between sites; shear strength under total and effective stress conditions; shear strength envelopes.

Chapter 6: Discussion of Results

Contents: *General Recapitulation:*- Eurocodes; aims of research, data sources, methodology etc.; geological and glacigenic domain controls.

Domain controls:- bedrock geology; site location relative to ice centre; glacial and post glacial history.

Statistical analysis of geotechnical data sets:- description and comparison of data sets; other methods of data summary and presentation.

Relationship between Index and Shear strength Parameters:- undrained shear strength versus SPT; peak angle of shearing resistance versus index properties.

Mohr failure envelope for peak angle of shearing resistance:- form of failure envelope and applicability to design. Onset of critical state shearing conditions.

Chapter 7: Conclusions

Contents: Summary of study; conclusions regarding effects of geology and glacigenic environment on properties of till; results of analysis; suggestions for further research.

1.3.2. Thesis Appendices

Appendix A: References

Appendix B: Summary tables of statistics

Appendix C: Graphs and Charts

Appendix D: Calculations

1.4. CONTRIBUTION TO KNOWLEDGE

1.4.1. Domain based approach

The research demonstrates that in addition to the effects of the glacigenic environment, the geology of the bedrock has a measurable effect on the properties of the resulting till, and that these effects are detectable in commercial investigations.

1.4.2. Empirical relationships

The research also demonstrates that the commonly used relationship between SPT and undrained shear strength derived by Stroud and Butler (1975) is not safe in the case of Cumbrian tills. Moreover, there are no direct correlations between shear strength and index properties for Cumbrian tills, and it is unlikely that critical state conditions are achieved even at high (20%) values of failure strain.

1.4.3. <u>Statistical analysis</u>

In the majority of cases it is not safe to assume the data set conforms to a Gaussian (‘normal’) distribution, and therefore the mean value is not a good descriptor of the data. In some instances the mean and 95% confidence interval did not encompass the modal value or range of values, whereas in contrast the median and its associated 95% confidence interval usually included the modal value or range.

Chapter 2. TYPES AND PROPERTIES OF TILL

2.1. DESCRIPTION AND ENGINEERING BEHAVIOUR OF TILL

2.1.1. Introduction

Trenter (1999) stated the main aspects for consideration in terms of geotechnical engineering to be the geological and glacial conditions of deposition, techniques of investigation, characterisation of engineering properties, selection of parameters, applicability of methods of analysis or design, and difficulties during construction.

The interdependence between the characterisation of engineering properties and the glacial and geological controls is not always appreciated by non-specialist engineers. Traditional apportionment of soil types into fine and coarse grained (formerly ‘cohesive’ and ‘granular’) is not always appropriate for tills, because of the heterogeneous nature of the soil. The variety of depositional effects, such as deposition mechanism, underlying geology and geographical location, leads to a correspondingly wide variation in classification, strength and deformation characteristics of the resulting glacial soil. In a similar way, the fabric of the soil may be directional or quasi two-dimensional, such as that exhibited by laminated glacio-lacustrine clays, or may have multi-directional spatial variability, as in fissured tills. There will also be the effects of post-glacial weathering, and possibly the effects of some degree of re-working (Clarke, 2012). The consequences of these processes and the resulting variations may be such that the soil behaviour does not conform to the principles of conventional theoretical soil mechanics, and the accepted empirical relationships developed from the study of purely gravitationally compacted soil may not always apply (Clarke et al., 1997; Hughes et al., 1998). Therefore in larger civil engineering projects a knowledge of the ‘far-field’ regional geological and geotechnical setting is a pre-requisite for the planning and execution of an effective and appropriate investigation and sampling regime, and the completion of an economic and practicable design.

During the construction phase of works involving till, it must be expected that significant variations of soil properties will occur, particularly in linear infrastructure schemes where the route may traverse differing geology and involve soils deposited under various glacial or peri-glacial conditions. A sound appreciation of the glacial and geological controls and their probable effect on the resulting tills is necessary to predict the range of conditions likely to be encountered and their location within the scheme.

2.1.2. Extent of till throughout the UK

Glacial deposits as a whole are some of the most widespread near surface soils in the northern hemisphere, covering large areas of Canada and the United States, eastern and northern Europe and Asia (Flint and Sharp, 1971; Stephenson et al, 1988, Ehlers and Gibbard, (eds.) 2004 a, b, c). In the United Kingdom it is believed that between eleven and sixteen different glaciation events occurred during the Pleistocene (DoE, 1994). There is evidence that three major glaciations have occurred in Britain during the last 500,000 years: the Anglian, c 480,000 - 420,000 years before present (BP); the Wolstonian, c 300,000 - 250,000 BP; and the Devensian, c 90,000 – 10,000 BP: other glaciations affecting only upland Britain are also inferred (DoE, 1994). Each successive major glaciation has tended to rework previous tills, and during the main Devensian period ice covered around 60% of the total land area of Great Britain, thus making Devensian till the dominant soil system over much of Northern Britain (Trenter, 1999; Clark et al., 2004). Significant ‘ice centres’, or accretions of significant thicknesses of stationary ice from which radial ice flows emanate, developed over upland areas in Scotland, the Teviot Hills, Pennines and Cumbrian Mountains (Mitchell and Clark, 1994): the ice in these centres is estimated to have been in excess of 1,800 metres in thickness in places, and this topographic elevation enabled the generation and transport of ice masses attaining hundreds of metres in thickness over many hundreds of kilometres. The resulting materials derived from the attritional action of the base of the sliding ice mass were deposited as till over much of the area away from the ice centres, including in the major river valleys and lowland areas of Cumbria.

Interpretations of the various glacial events covering Britain have been made using geological evidence for 150 years or more and it is sometimes hard to reconcile the descriptions of the glacigenic history and the resulting tills given in the published literature such as the sheet memoirs of the British geological Survey (Huddart, 1991; Huddart and Clark, 1994; Mitchell and Clark, 1994; Clark et al., 2004). Much work centred around the evidence for one or more oscillations of the extent of the ice cover, the so-called 'Gosforth Oscillations' c 20,000 BP, and a Scottish re-advance event towards the end of the Devensian period c 17,000 BP (Huddart, 1991; Clark and Smith, 1996). The debate started in the 1920's surrounding the evidence for these events continues, with new discoveries and interpretations (McMillan, 2004; Livingstone et al., 2010 a and b). Recently, extensive work to correlate the available information regarding the latest (Devensian) ice sheet has been undertaken with a view to assessing and reconciling the available published data, and combining evidence from several key indicators in a Geographic Information System (GIS) database, the 'Britice' database, for the preparation of a glacial Map of Britain (Clark et al., 2004; Evans et al., 2005). The database is seen by its compilers as a work in progress and, apart from making a judgement as to the reliability of the individual data sources, little or no re-interpretation has been undertaken (Clark et al., 2004). Based on geological survey and academic publications, the study indicates in some detail the maximum extent of the last Devensian glaciation, and maps significant glacial features. The information is presented in a searchable database and as GIS compatible shapefiles, both of which allow users to access the data easily and present it in tabular and graphical formats. Figure 2.1, prepared using the Britice database, indicates the extents of the Devensian glaciation overlaid on a map of the British Isles: this map also highlights some of the anomalies and gaps in the existing knowledge, showing as breaks and inconsistencies in the line indicating the extent of postulated ice cover.

2.1.3. Applicability and limitations of previous studies

A number of previous studies of engineering geological aspects of tills in Britain have been published. Almost all of these refer to lowland deposits in the north and east of England, most notably tills from North East Yorkshire, North Norfolk and Holderness, (Bell, 1991; Bell and Forster, 1991; Marsland, 1975; Marsland 1977) but also in Durham (Bishop and Vaughan, 1962a; 1962b; Eyles and Sladen, 1981; Vaughan et al., 1975), Northumberland (Robertson et al., 1994), central and southern Scotland (McGown et al., 1975; Hossain and McKinley, 1991) and North Yorkshire, (Marsland, 1977; Marsland and Powell, 1991). In addition, some studies exist on valley lodgement tills of South Wales, (Fookes et al., 1975b) and Dublin boulder clay (Skipper et al., 2005). McMillan et al (2000) described a domain-based approach to characterising tills in West Cumbria, but this was limited to the hydrogeological properties. Brief comparisons of tills from the coal fields of Cumbria and Northumberland are included in studies of the stability of screening mounds around opencast coal workings (Hughes and Clarke, 1997; Hughes et al., 1998).

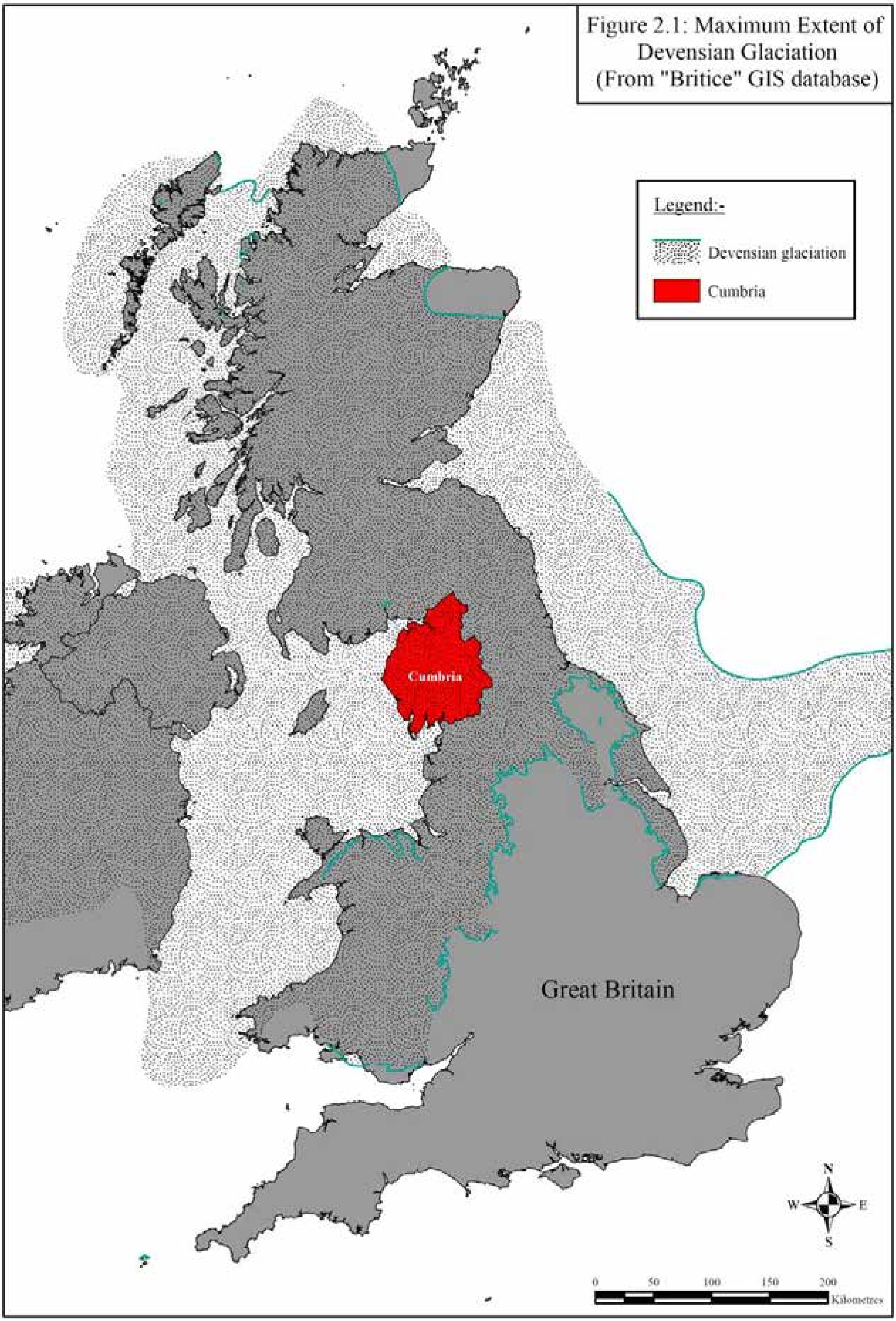


Figure 2.1: Extent of Devensian glaciation, from 'Britice' database

There are some limitations to the direct application of these studies to the tills of Cumbria arising from the different depositional environments, with most tills on the eastern side of Britain being essentially typical lowland type subglacial lodgement tills as described in Section 2.2.1. In general they are derived from relatively soft underlying rocks, and deposited beneath an extensive ice sheet relating principally to the Anglian and Wolstonian Glaciations (Ehlers and Gibbard, 1991; Jones and Keen, 1993). The grading curves for these tills show particle size distributions ranging from sand downwards in size, and all samples indicated 100% passing the 2mm sieve. In contrast, Cumbrian tills contain a much greater range of particle sizes, with a continuous distribution from cobbles and boulders down to silt and clay; they are also more recent, being Devensian in age (Clark et al., 2004).

The underlying rock types of the northeast of England are similar to those in some parts of Cumbria, but the depositional area in the North East is further from the ice centres in Scotland and the Lake District. A lower proportion of erratics of Scottish and Lake District origin is present, leading to a more matrix dominant till form.

Much of the published literature is focused on the geological aspects of tills, whilst the wealth of data concerning the geotechnical aspects are not generally shared, being contained in confidential commercial ground investigations (Clarke, 2012).

A brief review of principal literature follows, with an assessment of the applicability or otherwise of the findings to the situation pertaining in Cumbria.

2.2. IMPACT OF GLACIAL AND GEOLOGICAL CONTROLS

2.2.1. Till type related to glacigenic process

An important aspect of the glacial and geological controls on tills is fabric, initially defined by Derbyshire et al. (1976) as the summation of directional properties of a till. This includes voids and solids, being clasts, layers, lenses, fissures cracks and joints. In a subsequent refinement to this classification system a further distinction is attempted between primary fabric, arising from depositional effects, and secondary fabric, arising from post-depositional actions (Derbyshire et al., 1985). Trenter (1999) retained the distinction, but improved the terminology, using the terms depositional and post-depositional, to avoid the suggestion that one type of fabric may be more important in engineering terms than another. Furthermore, Trenter (1999) illustrated the effect of topographic situation, i.e. upland or lowland tills, and the type of host bedrock and land system on the fabric of tills. A schematic diagram of the principal glacigenic processes is included in Figure 2.2 and the outline of Trenter's classification in Figure 2.3.

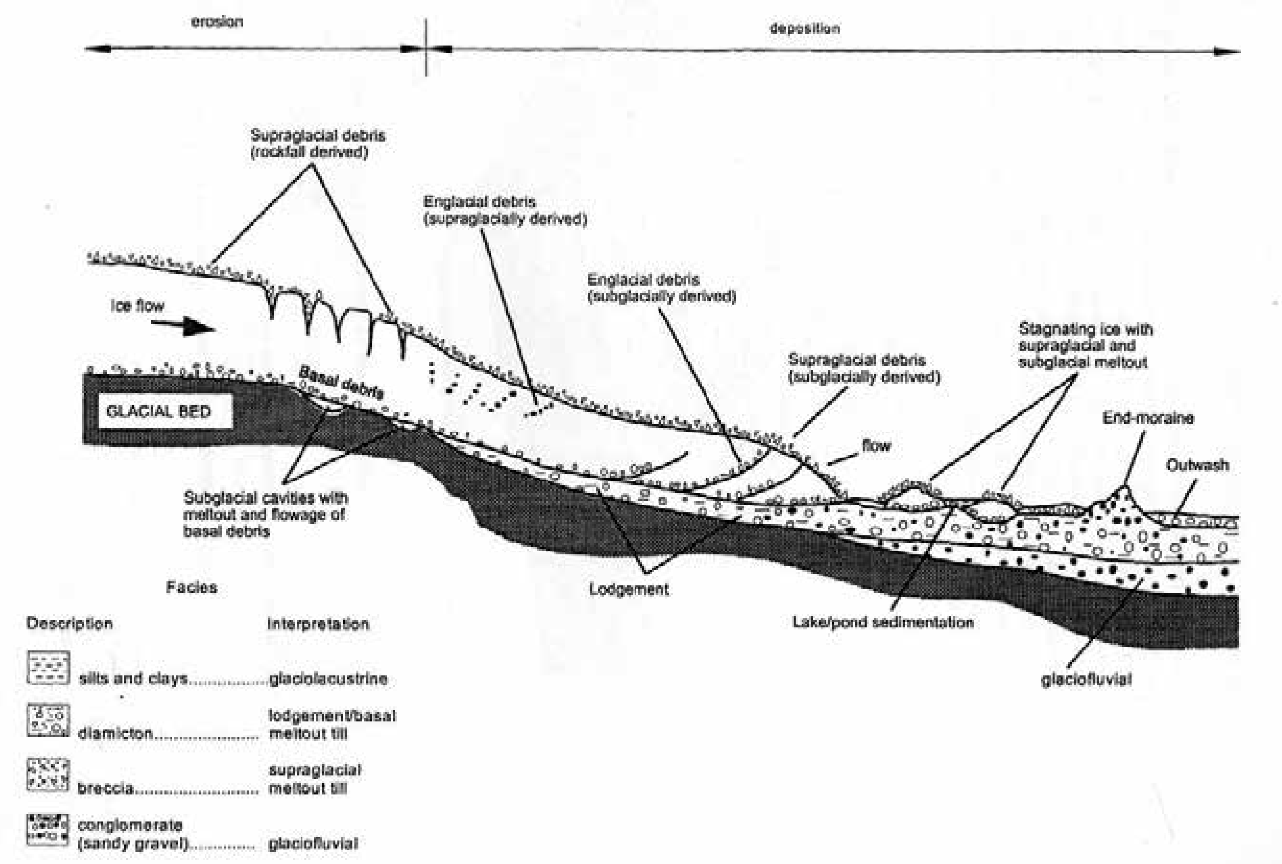


Figure 2.2: Simplified diagram of glacigenic processes

(From Trenter, 1999)

Till types are subdivided into the following main categories:

1). **Subglacial lodgement till:-** sediments eroded and deposited by large ice sheets rather than separate valley glaciers, leading to a significant depth of till cover. Although possibly transported over comparatively large distances, the constituents and properties of tills in this category are predominantly influenced by the local lithology. In Great Britain such deposits are mostly associated with lowland areas and softer bedrock types: in Cumbria these types of deposit occur in the lowland areas of the Solway Plain, along the coastal margins of West and South Cumbria and the larger river valleys such as the Irthing towards the Tyne Gap and the Eden towards Stainmore.

2). **Supraglacial and englacial meltout till:-** debris carried on (supraglacial) or within (englacial) a moving ice sheet and subsequently deposited by wasting or melting ice. Supraglacial material is derived from rock falls onto the ice sheet, whilst englacial material may be either supraglacial or subglacial material entrained into the moving ice as shown in Figure 2.2. Depending upon the origin and direction of the ice sheet, these materials can show a wide variety of rock types in the larger particle size ranges, with material transported over hundreds of kilometres. The percentage of such material deposited by large continental ice sheets is negligible (Elson, 1961).

3). **Glaciated valley till:-** may be ascribed to either lodgement or meltout till type, but is confined to upland areas of Great Britain, such as the Highlands of Scotland, the English Lake District and parts of Wales. Almost all the till within the upland valleys of the Lake District falls into this category.

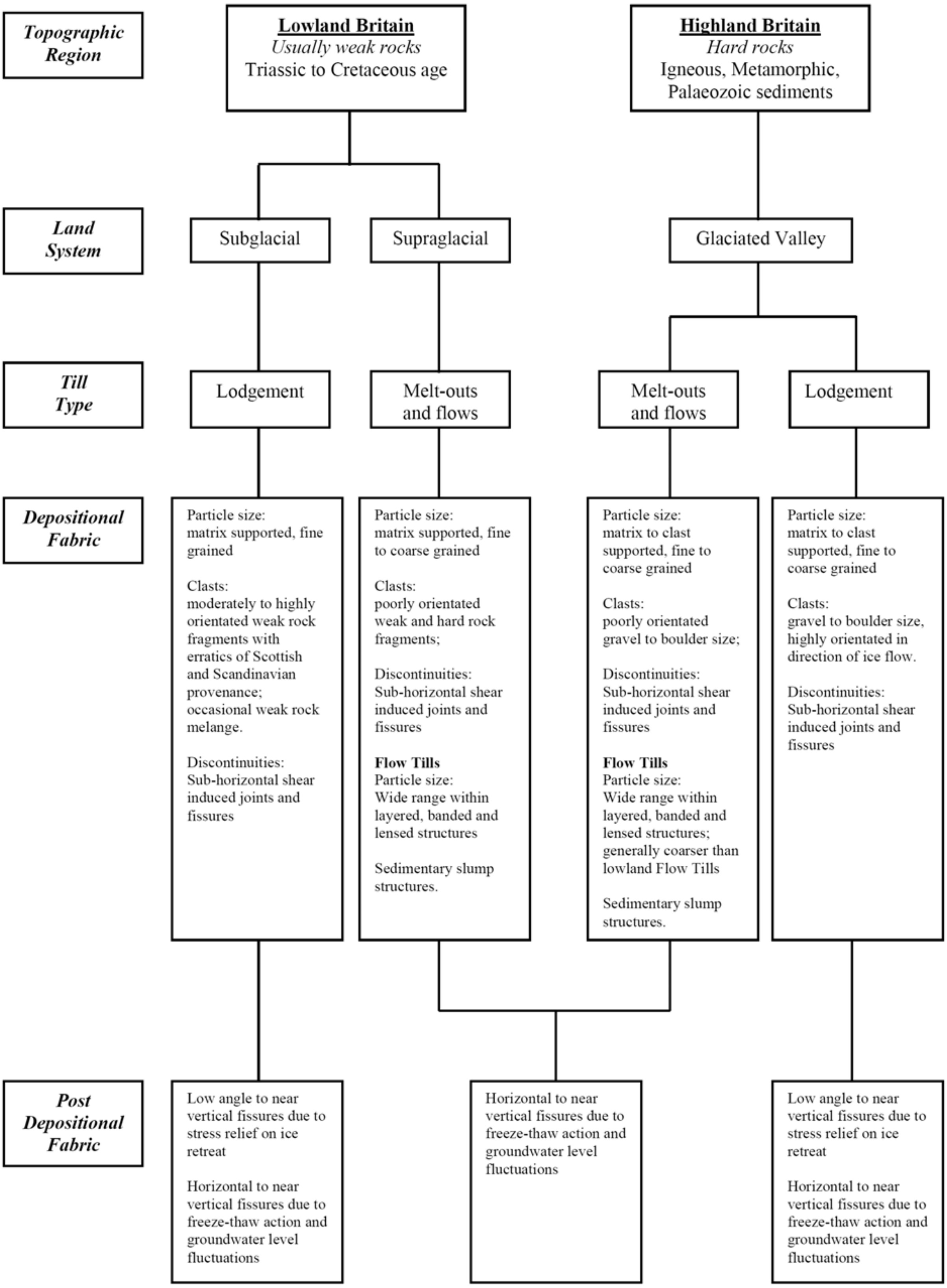


Figure 2.3: General description of fabric in tills

(After Trenter, 1999)

2.2.2. Classification and Fabric

McGown and Derbyshire (1977) proposed a classification system based on till type, dominant soil fraction and fabric: this would have the benefit of introducing an assessment of likely geotechnical properties into the descriptive process. The use of a relative numerical classification to describe the properties is limited by the subjective nature of these assessments and for this reason the systems have made little or no headway in the realm of geotechnical engineering, and are not widely used. Trenter (1999) recommended the addition of a soil classification description from BS5930 to the McGown and Derbyshire system to lend a degree of objectivity and reproducibility. This modification would enable a more robust transmission of geotechnical information based on field observations and simple tests (BS5930, 1999, including Amendments to 2010). For many situations in Cumbria, however, it is often difficult to distinguish till types by soil fraction or fabric, as tills from different provenance have very similar characteristics, and post-glacial processes such as hillwash, solifluction and erosion by surface water serve to disguise the original glacial processes behind the formation of the till.

Typical fabric effects in subglacial lodgement tills (Trenter, 1999) are of a fine grained till produced by shearing action on softer bedrocks containing orientated clasts of erratics of harder rocks, which in Cumbria are of Lake District or Scottish origin, depending upon the location and the provenance of the ice flow. Thrust and shear during deposition produce sub-horizontal and near vertical slickensided shear planes. McGown (1985) noted sand partings on sub-horizontal discontinuities in drumlinised Scottish tills.

Supraglacial tills generally contain a more varied particle size, with less orientation and more angular clasts. The exception to this generalisation is where the re-working of earlier subglacial lodgement tills is involved. Meltout tills may exhibit typical sedimentary structures in their fabric, but there may well be a general mixing of englacial tills and moraine which can mask the overall fabric of either till type.

References to the effects of till fabric on engineering properties abound. In particular, Marsland (1977) demonstrated the link between foliation and undrained shear strength in tills from the North East and at the Building Research Establishment facility at Watford. Several of these studies also cover the effect of sample size on various geotechnical properties as measured in the laboratory, as well as the influence of fabric at field engineering scale. Rowe (1972) covered this topic at length in his address at the twelfth Rankine lecture.

2.3. GEOTECHNICAL PROPERTIES

2.3.1. Classification properties – grading

The grading envelope of any till will be affected by all the depositional, post depositional and landform factors outlined in Section 2.2 above. These factors may be summarised as: geology of bedrock source, distance down the ice-stream from the bedrock source, inclusion of reworked glacial or other tectonised material, and post-depositional weathering (Elson, 1961; Sladen and Wrigley, 1983). Trenter (1999) presented a diagram of idealised grading and plasticity characteristics for typical British lodgement tills as illustrated in Figure 2.4. The concept of the 'T' line on the Casagrande classification charts is discussed in Section 2.3.2.

Supraglacial tills are likely to be more varied in grain size than associated lodgement tills, and will probably be more granular in nature. Clay content is likely to be localised in pockets or seasonal varves (Trenter, 1999).

Subglacial and glaciated valley lodgement tills are usually more homogeneous (Elson, 1961), although glaciated valley tills are somewhat more heterogeneous than subglacial tills due to the locally harder host terrain. There is a greater tendency in these tills to be matrix-supported, with included clasts of harder rocks, which may be locally derived or erratics from reworked pre-existing tills. Glaciated valley lodgement tills are often masked by deposits resulting from post-glacial processes such as solifluction and landslides (Trenter, 1999).

McGown and Derbyshire (1977) introduced the concept of a 'dominant soil fraction' based on work with Scottish tills. This, in turn, led to the classification of tills based on the fines in the till grading: this classification is summarised in Table 2.1.

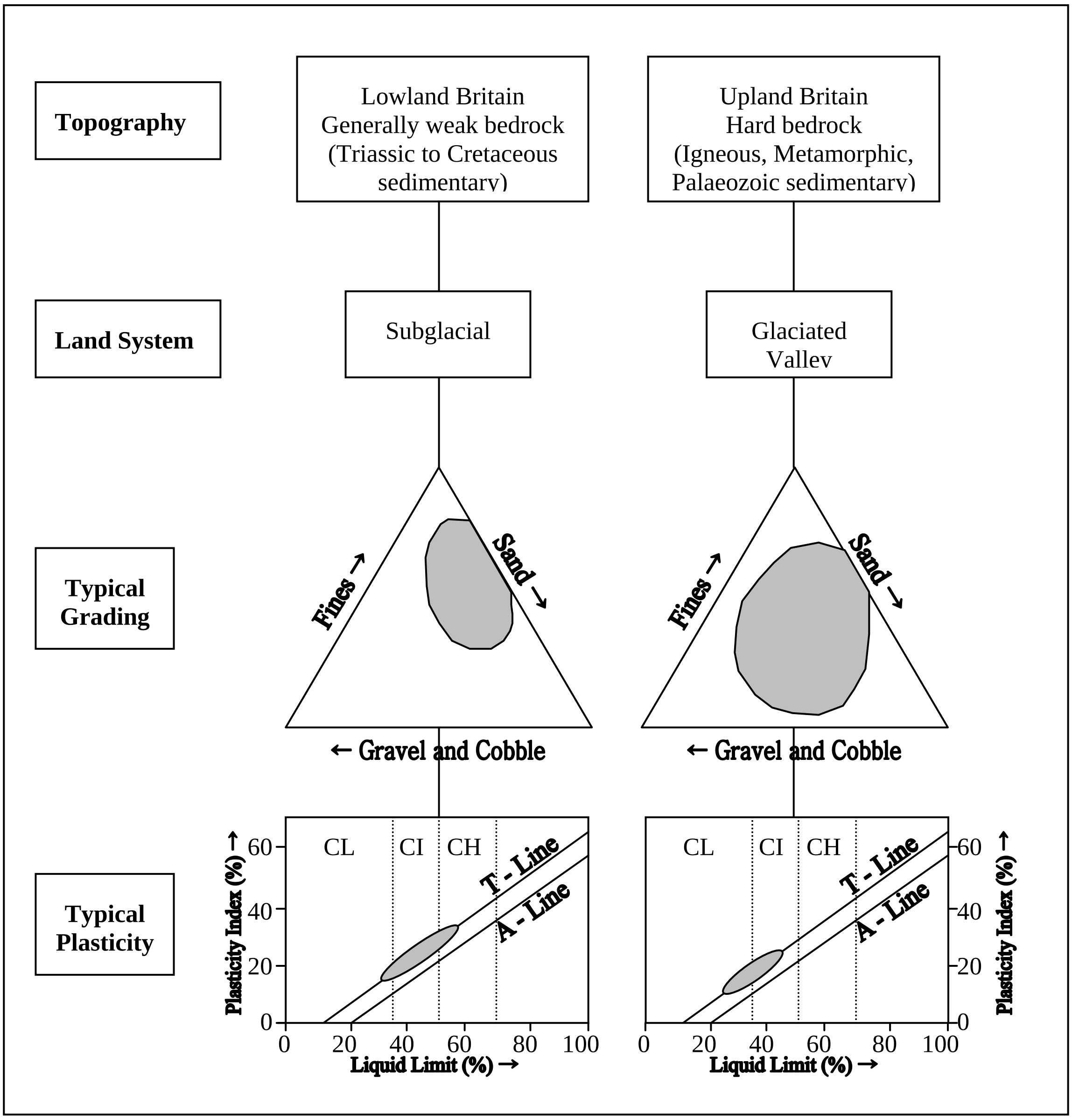


Figure 2.4: Typical grading and plasticity of lodgement tills
(After Trenter, 1999)

Dominant Soil Fraction	Nature of Dominant Fraction	Approx. % Fines	Texture Description
Clasts	Granular	0 – 15	Granular (**G**)
No Dominant Fraction	-	15 – 45	Well Graded (**W**)
Matrix	Granular	45 – 70	Granular Matrix (**Mg**)
	Cohesive	70 – 100	Cohesive Matrix (**Mc**)

Table 2.1: Classification of tills by grading fraction

(after McGown and Derbyshire, 1977)

Using information from large data sets obtained from an investigation in Welsh tills Fookes et al (1975b) successfully applied statistical analysis to particular soil fractions to separate inherent variations in grading from those due to exploratory method, provenance or location.

The presentation of the fine, sand and gravel fractions on a ternary grading chart similar to those included in Figure 2.4 allows comparison of grading of tills from different sites and readily displays the dominant soil fraction using the McGown and Derbyshire classification.

2.3.2. Classification properties - plasticity

All plasticity testing is carried out on the soil fraction passing the 425μm sieve, which covers the range from clay at the smallest fraction, up to medium sand (BS1377 Part 2, 1990). Within this grading, the plasticity index is inversely proportional to increasing percentage of the coarser fraction: the relationship is demonstrably linear (Dumbleton and West, 1966). This effect is of direct relevance to tills, as the poor sorting and substantial amount of coarser material <425 μm produces lower liquid limit and plasticity index. Results of index testing on tills presented on the Atterberg limit plot diagram tend to plot on, or near to, the ‘T’ Line, a notional line parallel to and slightly above the Casagrande ‘A’ Line separating clay from silt. The plasticity of tills tends to plot along the ‘T’ Line and in the region of clay of low to intermediate plasticity, although other non-till soils may plot in a similar fashion (Boulton and Paul, 1976). There is evidence that the clay mineralogy also influences the range of plasticity. Minerals that are more active, such as montmorillonite, will produce a clay matrix of higher plasticity, while less active minerals such as kaolinite, and rock flour typical of tills from hard bedrock areas, will produce a clay matrix of lower plasticity (Dumbleton and West, 1966; Boulton and Paul, 1976). This trend is illustrated in Figure 2.4. A study to determine the mineralogy of fine-matrix rich tills from Buckinghamshire, Lancashire and Norfolk found that the proportions of quartz, calcite and clay minerals varied according to the location, and that the type of clay minerals present varied between sites within each area. It was concluded that the tills studied were predominantly derived from the underlying bedrock lithology (Kemp et al., 2009). A study conducted in Finland came to similar conclusions (Peuraniemi et al., 1997) although a similar study from southern Sweden found no such correlation (Akselsson et al., 2006). These studies are mineralogical in scope, with no geotechnical laboratory testing.

Much of the investigative work on plasticity to date has been carried out on ‘manufactured’ soils using mixtures of pure kaolinite and quartz sand: some data are also available from externally commissioned work carried out by the University of Paisley, but this relates to Scottish, North Eastern, Midlands, Southern and Welsh tills (Denness, 1974; Anderson and McNicol, 1989; Bell and Forster, 1991; Lewis, 1991; University of Paisley, 1996 vide Trenter 1999). Manufactured soils will not possess the same range of grading anticipated in naturally occurring soils and the studies directly measured the effects of defined changes in one parameter at a time on the measured plasticity. Natural soils exhibit an almost infinite range of variation in all ranges of particle size, so the effects of change cannot be so easily isolated.

Trenter (1999) suggested that using index properties as a tool for validating the provenance of a till, or for deriving engineering properties empirically, is somewhat suspect, due to the variability of index properties over a very small distance. Indeed, the variation at a location may be greater than the variation between tills from different locations (Anderson and McNicol, 1989). However, other researchers have successfully applied statistical analysis to large data sets to separate inherent variation in index and other properties from those due to exploration method, (i.e. pits vs. boreholes), provenance or location (Fookes et al, 1975a). Once again, this work is based on information from Welsh tills.

It should also be borne in mind when comparing laboratory data from older investigations that the method of testing for the liquid limit has altered over the years. The former Casagrande apparatus method is subject to operator judgement, and large variability may also be introduced if the equipment is not satisfactorily maintained or the hardness of the base is altered (Norman, 1958). The preferred (definitive) method is now the cone penetrometer (BS1377, Part 2; 1990), which is subject to less inherent variability (Houlsby, 1982) but may give slightly different results from those obtained using the older method (DiMatteo, 2012). This should not necessarily lead to the rejection of older results, but a wider scatter of results may be observed within a single investigation.

2.3.3. Undrained shear strength

The undrained shear strength of a soil is closely allied to the index properties, as it is not a unique engineering parameter of the soil. Trenter (1999) gave a list of potential influences on the undrained shear strength, including the stress path and rate of application during loading, the sampling and testing methods employed, the specimen size and orientation with regard to the spacing and orientation of fabric features. Water content is only mentioned in passing as a variable which influences the undrained shear strength, and then only in relation to the effect of sampling method on the sample water content. As most soils are tested in the laboratory in their ‘as obtained’ condition, water content can be seen to play a very important part in the final measured undrained shear. The effect of water content on the value of the undrained shear strength is illustrated for normally or slightly overconsolidated soil in that the ratio of undrained shear strength at plastic limit to that at the liquid limit is approximately 100 (Wroth and Wood, 1978).

In-situ tests of undrained shear strength are also affected by variations in testing regime. The Building Research Establishment has carried out extensive testing at three research sites, in Hertfordshire, Cleveland and North Lincolnshire using a variety of in-situ and laboratory tests commonly used in British site investigation practice (Marsland, 1975; 1977; Marsland and Powell, 1985; 1991). The sites are all underlain by tills, each with a well-developed fabric caused by depositional and post depositional effects. Four test methods were adopted, namely laboratory undrained triaxial testing, static penetration testing, in-situ pressuremeter (Menard type) and plate bearing with 865mm diameter plate, the latter chosen to permit testing of a body of soil large enough to contain a representative fabric. The plate bearing test was carried out on the hand prepared base of a 900mm diameter borehole by jacking the plate at a constant rate of penetration of 2.5mm/min until a settlement of 15% of the plate diameter was achieved. The shear strength was calculated using theoretical bearing capacity under undrained conditions (Marsland, 1975, 1977).

The Hertfordshire and Cleveland tests showed that the in-situ plate loading tests generally gave lower shear strengths than triaxial testing in the laboratory, although there was much scatter within the triaxial testing results: the pressuremeter and static penetration tests gave shear strengths considerably in excess of the plate loading tests (Marsland, 1975, 1977).

The grading curves of the tills involved were significantly different from most tills found within Cumbria, with in excess of 90% passing the 425μm (medium sand) sieve. The tills also exhibited a marked foliation and a clear relationship was demonstrated between increased foliation and decreasing undrained shear strength (Marsland, 1977). The presence of larger clasts and wider till grading in Cumbria tends to mask the presence of any foliation fabric but the underlying principle still applies.

The representative strength of tills is generally known to be dependent on fabric, and references abound to the lack of reliability of test results from small diameter specimens which may not be fully representative of the behaviour of the soil mass. The importance of specimen size is demonstrated in work by McKinlay et al., (1975) and McGown et al., (1977). The research amply demonstrates that the range of variation in test results from 38mm specimens is unacceptably large, whilst that for 100mm specimens would be generally acceptable for engineering purposes, being of the order of 10% or so of the measured shear strength, and the average ratio of fissured to intact strength is close to the representative strength.

Large scatter of laboratory results of undrained shear strength in triaxial compression is often observed and generally is attributed to inherent variability in material, water content and sampling disturbance. Sampling disturbance is especially likely in tills with large clast sizes or many fabric features (Trenter, 1999). Marsland compared scatter in determination of undrained shear strength in triaxial compression using two methods of definition. The scatter when defined as $((\boldsymbol{\sigma_1}\text{-}\boldsymbol{\sigma_3})/\mathbf{2})_{max}$ was considerably greater than the scatter when defined as $((\boldsymbol{\sigma_1}\text{-}\boldsymbol{\sigma_3})/\mathbf{2})$ when $\boldsymbol{\sigma_1}/\boldsymbol{\sigma_3}$ is a maximum (Marsland, 1977). There was a corresponding reduction of almost 50% in the undrained shear strength value obtained. It should be noted that the requirements of the definitive method for determining undrained shear strength in triaxial compression in BS1377 is to calculate the undrained shear strength for the maximum deviator stress, corrected for membrane effects if appropriate (BS1377, Part 7: 1999).

The effects of sampling method were investigated by Marsland and Powell (1985) in tills of north Lincolnshire. The resulting undrained triaxial shear strengths derived from laboratory tests indicated that the highest strengths were observed for specimens obtained from thin walled push-in sampling tubes, with a significant reduction for specimens obtained by rotary and conventionally driven 100mm diameter open tube samplers (U100). The corresponding measured water contents were lower in the thin walled sampler specimens and higher in the rotary and U100 specimens. Work by Hooper and Butler (1966) in London Clay compared the results of laboratory triaxial testing and in-situ continuous rate of penetration testing. Using parametric statistical analysis they concluded that there are differences between shear strength results obtained from hydraulically pushed in 2½ inch (63mm) samplers, U4 (U100) open drive samplers, and continuous rate of penetration tests; the latter giving the most consistent results overall.

Thin walled samplers are now required by BS-EN 22475 for the recovery of Class 1 undisturbed samples suitable for strength and compressibility testing. The definition of thin walled includes a cutting shoe angle not exceeding 5º, an area ratio of 15% or less and an inside clearance ratio of less than 0.5%: this definition does not include the standard U100 driven open tube sampler commonly used in the UK. A useful summary of the industry response is presented by Baldwin and Gosling (2009).

The use of thin walled samplers in the tills found in Cumbria is problematic and, therefore, they are rarely, if ever used, as the large proportion of cobble and boulder sized clasts can lead to damage of the sampling equipment. The use of 2½ inch (63mm) samplers is no longer continued, and the alternative 38mm tubes are unsuitable for the types of till encountered for example throughout most of Cumbria, as the high gravel, cobble and boulder content often leads to failed samples and damaged equipment. The use of rotary coring generally leads to high levels of disturbance, with recovery of the cobble and gravel sized clasts, and the almost total loss of fines in the flush medium. Baldwin and Gosling (2009) suggested avenues of development, including hydraulic push-in samplers and rotary-sonic drilling for suitable matrix-dominant tills, or in-situ testing techniques. These would require correlation with laboratory testing, although the authors admit that such correlation relies heavily on the testing of samples of less than ideal quality. Taylor et al. (2011) undertook sampling of a southern Scottish till using traditional thick walled U100 samplers, thin walled U(T)100 samplers and rotary drilling with a variety of flush media. They compared the results with the required sample quality required by the European Codes and came to the conclusion that none of the techniques consistently produced a quality class 1 sample (Taylor et al. 2011).

2.3.4. Comparison of undrained shear strength with SPT

The difficulty of obtaining satisfactory undisturbed samples from clast and fabric dominant tills is well known, and the consideration of a relationship between the results of the Standard Penetration Test (SPT) 'N' value and undrained shear strength is an attractive proposition. The SPT itself is analogous to an undrained shear test, albeit under less controlled conditions and, therefore, the investigation of such relationships may be thought potentially fruitful. The relationship sought may be characterised by the equation derived by Stroud and Butler (1975):

$$\mathbf{c_u} = \mathbf{f_1} \times \boldsymbol{N} \qquad \text{(Equation 2.1)}$$

where $\mathbf{c_u}$ is the undrained shear strength in kN/m², $\boldsymbol{N}$ is the SPT blow count, and $\mathbf{f_1}$ is a multiplication factor to obtain the undrained shear strength in kN/m² units.

Stroud and Butler (1975) investigated such a relationship at twelve sites on tills and overconsolidated clays in Britain, and at least one each in North America and Europe. Of the twelve British sites, five were in the north west of England, including one near Carlisle in Cumbria; three were in Scotland, two in the North East and the remaining two in the Midlands and the south of England. The factor $\mathbf{f_1}$ was determined for each site by superimposing the two depth plots and adjusting the scale of the SPT plot to give the best fit when compared with the triaxial test results. The research concluded that the scatter of the SPT results was no greater, and in some instances was less, than the scatter obtained in laboratory undrained shear strength determination and that the empirical factor $\mathbf{f_1}$ varied between 4.4 and 6.0 in kN/m^2 units. This factor was found to be largely independent of depth down to 50m below ground level, and discontinuity spacing up to 200mm: there was found to be a general decrease of $\mathbf{f_1}$ with increasing plasticity index.

Further work was carried out by Chegini and Trenter (1995) into tills at Chapelcross in Southern Scotland. The values of $\mathbf{f_1}$ obtained were highly variable, with a range of less than 1 to greater than 6. Further studies referenced by Trenter (1999) yielded values for $\mathbf{f_1}$ of 9.8 for a site in North West England, and 3.9 for an unidentified site in Cumbria. The scatter of results at this latter location was relatively small, although no statistical parameters or regression coefficients were quoted. Reid and Taylor (2010) concluded that there was no direct correlation between the SPT ‘N’ value and the undrained shear strength of fine grained tills in South Lanarkshire.

The results to date incorporate the findings from a relatively small data set and work by both Trenter (1999) and Reid and Taylor (2010) concluded that there was no overall factor applicable to the relationship. The suggestion was further advanced that any such relationship should be derived on a site-specific basis (Trenter, 1999). This is of direct relevance when considering design using BSEN 1997 Part 1 (2004), which states that it shall be established that any empirical relationship used in analysis is relevant for the prevailing ground conditions. Thus great care must be exercised if correlations are used in situations that differ from those pertaining in the original derivation (Bond and Harris, 2008).

2.3.5. Comparison of undrained shear strength with index test results

The liquid and plastic limits may be thought of as the water contents of rather crudely standardised remoulded undrained shear strength tests and, therefore, in conjunction with the natural water content the parameters obtained might be expected to reflect the mass undrained shear strength of the natural soil. The liquidity index (LI) is often used to express this type of relationship, defined by:

$$LI = (\mathbf{w_{nat.}} - PL)/PI \qquad \text{(Equation 2.2)}$$

Where $\mathbf{w_{nat}}$ is the natural water content, PL is the plastic limit, and PI is the plasticity index. Early work by Skempton and Northey (1952) indicated an inverse relationship between undrained shear strength $\mathbf{c_u}$ and liquidity index.

Based on earlier work by, among others, Wroth and Wood (1978) and Youssef et al., (1965), Sladen and Wrigley (1983) suggested a relationship of the form:

$$LI \approx 1.115 - 0.5 \log_{10} \mathbf{c_u}, \text{ or } \mathbf{c_u} \approx 170^{(-0.46 \times LI)} \qquad \text{(Equation 2.3)}$$

It should be noted that the calculation of the liquidity index is very sensitive to errors in the laboratory determination of the Atterberg limits and natural water content. In particular, the natural water content should be determined on the same soil fraction as is used for the determination of the Atterberg limits, and care must be taken if using Equation 2.3 to ensure that this is in fact the case (Sladen and Wrigley, 1983). As the water content relationships are determined for soil passing the 425 micron sieve (BS1377-2:1990), whilst for tills the undrained triaxial shear test is commonly carried out on an undisturbed sample of 100mm diameter (BS1377-7:1990), the liquidity index may not be representative of the soil as encountered in the field. Therefore, in the case of tills with significant coarse fraction the Sladen and Wrigley relationship may no longer apply.

2.3.6. Drained peak and residual shear strengths

Very few commercial investigations undertake the measurement of drained shear strength because of the long time scales involved. Often, what is measured as drained shear strength is actually consolidated undrained shear strength with measurement of pore water pressure. The Mohr circles thus produced are then constructed for effective stress conditions. The slight difference between the true drained parameters and those derived from the effective stress test conditions is considered insignificant in engineering terms except for the most critical of applications (Bishop and Henkel, 1962).

Of more interest to engineers currently is the existence or otherwise of an effective stress intercept **c'** under peak shear conditions. Early researchers noted that the effective cohesion intercept varies depending upon a number of factors. Thorburn and Reid (1973) proposed a linear relationship between $\mathbf{c'_p}$ and $\boldsymbol{\phi'_p}$ for tills around Glasgow whilst Sladen and Wrigley (1983) stated that the effective cohesion lies between zero and 25kN/m² for clay tills. Neither of these suggestions negates the concept that **c'** is an artificial construct resulting from corrections necessary due to the testing process of consolidation and shearing at relatively high triaxial pressures.

Penman (1953) conducted a series of triaxial tests on a Scottish silt with a grading envelope of 100% passing 0.15mm and 0% Clay. The natural soil was reconstituted to different densities and then consolidated prior to the application of strain in the triaxial cell. Individual ϕ' results were calculated at peak values. Although the main thrust of the work was to investigate the relationship between ϕ' and void ratio **e**, the results also showed a reduced value of ϕ' with an increase in confining pressure. The paper also referred to work carried out on quartz sand, which exhibited the same behaviour. The overall effect of the combined results for a soil is to deform the usual straight line failure envelope, and is attributed to an elastic increase in inter-granular contact area during compression (Penman, 1953). A similar result was reported for tests on colliery spoil from around the United Kingdom, where curved failure envelopes passing through the origin c' = 0 were frequently observed (McKecknie-Thomson and Rodin, 1972).

Charles and Watts (1980) carried out a series of large diameter triaxial tests on prepared specimens of four different crushed rock aggregates: although granular, the material was generally well graded. The research was prompted by the need to investigate the properties of rock fill for embankments, and the problem of larger clast size in the eventual fill was overcome by using a specimen prepared to a parallel but finer grading curve. The effects of this are unclear, especially when applied to a natural soil in the field: some earlier research referenced noted an increase in ϕ' of up to 2º with increased particle size (Tombs, 1969; Charles, 1973), confirmed by later research (Bolton and Lee, 1993), while other work indicated a corresponding decrease of around 4º (Marachi et al., 1969). The increase in ϕ' at low confining pressures was of the order of 10º (Marachi et al., 1969; Charles and Watts, 1980). For a well graded till such as is common in Cumbria the exclusion of larger clasts either as a result of the limit on generally available borehole sampling equipment, or on the largest size (100mm diameter) of commercially available triaxial testing, is therefore considered to be negligible in engineering terms when other potential variables are taken into account.

The results obtained by Charles and Watts (1980) confirmed the work of several earlier researchers, and showed that a decrease in shear strength occurs with an increase in confining pressure. Some of this effect is attributed to the effects of dilation at low confining pressures and particle breakage at high confining pressures (Charles and Watts, 1980), but work by Bishop (1966) adduced similar overall results for steel shot, where no particle breakage occurred: this would tend to support the theory of Penman (1953) outlined above.

In a paper presented to the 10th European Conference on Soil Mechanics and Foundation Engineering in 1991, Houlsby presented the results of research into the shearing behaviour of soils at failure in terms of the combination of the shearing angle at constant volume combined with the angle of dilatancy. This paper further demonstrated that the rate of dilation is greater for samples with lower initial void ratio and that the soils all dilate until they reach the same critical voids ratio. The critical voids ratio is, however, not unique, but varies inversely with confining pressure. Thus for higher confining pressures the contribution from dilatancy is less, leading to the curved failure envelope observed (Houlsby, 1991).

Charles and Watts (1980) gathered the research together to present a theoretical curved Mohr failure envelope for peak shear stress of the form:

$$\tau = \boldsymbol{A}\,\sigma^{\boldsymbol{b}} \qquad \text{(Equation 2.4)}$$

where τ is the shear stress mobilised at failure, and σ is the (effective) confining stress. Charles and Watts (1980) obtained values for $\boldsymbol{A}$ of 3 to 6.8 (in kN/m² units) and $\boldsymbol{b}$ of 0.67 to 0.81 (dimensionless). De Mello (1977) performed a similar exercise on previous research results from granular fills and obtained values for $\boldsymbol{b}$ of between 0.81 and 0.88. Perry (1993) investigated the peak strengths of London Clay and Oxford Clay, and derived values of $\boldsymbol{A}$ of 3.7 and 3.4 (in kN/m² units) respectively, with a value of $\boldsymbol{b}$ of 0.58. Values of other clays, including Gault and Kimmeridge produced ranges of ***A*** between 1.8 and 2.8, and ***b*** from 0.58 to 0.73. The effect of an increasing ***A*** value is to increase the overall slope of the line, and increasing ***b*** tends to flatten the curve. For materials that exhibit a linear Mohr Coulomb envelope ***b*** approaches unity, and ***A***, in effect, encompasses the equivalent angle of shearing resistance, and may be regarded as an intrinsic shear strength index for the material (Indraratna et al., 1993). In their research, Indraratna et al. (1993) propose normalising the shear and normal stresses by dividing by the point load index of the rock tested: this is inapplicable in the case of tills as there is no one rock type, and often a considerable matrix of sand and clay.

This concept of a curved envelope is of importance in the analysis of slopes. For a straight line relationship for shear strength given by $\tau = \sigma' \mathrm{Tan}\ \phi'$ with $c' = 0$ the failure of a long slope is shallow and planar, whilst for a curved envelope the critical failure surface is curved and passes some depth into the slope. In this circumstance large volumes of material may fail in a sudden and rapid manner (McKecknie-Thomson and Rodin, 1972).

Subsequent research developed the concept of soil critical state, in which at strains greater than 10%, or so, soil passes its peak strength and continues failing at a constant but reduced shear stress, with no change in normal stress or void ratio. For these conditions the idealised Mohr envelope is linear and passes through the origin $\tau = \sigma = 0$ (Schofield and Wroth, 1968; Atkinson and Bransby, 1978; Muir-Wood, 1991; Atkinson, 2007). This envelope is then used as the basis for the derivation series of theoretical constitutive equations for soil behaviour known as the ‘Modified Cam Clay’ model, which relates soil yield, strain hardening and volumetric strain to measurable soil properties used in finite element computer algorithms (Britto and Gunn, 1987; Potts and Zdravkovic, 1999; Atkinson, 2007).

2.4. GLACIAL CONTROLS

2.4.1. Outline of glacial history in Cumbria

As discussed in Section 2.2, the glacigenic origin of a till will have an effect on the nature of the soil, and for this reason the history, extent and mechanisms of the glacial environments in Cumbria are potentially important controls on the subsequent engineering properties of the tills produced. The glacial deposits in Cumbria are strongly influenced by the location and topography of the region, with ice centres located in the Southern Uplands of Scotland, and over the Cumbrian Mountains, which latter also served to deflect the main southward ice flows into the Irish Sea basin or over the Pennines into North East England. The ice thickness attained several hundreds of metres (Clark, 2001; Smith, 2008).

Numerous glaciations have occurred across Northern Britain; the principal periods being Anglian (c 480,000 – 420,000 BP), Wolstonian (c 300,000 – 250,000 BP), Early and Late Devensian (c 90,000 – 10,000 BP) and the postulated Scottish Re-advance (c 17,000 BP) (Trenter, 1999). In addition to these major subdivisions, each of the successive glaciations was subject to oscillation, with retreat and re-advance cycles affecting the ice sheet margins prior to each final de-glaciation. Each subsequent new glaciation period re-worked or obliterated the tills from the previous episode and in Cumbria there is little conclusive evidence of relict Anglian or Wolstonian deposits, most, if not all, tills in Cumbria therefore being usually attributed to the Devensian period (Taylor et al., 1971; Clark, 2001; Smith, 2008). Some exceptions are noted in the form of buried clays and organic deposits of suspected earlier origin, but where confirmed these have only been proved at the base of a substantial thickness of Devensian deposits by boring (Trotter et al., 1937; Eastwood et al., 1968; Rose and Dunham, 1977; Burgess and Holliday, 1979, Johnson et al, 2001). It is not clear whether these are, in fact, relict pre-Devensian tills, or glaciotectonised relics entrained as rafts and incorporated into the subglacial lodgement tills. In either case, their depth below the existing ground surface and apparent locally confined extent make them of limited significance in engineering terms, though of great interest to the geological record.

2.4.2. Description of relevant glacigenic processes in Cumbria

A detailed general guide to the Quaternary glaciation of Cumbria is contained in The Ice Age in the Lake District (Smith, 2008). A useful detailed and readable presentation of the Late Pleistocene glaciation of North Cumbria is given by Clark (2001). Using reported tracings of Ailsa Craig and Ennerdale erratics throughout the North of England, a suggested ice centre, or 'shed', is postulated between Cairnsmore of Fleet in Wigtown Bay, and a location a little south of St. Bees Head on the west coast of Cumbria, with a second ice-centre situated over the Lake District mountains as illustrated in Figure 2.5. Successively more detail is contained in the various sheet memoirs for Cumbria, published by the British geological Survey (Holmes, 1899; Trotter et al. 1937; Eastwood et al., 1968; Day, 1970; Rose & Dunham, 1977; Burgess & Holliday, 1979; Arthurton & Wadge, 1981; Barnes et al., 1986) There are some differences in the accounts given of the regional glaciation in these publications, as interpretation of the complex glacial history has changed with the acquisition of more data over the years: indeed, the determination of the chronology and detailed effects of the Devensian glaciation is still a work in progress for the geological sciences (Mitchell and Clark, 1994; Clark et al., 2004). However, the overall conclusion is that the main ice flow was southward and eastward around the north of Cumbria, with an outflow over the Tyne Gap and at Stainmore summit at the head of the Eden valley, and southwards into the Irish Sea along the Cumbrian coast. Evidence from drumlinised till in the valleys of the rivers Eden, Tyne and Tees indicate a thickness of ice at the sills in excess of 250 metres at Stainmore and 450 metres at the Tyne Gap, with a glacial bed level at a present day elevation of 600 metres above Ordnance Survey Datum: the thickness and elevation at the ice-centres would have been greater still (Clark, 2001). The combined distribution of both Criffel/Dalbeattie and Shap granites in both the Tyne and Eden valleys indicate that the Scottish ice flow was eventually overwhelmed by ice flow from the Lake District. Apart from the very highest summits of the north Pennine hills, the ice flowed over a front of up to 90 kilometres in width, with landform evidence of an eastward flow. The main outflow of ice occurred across a 45 kilometre wide sill over the Bewcastle Fells and into the Tyne valley. At the secondary sill at Stainmore ice flowing South East from the Eden valley, east from Shap and North East from the Howgill Fells combined to flow eastwards across a 14 kilometre front before combining with ice flows along Teesdale. Drumlinised drift and ice-moulded landforms on the west facing slopes of the Eden valley indicate further ice overspill into the Tees valley.

Elsewhere in Cumbria, the ice flow was from the Lake District and Howgill Fells ice centres westwards and southwards into the Irish Sea ice stream, converging with the Scottish ice close to St. Bees Head, and ice flows from the Yorkshire Dales down the Vale of Lune into south Cumbria (Eastwood et. al., 1968; Mitchell and Clark, 1994; Ackhurst et. al., 1997; Clark, 2001).

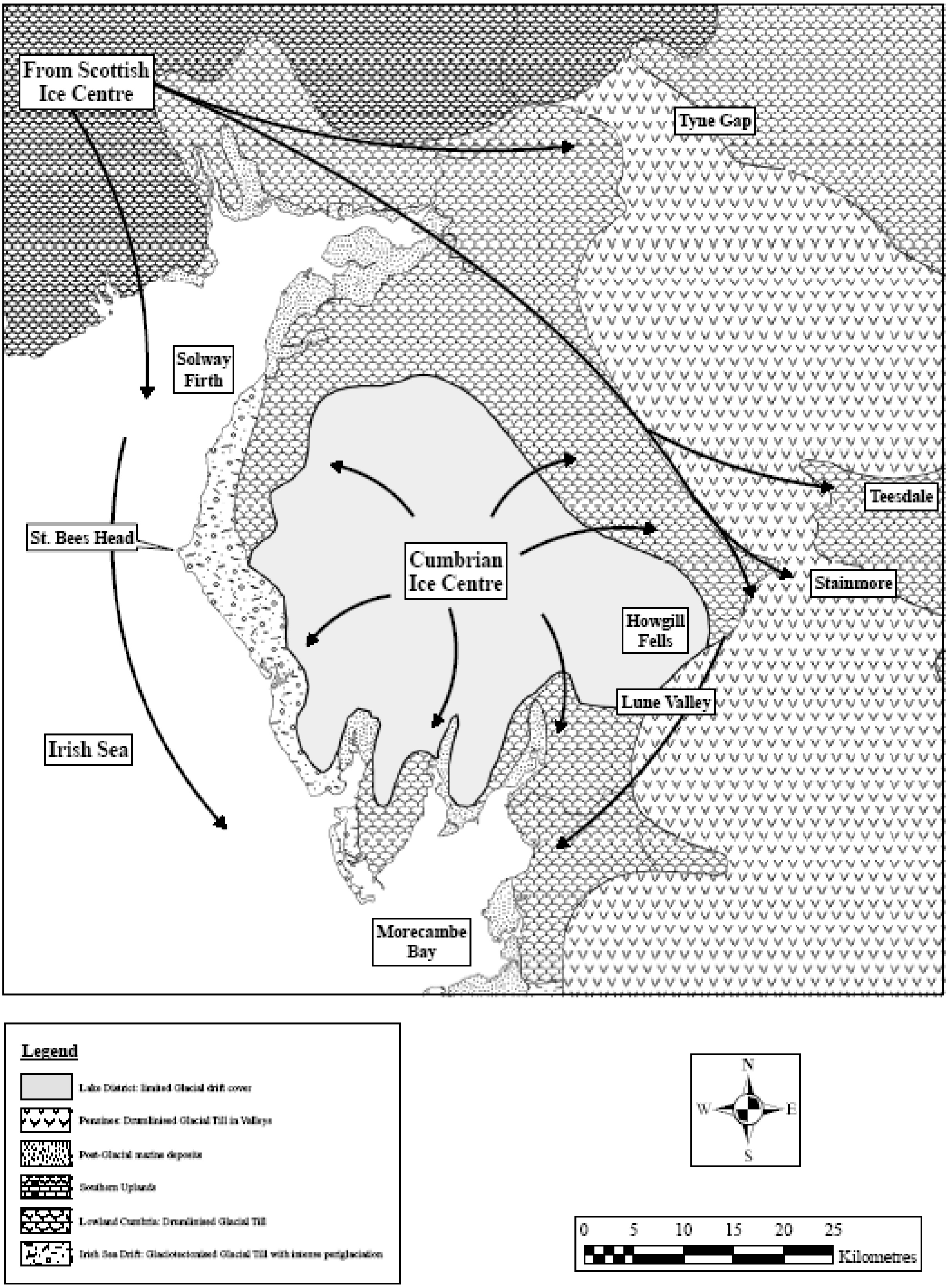


Figure 2.5: Schematic diagram of till types with ice movements at maximum Devensian extent.

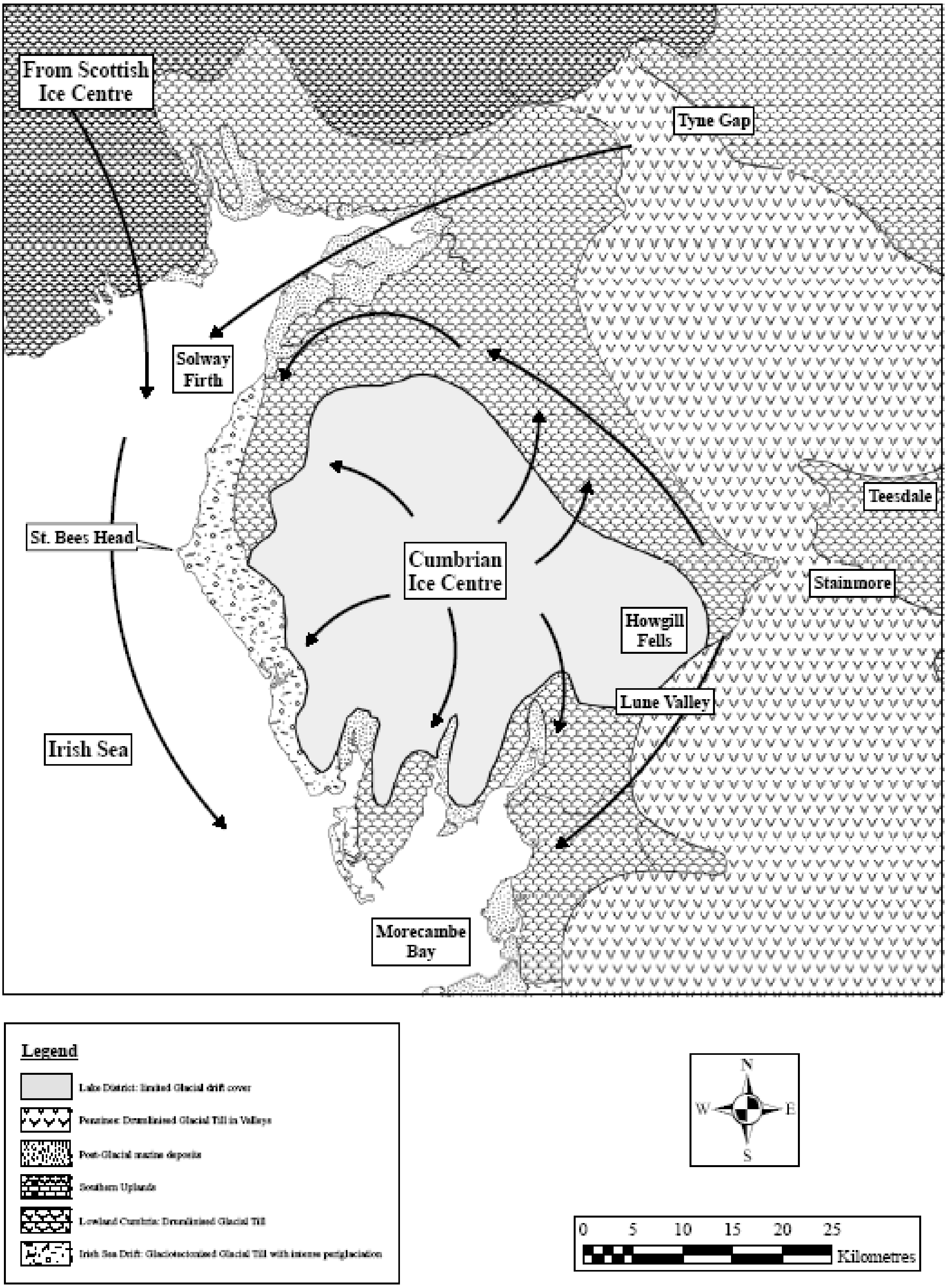


Figure 2.6: Schematic diagram of till types with ice movements at later Devensian extent.

Subsequent major re-advances have been identified during detailed geological mapping of tills in west Cumbria, the ‘Gosforth Stadial’, (Ackhurst et. al., 1997) and by examination of the drumlin fields east and west of Wigton on the Solway plain (Eastwood et. al., 1968, Huddart, 1991; Clark, 2001). The direction of ice movement during this ‘Broad Flow’ period was in an anticlockwise arcuate direction following the limestone escarpment from Appleby round to Cockermouth, i.e. generally in the opposite direction to that ascribed to the earlier period: the turns in the ice paths indicated by bedrock striations follow changes in the strike of the escarpment. The flow was in drumlin forming mode over lowland areas, such as mentioned above in the Wigton area, and in the vicinity of Maulds Meaburn near Appleby. Less well defined drumlinised till also occurs on the dip slope of the limestone escarpment. The major identified ‘Gosforth Stadial’ may be co-incident with the ‘Broad Flow’ period (Clark, 2001).

During this period ice gathered from the Howgill and Birkbeck Fells, Shap, Haweswater, Ullswater and Thirlmere before joining in the Eden Valley and pivoting anti-clockwise around the Skiddaw Uplands. The flow was in drumlin forming mode, indicating a possible fast ice movement across a weak wet bed, and there must have been a considerable restraint against lateral spreading towards the north to constrain the arcuate flow direction (Clark, 2001).

2.4.3. Peri- and post-glacial history

The majority of till in Cumbria has been assigned to the Devensian period. However, during the de-glaciation of the region a series of oscillations occurred, with consecutive retreats and re-advances evidenced by intercalations of glacio-fluvial and glacio-lacustrine deposits and by relict structures within the glacial drift. These include over-deepened drift-filled valleys, push moraines, folding and faulting structures, melt water channels and topographic traces of lakeshore markings (Eastwood et. al., 1968; Burgess and Holliday, 1979; Arthurton and Wadge, 1981; Ackhurst et. al., 1997; Clark, 2001).

As the final onset of de-glaciation occurred, ice retreated into valley glaciers and lakes of various extents were formed against retreating ice fronts in the main river valleys, most notably glacial Lake Ormsby, near to Appleby in the Eden valley, in the valley of the river Caldew between Caldbeck and Cockermouth and in other locations around the western Lake District. Dry melt water channels are often associated with these pro-glacial lakes, as the higher water levels were relieved by cutting new channels before the post-glacial channels were fully formed. Well-defined alluvial fans are visible in many river valleys in Cumbria and correlations of the plateau elevations give an indication of the lake levels extant when the fans were deposited: often there are several different elevations of alluvial fans, indicating a succession of differing lake water levels.

Such features make the detailed interpretation of a comprehensive glacial history difficult for the whole of the Cumbria region but are of vital importance when considering the range of engineering parameters that may be expected on a site-by-site basis, as the juxtaposition of different soils will affect the measured and measurable properties. Thus, the fabric, lithology and associated properties of tills can vary very quickly over a comparatively short distance and this is particularly so for valley lodgement tills. The additional changes induced by Peri- and Post glacial effects serve to exacerbate this problem. For example, a short cutting in valley lodgement till at Sykeside, Patterdale, contains material ranging from cobble and boulder pavement through to a firm orange sandy gravelly clay, with a significant lens of grey silt and fine sand, all within a twenty metre long exposure. This inherent variation places some limitations on the applicability of the use of broad glacigenic sub-types to classify tills in Cumbria, especially when combined with the underlying variation in bedrock source type.

2.5. GEOLOGICAL CONTROLS

2.5.1. Examination of the bedrock geology of the ice bed

The mineralogy, hardness and jointing of the bedrock geology over which the ice sheet passes will affect some, if not all, of the engineering properties of the derived till. For example, it was demonstrated by Dumbleton and West (1966) that different clay minerals and particle sizes influences the plasticity of a clay soil. Also, different rock types will produce differing sizes of entrained clast depending upon their resistance to abrasion and the jointing pattern of the rock mass. The sedimentary bedrock geology of Cumbria varies widely in age from Ordovician to Lower Jurassic, together with intrusive and extrusive volcanic rock forming the high mountainous regions within the central Lake District and the associated metamorphic rocks at the interface between the two, as can be seen in the simplified geological map of Figure 2.7. It is well known that the bedrock geology has a marked effect upon the topography of the region. The more abrasion and weathering resistant volcanic rocks form the high ground of the Cumbrian Mountains and the central Lake District and the softer sedimentary rocks underlie the gentler slopes of south Cumbria, the west Cumbrian coastal margins and, to the north, the Solway Plain. This variation in rock type makes the region an ideal area to study the effects of bedrock geology on the properties of the derived till.

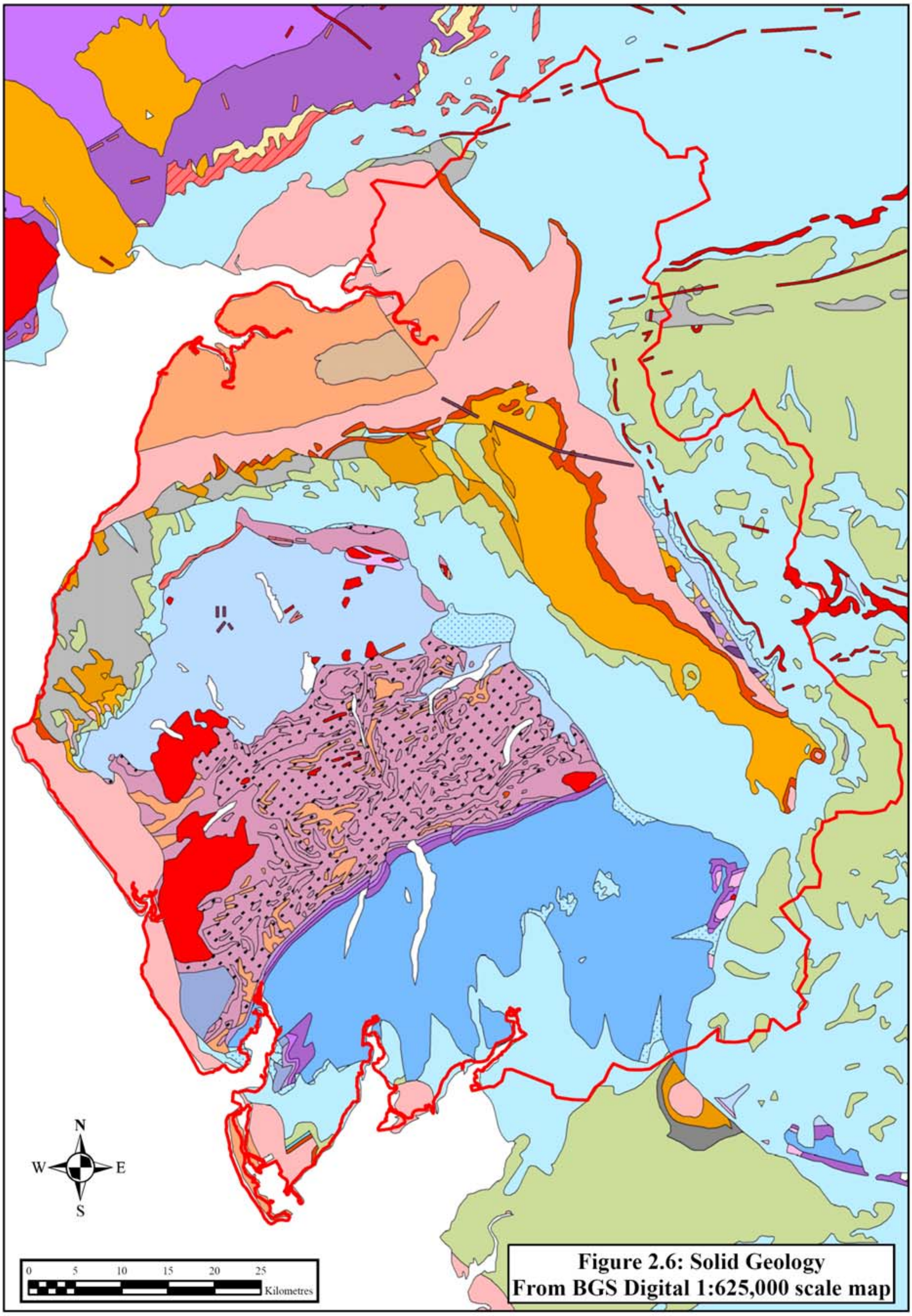
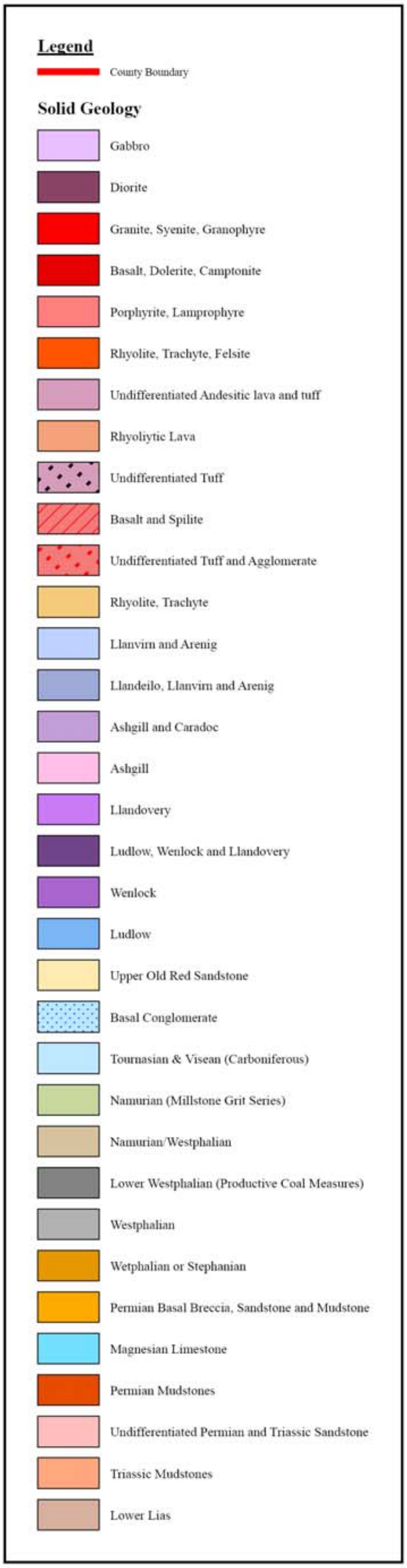


Figure 2.7: Solid geology of Cumbria (for key see opposite page)



Key to Figure 2.7

Solid geology

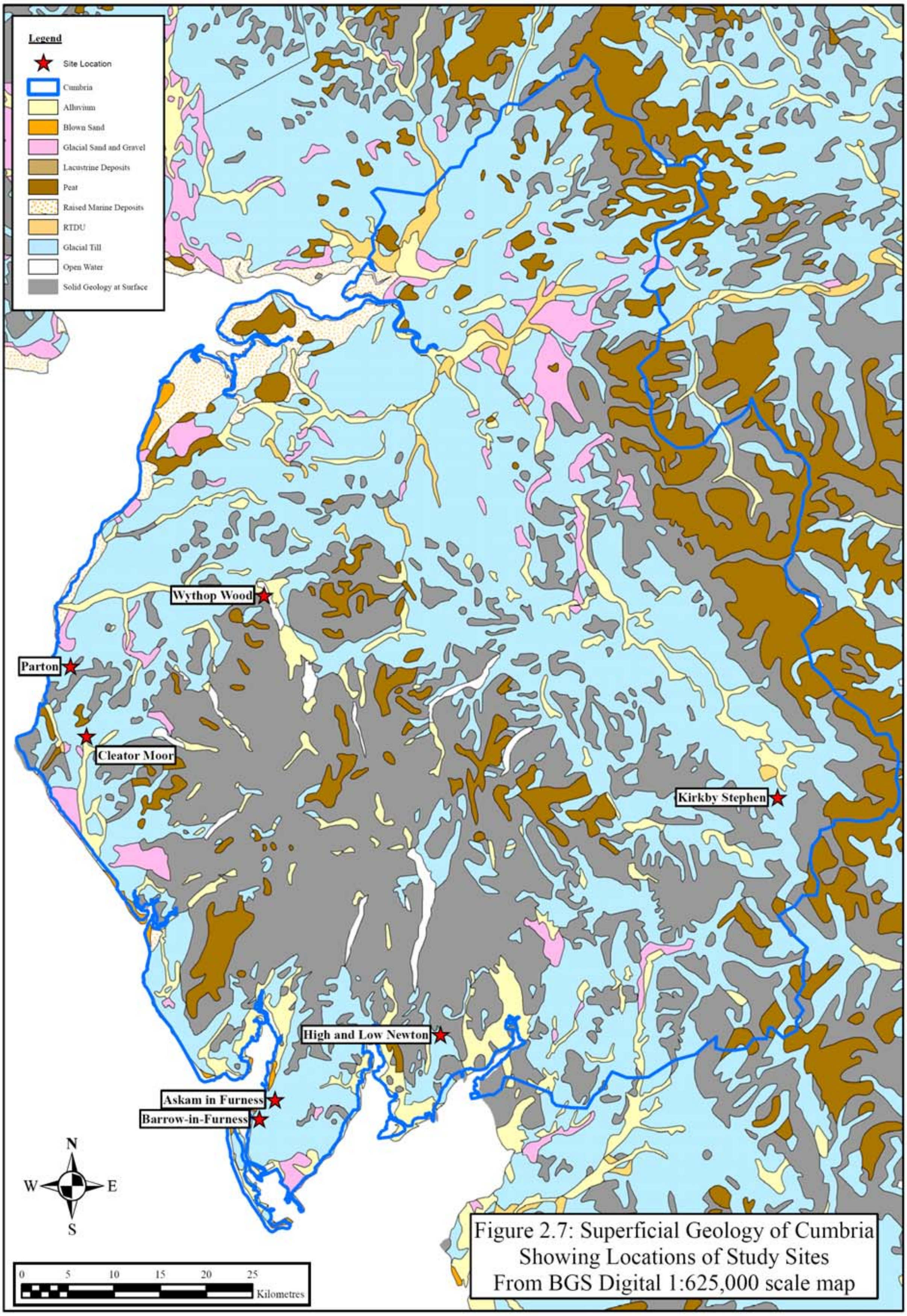


Figure 2.8: Superficial geology of Cumbria, showing locations of study sites

2.5.2. Occurrence and extent of different glacial deposits

A simplified map of the superficial geology of Cumbria is presented in Figure 2.8, based on the British geological Survey digital mapping data set. From this it may be seen that the till of Devensian age is confined to low and medium elevation relief, with the highest parts of the central Lake District mostly free of significant superficial deposits. Relatively thick till sheets exist in the lowland areas, and in over-deepened drift filled valleys, and deposits of valley tills are also in evidence. Glacio-fluvial sands and gravels exist in large bodies at several locations, particularly the Brampton Moraine, and Flandrian deposits overlie earlier glacial sediments around the northern and southern coastal and estuarine plains.

2.5.3. Post-glacial effects

Since the end of the Devensian period and the final retreat of the overland ice cover, alteration of the glacial deposits has occurred through a number of mechanisms. Chief among these is the gradual weathering of near-surface deposits, an effect which is observed almost universally within Cumbrian tills. The downward extent of post-glacial weathering is generally marked by a distinct colour change, due to a combination of chemical oxidation and downward leaching of minerals. The near-surface weathered zone is usually yellow, orange or red-brown in colour, overlying a generally dark grey or grey brown unweathered material. However, fissures and other discontinuities, and discrete lenses of more permeable sandy or gravely till can occasionally lead to a local deepening of the weathered zone. The effect that this weathering has on the geotechnical properties of the till is discussed in a later section.

Glacial outwash, associated with the last retreat of the Devensian ice sheet, locally obscures the underlying till at numerous locations. The extent of these outwash features can vary in size from a few metres for alluvial fans deposited in glacial lakes in mountain valleys such as that of the River Caldew, to several kilometres for the large Brampton Moraine in the Irthing valley. Some of the larger deposits are exploited as valuable sources of natural aggregates, but are not considered as part of the current study, being granular in texture.

Many of these outwash fans were deposited in large melt water lakes temporarily impounded by remaining ice. Large glacial melt water channels formed to drain some of the largest of these lakes, most notably near Caldbeck and south of Appleby. These channels are now either dry, as at Caldbeck, or over-deepened, as at Appleby, and are largely devoid of superficial cover (Eastwood et al., 1968; Burgess and Holliday, 1979).

At several locations on the north-facing slopes of the higher mountains of the Lake District, col glaciers lingered long after the Devensian ice sheet had melted. These were formed during prolonged periods of cold weather, as snow built up over several years and became compacted to form ice. In some instances these col glaciers attained tens of metres in thickness, and produced pronounced rock cirques and associated terminal moraines by attrition of underlying bedrock and reworking of existing tills (Evans, 1994).

There are over one hundred and fifty known cirques in Cumbria (Evans, 1994; Smith, 2008), and although many are at altitudes above four hundred metres Ordnance Datum and have no impact on engineering constructions, there are examples at lower elevations, or where instability in the terminal moraine may affect settlements or transport infrastructure.

In the steeper-sided valleys of the Lake District, post-glacial weathering of the exposed rock slopes has produced large volumes of hillwash and talus, which obscures the edges of the till where it abuts the valley sides. These deposits may include weathered and transported valley lodgement till and are, therefore, difficult to distinguish from the underlying undisturbed material. In these circumstances it is important to recognise the likely presence of post-glacial deposits and to ensure that the soils encountered during investigation are very carefully described to include the fabric on both a micro- and macro-scale. The use of terrain evaluation by site walkover and air photograph interpretation, geomorphological mapping and other site-based survey techniques are of immense value (Perry and West, 1996; BS5930, 1999). The increasing use of rapid air reconnaissance techniques such as LIDAR imaging is also of great potential value (Schofield and Breach, 2007; Norman, 2009).

2.6. CONCLUSIONS

2.6.1. Gap analysis of current knowledge base

There is a considerable body of work already available describing individual studies in till soils, and some area-wide studies to attempt to apportion till units to one or more glacial events, or to show that tills thought initially to be separate horizons are in fact different expressions of the same till. Many of these studies were primarily geological rather than geotechnical in their focus, and those conducted from an engineering standpoint were completed in excess of twenty years ago. In addition, much of the attention has been focused on predominantly lowland tills, particularly in the North East of England and the few more recent studies located in Cumbria are limited to the coastal margin in the west of the county and are again concerned with the geological implications rather than the engineering properties.

Much of the work has been carried out within the context of academic study, rather than in a commercial investigative setting, and the laboratory testing has been carried out using a degree of care in the obtaining of samples and the preparation of specimens that is not available to the practising geotechnical engineer. There is the consequent probability that small but measurable differences in soil properties might become invisible in normal engineering ground investigations and the application of the same techniques used by academic researchers would become unusable in practical commercial situations.

Discussion of the application of various methods of statistical analysis to geotechnical data sets is the subject of Chapter 3, but introductory mention is made here. As discussed in Section 2.3, some published studies have used statistical analysis but there is little or no discussion of the applicability of the parametric techniques used to evaluate and compare the available data sets. Often the choice to use parametric statistical comparisons is not discussed: it appears in most if not all cases to be made uncritically, based on the availability and ease of use of generic computer software rather than the distribution of the data values.

Most empirical relationships describing the engineering behaviour of soils are derived from work on either fine grained tills typical of the north east of Britain, essentially homogeneous fine grained soils such as occur in the south of Britain, or gravitationally consolidated peri- and post-glacial soils. In those derived relationships that include data from tills of north west England the amount of data drawn from the area is far outweighed by that from other parts of the United Kingdom.

2.6.2. Implications for engineering-based ground investigation

The introduction of the geotechnical Eurocode has codified ground investigation requirements in a legal compliance framework for the first time in UK practice. It is now essential for engineers to differentiate between strata (or soil types) and to obtain sufficient information from each stratum to fully define the geotechnical properties. To plan cost effective ground investigations that satisfy these requirements some a-priori assumptions must be made at the preliminary sources (desk) study stage of an investigation to design the locations and target depths of exploratory holes. To an extent, these factors are obviously governed by the conceptual design of the proposed engineering construction. The Eurocode states the requirements for exploratory hole depth relative to the anticipated foundation depth in some detail, but considerable latitude is given in exploratory hole spacing, particularly on linear projects such as roads and railways (BS EN1997 Part 2, 2007). Having gathered the data from site- and laboratory-based testing, the problem then remains as to the identification of soil types and the apportioning of relevant engineering properties in a way that provides confidence that the number of different soils present has been correctly identified, and that their chosen characteristic values are appropriate.

2.6.3. Aims and objectives of this research

This research aims to investigate the application of two potential tools available to assist in the successful planning of engineering ground investigations. In doing so, it is intended to draw upon the best published experience of both the geological and geotechnical disciplines, and to attempt to a certain extent to bridge the gap of understanding between the two. Many engineers fail to grasp the implications of the geological controls on the engineering behaviour of soils, and many geologists do not appreciate the effects that apparently small differences in soil parameters may have upon geotechnical construction.

The following objectives form steps towards these aims:

1). To compare the results of various parametric and non-parametric techniques as applied to a large data set obtained during a typical commercial investigation carried out for an engineering scheme.

2). To investigate a domain-based approach to plan investigations over wide areas of terrain, based on underlying geology and glacigenic history.

3). To assess the applicability of some commonly used empirical relationships to Cumbrian tills.

It is thereby proposed to ascertain whether the use of these analytical tools have any useful potential in the discipline of engineering geology to assist in the preparation and interpretation of ground investigations, and whether the general geological findings from studies elsewhere in Britain are applicable to the tills of Cumbria. The discussion of the various statistical techniques is carried forward in Chapter 3, with the initial site selection process and result of the analysis at that site discussed in Chapter 4. Chapter 5 goes on to describe the introduction and analysis of six further sites, and discuss the results obtained. Chapter 6 is a detailed discussion of the results of the research in terms of domain controls and the relationships examined, and Chapter 7 draws together the conclusions, and makes suggestions for possible lines of further research.

Chapter 3. STATISTICAL TECHNIQUES AND APPLICATION TO GEOTECHNICS

3.1. INTRODUCTION

3.1.1. Application of statistical analysis to geotechnical data sets

Notwithstanding the potential problems of applying an inappropriate method, and the apparently limited use of the techniques in published information to date, statistical analysis can be a useful tool in the interpretation of large data sets. However, its use for small sites with limited ground investigation data is likely to be more problematical. The introduction of limit state analysis into geotechnical engineering by the Eurocode harmonisation programme (BSEN 1997 Part 1 (2004) and Part 2 (2007)) means that for the first time statistical analysis is included in a code of practice, although its use is not mandatory (Driscoll et al., 2008). The selection of appropriate statistical methods therefore assumes more importance than it had previously, as does an appreciation of the limitations on their use and the potential implications of using techniques if certain pre-conditions are not satisfied.

Different opinions are expressed by a number of researchers as to the value of statistical analysis of ground investigation data. Trenter (1999) took a cautious approach, but Culshaw (2005) described the application of several statistical methods to rationalise and compare large datasets, with individual results reported to widely differing standards. The work of Fookes et al. (1975b) on a linear site in South Wales successfully applied tests of (parametric) statistical significance to a large data population to compare and contrast tills from different positions within the investigation, and to compare sampling techniques within similar tills. These authors acknowledged that some of the data sets did not follow a Gaussian distribution but no significance tests were carried out using non-parametric methods (Fookes et al. 1975b). Analysis of large populations of laboratory test data for London Clay carried out by Hooper and Butler (1966) suggested that the variation in measured shear strength followed a Gaussian distribution, but this may not be generally applicable to till. An assessment of the difference in the standard deviation and coefficient of variation of the data set caused by different sampling techniques was also reported. Lindh and Winter (2003) carried out tests on soils to determine the effects of different methods of sample compaction on the moisture condition value but the comparison was done using graphical techniques rather than numerical statistical analysis. Skipper et al. (2005) and Long & Menkiti (2007) carried out analysis of large data sets from ground investigations in Dublin Boulder Clay (glacial till). A range of graphical and other comparisons were made to compare the material properties, and the results obtained from a variety of laboratory and field tests, but statistical analysis was confined to the calculation of 'averages' (sic). There was no statistical test applied to the shape of the cumulative distribution curves for the parameters examined, and no non-parametric analysis between the different soil types encountered (Skipper et al., 2005; Long & Menkiti 2007).

The geotechnical Group of the Department of Civil engineering at Newcastle University has developed a relational database with an initial seeding population of ground investigation data from opencast coal sites in the North East and North West of England (Hashemi et al., 2006). The resulting database, known as 'NETDATA' uses the Microsoft® Access program and is based on the standard data transfer rules developed by the Association of Geotechnical and Geo-environmental Specialists (AGS) Working Group to enable easy transfer of data in and out (Anon, 2004). Although presenting the early stages of research in progress, some statistical analysis of the data from the initial thirty-three sites was presented to compare different tills. The analysis was in the form of histograms, grading curves and tables of parametric statistical data (range, 'average' and standard deviation). The reason for this choice is not discussed, but is probably a result of the original choice of the suite of software used rather than a consideration of the applicability of available statistical techniques.

3.1.2. Uses of statistical analysis in geotechnics

The ready availability of computers means that statistical analysis can be routinely performed almost anywhere and upon any data set. Most spreadsheet programs contain inbuilt analysis tools to filter data and perform conventional parametric statistics but the potential downside of such easily available computing power is that it is easy to overlook the limitations inherent in the available methods, and the necessary *a-priori* assumptions that must be satisfied if such methods are to be used.

To interpret the mass of data available from all but the most compact of investigations, statistical analysis in one form or another is frequently used in four principal but differing ways. Firstly, to describe the data sets; i.e. to define the data sets for each interpreted soil type in as simple and yet complete a way as possible consistent with providing robust input to further analysis of the information obtained from the investigation and the resulting geotechnical design for the scheme. Secondly, to compare data sets, thereby confirming the initial geological or geotechnical interpretation that apportioned the data into sets. Thirdly, to derive some sort of model to be used as a descriptor for the data sets; this may be one or more descriptive values, the cautious estimate(s) of the characteristic value(s) required by the geotechnical Eurocode for use in simple analysis, or a set of descriptive parametric or non-parametric values giving a distribution function for use in Monte Carlo type replacement analysis (BSEN 1997-1, 2004). Fourthly, a form of statistical analysis is involved when deriving mathematical relationships to describe a bivariate distribution, such as linear regression, curve-fitting etcetera. In each of these four applications, the objective should be to derive a full description, which is both robust and easily understood by the users of the data, either engineers, who may be considered to be technically literate, or clients, who may not be so conversant with the language of engineering and statistics.

As pointed out by Driscoll et al. (2008) the use of statistics in deriving characteristic values of geotechnical parameters is not made mandatory in the Eurocodes, but as the overall design philosophy adopted is that of a series of limit states using partial factors based on statistical principles (BSEN1990, 2002) statistical analysis is a valuable tool for the geotechnical engineer if used wisely (Bond and Harris, 2008; Driscoll et al., 2008). Bond and Harris (2008) stated the rule that the simplest form of statistics that captures the data trend should be the one selected.

To investigate the efficiency of various techniques for assessing the similarities and differences between soils from differing geological and geomorphological domains, statistical and mathematical analyses were carried out on the results of the testing of various engineering parameters from a ground investigation in Cumbria. This exercise leads to conclusions regarding the selection of appropriate techniques.

3.2. STATISTICAL TERMINOLOGY AND FRAMING THE NULL HYPOTHESIS

3.2.1. Statistical terminology

Throughout this research the terms used in describing statistics and statistical analysis all have their usually accepted (textbook) meaning (Upton et al., 2008), with the following exceptions where confusion may arise due to terms that are ambiguous in the sense of having different meanings in the fields of statistics and geotechnics.

One of the commonest causes of potential confusion in discussing the application of statistical techniques in geotechnical engineering is the use of the term ‘sample’. In geotechnical engineering the sample is, of course, the individual portion of the soil taken for analysis and is described by the laboratory parameters obtained from it. In the statistical sense, a sample is a data set forming a representative subset of a population of possible results. As a corollary to this, it can be seen that it is perhaps difficult to define a statistical population in a geotechnical sense, since it would require consideration of soil variation on a micro-scale. That is to say, the total volume of soil would require to be divided into ever-smaller portions subjected to individual testing, but there would come a point when the specimen volume is too small to perform the required laboratory test. Even so, the smaller volumes would still have a valid set of properties that could be used to define the soil, if they could be measured.

The term ‘normal distribution’ is synonymous with the term ‘Gaussian distribution’, and is often used in both engineering and statistical literature. In fact, as will be illustrated in Chapters 4 and 5, the distribution of the geotechnical data sets forming the basis of this research is often non-Gaussian. The term ‘normal’ also has a precise engineering use in the description of a stress acting at right angles to a plane within a soil, or any other engineering material. For these two reasons the term ‘Gaussian’ is used here in preference to ‘normal’.

A final cause of confusion may arise from the statistical term ‘exploratory data analysis’. This is used in statistics to describe all those techniques used for identifying extraordinary observations within a data set, noting violations of traditional assumptions such as Gaussian distribution, and similar applications. In the current research, these methods include various graphical analyses of data and the completion of statistical normality tests prior to the application of statistical techniques, either parametric or non-parametric. There is obviously the potential for this to be confused with the concept of analysing exploratory data from a geotechnical investigation, and so the term ‘preliminary data analysis’ is used henceforth to describe the statistical term ‘exploratory data analysis’.

3.2.2. Framing the null hypothesis

In each case, the null hypothesis H_0 was initially framed in the form:- *There is no difference between the mean value of <Parameter X> for Upper till and the mean value of <Parameter X> for Lower till within a domain.* The corresponding antithesis H_1 is that the mean value of the Upper and Lower tills differs statistically at each domain. The test statistic (termed the **p** -value) was calculated in terms of the probability of such variation between the data occurring naturally and hypothesis was tested at the $\alpha = 0.05$ level. In other words if **p** is less than or equal to α there is calculated to be a less than 5% probability of such natural variation, the hypothesis cannot be supported and the antithesis is assumed to hold.

A second null hypothesis was then framed in the form:- *There is no difference between the mean value of <Parameter X> for all till in one domain and the mean value of <Parameter X> for all till at another domain*: the corresponding antithesis H_1 is that the mean value of the chosen parameter differ statistically between domains. Each pair of domains was tested separately, and the distribution of the test statistic was compared at the $\alpha = 0.05$ level. Each hypothesis and its corresponding antithesis may be framed in similar terms for the median in place of the mean.

Once the Null hypothesis has been framed, it can be tested using a variety of parametric and non-parametric statistical methods, the choice of which is generally made with regard to the type and distribution of data sets involved, the dependence, or otherwise, of the data sets (paired data), and the satisfying, or otherwise, of the underlying assumptions inherent in the different methods of analysis. Some tests of the null hypothesis, for example the ‘Student’ t-test, can be carried out assuming either equal or unequal sample variance. Most specialist statistical software allows the user to make this choice.

3.3. ANALYTICAL METHODS

3.3.1. Introduction

To derive a characteristic value, or a cautious estimate, of a geotechnical property as required by Eurocode 7 for use in analysis, some sort of methodology is required to provide a simple way of describing the measured data set mathematically. This is true also if a comparison of geotechnical properties of soils of differing provenances is to be made. The most obvious and simple relationship that may be defined is the absolute value of the property measured, or in the case of a large data set, the overall range of values obtained. However, this statistic is of limited practical value, as there may be an infinite number of different distributions which all have the same range, but may have a vastly different 'most likely value', as illustrated in Figure 3.1 showing data from two sets with the same range but different distributions and mean values.

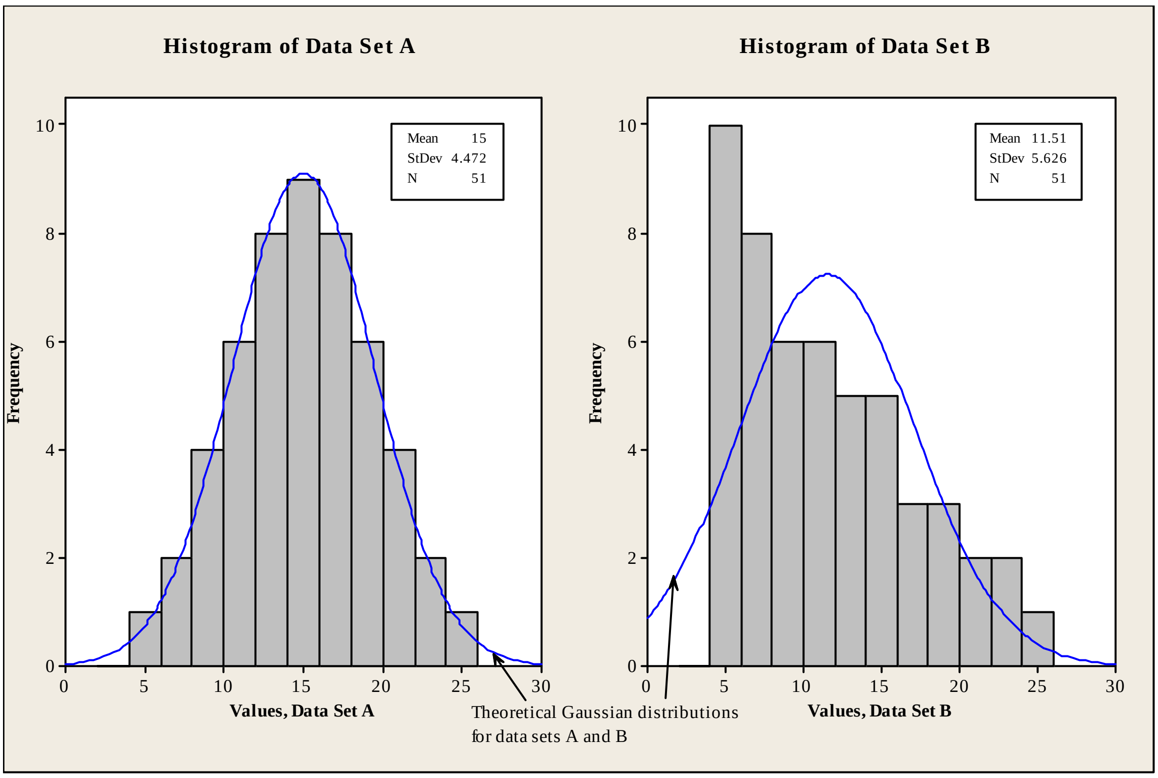


Figure 3.1: Data sets showing same range with different means

To arrive at the ‘most likely value’ for the property in question some form of statistical analysis must be applied to the data set. Many techniques are available but not all are suited to geotechnical applications, as the underlying rules and assumptions are not always satisfied by the data sets obtained from the measurement of natural soils and rocks. To perform the detailed statistical analysis involved in this research the program MiniTab® Version 15.1 (2006) was used. This software selection was made as being a reasonable compromise between a robust statistical package with an extensive range of inbuilt analytical tools but being widely available commercially at a reasonable price. The program also has the advantages that it is comparatively easy to use for the non-specialist, but contains ample guidance on the selection of appropriate techniques, with information concerning the limitations of the various methods, and worked examples to explain the complex output produced during the calculations. Being specialist software designed for general use in any field of statistics it is analytically rigorous, and provides the output data in a form that is accessible to statisticians and other professionals alike.

3.3.2. Preliminary data analysis

Graphical presentation of the data may be divided into two main categories, that of presenting relationships, either between parameters, or for parameters versus depth, and that of population distribution, such as histograms (Figure 3.2), ‘box and whisker’ plots (Figure 3.3), cumulative distribution functions (Figure 3.4) and probability plots (Figure 3.5). The examples are for two data sets with the same mean, but differing distributions.

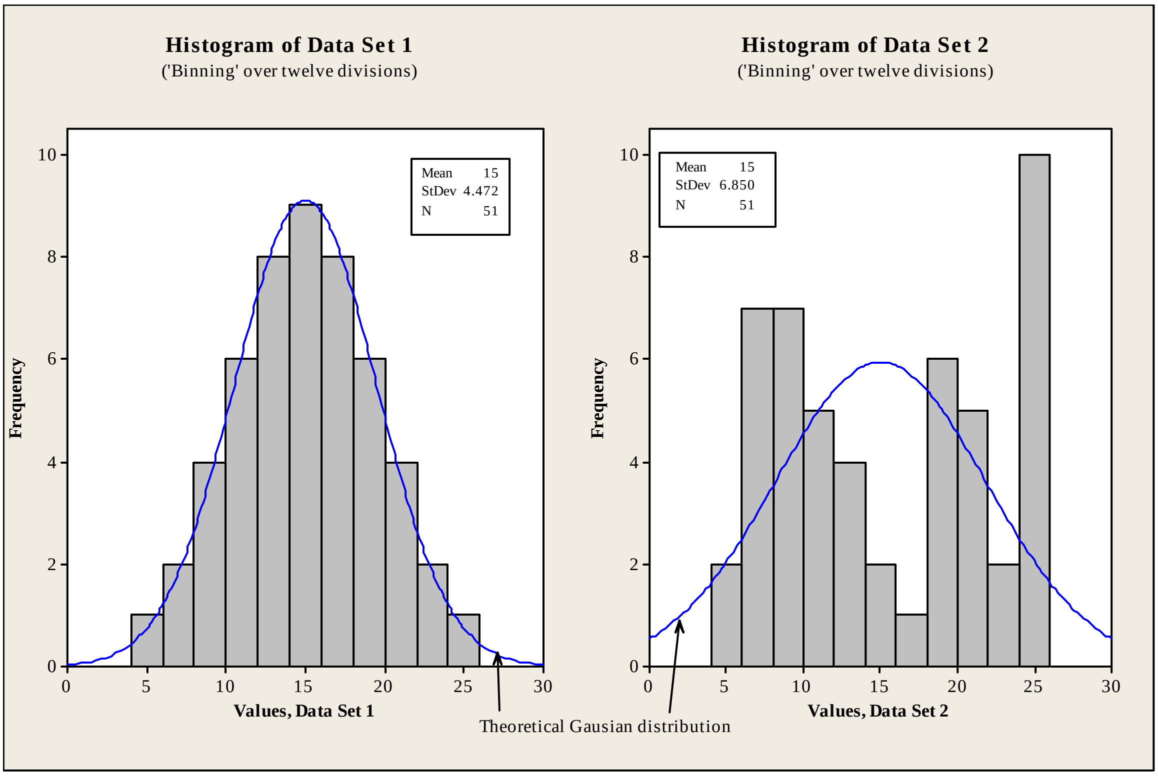


Figure 3.2: Histograms of two data sets

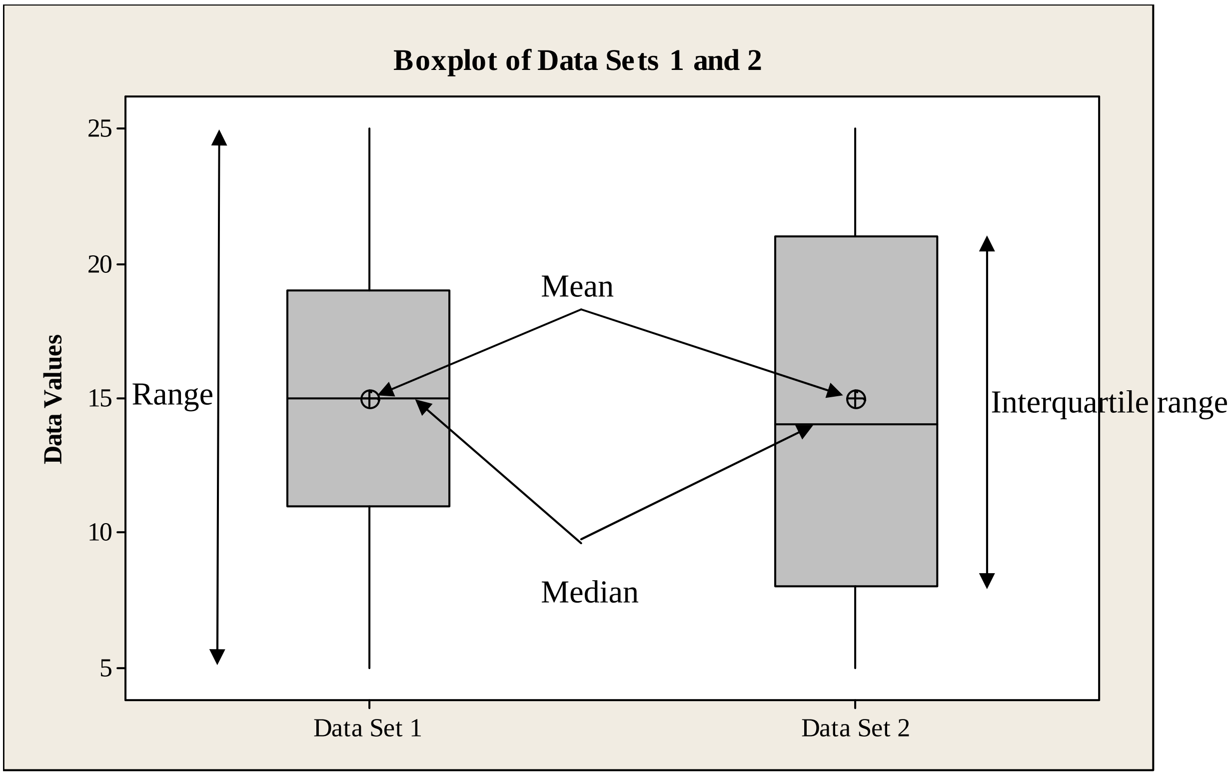


Figure 3.3: Box and whisker plots of two data sets

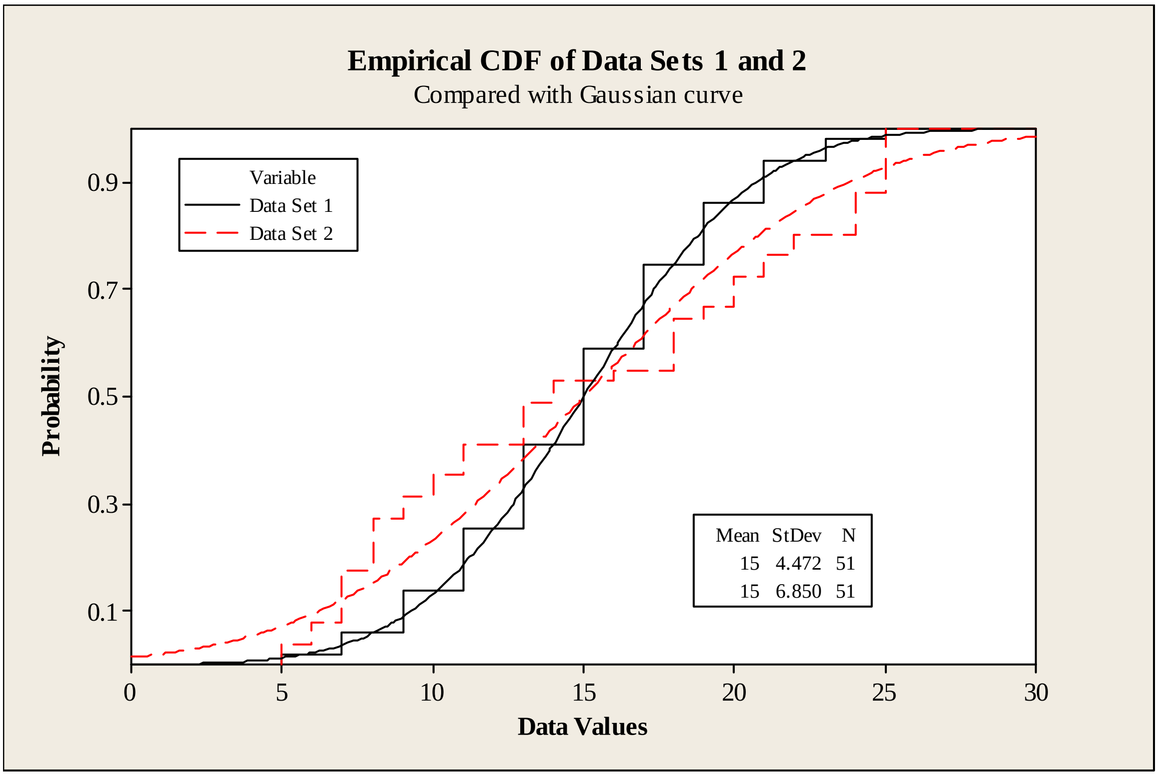


Figure 3.4: Cumulative distribution functions

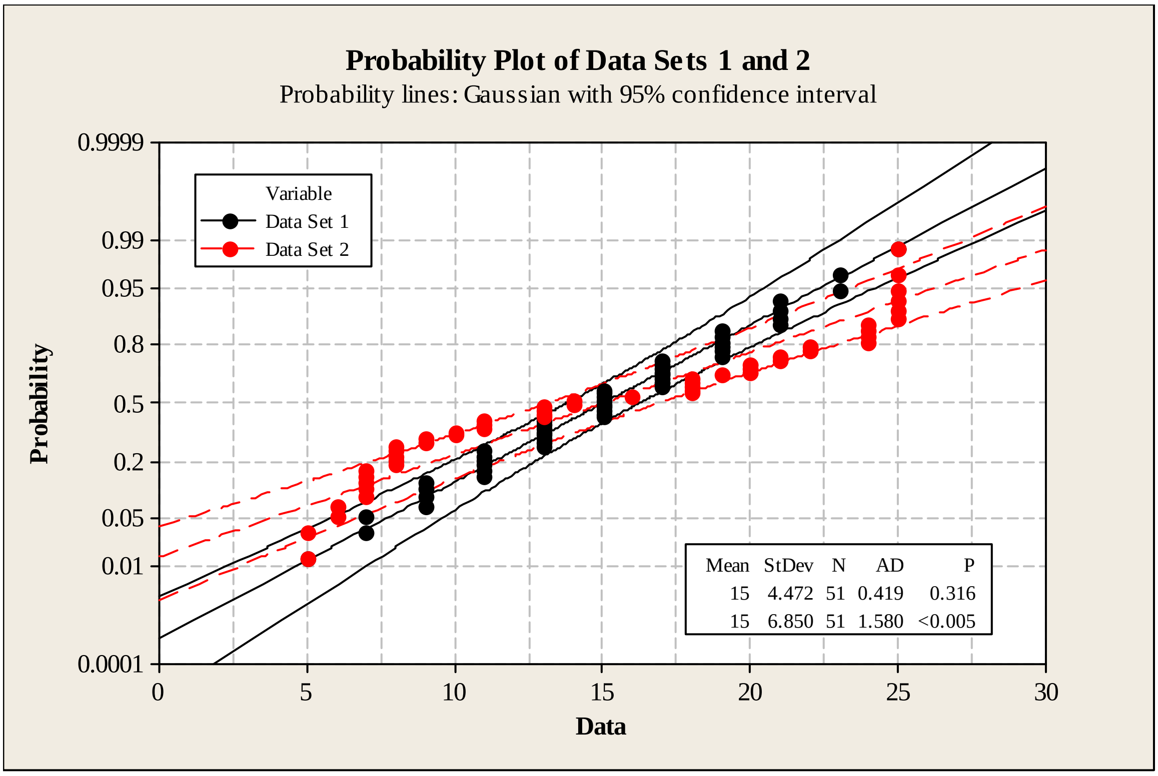


Figure 3.5: Probability plots of two data sets

The cumulative distribution function and probability plot are both somewhat specialised statistical graphs and suffer slightly from a lack of familiarity amongst many engineers, however, they are both useful as a first pass assessment. The cumulative distribution function shows a 'step-wise' increasing graph of the data values: the closer the steps are to the 's'-shaped Gaussian curve so the closer the data are to a Gaussian distribution. The probability plot is most easily read using the 'fat pencil' analogy: this is to imagine a pencil laid along the data plot and either obscuring the points if the data is Gaussian, or leaving some exposed if they are not. Many software applications will plot 95% confidence lines (or any other specified confidence interval) for any chosen parametric distribution when graphing the probability function, as shown in the typical example in Figure 3.5. In this example the straight lines represent the Gaussian probability curve, and the 'fat pencil' has been replaced by the 95% confidence interval lines. It can be seen immediately that data set 2 is non-Gaussian in form.

Histograms can be sensitive to the choice of 'bin width', the interval along the parameter axis used to sum the data frequency, as in the examples in Figure 3.6. The idealised bell shape of the Gaussian distribution is immediately recognisable to most engineers and any departure easily remarked. As part of this research a more rigorous series of data checks was carried out using the Anderson-Darling test and the Kolmogorov-Smirnov test, both of which compare the empirical cumulative distribution function of the sample data with the distribution expected if the data were Gaussian; and the Ryan-Joiner test, which assesses normality by calculating the correlation between the data and the normal scores of the data (similar to the Shapiro-Wilk normality test). If the p-value of these tests is less than the chosen α-level, the null hypothesis can be rejected and conclusion drawn that the population is non-Gaussian. An example of this type analysis is included in the data summary tables in

Figure 3.5: the p-value for data set 1 is sensibly Gaussian (0.316) whilst that for data set 2 is non-Gaussian (<0.005).

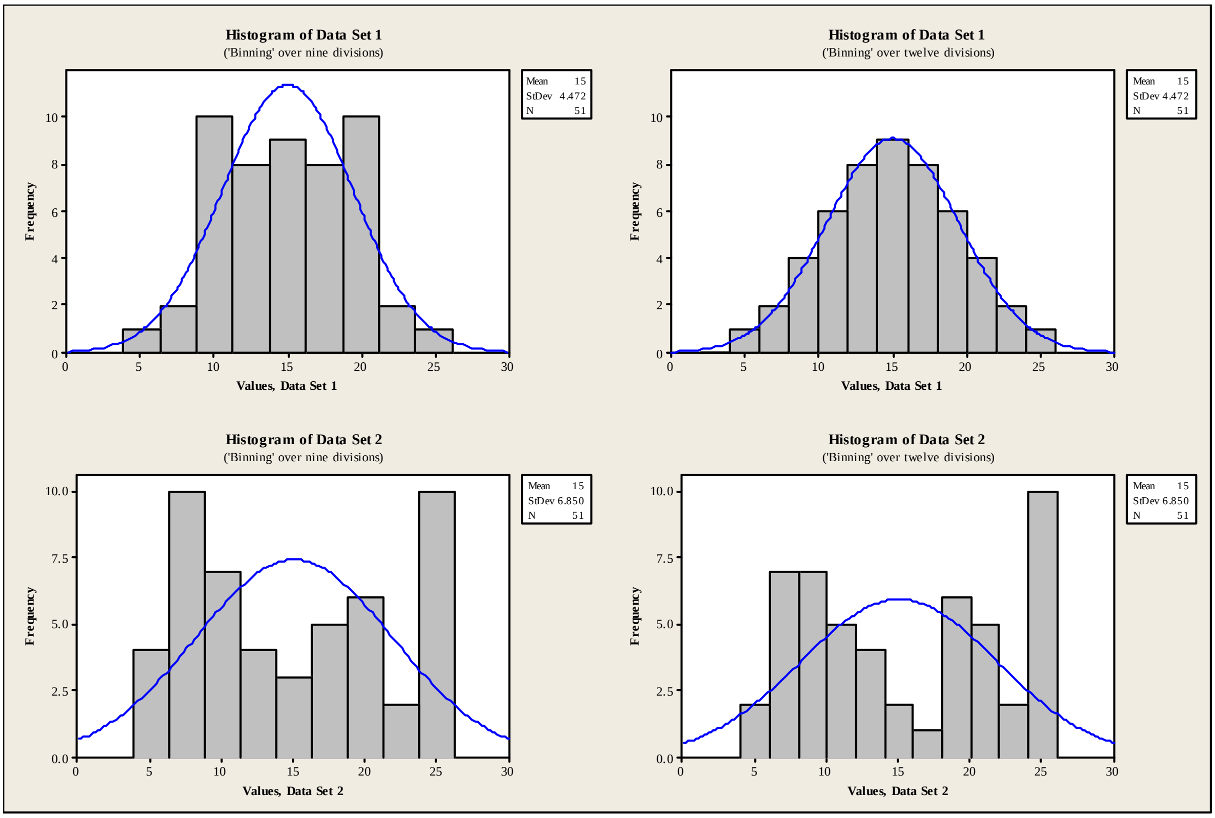


Figure 3.6: Effect of binning interval on histogram shape

Graphical plots of soil properties such as Atterberg limits, moisture content relationships with depth below ground level to assess any trend with depth, grading envelopes of soils using the commonly employed log-normal particle size distribution curves and ternary grading charts can usefully be employed to highlight any obvious outliers within an otherwise consistent dataset. By comparing successive pairs of envelope plots prepared in this way, a visual comparison can easily be made between soils from different domains.

'Box and whisker' plots are a further refinement of the preliminary data analysis stage, but the resulting diagram can be subject to some limitations with regard to the presentation of summary data within the distribution tails (Hallam, 1990). The default format of defining the box limits by the interquartile range and defining outliers as any value beyond 1½ times the interquartile range above and below the upper and lower quartiles may not provide sufficient precision for heavily skewed distributions. Hallam suggested the use of an enhanced box plot, indicating percentiles at 1, 2, 5, 10, 25, 75, 90, 95, 98 and 99 percent and constructing the box width in proportion to the square root of the number of data points in each range. Furthermore, the definition of outliers at each tail of the distribution should be based on the respective distribution in each tail to avoid an arbitrary cut-off of reasonable tail values (Hallam, 1990). With the advent of more sophisticated computer programs for the production of technical graphs, such plots can be prepared rapidly from spreadsheet data.

3.3.3. Parametric statistics

Parametric statistics is the most familiar and widely used method in scientific and engineering studies. It seeks to define a variable population by means of two parameters, the mean and the standard deviation (or its square the variance) which, between them, fully characterise the population. This is strictly only applicable to a symmetrical distribution of Gaussian form. The calculation of the mean of a statistical sample is not robust with respect to outlier values and the standard deviation is not applicable to non-symmetrical distributions. In practice, many geotechnical parameters do not conform to a Gaussian distribution, being skewed by limiting values at either the maximum or minimum. For example, water content may be a small percentage (single figures) but cannot be negative, causing a short 'tail' to the distribution below the mean, with a corresponding longer tail above. For this reason parametric statistical analysis is not always an appropriate technique. It is common for researchers to apply a conversion to the data set to obtain a distribution of the transformed data that is approximately Gaussian but this has several drawbacks, not least that the selection of the transformation function is made on the basis of the shape of the distribution thus obtained. In practice, this function may bear little or no resemblance to the initial geological or geomorphological process that produced the non-Gaussian data set in the first place and is sometimes merely an artifice to justify the use of parametric statistics (Cheeney, 1986; Metcalfe, 1994). In addition, the parametric values obtained for mean and standard deviation of the transformed data cannot be directly attributed to the underlying data set. A commonly used transformation is to take the logarithm of the data value.

Another manipulation technique is to remove an equal number of values from each extreme of the data set, and calculate the mean of the remaining values. This is known as the 'trimmed mean', and is usually defined by the percentage of data points removed from each end of the distribution. An obvious problem with this method is the potential for subjectivity in choosing how many data points to remove and the potential displacement of a true mean if the distribution is in any way skewed.

One of the primary motivations for carrying out statistical analysis in geotechnical engineering is to compare data sets either from different soil horizons at one location, on soils from different locations, or on samples obtained using different investigation techniques. To this end, the calculation of means and standard deviations or variances is a step on the way to the application of a comparison of the difference in means with a test statistic. This is generally accomplished by framing a null hypothesis as described in §3.2.2, that at a chosen Level of Confidence, usually $\alpha = 0.05$, there is statistically no difference in the two means, and its corresponding antithesis, that statistically there is such a difference. The comparison most commonly used is the 'Student' t-test', where the confidence interval of the two means is calculated for the chosen percentage and the number of degrees of freedom, based on the sample size. The use of this test requires certain *a-priori* assumptions about the data sets involved, particularly that they are both Gaussian and that the variances are equal. These assumptions are not always satisfied in raw geotechnical data sets, as will be shown in Chapter 4.

One further requirement for the application of conventional parametric statistics is that of ‘stationarity’, that is to say that the population in question varies in neither time nor space. Thus statistical samples taken anywhere within the population can be said to be representative of the entire population. This is very unlikely to hold true for many geotechnical parameters. Sedimentary soils are often water sorted, with material fining upwards in a deposit, and with distance from source. Fine soils frequently exhibit a near-surface desiccation zone with increasing moisture content with depth, followed at greater depths by a gradual reduction in moisture content due to consolidation. Tills also show a degree of sorting, with lenses of coarser material, and boulder and cobble fields where completely different particle size distributions exist. Since the plasticity of a fine soil depends, in part, on the percentage of clay- and silt-sized particles (Dumbleton and West, 1966), the results of Atterberg limit testing may be expected to vary between different locations. The range of variation in classification properties may be as great in a single exploratory trial pit as it is between different pits in the same investigation (Denness, 1974). As many engineering parameters depend, in turn, upon plasticity, water content and/or grading, the values obtained are similarly difficult to consider rationally as forming a single population upon which parametric statistical analysis may be employed.

However, it should be said that if the assumptions of Gaussian distribution and equal variance are satisfied in the samples, then the use of a parametric test is justified. In general, the parametric tests are more powerful in a statistical sense than the equivalent non-parametric tests, though parametric tests are, in the main, less robust with respect to outliers and data errors. For this reason, and the widespread availability of parametric statistical algorithms in non-specialist software such as spreadsheets, if it can be shown that meaningful results can be obtained notwithstanding the limitations already described then the technique could be applied with confidence even to non-conforming data sets.

3.3.4. Non-parametric (rank) statistics

Non-parametric statistics seek to remove the need for prior assumptions about the shape of a particular distribution, and to carry out a more neutral comparison of data sets using a similarly rigorous methodology that parallels the techniques of parametric statistics. The data set is first put into order (rank) from lowest to highest, and then the analysis is carried out using the rank of the data point. The most familiar of the statistical values obtained from this methodology is the median value, analogous to the mean in parametric statistics. For a Gaussian distribution the mean and median will be co-incident, and the median is equal to the 50% trimmed mean for any and all distributions. The median is particularly robust with respect to outlying values.

In place of the standard deviation or variance in parametric statistics, the values of various percentiles may be used to characterise and compare distributions. These are the values of ranks within the distributions at chosen specific percentiles of the data set. The most commonly used are the quartiles, lying 25% from each end of the distribution: occasionally other percentiles such as 10% or 5% are used to add further definition. The usual convention is that outliers are assumed to be all those data values that lie outwith the upper and lower extremes given by 1½ times the inter-quartile range below the lower and above the upper quartile values, respectively. Similar comparative tests to those available in parametric statistics can be carried out in rank statistics but are carried out on the median rather than the mean: confidence intervals for the median may also be constructed (Hettmansperger and Sheather, 1986). In general, comparisons made using rank statistics are less powerful (the ability to correctly reject the null hypothesis) than the equivalent parametric tests but are more robust with respect to outliers and data errors (Hettmansperger and McKean, 1998).

Probably the simplest method of comparison using ranked data to compare different sets is the Kolmogorov-Smirnov test, which compares the data using the cumulative distribution functions (CDF's) for each sample (Cheeney, 1983). In this case, the test statistic is the maximum difference between the two distribution functions: the critical region is defined according to the degree of certainty required and the number of observations in the data sets. If the difference between the two CDF's is greater than the test statistic it can be stated that, at the defined level of certainty, the two data sets are derived from different populations. As well as comparing two data sets, the test may be used to compare a data set with a theoretical CDF and can be used in a directional comparison (an *a-priori* assumption that one set has a higher or lower CDF) or non-directional comparison (no such *a-priori* assumption). The test makes no prior assumptions about the shapes or similarities of the underlying distributions of either data set, nor does it provide any statements about the median values or ranges of the data sets. The test may be carried out on either balanced (equal numbers of observations) or unbalanced (unequal numbers of observations) samples, but seems to work better with data sets that are not too dissimilar in size (Cheeney, 1983). An example is shown in Figure 3.7.

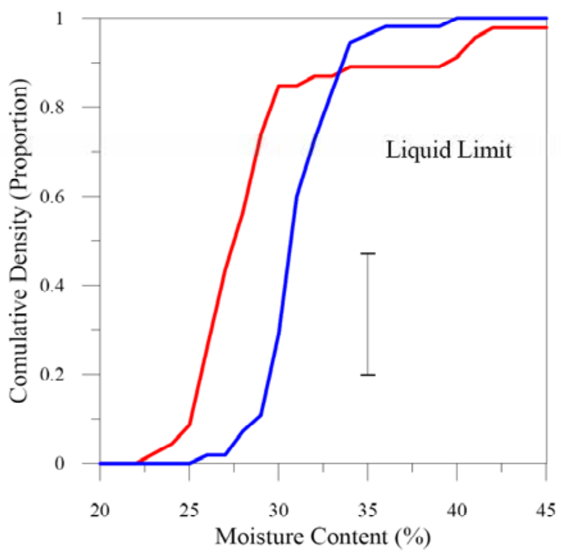


Figure 3.7: Example Kolmogorov-Smirnov graphical comparison
(The length of the vertical bar is equal to the value of the test statistic)

The null hypothesis is rejected only if the maximum difference between the two CDF's is greater than the value of the test statistic calculated from the appropriate equation. The method lends itself to simple spreadsheet applications, and may also be performed graphically by superimposing the two CDF's.

To compare medians, the null hypothesis may be tested using non-parametric tests such as Moods median test, or the Kruskal-Wallis analysis of variance, which is a generalised form of the Mann-Whitney test. Comparing the two methods, Moods median test is more robust but less powerful than the Kruskal-Wallis method. In the context of non-parametric statistics it should be understood that the term variance, which in parametric statistics has the specific definition as the square of the standard deviation of a Gaussian distribution, is here assigned a more general and non-quantitative meaning. The variance in the context of non-parametric statistics is used to describe the wider concept of the variation between statistical samples.

If data sets do not conform to the underlying conditions required for the use of 'traditional' parametric statistics, some simple form of non-parametric statistics would then become a very useful additional analytical tool. Whilst many of the available calculation methods are not built in to commonly used spreadsheet packages, simple methods such as the Kolmogorov – Smirnov test can be readily programmed into a spreadsheet. If this method could be shown to be reliable when compared to the more rigourous analyses this would mean the application would be useful in the analysis of data sets that exhibit significant deviation from a Gaussian distribution.

3.3.5. Geostatistics

Geostatistics, in its proper sense, is a particular data analysis technique that has been developed within the field of mineral exploration, largely for predictive calculations to assess potential ore yield, vein thickness etcetera, but any measured parameter that is spatially variable could be substituted in the calculation (Clark, 1979; Henley, 1981). Most textbook examples are concerned with calculations based on parameters measured in regular grids of exploratory locations, or from samples taken at regular intervals within deep boreholes. The construction of the semi-variogram in this situation is comparatively easy. The classical method requires calculation of the variance between regularly spaced pairs of samples drawn from such a population and only pairs in a constant direction are considered during the analysis. The calculation proceeds by first comparing differences in a measured parameter between adjacent pairs of samples throughout the grid and calculating the semi-variance γ^* of the differences obtained, by the expression $\gamma^*(h) = ½\{1/\mathbf{n}\Sigma[\mathbf{g}(x) - \mathbf{g}(x+h)]^2\}$, where h is the spacing under consideration, **n** is the number of pairs of observations, and **g** is the measured parameter at each location. Then the distance between samples considered is taken to be twice the grid spacing, and the semi-variance of the new set of differences is calculated. This is repeated for increasing multiples of the grid spacing until a 'sill' or reasonably constant semi-variance is obtained, or the number of possible pairs becomes too small. The resulting set of semi-variances is plotted on a graph of γ against h to give the semi-variogram of the type shown in (Barnes, undated; Clark, 1979; Henley, 1981).

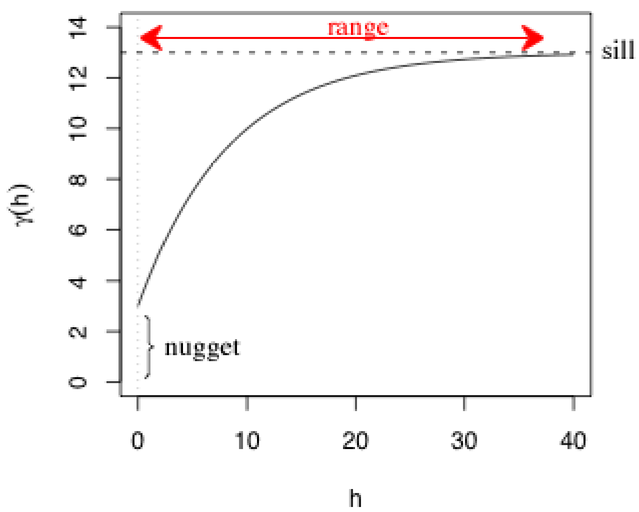


Figure 3.8: Idealised semi-variogram

There are various theoretical models that can be applied to obtain best-fit lines to observed semi-variograms. The commonest model is the spherical or Matheron model, named after an early pioneer of the technique, which is to geostatistics what the Gaussian distribution is to parametric statistics. Within the field of geotechnics the main use foreseen for the semi-variogram would be as a means of comparing similarities and differences between semi-variograms obtained from different data sets but if it can be shown that the technique yields meaningful results, some degree of prediction of soil properties could potentially be made within a limited investigation.

3.3.6. Regression analysis

One further statistical technique that is frequently used in data analysis is linear regression. Wonnacott and Wonnacott (1981) asserted that this is the most important tool available in applied statistics, but it is also often the most incorrectly applied (Mann, 1987). The errors in use arise from three main causes: demonstration of non-existent relationships, violation of the inherent assumptions, and inappropriate extrapolation and interpretation (Mann, 1987). The technique is thought to have been originally developed by Gauss and Legendre between 1794 and 1805 and was reinforced by Pearson in 1896. The purpose of linear regression is to obtain a relationship between an independent variable $\boldsymbol{X}$ and a dependant variable $\boldsymbol{Y}$ of the form $\boldsymbol{Y} = \mathrm{m}\boldsymbol{X} + \mathrm{C}$. Originally, both variables were assumed to be randomly observed (Snedecor, 1956) but it is now considered permissible to observe the independent variable in a fixed as well as a random way (Draper and Smith, 1981). The fitting of regression lines to test results plotted by depth, for example, theoretically violates this requirement, as the depth is often fixed during measurement and is, therefore, non-random. It is often to be observed in parameter depth plots that a series of results is obtained at certain set depths when aggregating data from several exploratory holes.

Mann (1987) set out the requirements for the correct application of linear regression as follows:

- X and Y are measured without error
- X and Y are independent Gaussian variables
- A linear relationship does in fact exist between X and Y
- X values are linearly independent
- Errors are Gaussian with a mean of zero, and are homoscedastic (constant variance)
- Errors are serially independent, i.e. not autocorrelated.

In the case of geotechnical data the first requirement is clearly impossible since in addition to laboratory error the lack of a stable ground level datum during drilling means there is a lack of precision in measuring borehole depth during sampling, and further uncertainty in level measurement is introduced when sub-sampling from bulk or U100 samples in the laboratory. However, it has been shown by various authors that this rule may be safely relaxed in many circumstances (Mann, 1987). Of the remaining requirements, the most commonly violated are those of linearity and homoscedasticity. However, in theory at least, all the possible violations should be considered (Mann, 1987).

Using different methods, an infinite number of straight, or *structural*, lines may be fitted to a data set (Troutman and Williams, 1987). The most generally used of these is the regression of Y on X using ordinary least squares (OLS), and this is the commonly inbuilt algorithm in spreadsheet programs. This seeks to reduce to a minimum the squared vertical deviations between the individual data points and the linear fit model. A similar model, resulting in a different line, is regression of X on Y, which reduces the square of the horizontal deviations. All the remaining structural lines will lie between these two extremes, depending upon the value of a parameter λ reflecting the relative errors in X and Y (Troutman and Williams, 1987). λ varies between zero and infinity: for a λ value of zero the regression line corresponds to the OLS line for regression of X on Y, minimising horizontal deviations. For a value of λ tending to infinity, the result is the OLS line for regression of Y on X, minimising vertical distances. A λ value of one is of particular interest, as this corresponds to the least normal squares regression line minimising the perpendicular distance between the line and the data points. This has the intuitive advantage of being by definition the line that fits the given data most closely and is invertible, unlike the OLS lines for X on Y or Y on X (Troutmann and Williams, 1987). However, it does have the disadvantage that if the data are scaled the same relationship no longer holds, and the calculation must be repeated on the transformed data. It should be noted that if an OLS regression has been performed for Y on X, it should not be used for prediction of X for a value of Y. Thus, the practice of using a linear regression by OLS for shear strength (dependant variable) against depth (independent variable) the resulting expression should theoretically not be used to predict a depth at which a particular shear strength may occur.

The linearity problem may be obviated by comparing different linear and curvi-linear models in a more general polynomial association analysis (Harrell, 1987). This can be carried out by calculating the sum of square errors for each interpreted line but in many cases the results are so similar as to be almost indistinguishable and, in any case, such a basic test gives little or no information about the nature of the 'lack of fit' thus identified. Probably the best way to undertake such a comparison is by analysis of residuals using a graphical presentation (Mann, 1987). Residuals are defined as the difference between observed and predicted values of the dependent variable, i.e. $\mathbf{d_i = y_i - \hat{y}_i}$ (Cox and Snell, 1968). The residuals from the regression lines to be compared are plotted against one of the variables, and the pattern and magnitude of differences are examined. The ideal situation is for the residuals to be relatively small and distributed randomly above and below the d = 0 axis for all measured or predicted values (Behnken and Draper, 1972). A wedge of gradually increasing or decreasing residuals plotted against the independent and dependent variables may indicate a lack of homoscedasticity in $\mathbf{d_i}$ (Goodall, 1983).

3.4. SUMMARY

As described in the foregoing sections, a number of statistical techniques which may be applicable to geotechnical data sets are available. The next stage is to apply the selected methods to the results of an investigation. The statistical tests applied are:

- ‘Student’ t-test (Parametric; comparison of means)
- Mood’s median test (Non-parametric; comparison of medians)
- Kruskal – Wallis test (Non-parametric; comparison of medians)
- Kolmogorov – Smirnov test (Non-parametric; comparison of cumulative distribution functions)

In addition, geostatistical methods are trialled on the same data set to assess the suitability of the technique when applied to geotechnical investigations rather than mineral prospecting.

The selection of a suitable trial site and the results of the analysis of the data set are discussed in Chapter 4.

Chapter 4. APPLICATION TO REAL DATA

4.1. SELECTION OF DATA SET

4.1.1. Introduction

To assess the applicability of the statistical and mathematical analytical techniques to investigate the similarities and differences between soils from differing geological and geomorphological domains a suitable trial site was required. Having selected an appropriate site from among a large number of archive commercial ground investigations made available for the study, the geotechnical parameter data set was analysed using the techniques outlined in the previous sections.

This chapter describes the reasoning process behind the selection of the eventual site, then presents the results of the analysis and seeks to draw conclusions regarding the applicability or otherwise of a selection of the available techniques. Once this exercise was complete, the applicability of the method was further tested by extension into other areas of Cumbria with different bedrock lithology (Chapter 5). Unless otherwise indicated, all statistical analysis was performed using Minitab® v15 statistical software, using data imported from the Excel® spreadsheets used in the preliminary data analysis exercise.

4.1.2. Data sources and selection of data for initial study

Studies carried out by Kempe et al. (2009) on tills from different areas of Britain found that the mineralogy could be correlated to the lithology of the underlying bedrock. To ascertain whether a similar correlation exists between bedrock geology and engineering properties, a site with geotechnical data from till across two or more distinct bedrock types was required to test the hypothesis. Somewhere in excess of one thousand individual investigations were made available for research from the archives of Cumbria County Council, the Highways

Agency and other clients for sites in Cumbria. As a first pass, all those investigations concerned only with trial pitting or reporting of materials, pavements or structural failures were filtered from the list: this removed small sites where only limited laboratory testing was carried out, or the underlying geology was not fully established during the intrusive investigation. The sites remaining in the list following the initial filtering were then further examined to determine the range of soil parameters that were measured. Since part of the aim of the research is to examine the effects of glacial and geological controls on shear strength of till, those investigations where no effective stress triaxial testing was carried out were filtered from the list. This included several large investigations completed in the 1960's, when effective stress triaxial testing was not routinely performed and investigations concerned primarily with building foundations, where total stress analysis was traditionally assumed to be the critical calculation.

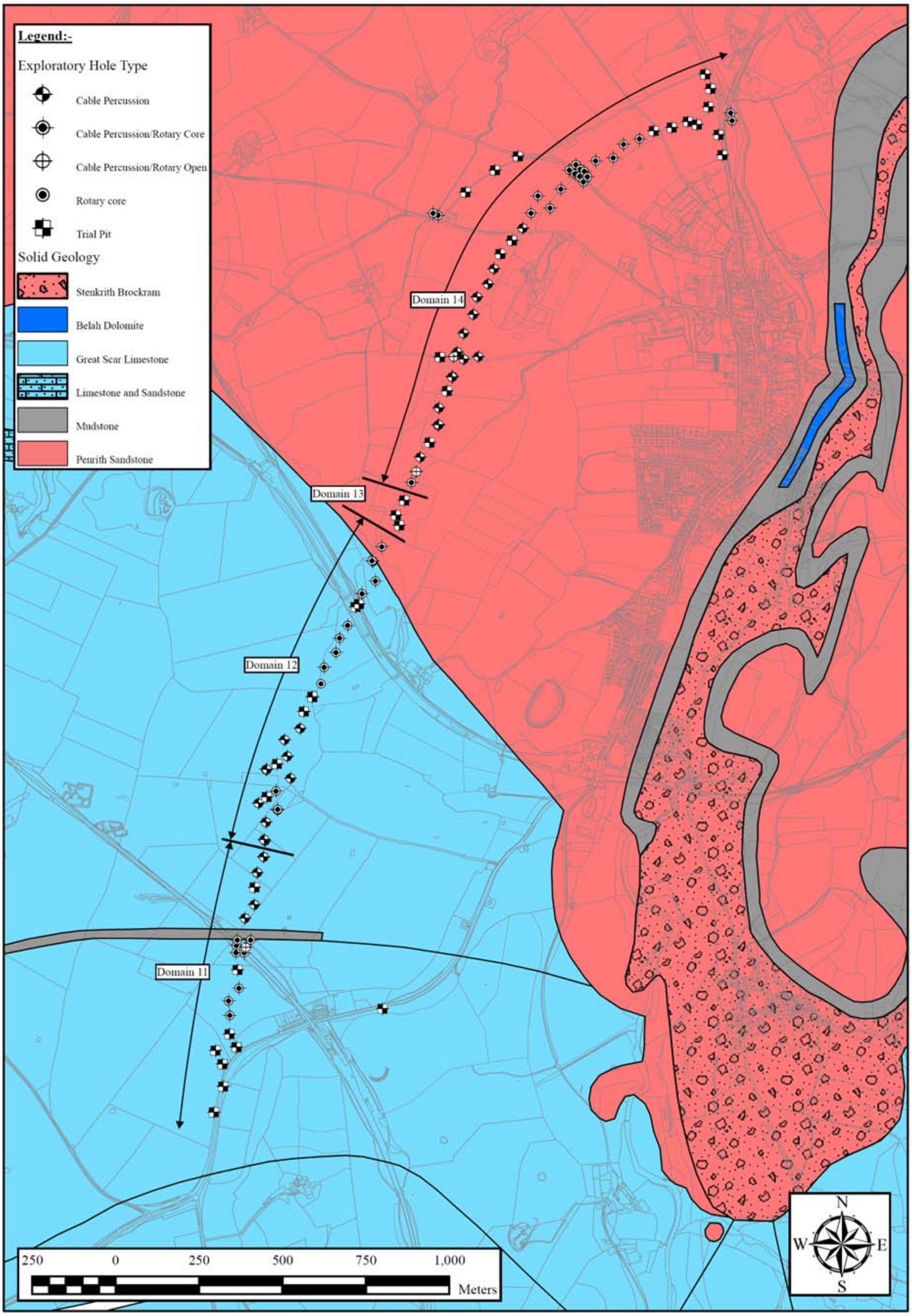
The selection then concentrated on the larger investigations remaining in the list, where significant numbers of exploratory holes were completed and a high ratio of the samples taken on site were subject to detailed laboratory examination for a wide range of soil parameters. Particular preference was given to investigations which straddled differing bedrock geology, to obtain data on as many different soil domains as possible for subsequent comparison. In this regard, an investigation situated in the Eden Valley near to the town of Kirkby Stephen was finally selected, as shown on the map in Figure 4.1.

4.1.3. <u>Site description</u>

Kirkby Stephen is situated in the upper reaches of the Eden Valley, in the former County of Westmorland, lying between the high ground of the Lake District mountains to the west, the Howgill fells to the south and the Pennines to the north and east. Although various theories have been advanced as to the number and type of glacigenic periods in the region (Trotter, 1929; Taylor et al., 1971; Burgess and Holliday, 1979; Arthurton and Wadge, 1981; Mitchell and Clark, 1994) the identified till in the region has been ascribed to the Devensian period on the available evidence (Burgess and Holliday, 1979). During this period a conflict occurred between the powerful ice streams emanating from the major Scottish ice centre and the periodically fluctuating ice centre over the Lake District and Howgill Fells. When the Lake District ice centre was particularly strong this conflict caused major ice movement directly east through the Tyne Gap, but during periods of lesser force the flow was south eastwards, along the Eden Valley and over Stainmore (Taylor at al., 1971; Burgess and Holliday, 1979).

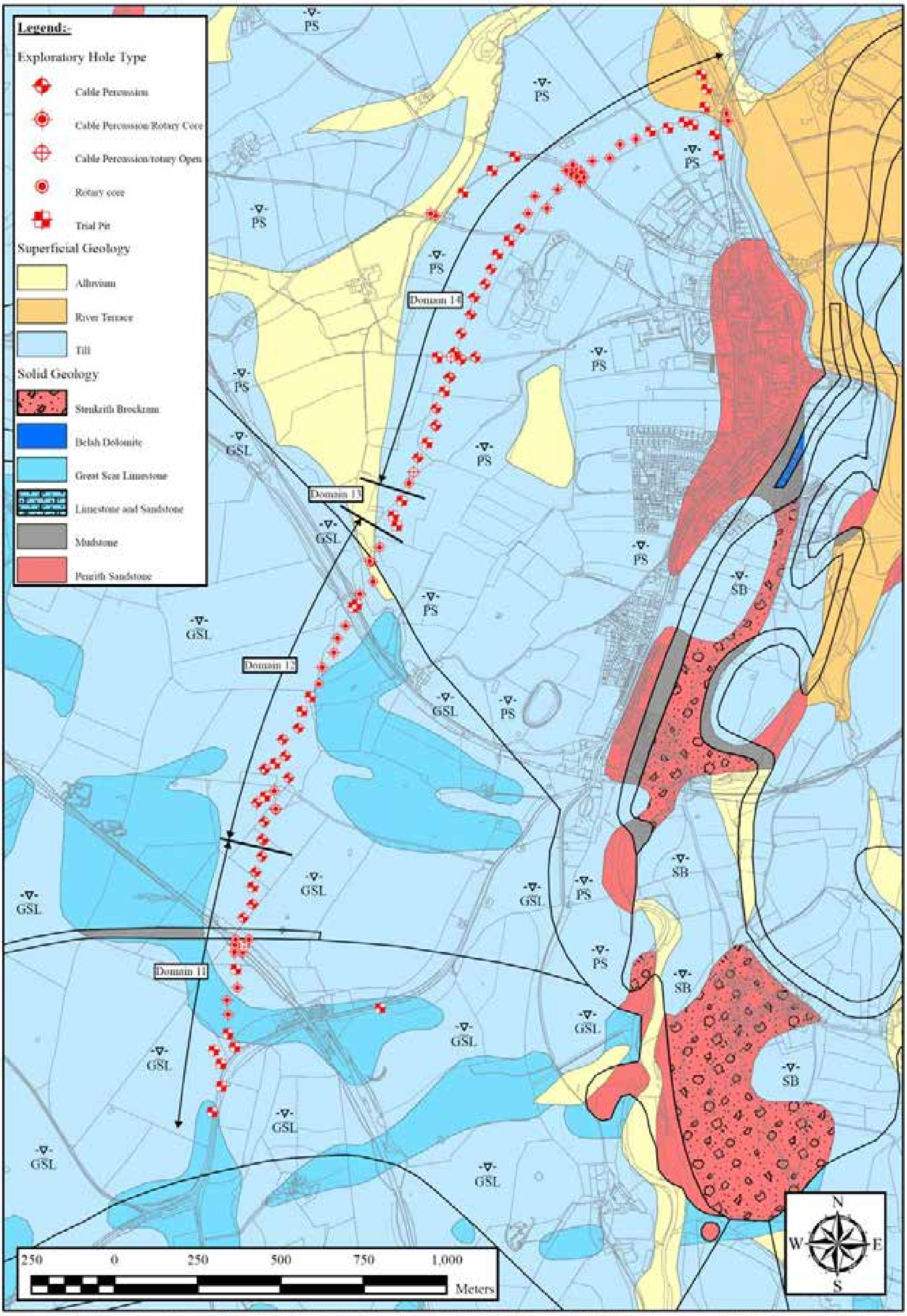
As well as the range of glacial actions at the site, the underlying bedrock geology is similarly varied. Kirkby Stephen lies near to the major unconformity between the Permian Penrith Sandstones, a red cross-bedded aeolian millet-seed sandstone unconformably overlying gently folded limestones of the Knipe Scar Limestone Formation, part of the Great Scar Limestone group of Carboniferous age. These limestones are pale grey, scar-forming limestones, mostly thickly bedded, fossiliferous and commonly pseudobrecciated (Burgess and Holliday, 1979). At the base of the Permian strata around Kirkby Stephen are localised breccia deposits known as the Stenkrith Brockram, after the major type exposure at Stenkrith, immediately south of Kirkby Stephen. The stratum is mainly composed of clasts of Carboniferous limestone in a calcite cemented matrix of millet-seed sand (Burgess, 1965). The geology of the area is shown in Figure 4.2 (solid) and Figure 4.3 (drift). The domains referred to in Section 4.2.1 are shown in relation to the mapped geology. It should be noted that Domain 12 appears to overlap the Permian sandstones at the northern end, however the rock proved at the base of the two northernmost boreholes in the domain was in fact limestone.

Figure 4.1: Location of Kirkby Stephen site



Geology © British Geological Survey. 2010. Digital Geological Map of Great Britain 1:50 000 scale (DiGMapGB-50) Version 6.20. BGSKeyworth, Nottingham
Contains Ordnance Survey data © Crown copyright and database right 2012

Figure 4.2: Solid Geology of Kirkby Stephen area



Geology © British Geological Survey. 2010. Digital Geological Map of Great Britain 1:50 000 scale (DiGMapGB-50) Version 6.20. BGSKeyworth, Nottingham
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Figure 4.3: Drift Geology of Kirkby Stephen area

The glacial soils of the area are predominantly till, which in the Vale of Eden is extensively drumlinised. The till is typically rock fragments up to boulder size in a matrix of sand and clay, although the proportions of the constituents vary throughout the region. Erratics come from a wide range of rock types including Scottish (Galloway) granites, Borrowdale volcanics, Carboniferous sandstone and limestone, Shap granite and Whin Sill dolerite. Lenses of sand and gravel, and laminated clays, occur within the till (Burgess and Holliday, 1979). Furthermore, Burgess and Holliday concluded with some earlier workers that these lenses are "interwoven" within the till, which is the product of a single glacial event rather than the multiple events postulated by Trotter (1929) (Goodchild, 1875; Boulton, 1972 both quoted in Burgess and Holliday, 1979).

The topography of the site varies from an elevation in excess of 250m OD in the south, with sloping landforms and relatively thick drumlinised deposits of till, to flatter landforms at elevations below 190m OD in the north, with relatively thin till cover. Overall, therefore, the site presents an attractive study area from many standpoints. A general view of the terrain in the upper Eden Valley is shown in Figure 4.4, with more detailed views of the area investigated in Figure 4.5 (Domain 11) and Figure 4.6 (Domain 14).

Testing was carried out in a commercial laboratory and included determination of natural water content and Atterberg limits (liquid and plastic limits); particle size distribution by wet sieving and sedimentation; natural bulk, dry and particle densities; one dimensional consolidation properties; unconsolidated undrained triaxial compression and consolidated undrained triaxial compression with pore pressure measurement. All testing was carried out at a suitably accredited laboratory and in accordance with the relevant sections of the British Standard for the tests in question (BS1377, 1990): no departures from standard were noted. Stress path, stress-strain and pore pressure diagrams were available for the consolidated undrained triaxial tests, but only as paper copies.

Figure 4.4: View of the upper Eden Valley looking westwards from Barras towards Kirkby Stephen

View looking westwards from Barras towards Kirkby Stephen, which lies in the valley behind the trees in centre view. The Cumbrian mountains of the English Lake District are faintly visible in the far distance. (This view is said to have been the inspiration for the painting "The Plains of Heaven" by the Cumbrian artist John Martin; the work now hangs in the Tate Gallery)

4.2. DATA HANDLING AND PRELIMINARY DATA ANALYSIS

4.2.1. Data handling

Once the data set had been selected, the first stage was to prepare the available information. The sheer volume of available data rendered it difficult to handle without the use of computer software therefore the first stage of the analysis was to input the results of the selected ground investigation into a computer database using the Microsoft Access® programme. The database was designed to include reference markers for individual data points to allow identification of site domain, each exploratory hole location at the site and the soil horizon within each exploratory hole. Where available, data produced using the Association of Geotechnical Specialists (AGS) protocol Electronic Transfer of Geotechnical and Geoenvironmental Data, Edition 3.1 (Anon., 2004) were used and easily imported into the database wholesale. In addition to saving time, this also obviated transcription errors during data input. However, some of the laboratory analysis was not available in the AGS format and required manual data input, as did the reference marker for each entry. This marker is a two digit numeric code containing the site reference as the first digit and the domain within the site as the second digit. Further fields were manually input to include the generic soil type and the type of underlying geology, both as plain text values selected from a drop-down list. By using the code and geology fields to sort the raw data the properties of the various domains are easily isolated and filtered into sub-sets of data, which may then be used for undertaking comparisons within and between sites and domains.

The Kirkby Stephen site was divided into four separate numbered domains based on a combination of the site topography and the underlying bedrock geology. It is recognised that other methods of carrying out the division would be equally valid, for example using a Geographic Information System (GIS) to partition the data spatially on the basis of statistically similar measured properties without making any such *a-priori* assumptions. However, one of the objectives of this study was to test the hypothesis that there are statistically significant differences in the engineering properties of till subdivided into domains based on the bedrock geology and surface landform, and that such a subdivision is a useful tool in planning and interpreting geotechnical investigations over linear or areal extents where such different domains occur.

The till deposits encountered were generally described throughout the investigation as firm to stiff brown (or grey at depth) sandy gravelly clay with cobbles and boulders. Unfortunately no details of the lithology of the coarse clasts (gravel and larger) were available from the investigation report. The addition of such detail would have been invaluable in confirming the disposition of the initial domain boundaries.

- Domain 11, at the south end of the study area, comprises thick drumlinised till deposits at an elevation above 250 metres Ordnance Datum, overlying Carboniferous limestone as described in Section 4.1.3.

- Domain 12, in the southern central part of the study area, consists of lower elevation thinner lodgement tills on a gentle north-east facing slope, again overlying Carboniferous limestone bedrock.

- Domain 13, in the central part of the study area, is characterised by superficial cover that is extremely thin, consisting mainly of Glacial Sand and Gravel with a little till overlying the Permian Stenkrith Brockram (breccia) described in Section 4.1.3. Only three trial pits were excavated within this domain and insufficient tests were carried out to permit statistical analysis, but the results were included for completeness.

- Domain 14, in the central and northern parts of the study area includes low elevation comparatively thin lodgement tills overlying Permian Stenkrith Brockram and Penrith Sandstone as described in Section 4.1.3.

Figure 4.5: Investigations in Domain 11

Drilling under rail possessions at the site of a proposed road bridge over the Settle to Carlisle railway. The depth of till here was in excess of 20 metres, and limestone outcrops in the fields visible immediately beyond the railway cutting. (From a scanned photograph)

Figure 4.6: View of Domain 14 near Kirkby Stephen

For each domain, a further subdivision was made into a near-surface weathered zone and an underlying less weathered soil: this subdivision was initially made on the basis of descriptions of colour and consistency made on the engineering logs from the original investigation. The individual test results from the investigation were then ascribed to a single domain and a single stratigraphic sub-division, using the original ground investigation exploratory hole log descriptions and visual examination of data plots to apportion laboratory test results to the soil domains.

4.2.2. Preliminary data analysis

In all cases the data were carefully checked for internal agreement. This was carried out by proof reading lines of input data, by calculating maximum and minimum values of discrete soil properties as input into the database and by plotting graphs of data to highlight anomalous and, therefore, potentially erroneous values in a series. This was facilitated by exporting the sorted data into a spreadsheet programme (Microsoft Excel®) to make the mathematical and graphical operations easier to perform. As a result of this exercise, comparison of individual results and overall soil descriptions revealed that occasional misattributions of soil type had occurred in the original reports. These were corrected as the analysis progressed, using an assessment of the results from each stage. Once this exercise was completed for each domain and sub-division of soil, further more detailed preliminary analysis was undertaken as follows.

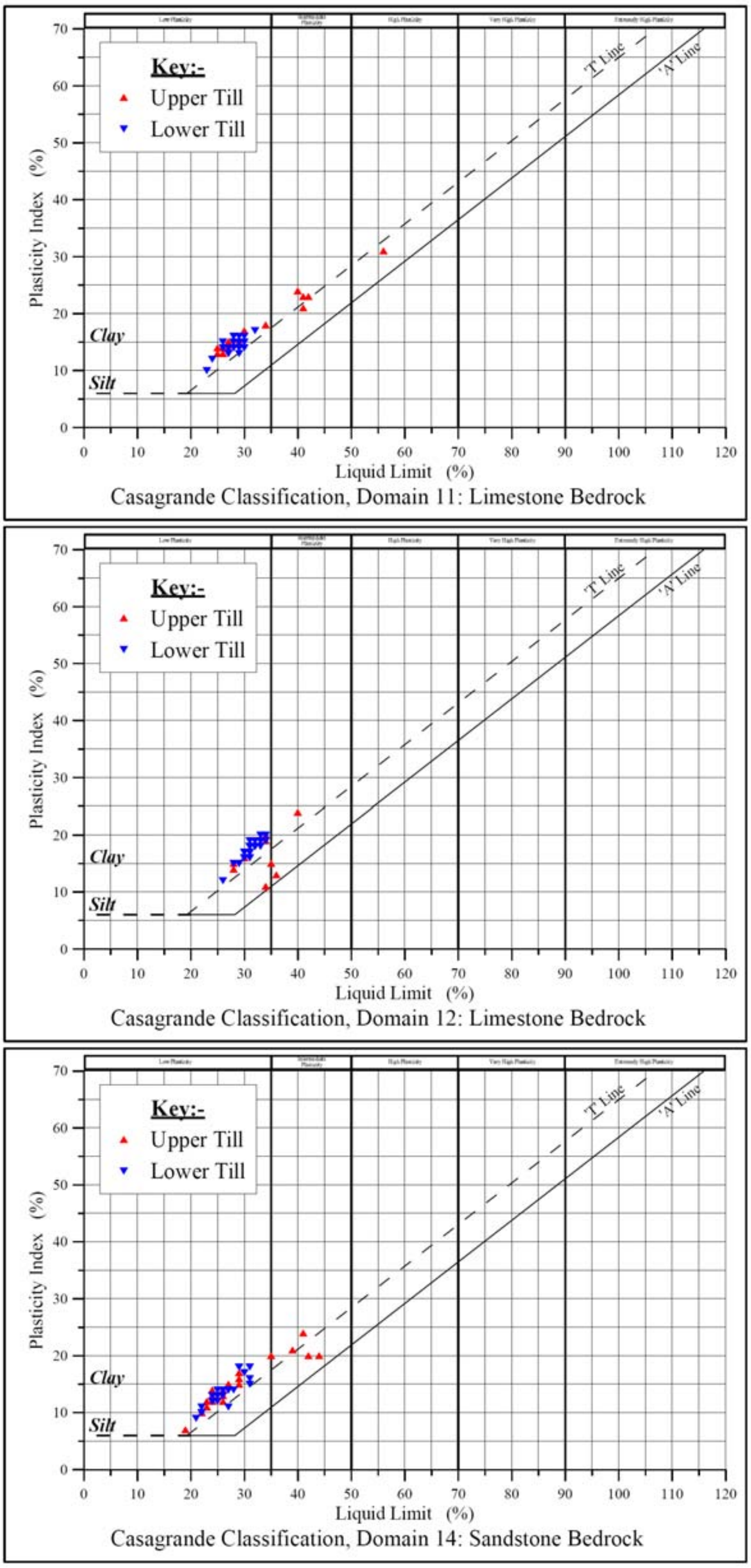


Figure 4.7:Casagrande charts, upper and lower till by domain

Graphical plots of Atterberg limits were prepared and clusters of results from different sites compared for the spread of results in each domain and differences in location along and about the Casagrande ‘A’ line and Boulton and Paul ‘T’ line as shown in Figure 4.7 (BS5930: 1999; Boulton & Paul, 1976). Using these plots, any data points that plotted outwith the clay region were re-allocated to a silt description and removed from the dataset. The plots of water content relationships with depth below natural ground level included in Figure 4.8 were prepared to assess any trend with depth and to ascertain whether the trend between vertically adjacent soils within a domain was sensibly continuous. Depth rather than elevation was used as the thickness of soil was relatively small compared with the overall change in topographic level within each domain.

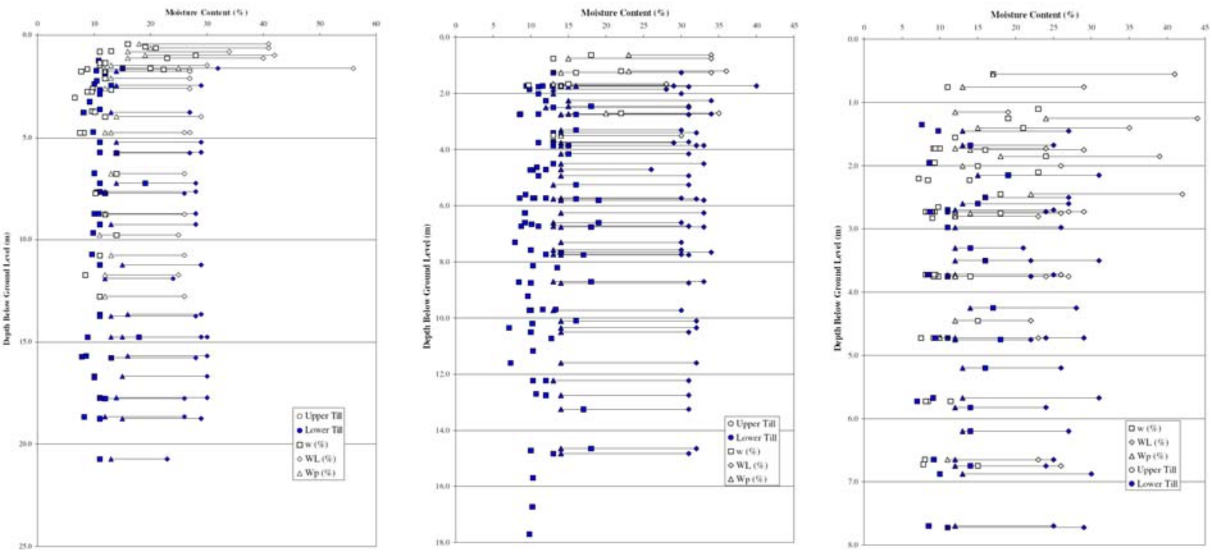


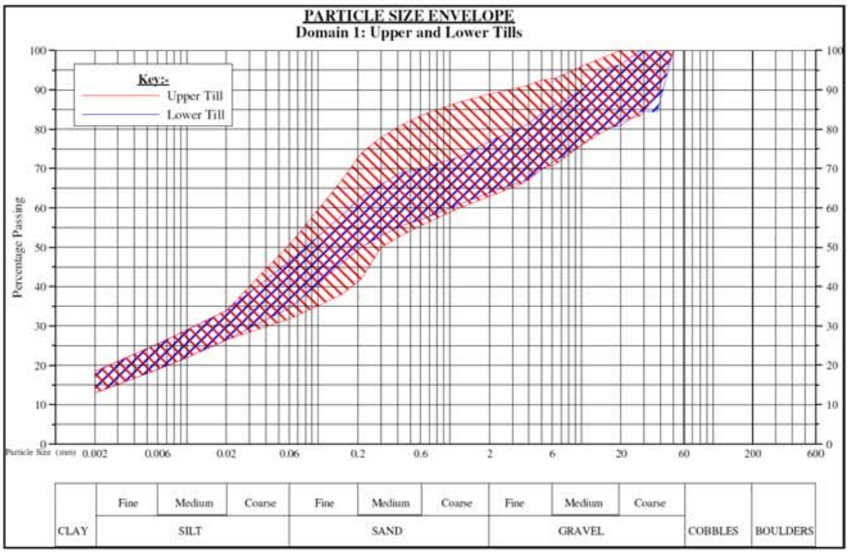
Figure 4.8: Water content relationship versus depth

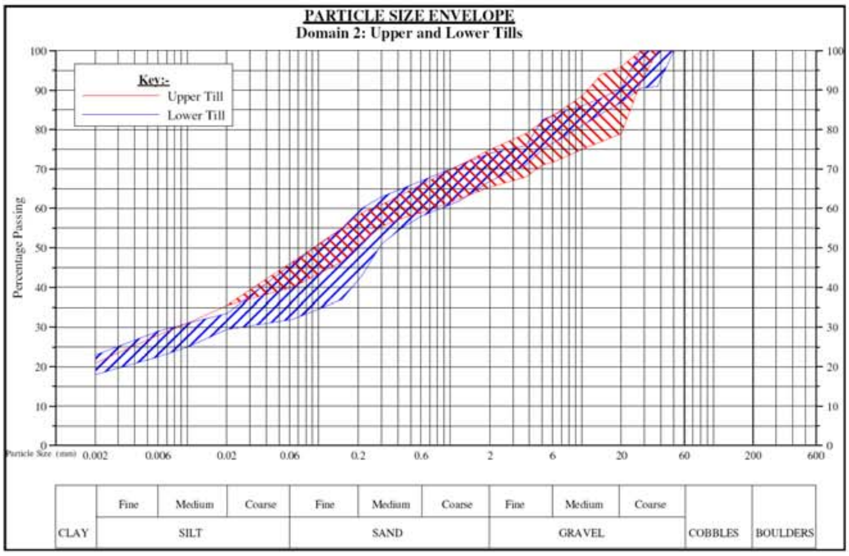
Initially, the grading envelopes of soils in different domains were compared using the commonly employed log-normal particle size distribution curves (BS1377-2: 1990). Envelopes of grading of soils in different domains were compared by overlaying pairs on single charts in succession to assess the degree of overlap between the envelopes: these charts included the results of sedimentation tests, where available, and are presented in Figure 4.9. Additional plots were then constructed on the ternary grading chart included in Figure 4.10, with soil size fractions in the Fine (<63μm), Sand (63μm – 2mm) and Gravel (2mm – 60mm) ranges normalised to 100%. In this form of presentation each grading is reduced to a single point on the chart and boundaries were then constructed to enclose all the points obtained from grading tests in a single domain. Using the refinement of McGown and Derbyshire (1977) allows the subdivision of the material into till classifications of cohesive or granular matrix tills, well graded tills or granular tills. Again, by comparing successive pairs of envelope plots prepared in this way, a visual comparison could easily be made between soils from different domains.

Box and whisker plots were prepared for the commonly measured moisture dependant index properties, bulk and dry densities and undrained shear strength. Separate plots of each parameter for the upper and lower till at each location were prepared in Figure 4.11 to Figure 4.13 to allow direct visual comparison. A similar set of box and whisker plots was prepared for the results of upper and lower tills grouped by domains as in Figure 4.14 and Figure 4.15. The initial preparation of these diagrams was carried out using the built-in options in the Minitab® statistical analysis software package and the widely available program Grapher®, but the resulting diagrams are subject to some limitations with regard to the presentation of summary data within the distribution tails. The default format of defining the box limits is by the inter-quartile range and outliers are defined as any value beyond 1½ times the inter-quartile range above and below the upper and lower quartiles respectively.

It has been suggested that this method may not provide sufficient precision for heavily skewed distributions and that the use of an enhanced box plot, indicating percentiles at 1, 2, 5, 10, 25, 75, 90, 95, 98 and 99 percent may provide better definition (Hallam, 1990). Furthermore, the definition of outliers at each tail of the distribution should be based on the respective distribution in each tail to avoid an arbitrary cut-off of reasonable tail values. As no computer software could be found to automate this procedure, a set of boxes for the larger data sets was constructed by hand for comparison as shown in Figure 4.16. It is considered when viewing these plots that a reasonable compromise system omitting the 1, 2, 98 and 99 percentile boxes improves the interpretation of the data distributions without the addition of undue effort in constructing the diagrams and that the in-built graphs in Minitab® are adequate for all but the most problematic data sets.

Only where all available data indicated an unambiguous attribution was the sample included in the analysis: where irreconcilable doubts persisted the information was removed from the working data set into a subset of results labelled ‘not used’. Once the data set had been cleaned of doubtful data in this way, the main statistical analysis calculations were commenced.





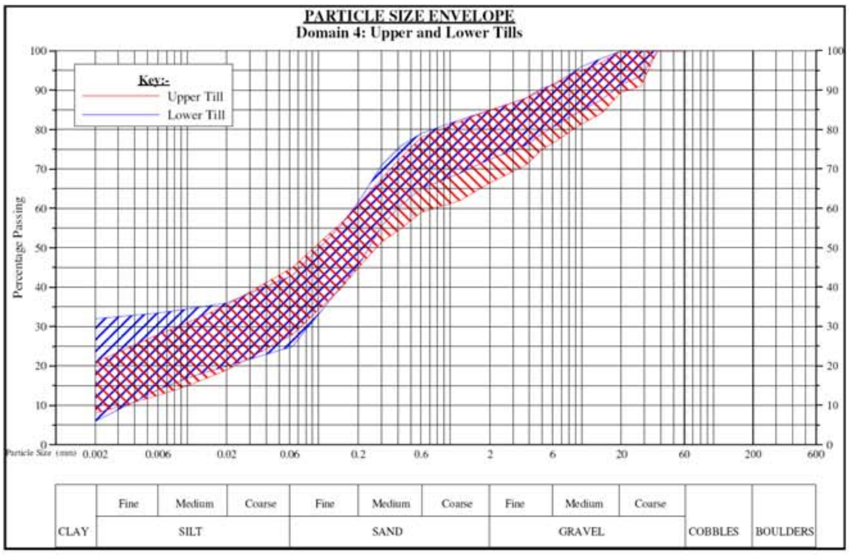
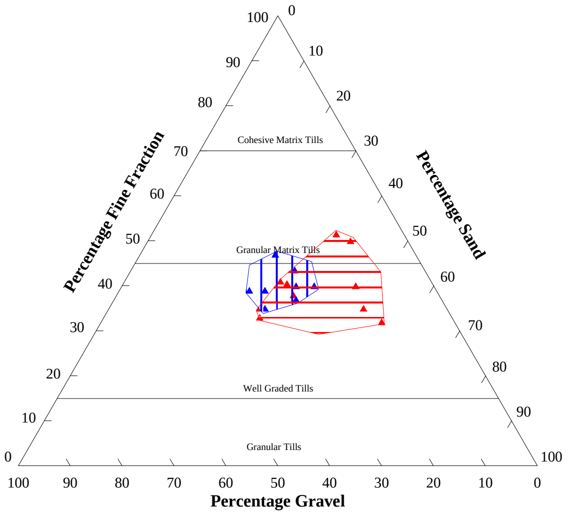
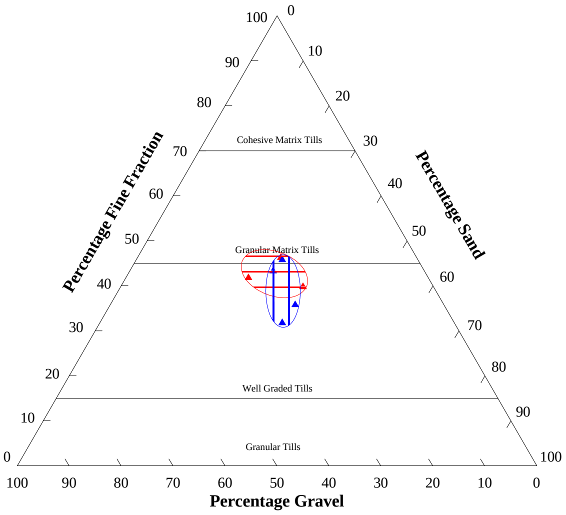


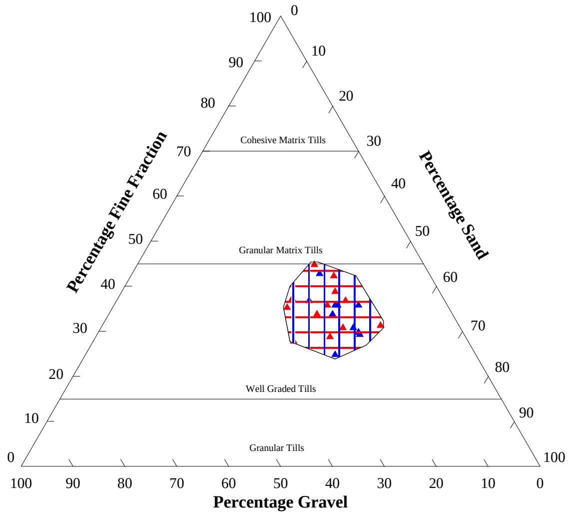
Figure 4.9: Particle size distribution curves



Domain 11: Limestone Bedrock



Domain 12: Limestone Bedrock



Domain 14: Sandstone Bedrock

Fine Fraction: <63µm Sand: 63µm - 2.0mm Gravel: 2.0mm - 63mm	Note: Total for Fine Fraction, Sand and Gravel is normalised to 100%.	**Red** Hatching: Upper (Weathered) Till **Blue** Hatching: Lower Till

Figure 4.10: Ternary grading diagrams

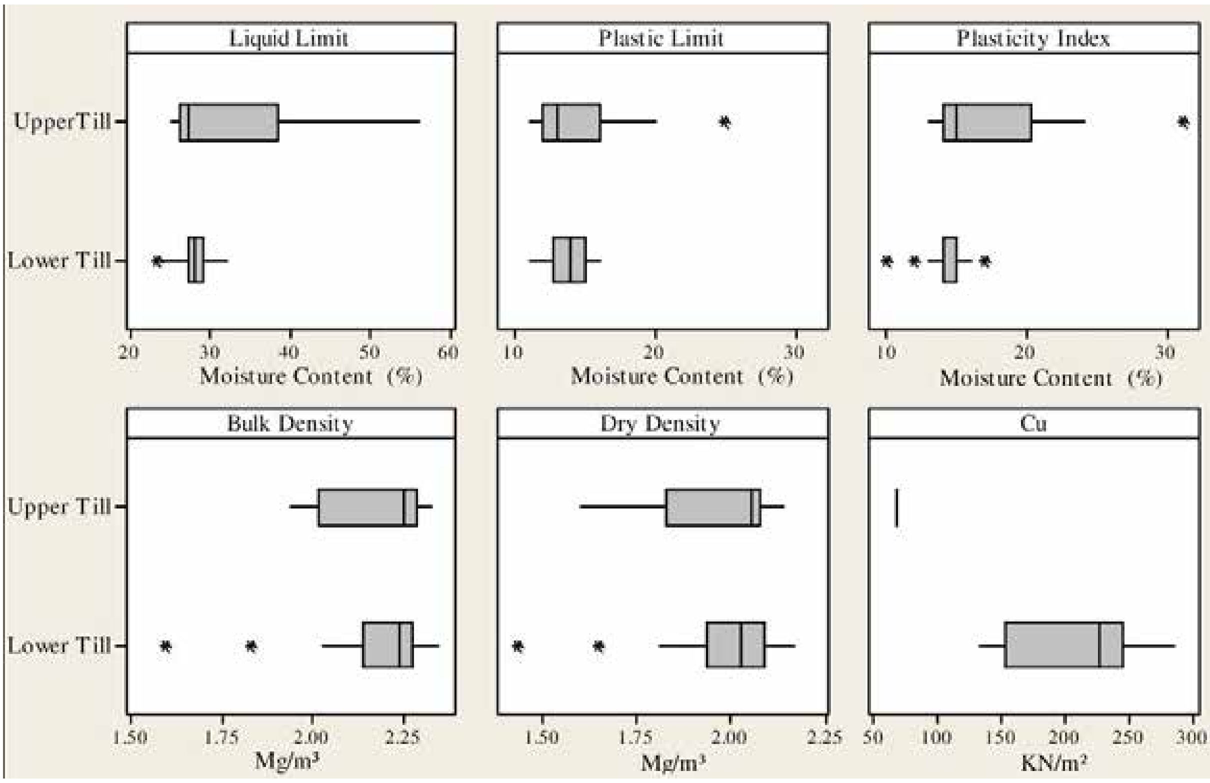


Figure 4.11: Boxplots of index properties, Domain 11

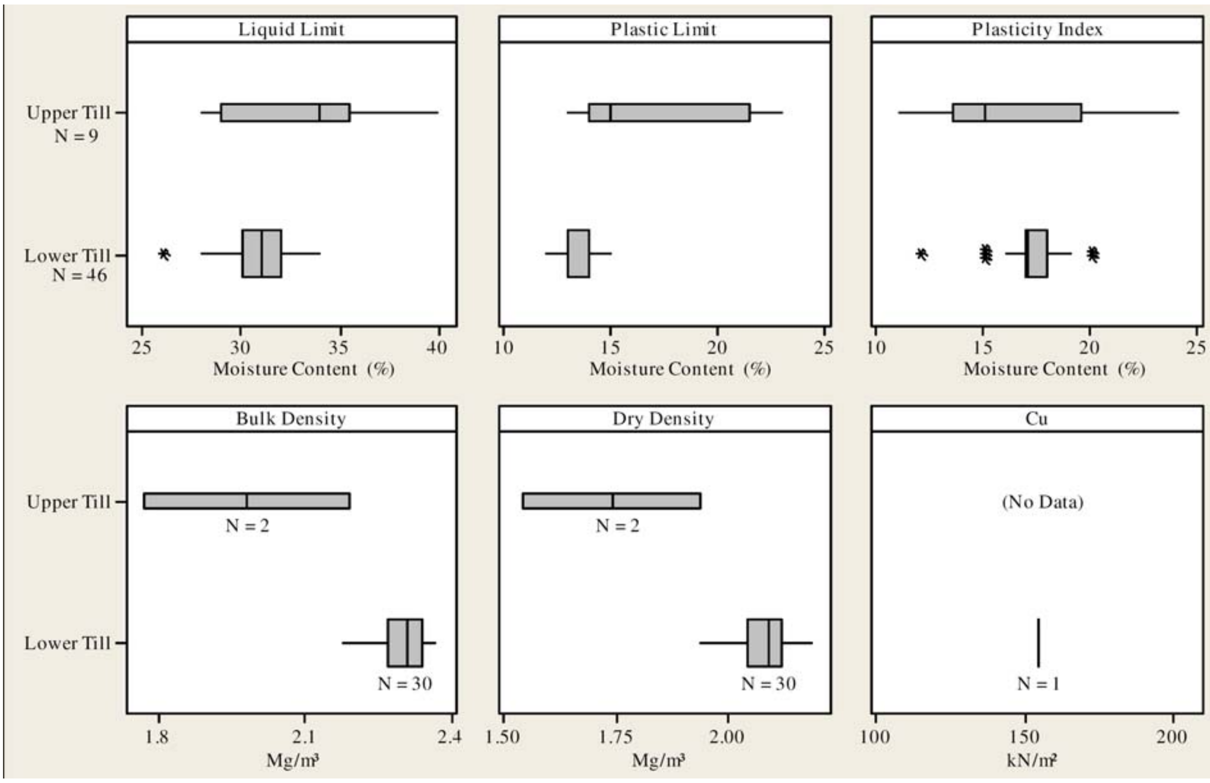


Figure 4.12: Boxplots of index properties, Domain 12

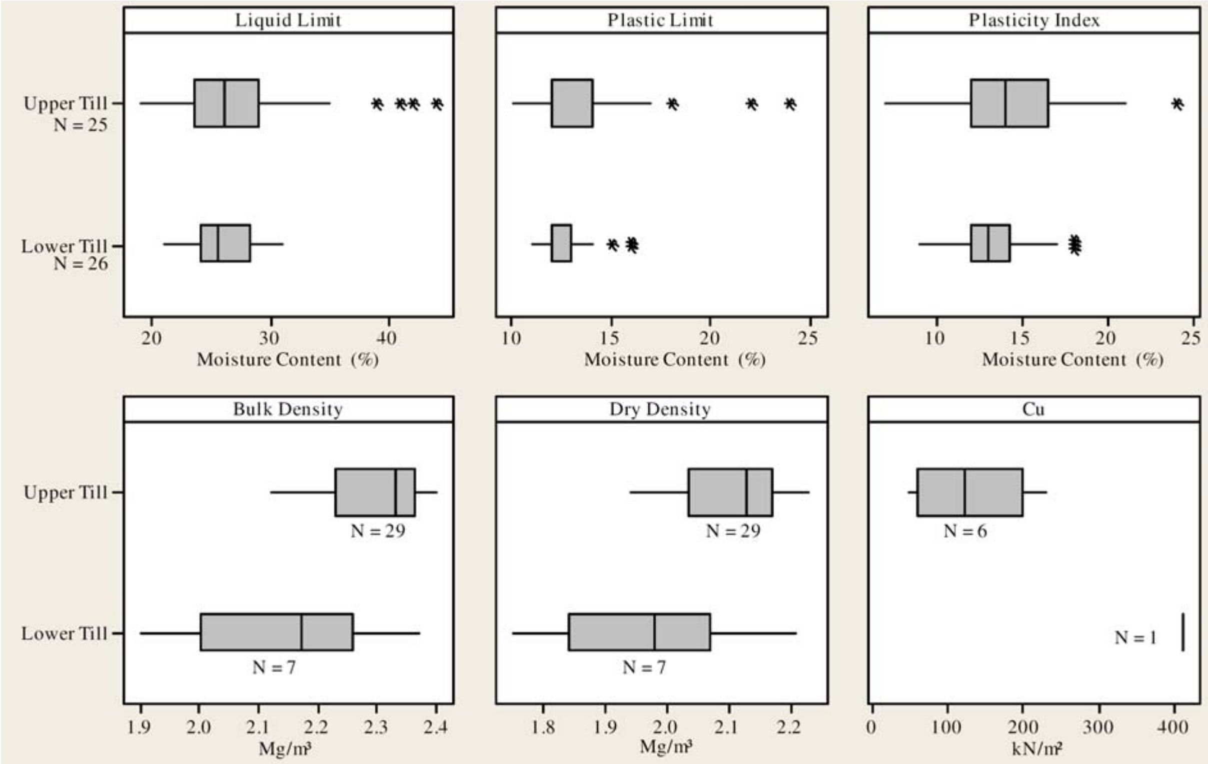


Figure 4.13: Boxplots of index properties, Domain 14

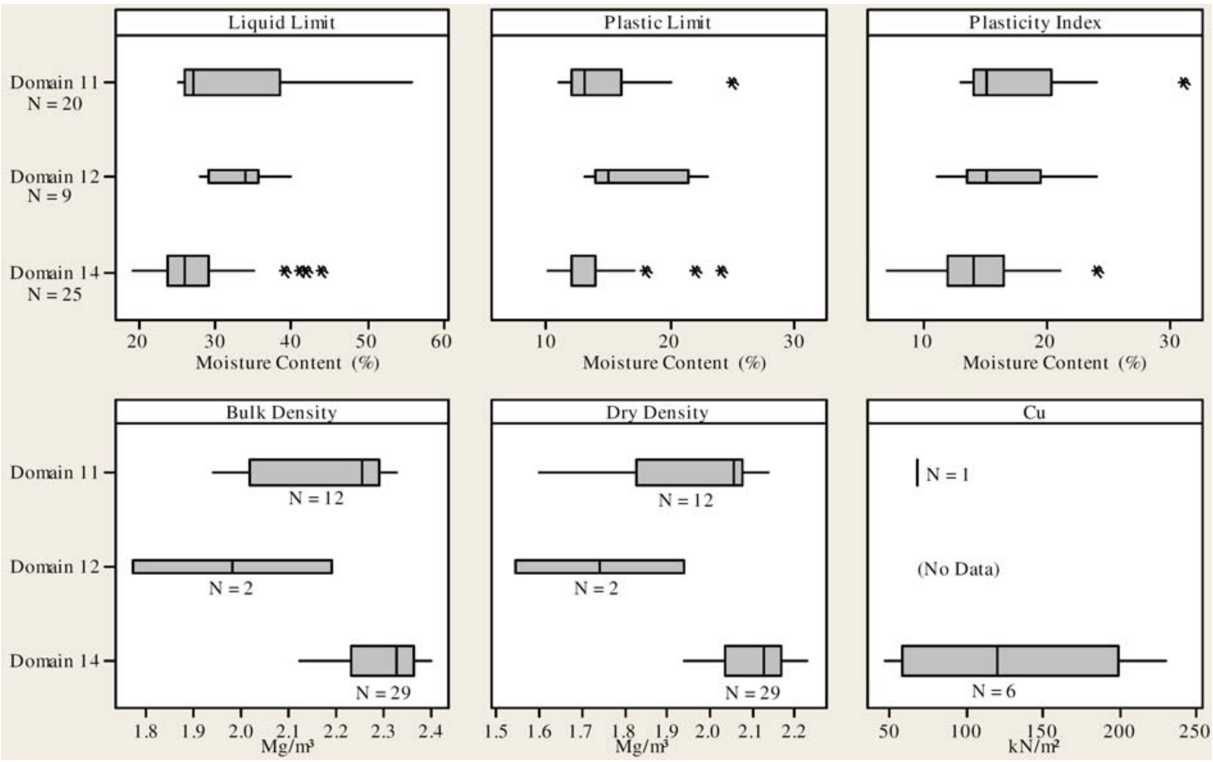


Figure 4.14: Boxplots of index properties of upper till

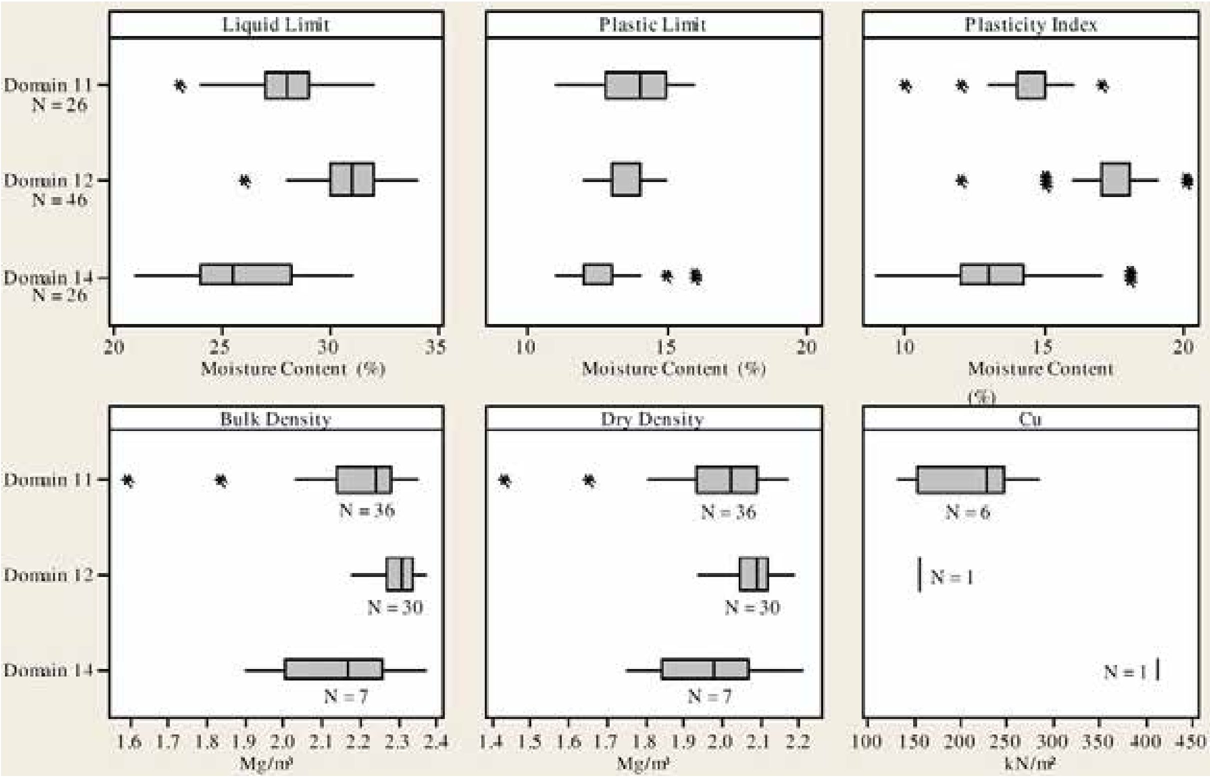


Figure 4.15: Boxplots of index properties of lower till

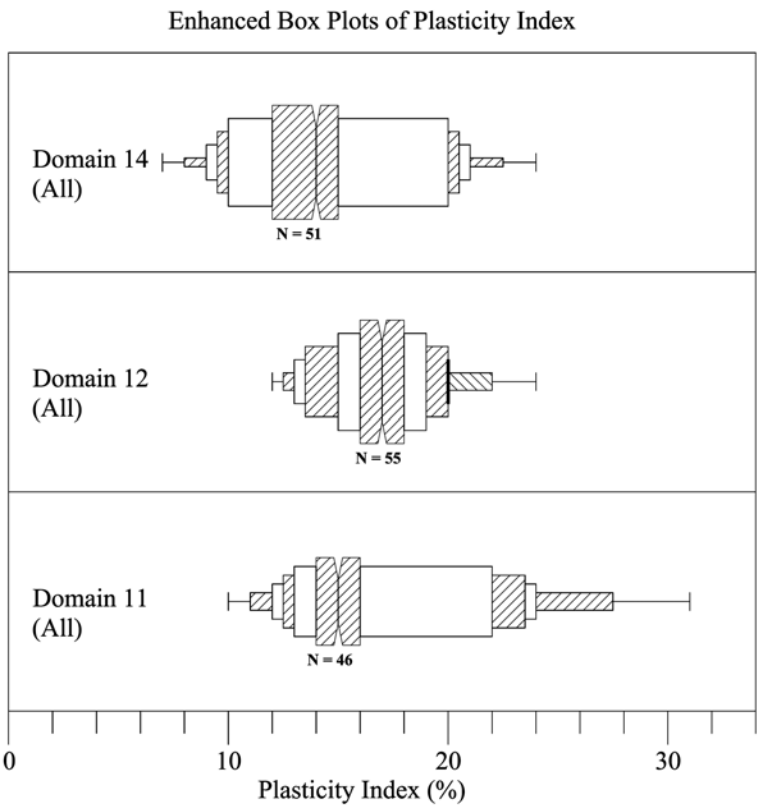


Figure 4.16: Enhanced boxplots of plasticity index

4.3. PARAMETRIC STATISTICS

4.3.1. Methodology

A first pass assessment of potential differences in populations of results (in the statistical sense) from individual domains was made using conventional parametric statistics on the large data set available for the commonly tested index properties. However, for the reasons discussed below, doubts soon emerged as to whether this was an appropriate methodology and other techniques were investigated.

The indicator parameters used in the statistical analysis were chosen on the basis of the size of the available data set. In practice this was limited to the index tests including liquid and plastic limit, plasticity index and grading fractions: there were insufficient laboratory shear strength data to make a meaningful comparison across all domains, but the results are included for completeness. Grading was compared at the 63μm, 425μm, 2mm and 60mm sieve sizes but it should be noted that the sample size within Domain 2 was too small to give 95% confidence in testing the null hypothesis for difference between upper and lower till. The overall number of results from till in Domain 3 was similarly too small to obtain the 95% confidence level and the domain was not included in the analysis.

Histograms of the same set of index properties were also prepared, using data analysis tools in Microsoft Excel® and the built in functions in Minitab®. Generally, it was found that the built-in default options for binning presented the best histograms to make sense of the data with regard to visual appearance and analytical rigour. The data were also plotted as cumulative distribution functions in Minitab®. Normality testing was carried out on each parameter within each data set to check for a sensibly Gaussian distribution by a visual examination of the data histograms and cumulative frequency curves, the latter being facilitated by the superimposition of the corresponding graph of the Gaussian distribution with 95% confidence envelope. Three inbuilt Normality tests in the Minitab® software package were used to confirm the initial findings more rigorously; these being the Anderson – Darling, Ryan – Joiner and Kolmogorov – Smirnov methods.

Many of the parameter histograms in the data set were obviously not Gaussian in form, as can be seen in the examples in Figure 4.17 to Figure 4.19. This was confirmed by plotting the data as probability distributions and comparing the resulting graphs with the Gaussian distribution as in the examples in Figure 4.20 to Figure 4.22. The data points lie outside the 'fat pencil' defined by the 95% confidence interval, and therefore do not conform to a Gaussian distribution. This lack of fit was confirmed by the results of the normality testing included in full in Appendix B1.

Despite the data not conforming to a Gaussian distribution, parametric statistical comparison between data sets was carried out using the two-sample 'Student' t-test. Having compared soils from different stratigraphies and at different locations, the means and medians of the various parameters were calculated for the aggregated data sets within a domain, with their corresponding 95% confidence interval. These locations were plotted on the appropriate frequency histograms to assess the practical validity of the results. Means and confidence intervals for each parameter data set were estimated using the one-sample T method, as the population variance is unknown.

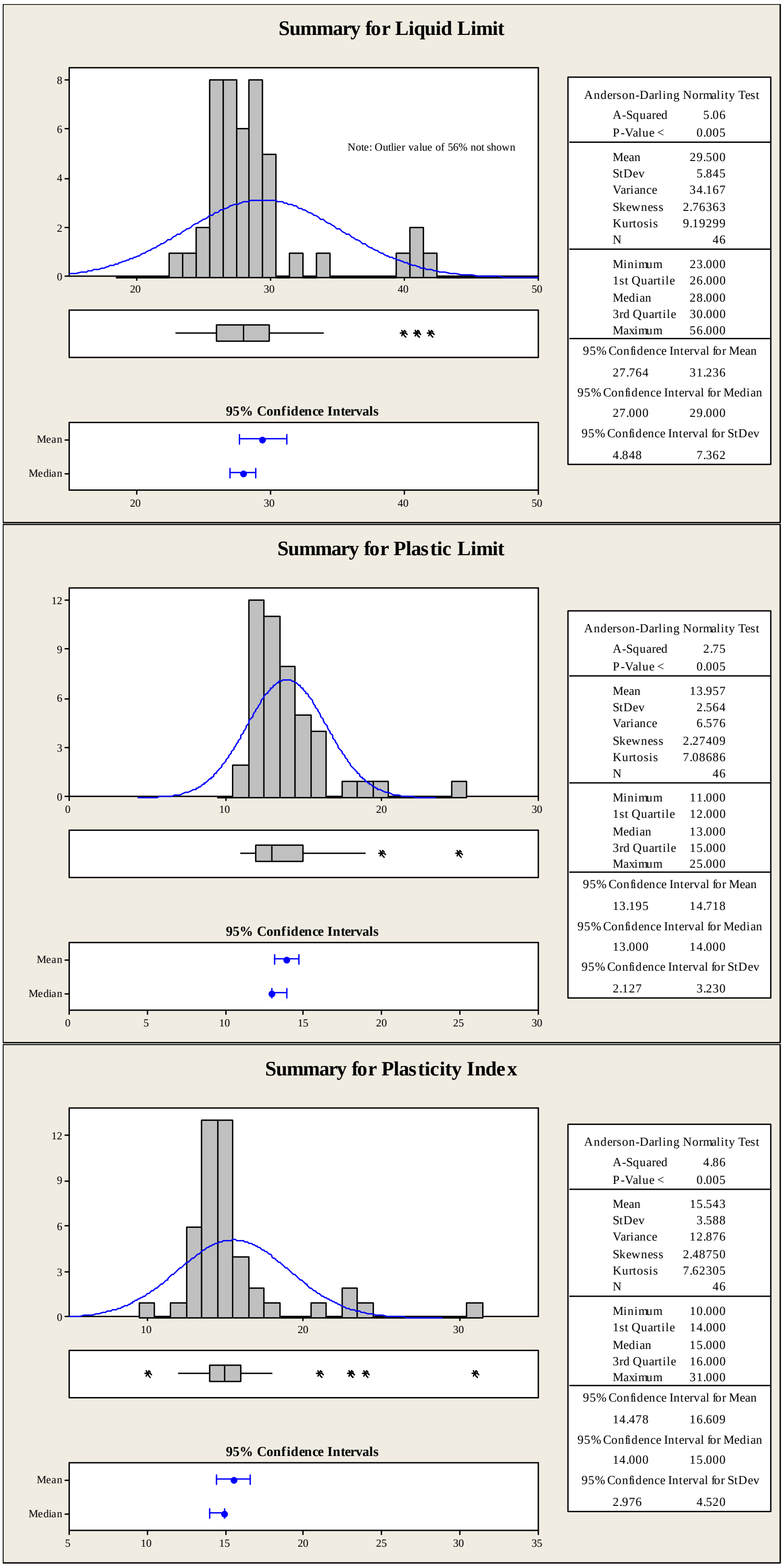


Figure 4.17: Histograms and Confidence Intervals for Index Properties; Domain 11

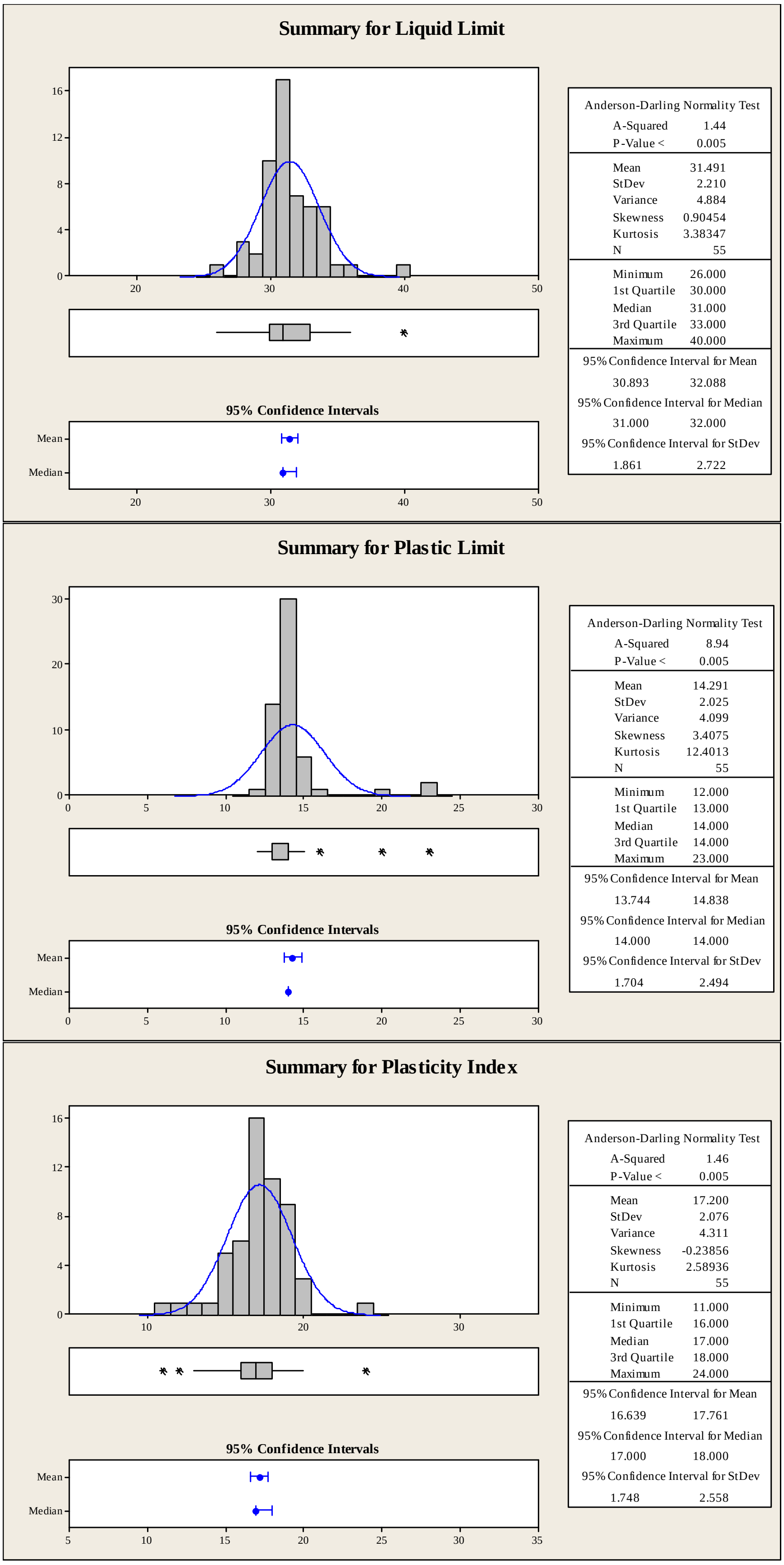


Figure 4.18: Histograms and Confidence Intervals for Index Properties; Domain 12

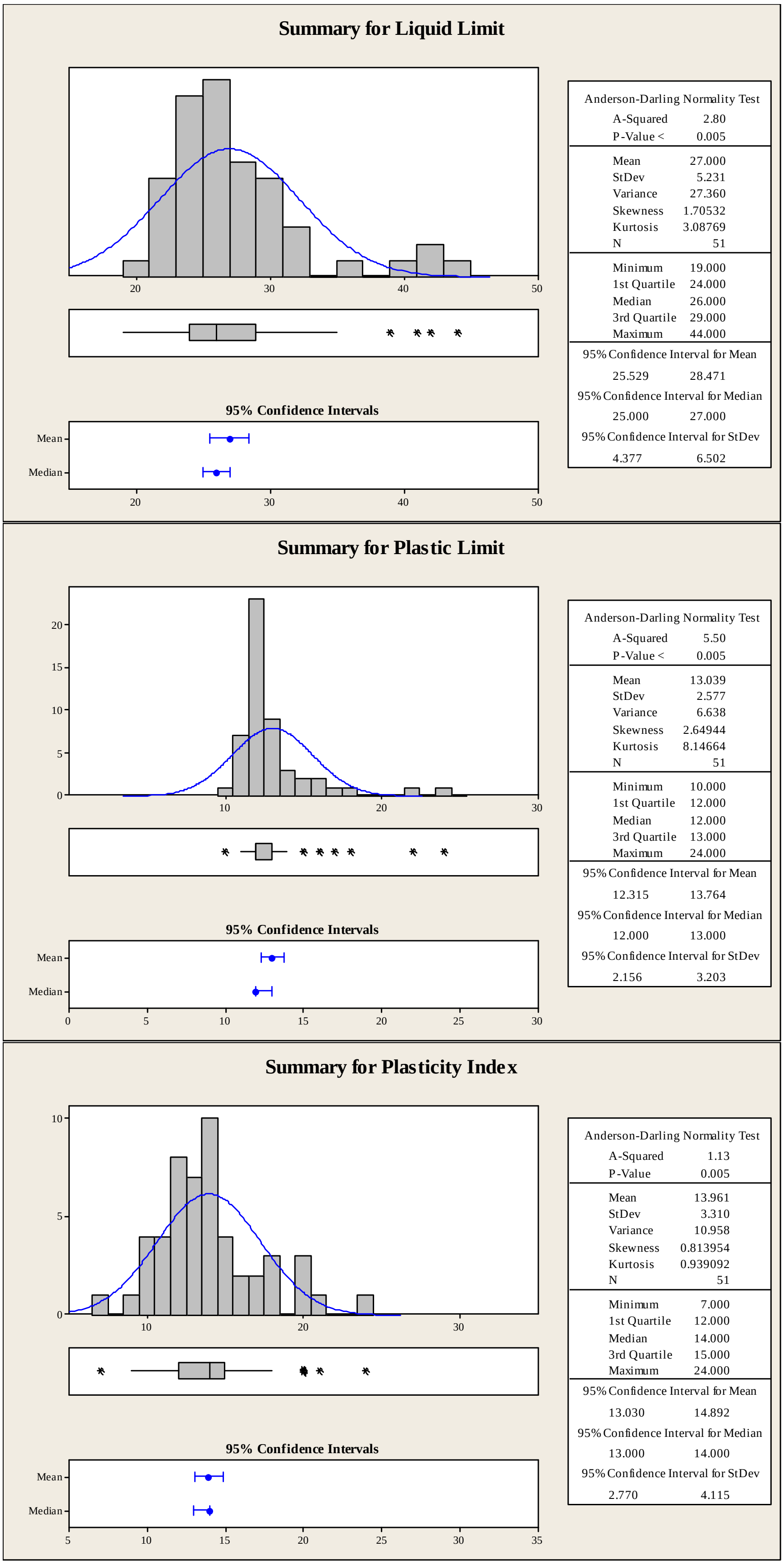


Figure 4.19: Histograms and Confidence Intervals for Index Properties; Domain 14

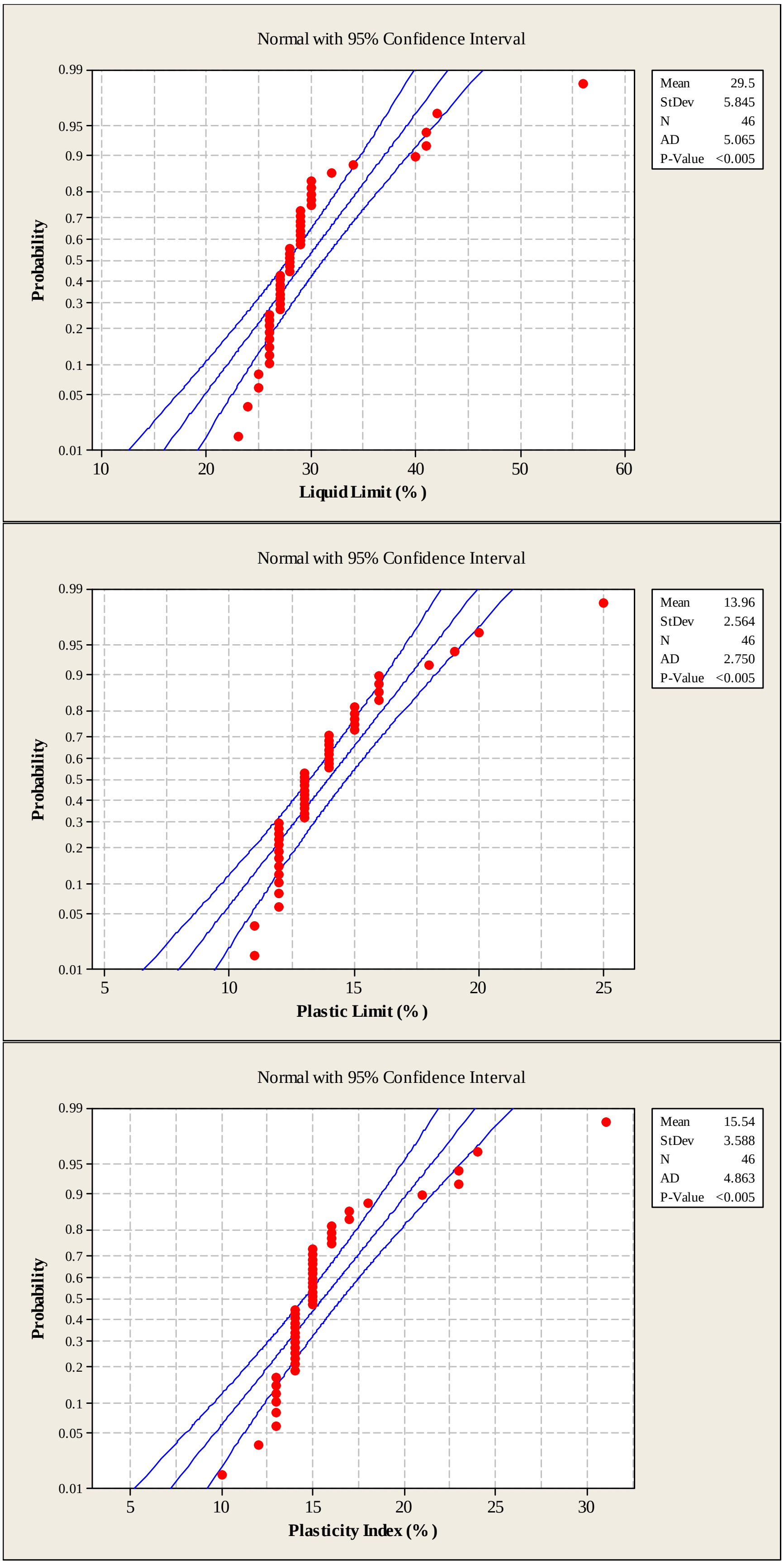


Figure 4.20: Probability plots for index properties, Domain 11

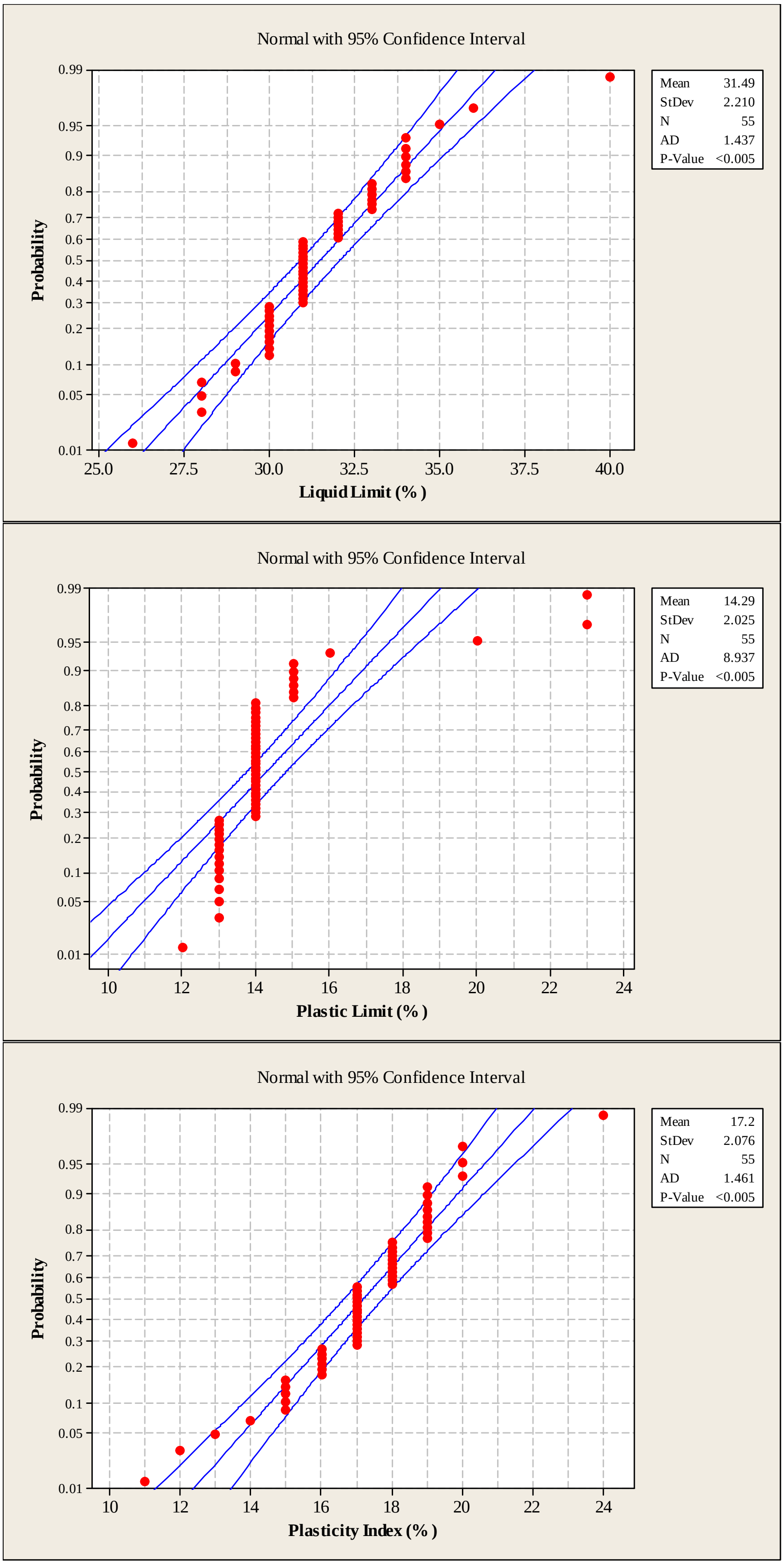


Figure 4.21: Probability plots for index properties, Domain 12

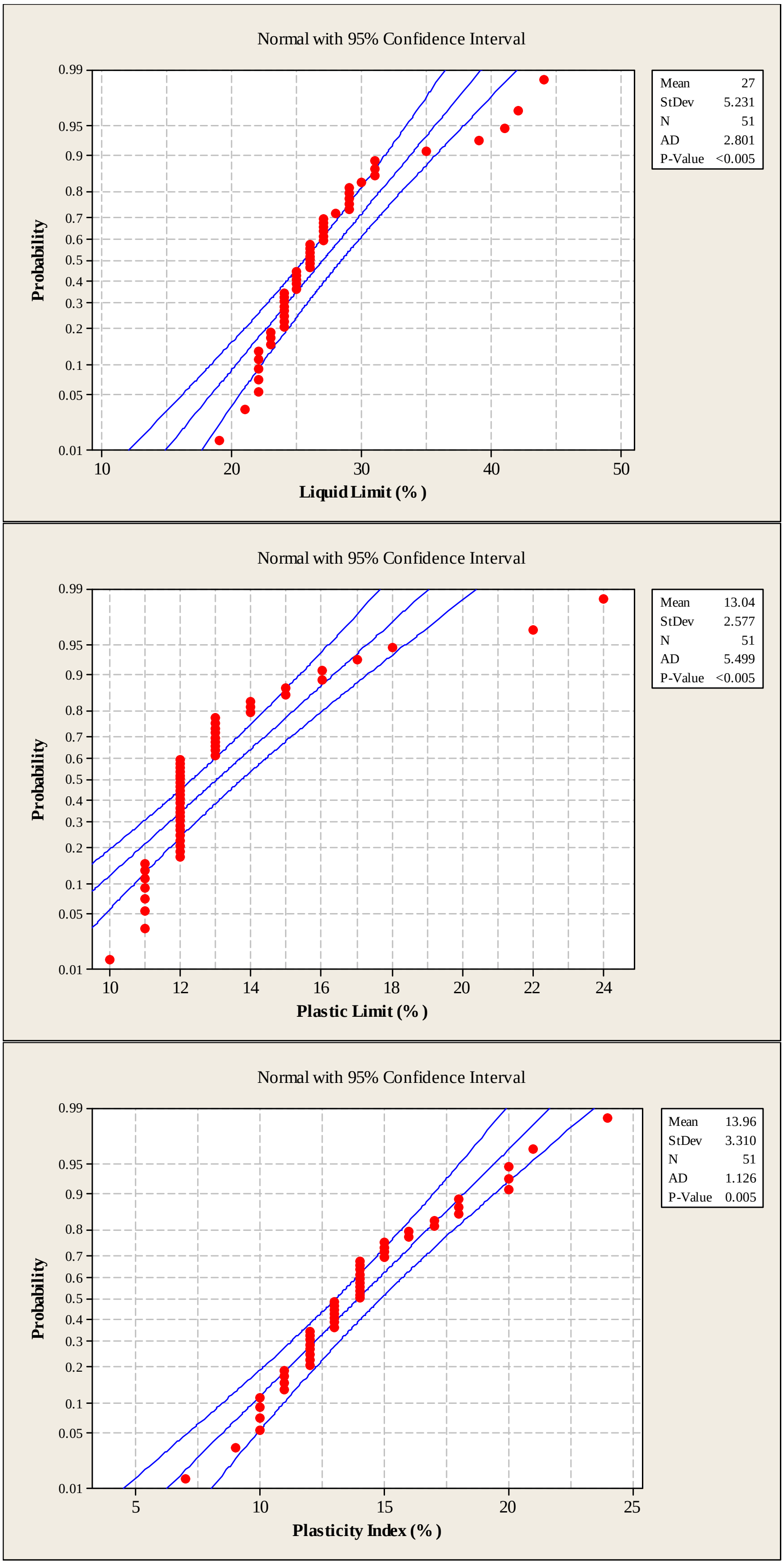


Figure 4.22: Probability plots for index properties, Domain 14

4.3.2. Results and discussion

The results of 'Normality' testing indicate that the distributions of many of the data sets are not close enough to a Gaussian distribution to permit the comfortable use of conventional parametric statistical studies. This was confirmed by examination of the plotted histograms with various class widths for each soil domain and comparison with the corresponding probability functions: the results of 'Normality' testing are tabulated in Appendix B1. In addition, the important *a-priori* requirement for equal variance in each statistical sample that is to be compared is not fulfilled for the separate data sets in the current study. However, some comparisons between soil types were made, using the two-sample 'Student' t-test for means of the data parameters listed in the previous section: the results are tabulated in Appendices A2 to A4, with full calculations included in Appendix D

Comparison of the index properties of upper and lower tills within each domain indicated that the null hypothesis could be rejected at the $\alpha = 0.05$ confidence level for plasticity in Domains 11 and 12, but not for the upper and lower tills in Domain 14: for liquid limit the null hypothesis could not be rejected. Corresponding statistical tests on the aggregated results from each domain failed to reject the null hypothesis for differences between Domains 11 and 12 and Domains 11 and 14, again on the basis of plasticity. The null hypothesis was emphatically rejected for the differences between Domains 12 and 14.

For the grading results the picture is slightly different, as with the exception of a close result for the sand sized fraction in Domain 11, the statistical tests failed to reject the null hypothesis for differences in upper and lower till within a domain. The null hypothesis was also not rejected for differences in tills between Domains 11 and 12 and for the gravel size fraction in Domains 11 and 14.

In the case of the undrained shear strength results, the null hypothesis could be rejected at an α level of 0.05 for upper and lower tills in Domain 14 and for tills overall between Domains 11 and 14 and Domains 12 and 14. The null hypothesis could not be rejected for tills between Domains 11 and 12.

Overall, since rejection of the null hypothesis for any index parameter suggests a difference in soil between two statistical samples, the results of parametric statistical checks indicate that the upper and lower tills are statistically different within each domain and between different domains. The suggested differences between Domains 11 and 12 are somewhat less than the differences between either of those domains and Domain 14.

Examination of the tabulated means and confidence intervals and comparing them with the graphical results indicates that the mean generally falls towards the high side of the sample distribution and, on occasion, the 95% confidence interval does not include the modal value or range. The implication is that for the data set under consideration the mean does not provide a very good estimate of the 'most likely value' and Figure 4.17 to Figure 4.19 indicate that the 95% confidence interval of the mean may, in some instances, not provide the cautious estimate of the characteristic value of a parameter required by Eurocode 7 (BSEN 1997-1:2004, §2.4.5.2 (2)P).

4.4. NON-PARAMETRIC (RANK) STATISTICS

4.4.1. Methodology

To compare the results of the application of conventional parametric and rank non-parametric statistical analysis of this real data set, a parallel analysis was carried out using percentiles and medians rather than means.

For the reasons discussed in Section 3.3.4 a preliminary examination of the parameter data from the upper and lower tills was made within each domain, using a two-tailed Kolmogorov – Smirnov test; i.e. the direction (positive or negative) of any difference in the parameter is not important. This test calculates the difference between two cumulative distribution functions (CDF's) and compares the resulting figure against a test statistic calculated on the basis of the number of observations N in the data sets (Cheeney, 1983).

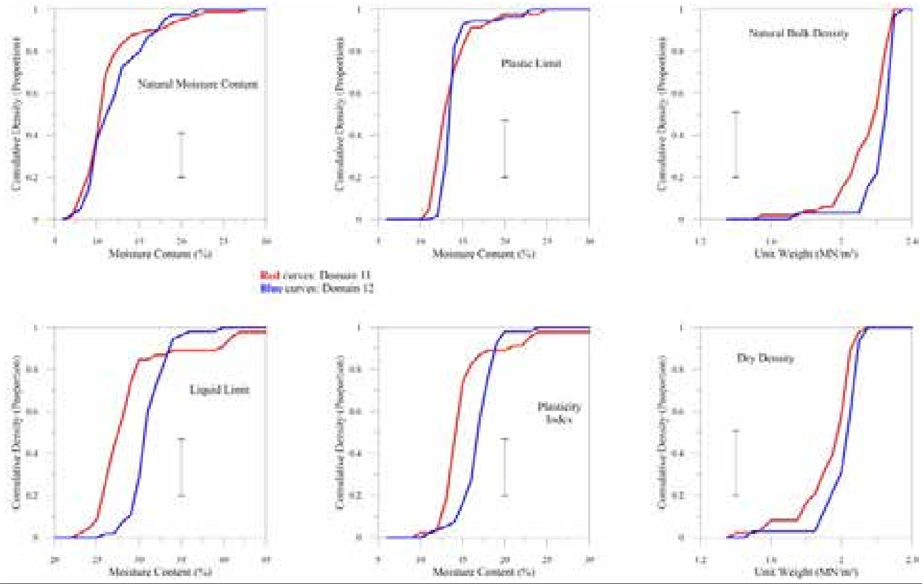
The test statistic for the two most commonly used α-values is formulated in Table 4.1:

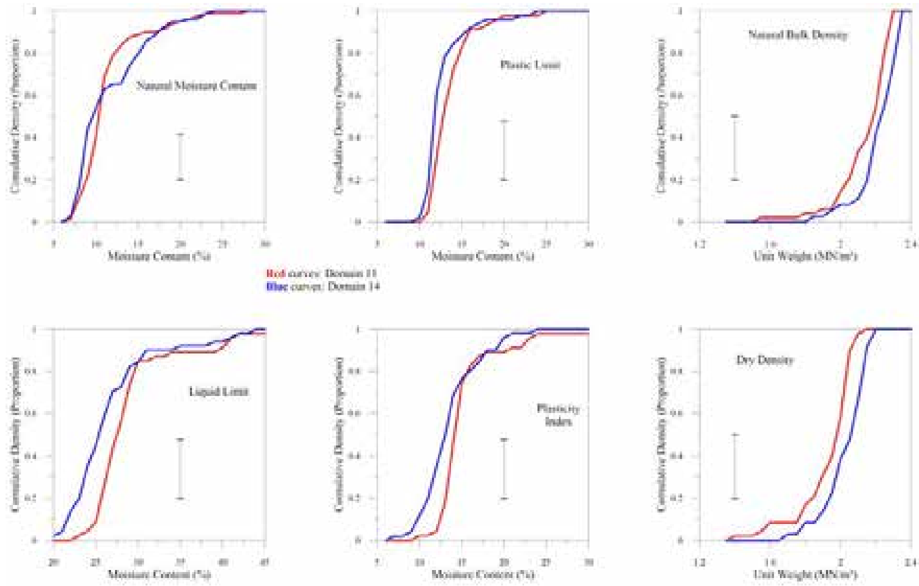
Values of D	$\alpha = 0.01$	$\alpha = 0.05$
One-Tail	$D = 1.51\, N'$	$D = 1.22\, N'$
Two-Tail	$D = 1.63\, N'$	$D = 1.36\, N'$

Table 4.1: Values of Kolmogorov – Smirnov test statistic

Where $N' = 1/\sqrt{(N)}$ for one-sample tests against a theoretical distribution, or alternatively for comparison between the CDF's of two data sets $N' = \sqrt{[(N_1+N_2)/(N_1.N_2)]}$.

The test was carried out by calculating the maximum difference and comparing this against the appropriate value of the test statistic D and also by plotting the CDF curves for a visual comparison, initially for upper and lower tills within a single domain: examples are included in Figure 4.23. The data from the upper and lower till was then combined at each domain and a similar comparison made for all tills between different domains.


Natural Moisture Content
Plastic Limit
Natural Bulk Density
Liquid Limit
Plasticity Index
Dry Density
Cumulative Density (Proportions)
Moisture Content (%)
Unit Weight (MN/m³)
Red curves: Domain 11
Blue curves: Domain 12


Natural Moisture Content
Plastic Limit
Natural Bulk Density
Liquid Limit
Plasticity Index
Dry Density
Cumulative Density (Proportions)
Moisture Content (%)
Unit Weight (MN/m³)
Red curves: Domain 11
Blue curves: Domain 14

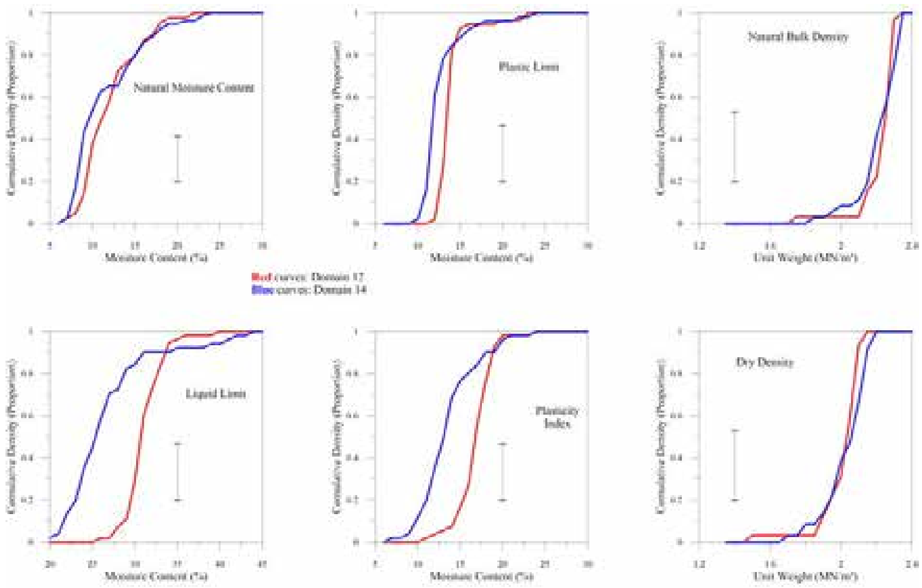

Natural Moisture Content
Plastic Limit
Natural Bulk Density
Liquid Limit
Plasticity Index
Dry Density
Cumulative Density (Proportions)
Moisture Content (%)
Unit Weight (MN/m³)
Red curves: Domain 17
Blue curves: Domain 14

Figure 4.23: Example Kolmogorov - Smirnov Graphical Comparisons

In practice, constructing the large number of graphs necessary proved to be too time consuming and a simple Excel® spreadsheet application was employed to filter the data by comparing the differences between the cumulative density functions with the calculated test statistic values for α = 0.01 and α = 0.05. All calculations and graph plotting were easily carried out using an Excel® spreadsheet, and full results are included in Appendix D3.

Further analysis of the results of index tests was then undertaken using Moods Median test and the Kruskal – Wallis test. Once again, the tests were conducted on tills from within a single domain and then between domains on the aggregated results from tills in each domain. Medians and confidence intervals were calculated using the one-sample sign method, with non-linear interpolation (NLI) (Hettmansperger and Sheather, 1986, also Anon, 2007: Minitab® v.15 manual). This is the default algorithm utilised by the Minitab® software (Minitab® v.15 program manual, 2007). The results of the non-parametric statistical analysis are tabulated in Appendices A2 to A4 with full calculations included in Appendix D.

4.4.2. Results and discussion

The results of the Kolmogorov – Smirnov tests indicated that the null hypothesis could not be rejected at the α = 0.05 confidence level for the index properties of the upper and lower tills within any domain and therefore that statistically there is no evidence for a difference between the tills within a single domain. The results of the same tests on the aggregated data from within domains indicated that the null hypothesis could be rejected at the α = 0.05 confidence level and therefore that there is a statistically significant difference between tills from different domains within the study area, on the basis of index properties measured in the laboratory. The greatest divergence occurred between tills from Domains 12 and14.

Analysis using the two median tests also indicated that the null hypothesis for differences in median values of parameters for upper and lower till within individual domains could not be rejected. However, the null hypothesis for differences between median values for parameters for all tills between domains could be rejected at the $\alpha = 0.05$ confidence level, thus confirming the results of the initial analysis: once again the most emphatic rejection of the null hypothesis occurred between Domains 12 and 14.

The results of similar tests on the grading fractions also failed to reject the null hypothesis for different tills within each domain. The aggregated grading test results for each domain were then compared, indicating that the null hypothesis could not be rejected between Domain 11 and Domain 12 but that statistical differences exist between Domain 14 and the other two domains.

In the case of the undrained shear strength results, the null hypothesis could be rejected using all three non-parametric methods at an α level of 0.05 for upper and lower tills in Domain 14 and for tills overall between Domains 11 and 14 and Domains 12 and 14. The null hypothesis could not be rejected for tills between Domains 11 and 12.

Overall, the results of non-parametric statistical checks indicate that the upper and lower tills probably do not differ within each domain and that tills from different domains are different. The suggested differences between Domains 11 and 12 are somewhat less than the differences between either of those domains and Domain 14. The exception to this is the undrained shear strength in Domain 14, where there is an apparent difference between the upper and lower tills.

In all cases, the confidence interval of the median lay closer to the modal value and in most cases included it: this confirms that for non-Gaussian data sets the median would be a better indicator of the characteristic value than would the mean (Figures 4.13 to 4.15). In many cases the overall range of the 95% confidence interval was smaller for the median than for the mean. The ranges, means and medians of the data sets are shown as box plots in Figure 5.19 to Figure 5.27. A summary table of the means, medians and 95% confidence intervals is included in Appendix B5.

4.5. OTHER ANALYTICAL METHODS

4.5.1. <u>Geostatistics</u>

The application of geostatistics has grown from work pioneered in the field of mineral exploration (Clark, 1979; Henley, 1981). As such, it is ideally suited to analysing data from regular grids of exploratory locations, where the construction of a semi-variogram based on regular distances is comparatively easy. For the cases considered in the current study the patterns of exploratory locations are predominantly linear and, of necessity, are not regularly spaced, being targeted towards specific geotechnical problem locations such as structure foundations or deep cuttings. The construction of the semi-variogram therefore requires the consideration of a range of distances rather than a single spacing for the calculation of the variance in the parameter under consideration. The directionality of the data has also to be set aside, as the displacement vectors between exploratory points are not always in the same direction, which changes as the highway route deviates. It is also highly probable that there is some degree of horizontal directionality in the data set with respect to ice movement vectors and vertically with respect to weathering: the construction of a semi-variogram using all the data points fails to take this into account. The lack of an orthogonal spread of exploratory points does not permit analysis of directional variation in the chosen parameters. The construction of the semi-variogram in these circumstances is a laborious process by hand calculation and falls somewhat short of the ideal required for consistent application of the method. A semi-variogram option is included in the Surfer® contouring software suite, published by Golden Software of Colorado, USA but is limited in the options for selecting data, particularly the buffer zone for the length variable (Barnes, undated). Both the hand-calculated and computer generated semi-variograms produced from the data used in the current study were very similar in form. It was found that the differences in index parameters between pairs of exploratory holes were so small that the values of variance calculated gave no consistent curve: the points plotted showed a random distribution and no sill was obtained in the semi-variogram, as can be seen in Figure 4.22. Missing data points in the spatial pattern added to the problems in constructing the semi-variogram and the limited number of pairs available for each separation interval cast doubt on the validity of the calculated variance. Given the analogy between the spherical model semi-variogram and the Gaussian distribution in parametric statistics, this lack of coherence is not unexpected given the non-Gaussian form of the underlying data sets. For the purposes of extending the study, therefore, the use of geostatistics, and in particular the semi-variogram, was not continued in the further sites considered in Chapter 5.

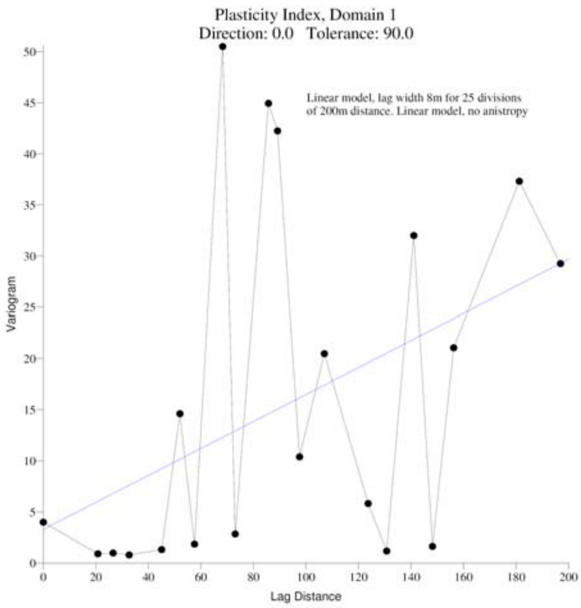


Figure 4.24: Example semi-variogram of data from Kirkby Stephen site

Note wide data scatter and lack of sill.

4.5.2. Shear strength parameters

An assessment of the shear strength of a soil is probably the most common requirement for any geotechnical calculation: this is generally the case for both total and effective stress analysis. Several methods were used to examine the shear strength of the soils analysed in the data set for the investigation, as follows.

Stroud and Butler (1975) suggested a relationship between SPT 'N' Value, plasticity index and undrained shear strength $\mathbf{c_u}$ for a variety of clay soils. This took the form:

$$\mathbf{c_u} = \mathbf{f_1} \times N$$

In this relationship $\mathbf{f_1}$ is a variable factor that varies inversely with increasing plasticity, ranging from 5.5 to 7 for a plasticity index of 10% to 12%, falling asymptotically to between 4 and 4.5 for a plasticity index somewhere above 40% (Stroud and Butler, 1975).

To assess the applicability of the relationship to the tills analysed here, depth plots of laboratory undrained triaxial shear strength were superimposed on results of in-situ Standard Penetration Test 'N' values using graphs in an Excel® spreadsheet. Since the investigation results yielded very few pairs of SPT 'N' values and undrained triaxial shear results, even from adjacent positions within an exploratory hole, the test results for different domains were aggregated across all exploratory holes within that domain. Separate axes were used for each layer and the scale factor manually adjusted to give the best visual fit of the two scatter plots, as presented in Figure 4.25 to Figure 4.27.

The results indicate an empirical relationship of $\mathbf{c_u}$ in the range $3.5N$ to $4N$ for Domains 1 and 4 and $\mathbf{c_u}$ in the range $3N$ to $3.5N$ for Domain 2, although this figure is based on a single laboratory triaxial test result. Generally, the values of the relationship obtained were lower for the range of plasticity measured in the laboratory than the values that would be suggested by the curve derived from the original work by Stroud and Butler (1975).

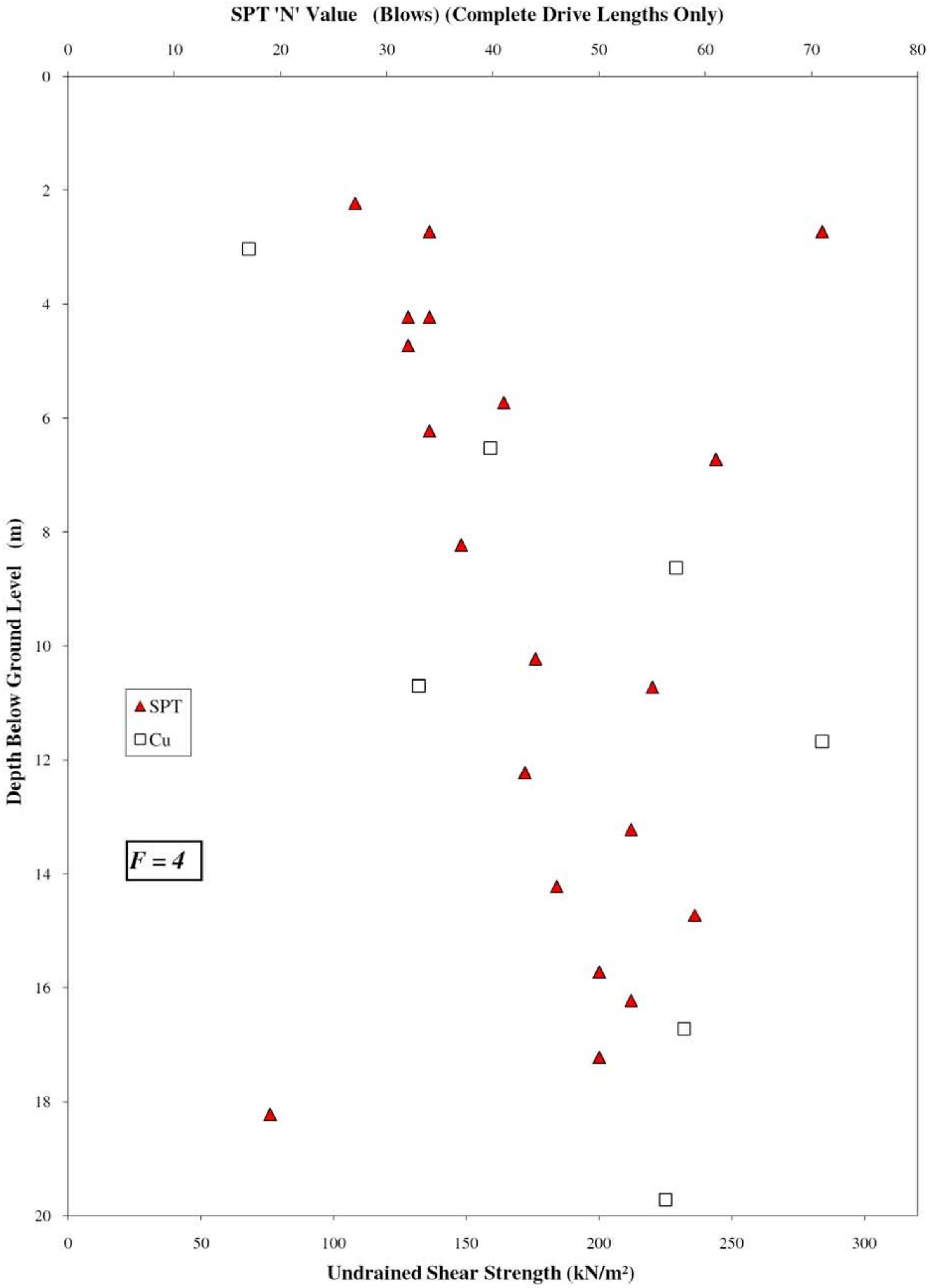


Figure 4.25: Comparison of SPT and undrained shear strength, Domain 11

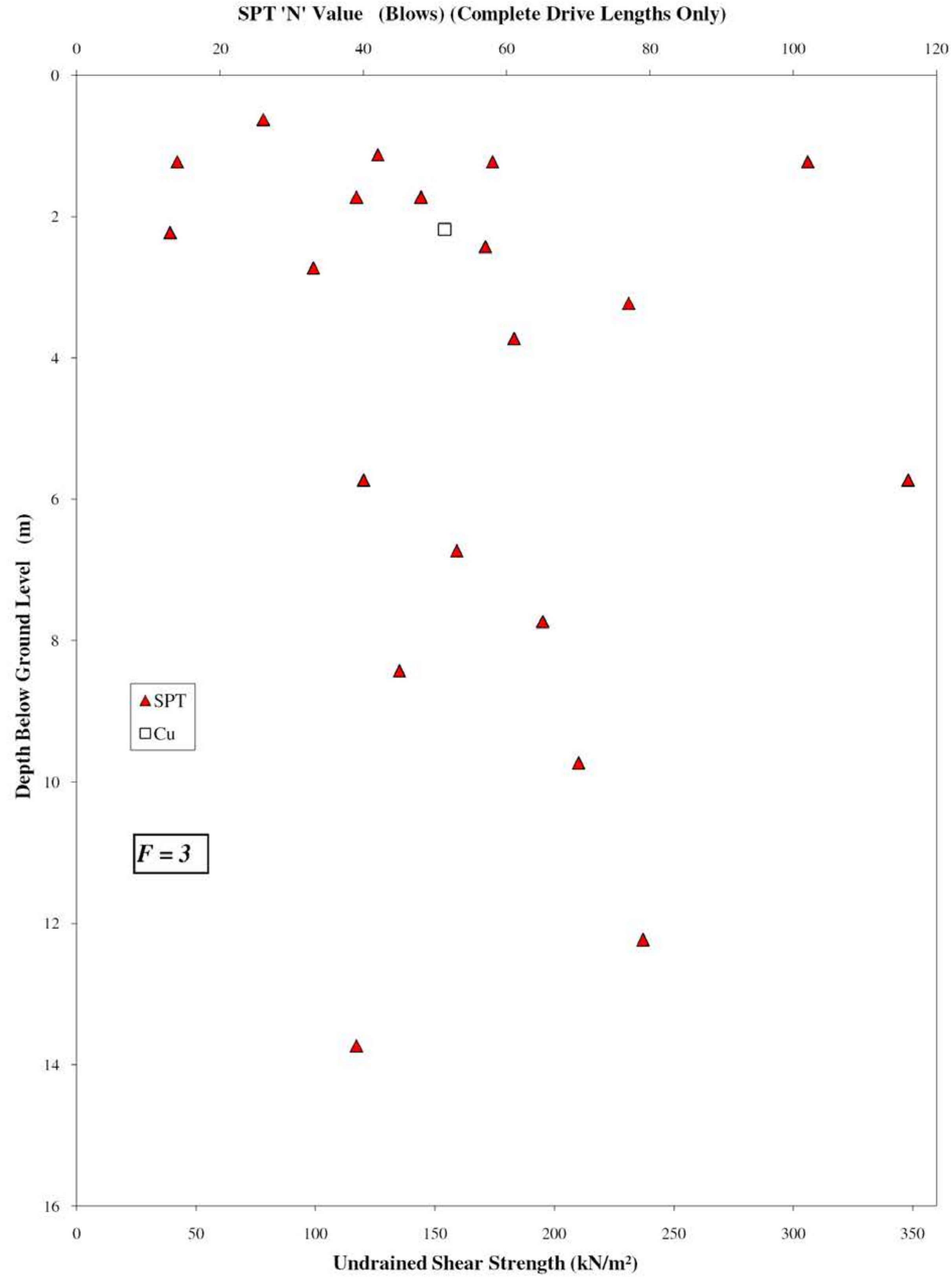


Figure 4.26: Comparison of SPT and undrained shear strength, Domain 12

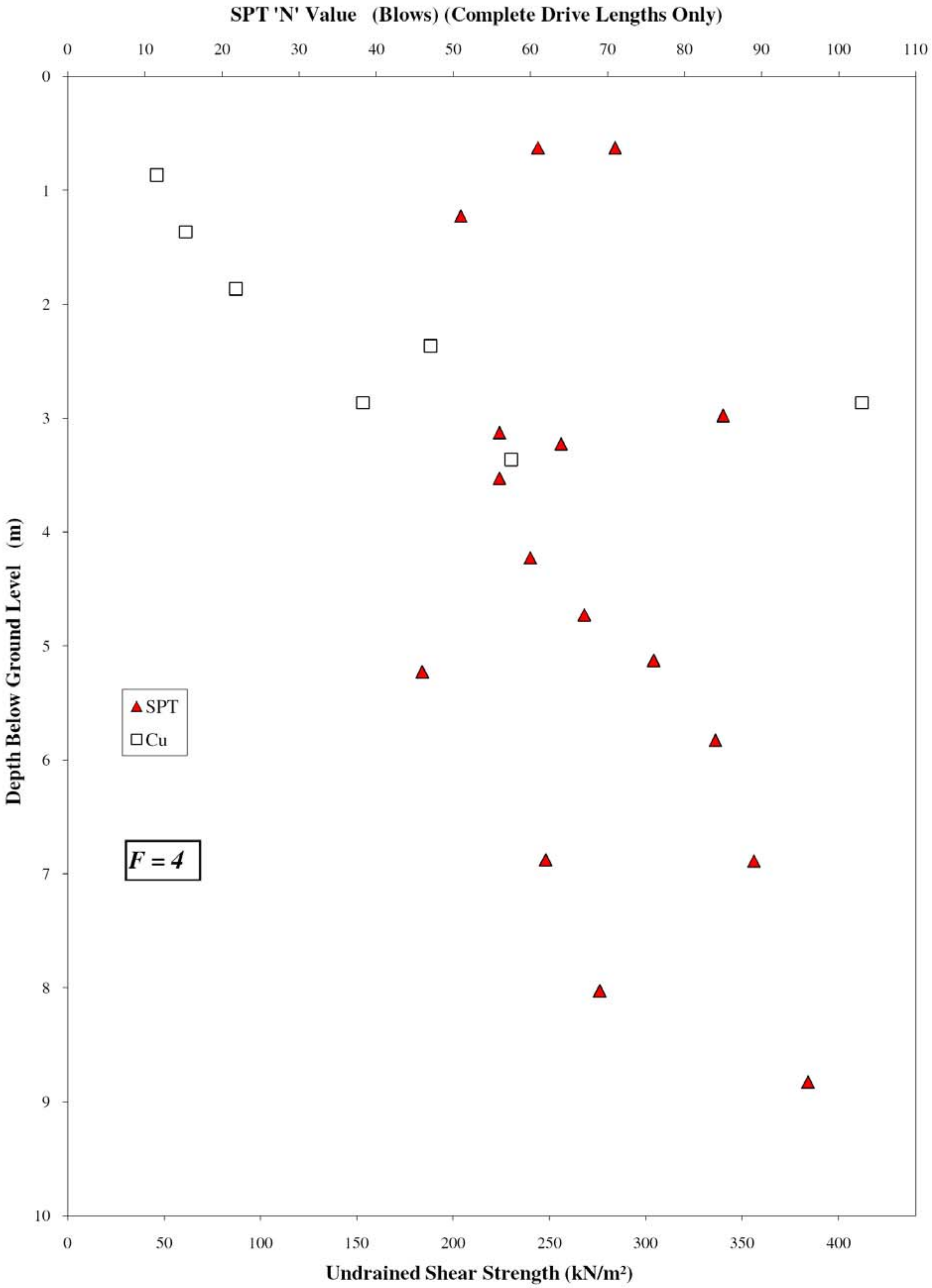


Figure 4.27: Comparison of SPT and undrained shear strength, Domain 14

A further commonly used relationship links the undrained shear strength $\mathbf{c_u}$ with the liquidity index, defined as $\mathbf{LI} = (w - \mathbf{w_L})/\mathbf{I_p}$. Based on work carried out by Schofield and Wroth (1968), the relationship is:

$\mathbf{c_u} = 170^{(-4.6 \times \mathbf{LI})}$.

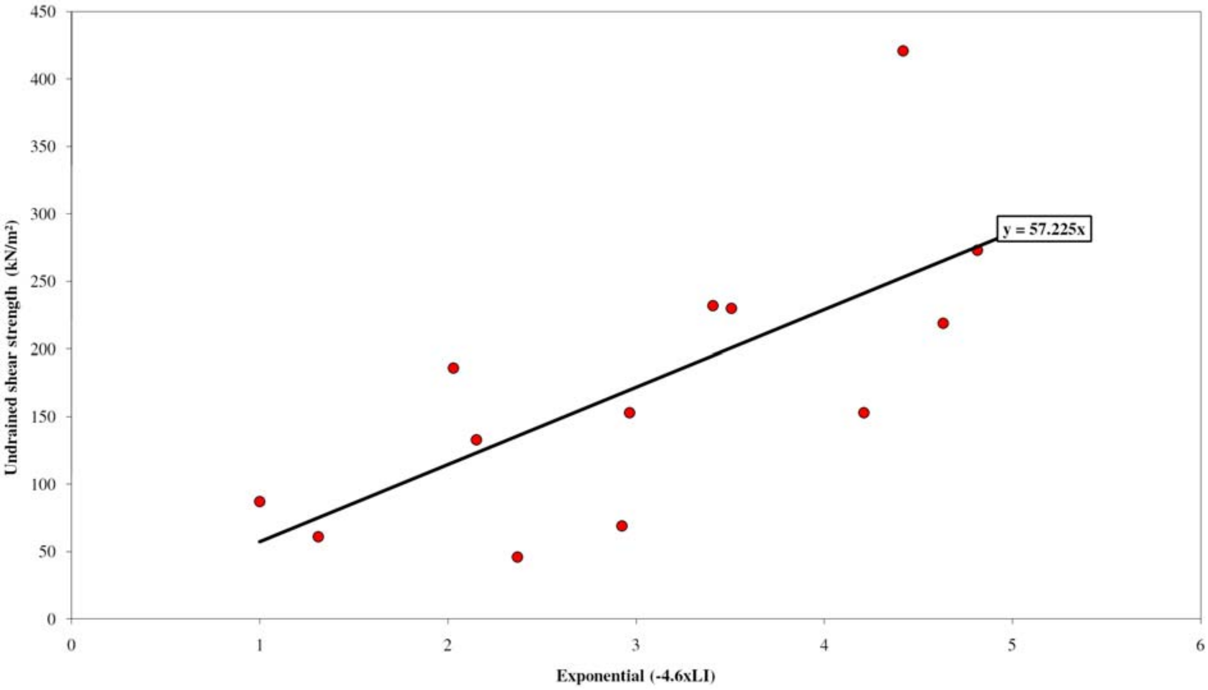


Figure 4.28: Plot of undrained shear strength vs. liquidity index, all Domains.

The plot in Figure 4.28 of undrained shear strength against liquidity index for the data set in the current study gave no clear relationship; ignoring the poor convergence of data points and plotting a linear relationship against Exp(-4.6 **LI**) gives a lower slope of 57 compared to the original slope of 170 (Schofield and Wroth, 1968). Plotting undrained shear strength against natural water content in Figure 4.29 provided a slightly more convincing linear relationship and confirmed the expectation that undrained shear strength is inversely related to the water content of the soil. However, neither of these two plots is considered to add anything to the interpretation of the data and the relationships are not examined further in the research.

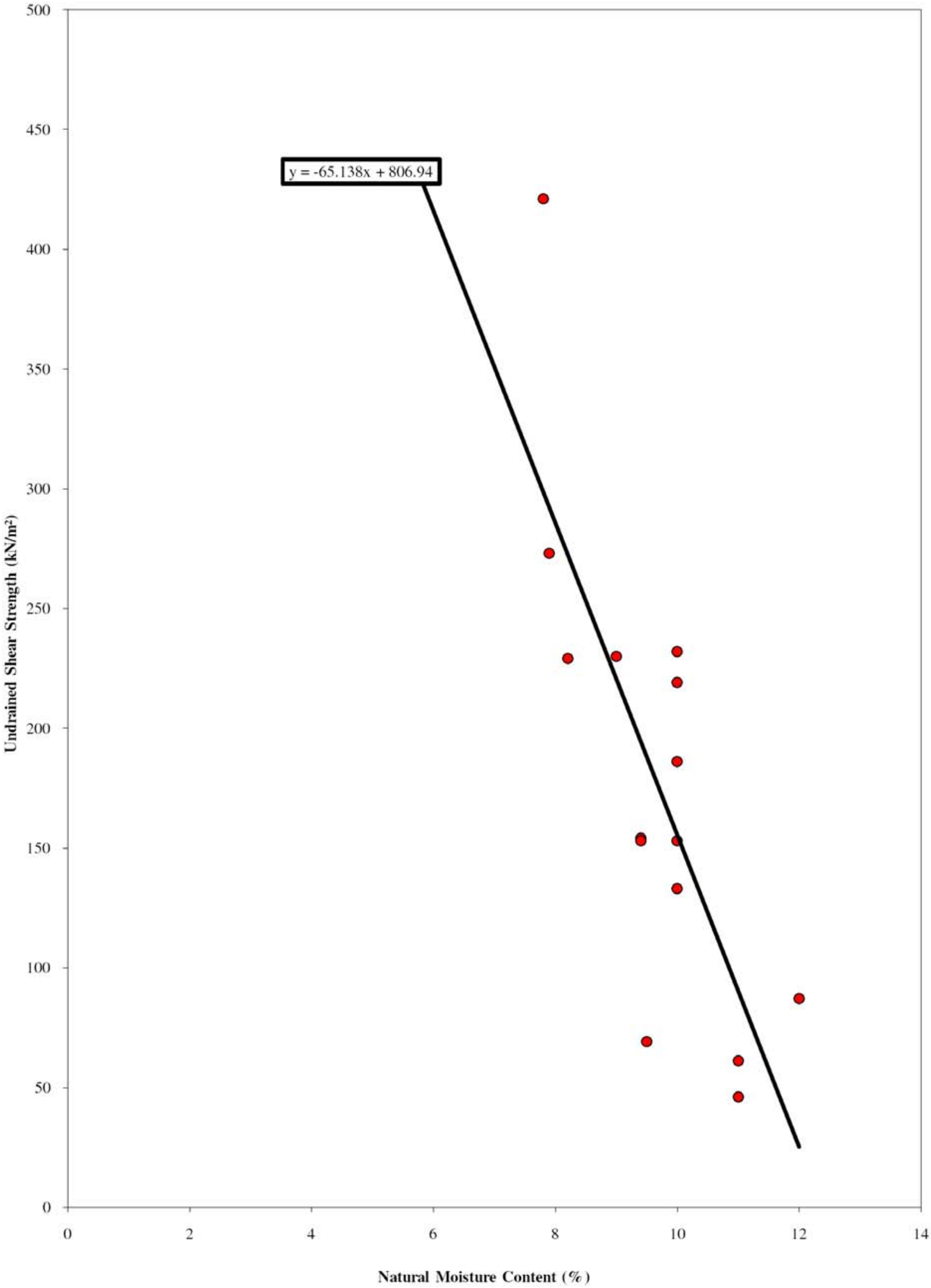


Figure 4.29: Plot of undrained shear strength vs. natural water content, all Domains

In terms of effective stress, the shear strength of a soil is usually interpreted by fitting a line to the Mohr circles of stress obtained during triaxial testing. A specially written computer program using the BASIC programming language was used to analyse the effective stress triaxial test data. The program was based on the algorithm published in a complementary pair of papers by Perry (1994a and b). A least normal squares type of regression calculation is used in fitting a line to the Mohr circles of stress from the results of a series of laboratory triaxial tests. Two regression lines are calculated, with a simple straight-line fit of the type $\tau = \mathbf{c'} + \sigma'_{\mathbf{n}} \tan\phi'$ and a power curve $\tau = A\sigma'^{\mathbf{b}}_{\mathbf{n}}$ of the form suggested by Charles and Watts (1980). The program is used to calculate the regression parameters apparent effective cohesion **c'**, angle of shearing resistance **ϕ'**, the power curve constants **A** and **b**, the sum of square errors from each regression line, the raw residuals and the residuals as a percentage of the maximum shear stress. These residuals were plotted graphically to assess the degree of fit of the calculated lines. The results gave very similar sum of square error values and the raw residual plots were also inconclusive. The plots of residuals normalised by maximum shear stress provided some indication that the curved envelope probably fitted the data somewhat better, as the range above and below the zero difference line was narrower and, in general, the residuals for the curve were less than those for the straight line, as demonstrated by Figure 4.30 to Figure 4.32.

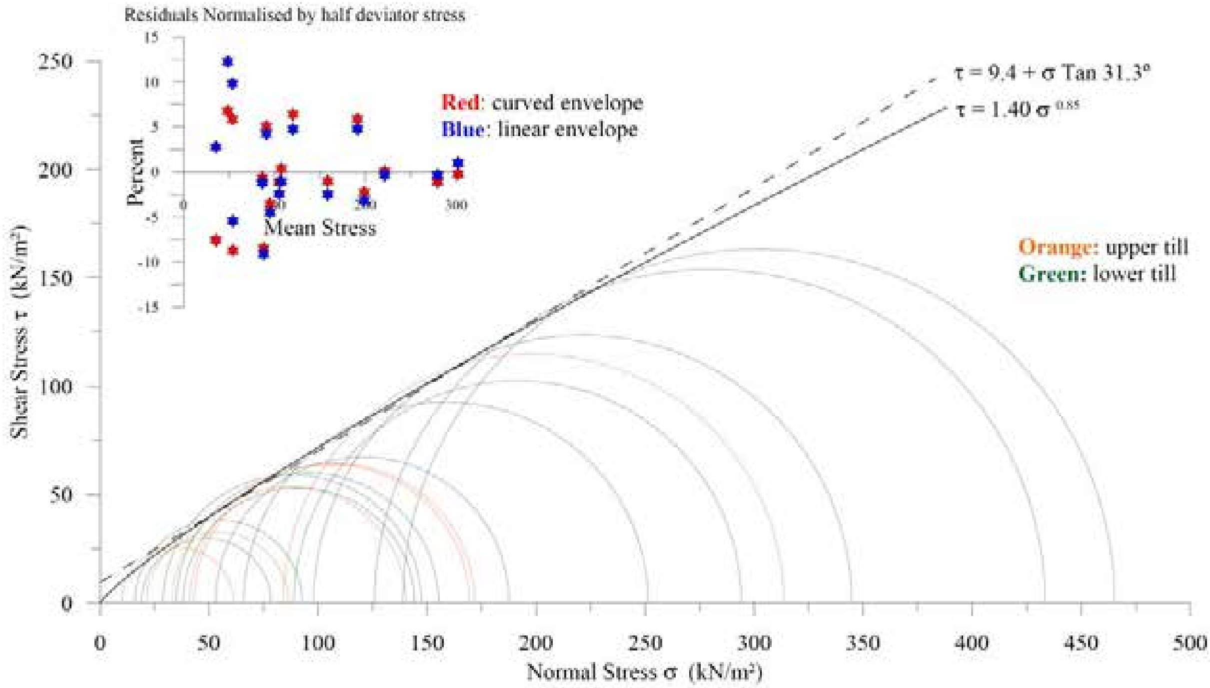


Figure 4.30: Mohr envelopes and normalised residuals for Domain 11

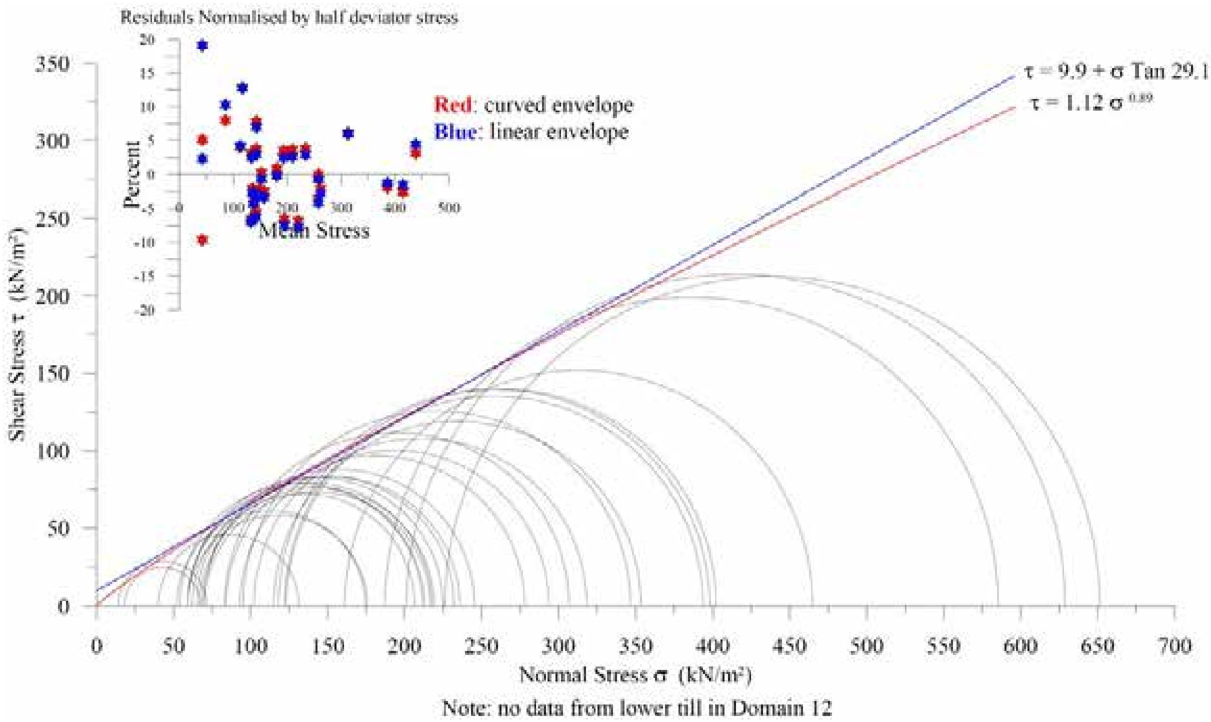


Figure 4.31: Mohr envelopes and normalised residuals for Domain 12

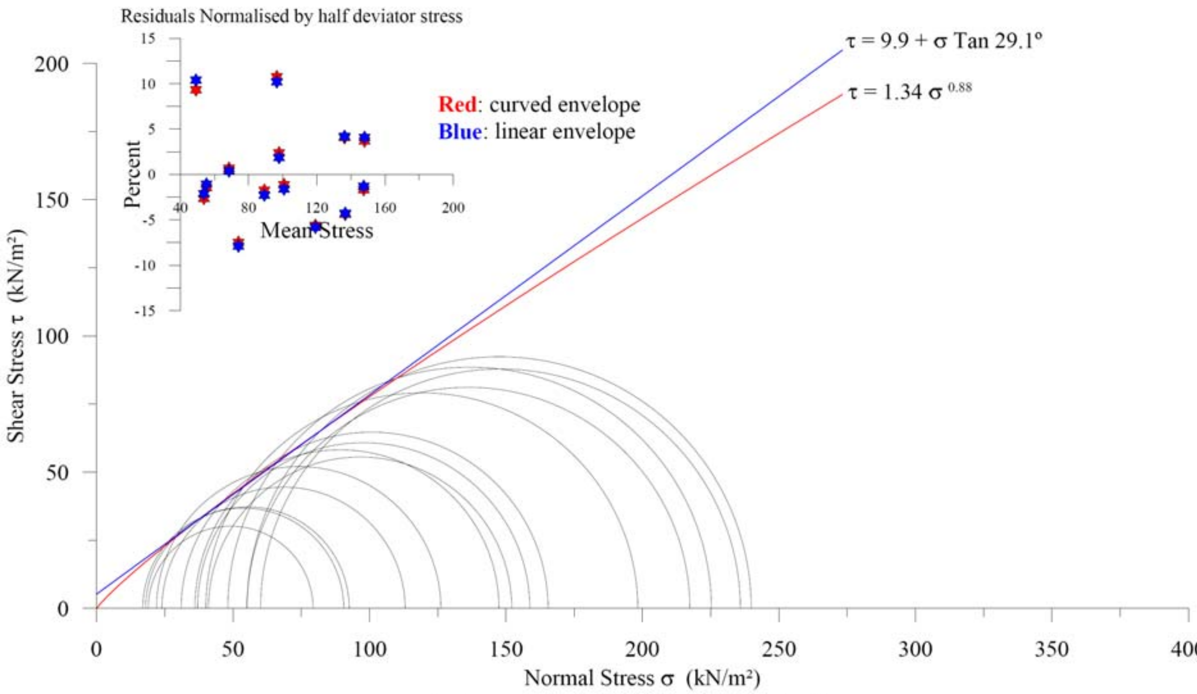


Figure 4.32: Mohr envelopes and normalised residuals for Domain 14

To investigate the possible relationships between shear strength and commonly measured index properties, the results of individual effective stress triaxial tests were also plotted in Figure 4.33 to Figure 4.35 as angle of shearing resistance ϕ' against dry density (γ_d), percentage passing 425μm sieve and against plasticity index (I_p). Maximum stress ratio was used to define failure, as this is stated to be a more consistent method of correlating peak strength against other parameters, for comparing different types of test and for defining failure in multi-stage triaxial tests (Head, 1986). In every case, as the full range of tests were not carried out on each specimen, data for passing 425μm and I_p was taken from the nearest available specimen in the same exploratory hole: where this specimen was further than two metres away vertically the data were ignored and the friction angle was not plotted. The friction angle was plotted as a function of both maximum principal stress ratio and maximum deviator stress: in each case the latter figure corresponded to a failure strain of 18% to 20%. The complete grading curve was derived for four samples from Domain 14 where effective stress triaxial testing was carried out. To assess the effect of increased sand and gravel content on the angle of shearing resistance the triaxial results from the four tests were plotted in Figure 4.36 against the grading fraction.

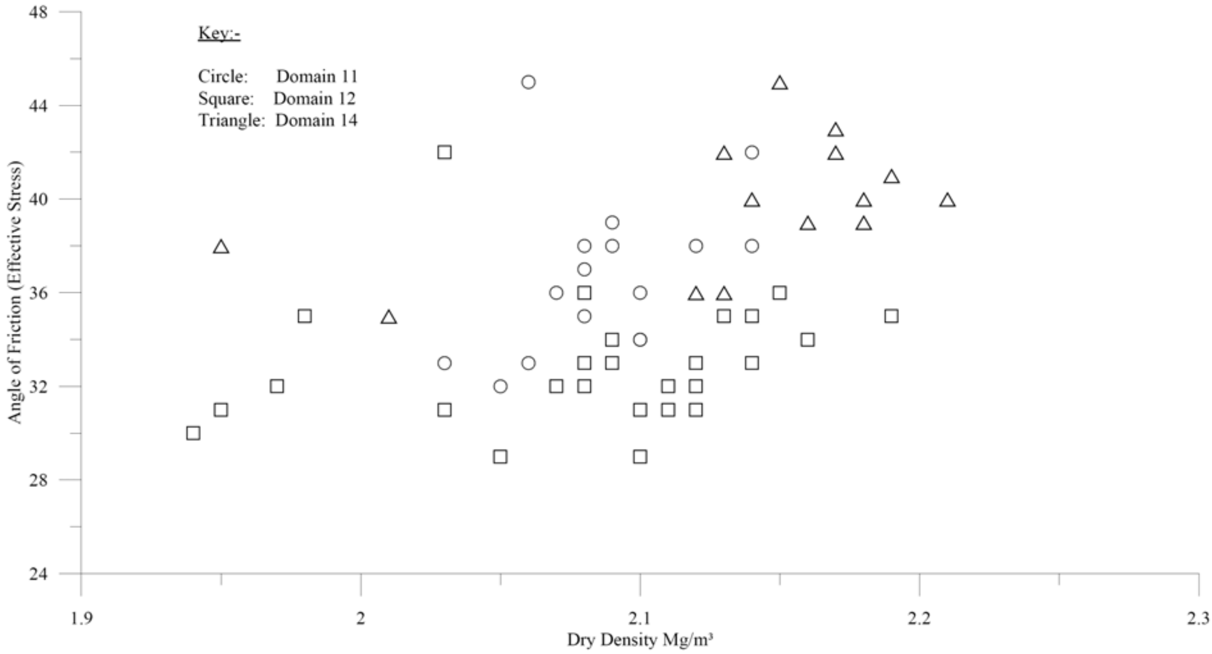


Figure 4.33: Peak friction angle (maximum stress ratio) vs. dry density

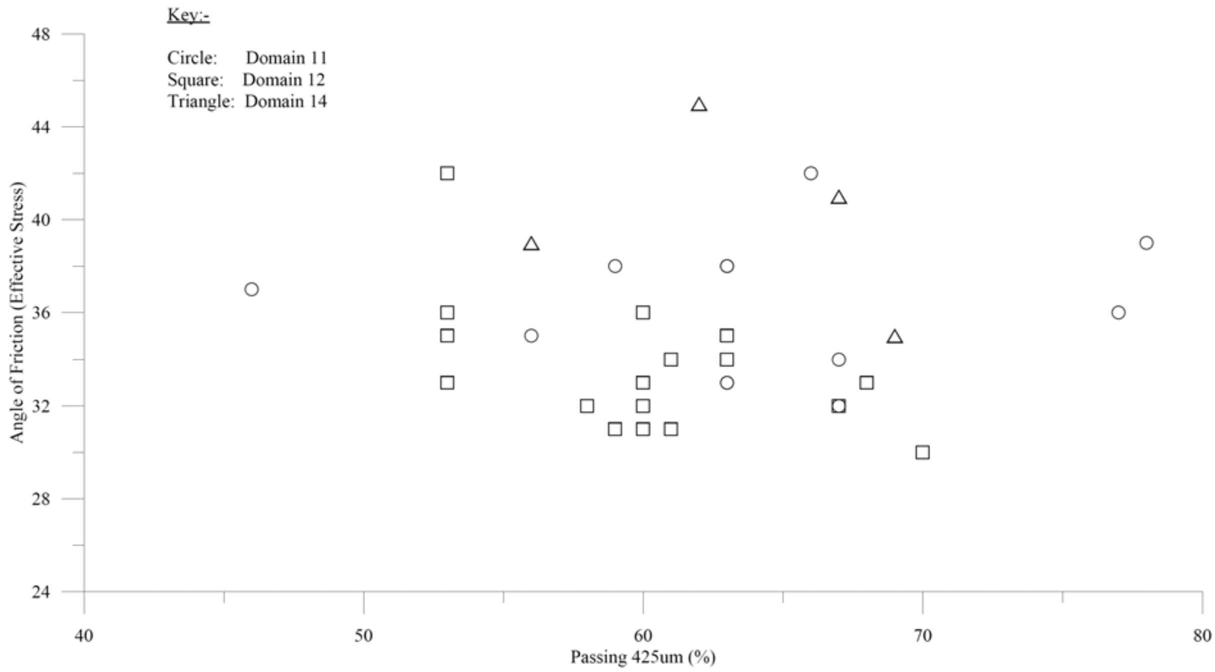


Figure 4.34: Peak friction angle (maximum stress ratio) vs. % passing 425 micron sieve

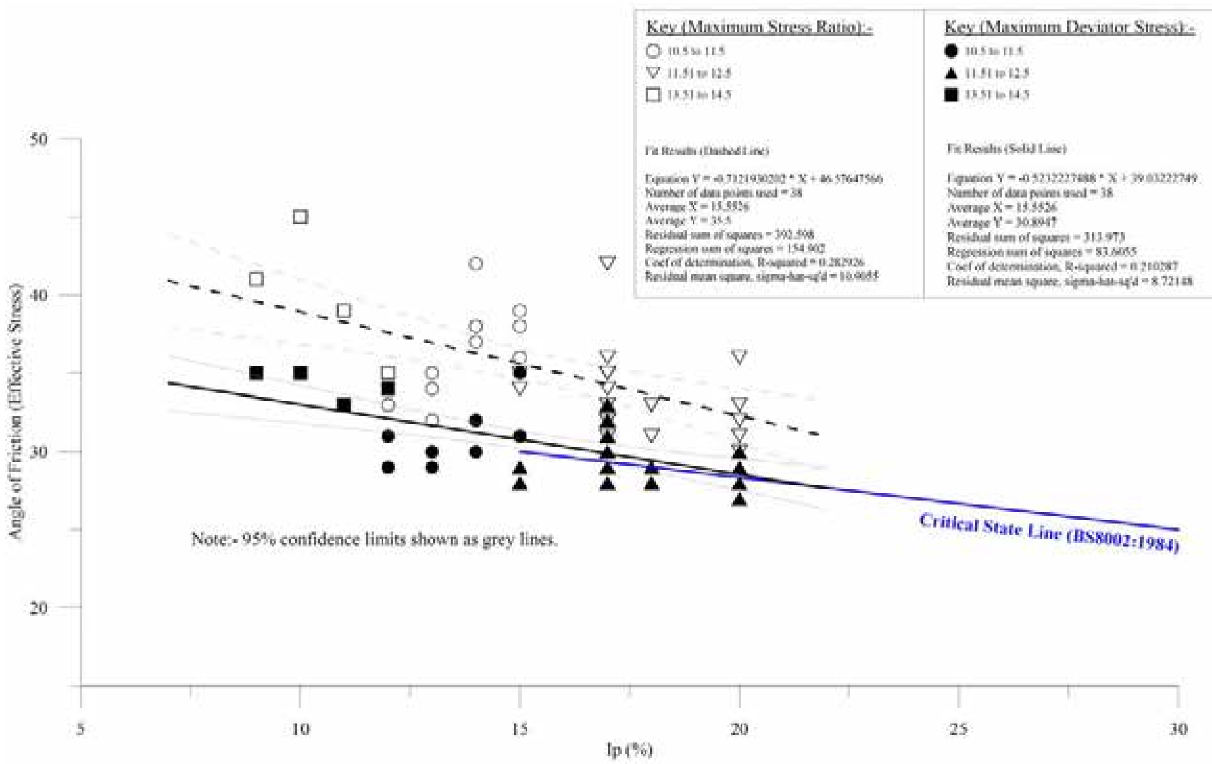


Figure 4.35: Peak friction angle (maximum stress ratio) vs. plasticity index.

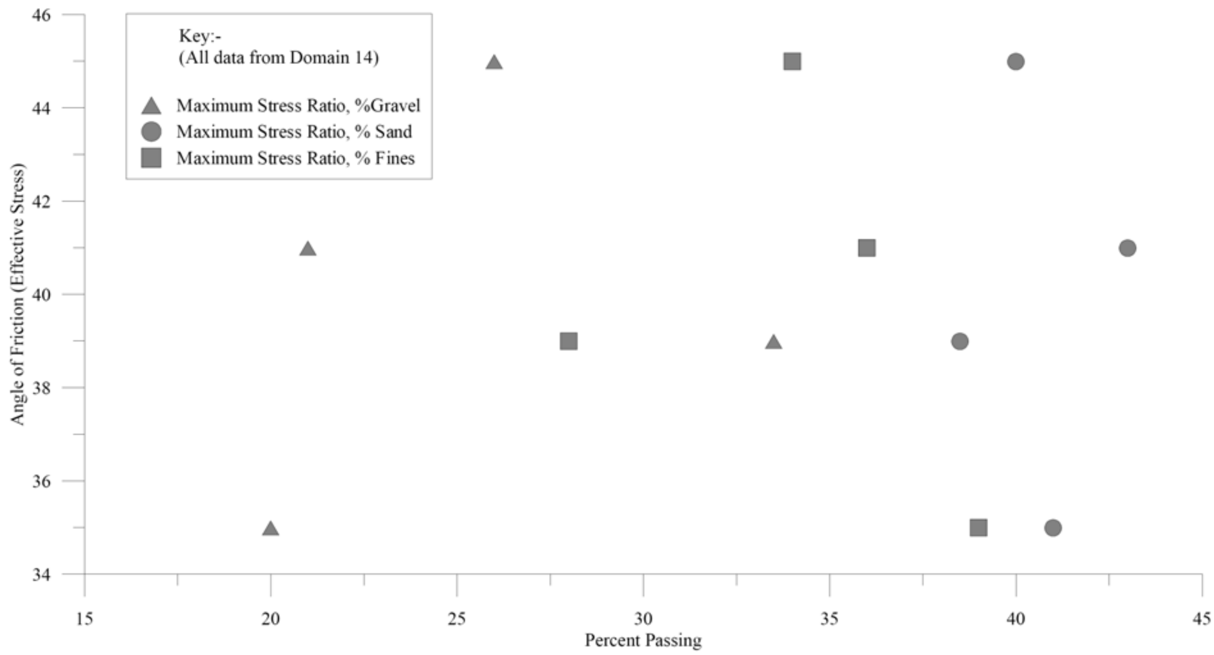


Figure 4.36: Peak friction angle (maximum stress ratio) v grading fractions, Domain 14

For all cases the relationships involving dry density, percent passing 425μm and grading fraction appeared random and the resulting charts added nothing to the overall interpretation of the engineering parameters. However, the relationship for both methods of plotting failure stresses showed a sensible inverse trend of decreasing friction angle with increasing plasticity. The trend line for the maximum deviator stress method lies very close to the ϕ'_{crit} line given in BS8002:1994, indicating that this may represent a state of stress approaching the critical state, as may be expected from the measured strain and some observations of porewater pressure trends from the latter stages of the tests.

4.6. SUMMARY

4.6.1. Results from the Kirkby Stephen site

The results of all methods of 'normality' testing indicate that the majority of parameter data sets do not follow a Gaussian distribution and therefore that, theoretically at least, parametric statistical analysis should not be applied. On a practical level, whilst the comparison of means using the 'Student' t-test seems mostly to give acceptable results in differentiating soils from different domains, there are significant departures that cannot be reconciled with the other geological evidence and are at variance with the results of the non-parametric studies. In addition the 95% confidence interval for the mean does not always encompass the modal value and it is, therefore, open to question as to whether parametric statistical analysis is a philosophically acceptable method for the derivation of a characteristic value for use in design. The 95% confidence interval of the median is seen to be a better indicator of the characteristic value of a parameter as it usually encompasses the modal value.

Results from non-parametric analysis shows that the difference between the upper and lower tills is probably not statistically significant but the difference between all tills from different domains is shown to be significant at the commonly accepted $\alpha = 0.05$ level. This difference is even more significant when bedrock geology is taken into account, as demonstrated by the statistical differences between soils from limestone and sandstone bedrock areas. Therefore, there is statistical evidence that the glacigenic environment and bedrock geology do exert some influence on the engineering properties of till from this site.

The lack of significant difference between the upper and lower tills at this site corroborates the available geological evidence of the upper till being merely representative of a zone of weathering of the lower till rather than a separate till resulting from a different glacigenic period.

The use of classical geostatistics in the analysis of data from a typical civil engineering ground investigation proved to be problematic. This is considered to be due to several factors, including the inherent variability of the soil parameters, the lack of regular exploratory hole spacing and the linear nature of the investigation for the infrastructure project which formed the subject of the original ground investigation, coupled with the constant variation in orientation of the centreline. The resulting semi-variograms were ‘noisy’ and gave no additional information of use in predicting characteristic values. The effort required to prepare the semi-variograms was out of proportion to the resulting benefits and the method is not considered further in the study.

There is no clear relationship between the angle of shearing resistance of the soils and either the corresponding grading fractions or dry density but the angle of shearing resistance is related to the plasticity of the soil and the values obtained broadly confirm the ranges of values given in Table 2 of BS8002 for critical state conditions (BS8002, 1994).

4.6.2. Extension of study into other sites

Having successfully applied a domain based approach to a single site with varying bedrock geology, the next stage was to test further the hypothesis that the major depositional controls have an effect on the engineering properties of till. To this end it was decided to select some further sites around Cumbria to enable a wider comparison of the soil properties of tills from different geological and glacigenic environments. A similar criterion was used to select each additional site, with the additional objective to locate information from sites in other glacigenic and geological control areas. The number of sites with suitably detailed investigations was limited but produced six further individual locations giving the required spread around the area of interest. The sites chosen were at Wythop Wood, near Bassenthwaite; Sowerby Wood, to the north of Barrow-in-Furness; a site between Dalton-in-Furness and Askam-in-Furness; High Newton between Newby Bridge and Grange-over-Sands; Distington, north east of Whitehaven; and Cleator Moor in West Cumbria. Most of the investigations were associated with major highway improvements, with the exception of the site at Sowerby Wood, which was an industrial development site, and Cleator Moor, which was an investigation for the remediation of a cluster of mine shafts. The locations are discussed in more detail in Chapter 5.

Chapter 5. DEVELOPMENT OF A DOMAIN MODEL

5.1. SITE SELECTION AND DATA HANDLING FOR ADDITIONAL STUDY

5.1.1. Selection of sites

The results of the statistical and engineering analysis of the large data set from the Kirkby Stephen site suggests that there is evidence for local and regional effects on the measured parameters of the tills at the site. To investigate these potential differences over a wider area several more sites were selected from the available archive material. The same criteria were used in the selection process as were used in the initial choice of the Kirkby Stephen site. Geotechnical information from areas within the central Lake District is scarce, as the infrastructure is well established, and improvements are difficult to carry out because of environmental and geographic constraints, therefore the process concentrated on the larger investigations in the list, where significant numbers of exploratory holes were completed, and where samples taken on site were subject to detailed laboratory examination for a wide range of soil parameters. A further refinement to the selection process was to search for sites in different geological and geographical areas to extend the study into a greater range of domains. Sites at Bassenthwaite, Barrow, Askam, Lindale, Whitehaven and Cleator Moor as shown in Figure 5.1 were selected. The selected sites are discussed in more detail in Section 5.2.

Having made the selection of the sites, the available data was prepared in a similar fashion to the first data set from the Kirkby Stephen site by first inputting all the test results into the database. The same two digit domain flag system and soil type reference markers were used for each site.

5.1.2. Data handling

The available data were prepared in a similar fashion to the data set from the Kirkby Stephen site by first inputting all the test results into the database. Once again, where available, AGS data were used, but older data had to be input by hand. The individual laboratory test results from the investigations were then ascribed to a domain and the stratigraphic sub-division within a site, using the original ground investigation exploratory hole log descriptions and visual examination of data plots. At this point the volume of data and the complexity of the required analytical calculations rendered the use of the Microsoft Access® software rather cumbersome, and the data were exported into a Microsoft Excel® spreadsheet to permit easier transfer to other applications such as Minitab®, Grapher® and similar specialist data handling programs.

5.1.3. Preliminary data analysis

The data were carefully checked for internal agreement on a site by site basis. This was carried out by proof reading lines of input data, by calculating maximum and minimum values of discrete soil properties as input into the database and by plotting graphs of data to highlight potential erroneous values in a series. As before, the occasional misattributions of soil type that had occurred in the original reports were corrected as the preliminary analysis progressed, prior to undertaking more detailed analysis. As noted in Section 5.2.5 this was particularly applicable to the site at High and Low Newton, where the results of index testing suggested that some material described as silt was more properly a clay soil.

Figure 5.1: Locations of study sites

Graphical plots were prepared, again on a site-by-site basis, for the same range of soil parameters as in the case of the Kirkby Stephen site. The methodology used was the same, and as before plots were produced for Atterberg limits, water content relationships with depth, grading envelopes, ternary grading charts, box and whisker plots and data histograms. The complete charts are included in Appendix C.

5.1.4. Statistical Analysis

The same set of parametric and non-parametric techniques was applied to the parameter populations drawn from results for each soil type within each domain. To recap, the means were compared using the Student t-test at a confidence level of $\alpha = 0.05$, cumulative density functions were compared using a two-tailed Kolmogorov – Smirnov test programmed into an Excel® spreadsheet and medians were compared using both Moods Median Test and the Kruskal – Wallis Test. Means and confidence intervals were estimated from the data sets using the One Sample T method, as the population variances are unknown: medians and confidence intervals were calculated using the One Sample Sign method, with non-linear interpolation.

The indicator parameters used in the statistical analysis were the index tests including liquid and plastic limit, plasticity index, bulk and dry density, and grading fractions compared at the passing 63μm (fine fraction), 63μm to 2mm (sand fraction) and 2mm to 60mm (gravel fraction) sieve sizes.

Having compared soils from different stratigraphies within each domain, the means and medians of the various parameters were calculated for the aggregated data sets within a domain, and the resulting statistical samples compared between domains, or where only one domain was recorded at a site, between sites.

The use of geostatistics was discontinued at this stage, as the method proved somewhat intractable for linear types of site involved in the study, and results from the Kirkby Stephen site analysis proved inconclusive.

The calculated **p**-values for all statistical tests are summarised in Appendix B in the following tables: Table A1 for 'normality' testing, Table A2 for comparisons of tills within domains and Table A3 for comparison of combined results between domains. The full calculations are included in Appendix D.

5.2. RESULTS FROM WITHIN INDIVIDUAL SITES

5.2.1. Site 1: Kirkby Stephen

Site Description

This site is discussed in the previous chapter. The domain references were amended to the new double-digit system described above.

Results

The various data analyses carried out for the Kirkby Stephen study site, and the results obtained, are discussed fully in Chapter 4.

5.2.2. Site 2: Wythop Wood, Bassenthwaite

Site Description

Rather than a single investigation, this is a composite of several stages of an investigation at the site of an active historical landslide on the north facing slopes of Wythop Fell on the south shores of Bassenthwaite Lake: a general view of the landscape of the area is shown in Figure 5.2. The site lies within the borders of Sheet 23, Cockermouth, of the BGS 1:50,000 scale series of geological maps, published as Solid and Solid with Drift in 1997. The site geology is characterized by superficial soils interpreted as post-glacial hillwash or supraglacial till overlying Devensian lodgement till, with solid geology comprising folded, faulted and cleaved laminated and thinly bedded mudstones and siltstones of the Kirkstile Formation, part of the Skiddaw Group. A geological map is included in Figure 5.3.

The lodgement till is ascribed to the Main Glaciation, occurring between the Early Scottish and Scottish Re-advance. During this Main Glaciation the thick ice sheet that formed over the central Lake District flowed anticlockwise across the Solway Plain, and merged with the Irish Sea ice sheet towards the Cumbrian coast. At the Wythop Wood site the lodgement till was deposited beneath a valley glacier which flowed generally north east along what is now Bassenthwaite Lake in the Derwent valley, before merging with the main ice sheet near the village of Sunderland. (Eastwood et al., 1968)

The initial investigations were carried out as part of a scheme to improve the A66 Trunk Road linking Workington with the M6 at Penrith. The works, carried out in the 1970's, included dualling the road over the length at Wythop Wood by upgrading the existing single carriageway of the old A66 to create the westbound carriageway and constructing a new eastbound carriageway along the track bed of the abandoned Penrith, Keswick and Cockermouth railway which was in cutting down slope from the old road at this location. The existing carriageway is benched into the lower slopes of Wythop Fell and some widening of the former railway cutting was required to accommodate the width of the new eastbound carriageway. Sometime after the completion of the scheme ongoing maintenance problems at the site led to the commissioning of supplementary investigations carried out over a limited section of road to ascertain the causes of substantial ground movements at the site, and to enable the design of suitable remedial options. A total of twenty-eight exploratory holes were drilled between 1970 and 1992, with a range of index testing, grading, and effective and total triaxial stress testing.

Figure 5.2: View across Bassenthwaite Lake to Wythop Wood

Note steeply sloping wooded area overlying hillwash material below the outcropping rock crags, and the gentler slopes of till in the right foreground. The slopes of ‘Catbells’ above the town of Keswick is visible to the left of the view.

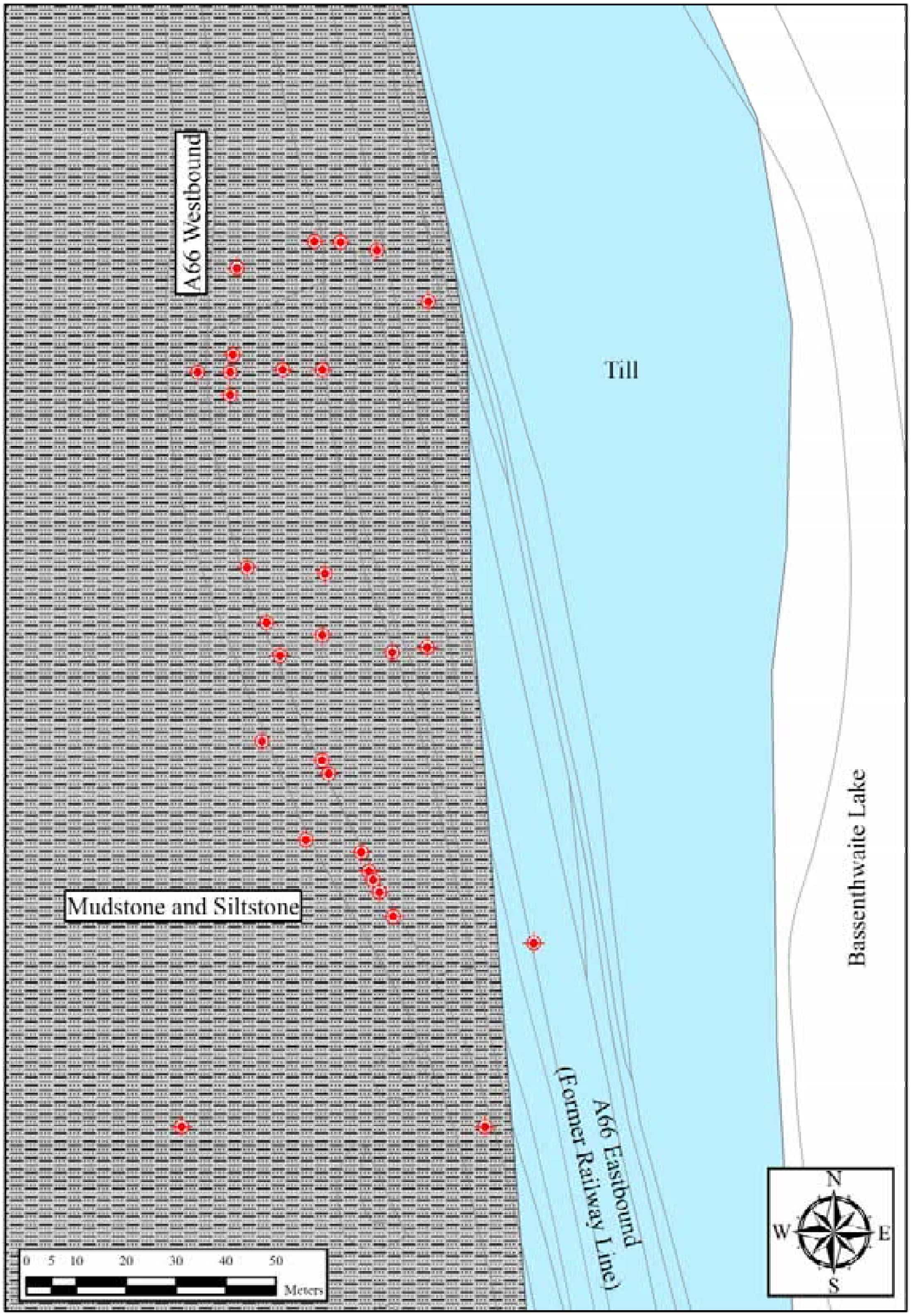


Figure 5.3: Site layout and geology, Wythop Wood

Although drift is shown on the geological map as thin or absent over much of the area, up to eleven metres of drift were encountered in one borehole, and nowhere was it found to be less than four metres in thickness. The soil description from the investigations indicated firm or stiff brown silty sandy clay with gravel overlying firm or stiff, blue-grey or grey silty sandy clay with gravel. No detailed lithological descriptions of the coarse fraction were given in the earlier investigations carried out in 1970. The descriptions from the later investigations were more detailed, but the recording of lithology was not carried out consistently, and was sometimes absent. Where it was recorded, the lithology of the material interpreted as hillwash contained angular mudstone fragments, whilst that interpreted as till contained quartz, in addition to being sub-rounded.

The site contains only one geological and topographical domain, referenced Domain 21, but was included in the overall data set to investigate the potential differences between properties of post-glacial soils and lodgement till which are often hard to distinguish in the field, and to include a site located on metamorphosed mudstones in the mountainous central Lake District. Thus for the current study, the comparison within Domain 21 is between the post-glacial or supraglacial soil and the underlying till.

Results from an interesting pair of ring shear tests are also available from the site, enabling some comparison of shear strength test results on specimens with different maximum particle sizes.

Results

The initial partition of data into the two soil types was made on the basis of colour and gravel shape, with the brown clay with angular or tabular gravel being interpreted as post-glacial hillwash, and the blue grey or grey clay with sub-rounded gravel including quartz interpreted as subglacial till. The original attributions were checked at the preliminary data analysis stage prior to the completion of the statistical tests.

Examination of the plotted histograms with various class widths for each soil domain, and comparison with the corresponding probability functions and ‘normality’ tests for index results indicates that most but not all the distributions are close enough to Gaussian to permit the comfortable use of conventional parametric statistical studies. Significantly, the subglacial till fails the test for Gaussian distribution in more parameters than does the hillwash. In addition, the *a-priori* requirement for equal variance in each statistical sample is not fulfilled for the separate data sets for the two interpreted soil types. However, parametric comparisons between soil types were made using the “Student” t-test for means of the data parameters listed in the previous section: only one horizon of lodgement till was interpreted, so the comparison was made between the subglacial till and the hillwash.

The box plots of index parameters confirm that the liquid limit and plasticity of the hillwash are higher than those for the subglacial till. This is somewhat unexpected, as the gravel content is also higher, with a corresponding reduction in the overall fines content. The bulk and dry densities of the till are generally the higher of the two soils.

The results of the Kolmogorov – Smirnov analysis indicate that there is a statistically significant difference at the $\alpha = 0.05$ level between the hillwash and till for every index parameter measured, with the exception of natural water content and dry density. The grading fractions were also statistically different overall, with significant differences in the percentage of gravel and fine fractions, but no statistical difference in the sand fraction. For the majority of parameters where a difference was interpreted, this existed at the $\alpha = 0.01$ level as well as the $\alpha = 0.05$ level.

The ‘Student’ t-test, Kruskal Wallis and Moods Median Test all indicated a similar picture, with a **p**-value for difference in all index parameters of 0.01 or less, again with the exception of natural water content and sand grading fraction. However, in this case there was a difference in means at the $\alpha = 0.05$ level in the dry density in addition to the bulk density in all three methods, and the Moods Median Test suggested a difference in the natural water content.

This confirms the expected difference inferred between the two soils at the site and serves to demonstrate that the techniques adopted are capable of distinguishing between soils on the basis of statistical analysis.

5.2.3. Site 3: Sowerby Wood, Barrow-in-Furness

Site Description

This is a rather more compact investigation carried out for a proposed industrial plant situated on rounded, gently sloping land to the north of Barrow-in-Furness as shown typically in Figure 5.4. The site lies within the borders of BGS Sheet 48, Ulverston, of the 1:50,000 scale series of geological maps, published as Solid and Solid with Drift editions in 1997. The geology at the site consists of Devensian till overlying St. Bees Sandstone, part of the Sherwood Sandstone Group of early Triassic age. This site lies near the confluence of the Lake District and Irish Sea ice sheets, in an area where the Duddon and Leven ice streams joined the southward flowing Irish Sea ice sheet, having passed southwards across the Coniston and Furness Fells (Johnson et al., 2001). Early geological memoirs interpret two or three discrete glacial periods, separated by interbedded sand layers indicating outwash material laid down between (Mackintosh, 1869; Kendall, 1900; Grace and Smith, 1922). More recent studies, however, seem to indicate that these sand layers are impersistent, and confined to hollows in the bedrock surface, and it is suggested that there is no evidence for multiple glaciations, especially since the upper and lower tills cannot be distinguished where the sand layers are not present (Rose and Dunham, 1977; Johnson et al., 2001).

Figure 5.4: Typical glacial landform at Sowerby Wood

The investigation comprised a total of thirty four exploratory holes, including cable percussion boreholes and machine excavated trial pits. Occasional discontinuous sand lenses were encountered during the site work, but not in all exploratory holes and even then generally only in the upper horizons: sometimes the sand lenses attained a thickness in excess of four metres. Overall the thickness of superficial deposits was of the order of twenty metres or so, overlying weak or very weak medium grained sandstone. The layout of the investigation is shown in Figure 5.5.

The till was subdivided into upper and lower layers by consideration of the elevation relative to Ordnance Datum, the position relative to any sand bands within each exploratory hole and by colour and consistency: no lithological detail was included in the descriptions of the coarse fraction. Laboratory testing included index properties, effective and total stress triaxial testing.

Although there is again only one geological and topographical domain, referenced Domain 31, this site was considered an appropriate addition to investigate till properties over a different sandstone unit to that at Kirkby Stephen, and to test the theory that two distinct tills may be present. The site also provides a logical pair to extend the comparison available from the adjacent Site 4 between Dalton-in-Furness and Askam, described in Section 5.2.4.

Results

The plotted histograms and probability functions together with the results of ‘normality’ testing indicate that none of the distributions for index tests are Gaussian in form and, therefore, parametric statistical analysis cannot be considered appropriate. Nevertheless, statistical tests were carried out using the “Student” t-test to compare results against those obtained using non-parametric statistics.

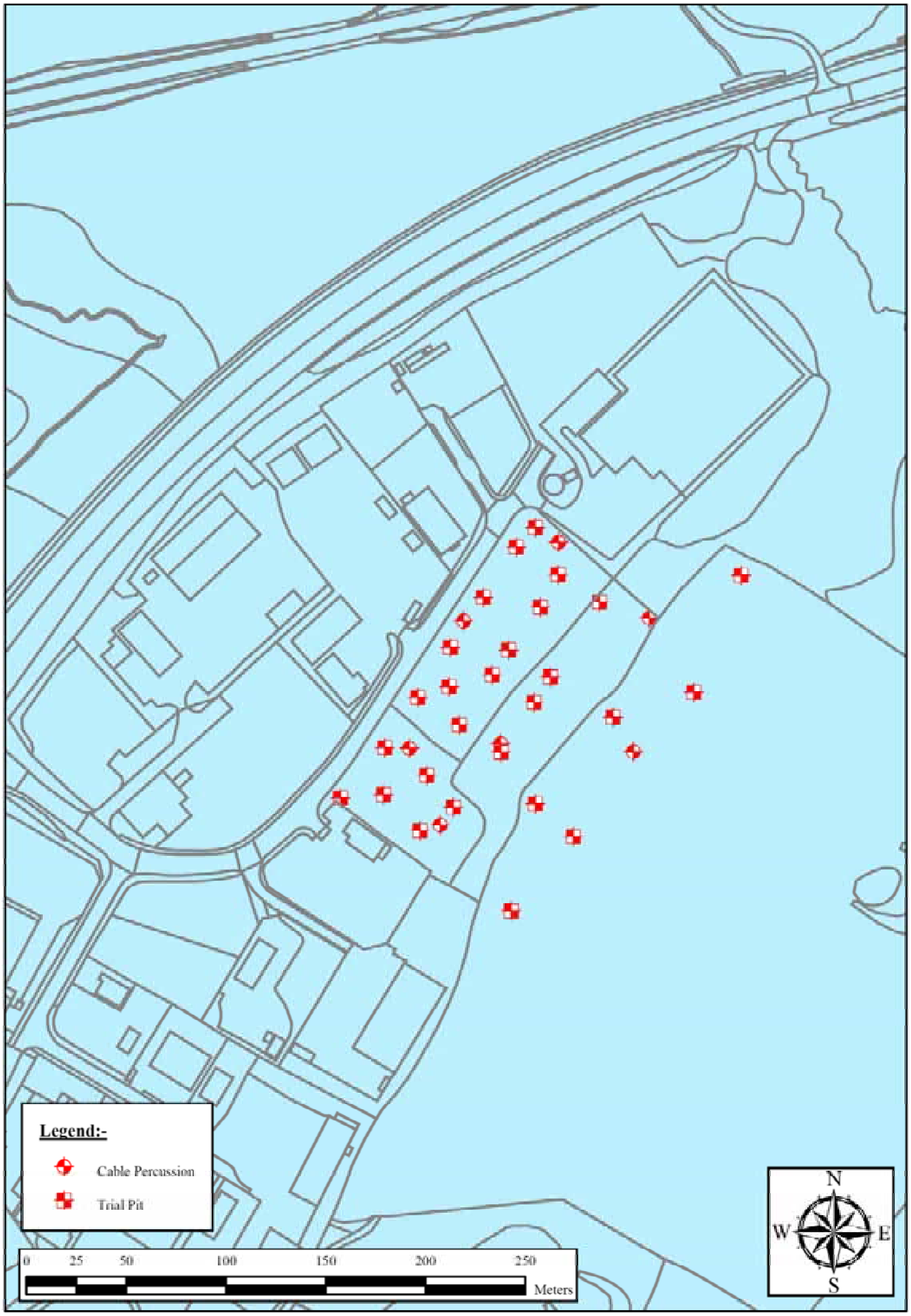


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Figure 5.5: Disposition of exploratory holes, Sowerby Wood

The majority of statistical tests indicate no significant difference at the $\alpha = 0.05$ level between the upper and lower till for the Atterberg limits and principal grading fractions, although a difference at $\alpha = 0.1$ was observed for plastic limit using parametric statistics ($\alpha = 0.086$) and for liquid limit using Mood's Median Test ($\alpha = 0.060$) together with a slight exceedence of the test statistic over one counting interval in the Kolmogorov – Smirnov Test. However, the bulk and dry density of the upper and lower tills were found to be different at the $\alpha = 0.05$ level. The mean and median of both densities for the lower till are higher than for the upper till: the corresponding mean and median natural water content is lower in the lower till.

Taking into consideration the lack of any identified continuous sand layer and the results of the statistical analysis, the upper and lower till can be explained as a single unit with similar index properties throughout; natural consolidation is believed to account for the higher densities in the lower soil.

5.2.4. Site 4: Dalton-in-Furness to Askam Bypass

Site Description

A total of eighty-four exploratory holes were bored in two phases between 1992 and 1994 for an improvement to the A595 coast road between Dalton-in-Furness and Askam-in-Furness, to the north of Barrow-in-Furness. The site is on the steep west facing hillside above the coastal plain of the Duddon estuary as shown in Figure 5.6 and Figure 5.7. The glacial history is similar to that described above for Site 3 at Sowerby Wood, as the sites are only 2.7 kilometres apart: Askam-in-Furness is located near to the confluence of the Duddon ice stream and the main Irish Sea ice sheet (Johnson et al., 2001).

Figure 5.6: General view of Askam-in-Furness

The glacial landforms through which the study area passes are seen in the foreground and to the right of the view. Greenscoe Quarry, a working in an intruded volcanic neck, is just visible on the skyline at the left. The chimney in the centre of view is the Askam brickworks.

The total length of the scheme is 3km passing across superficial geology of till overlying solid geology of Carboniferous Limestone down-faulted into contact with Skiddaw Slates of Ordovician age and a range of intrusive volcanic rocks, mainly andesites and tuffs, associated with the nearby Greenscoe volcanic neck. The deposits in each of three domains were divided vertically into upper and lower tills using the soil descriptions from original investigation exploratory hole logs: no lithological details of the coarse fraction were included in the soil descriptions. A full range of index and strength testing was carried out in the laboratory.

Figure 5.7: View from Askam-in-Furness across the coastal plain of the Duddon Estuary

Contrasting topography of the glacial landform comprising till in the near foreground, with Flandrian marine deposits forming the flat low lying coastal plain. The town of Millom is situated on the other side of the estuary, with Black Combe beyond.

Three distinct domains are identified at the site, based on the geology and topographical relief. Commencing at the southern end of the area of interest, Domain 41 lies at an elevation generally above 85m A.O.D. over solid geology consisting of alternating beds of conglomerate, sandstone and shale, with a few subordinate gypsum beds. These are known collectively as the Dalton Beds, part of the Viséan basement beds of the Carboniferous. Domain 42 lies over Ashgill Series rocks comprising calcareous mudstone, limestone and rhyolite of the High Haume Mudstone Group of Ordovician age. These are metamorphosed by proximity to the Greenscoe plug, a volcanic neck intrusion of agglomerate, fluidised tuffs, andesites and tuffaceous breccias. The elevation of this central portion of the site is between 85m A.O.D and 55m A.O.D. Domain 43 lies below 55m A.O.D. on Ordovician Skiddaw Slates, a series of black pyritic marine mudstones and siltstones, part of the Arenig and Llanvirn Series. The mudstones of Domains 42 and 43 are generally cleaved, and in the case of the Skiddaw Slates, crushed (Rose and Dunham, 1977; Johnson et al., 2001). Solid and drift geological maps showing the domains are included in Figure 5.8 and Figure 5.9.

Results

The data set for Domain 42 was too small to allow safe application of statistical analysis: there were also insufficient grading test data in Domain 41. The remaining data from the upper and lower tills within Domains 41 and 43 passed the 'normality' tests at the $\alpha = 0.05$ level with the exception of natural water content and bulk density (Domains 41 and 43), dry density (Domain 41) and percentage passing the 63 micron sieve (Domain 43).

There is no statistical evidence for any difference in index properties or density between the upper and lower tills in Domain 41 using either parametric or non-parametric methods: the lack of sufficient data in Domain 41 precluded comparison of the grading fractions. The results of the Kolmogorov – Smirnov tests indicated that the Null Hypothesis could not be rejected at the α = 0.05 confidence level for the index properties of the upper and lower tills within Domain 43 and, therefore, that statistically there is no evidence for a difference between the upper and lower tills within a single domain. However, the "Student" t-test and Kruskal Wallis test indicated a difference at the $\alpha = 0.05$ level for plastic limit, and Mood's Median Test for liquid and plastic limit, with a difference at the $\alpha = 0.1$ level for plasticity index. No differences were noted for principal grading fractions or density. Therefore it is concluded that there is no overall significant difference in the properties of the upper and lower tills.

Comparison of the combined results of upper and lower tills between Domain 41 and Domain 43 indicate that on balance there is a difference in index properties, grading fractions and bulk density at the $\alpha = 0.05$ level and, therefore, that there is a statistically significant difference between tills from different domains within the site area, on the basis of index properties measured in the laboratory. The results indicate a higher liquid limit and plasticity index in Domain 41, with a higher percentage of material passing the 63 micron sieve and less material in the gravel fraction. The bulk and dry densities were slightly higher in Domain 41, although the results of particle density determination indicate very little difference between the two domains.

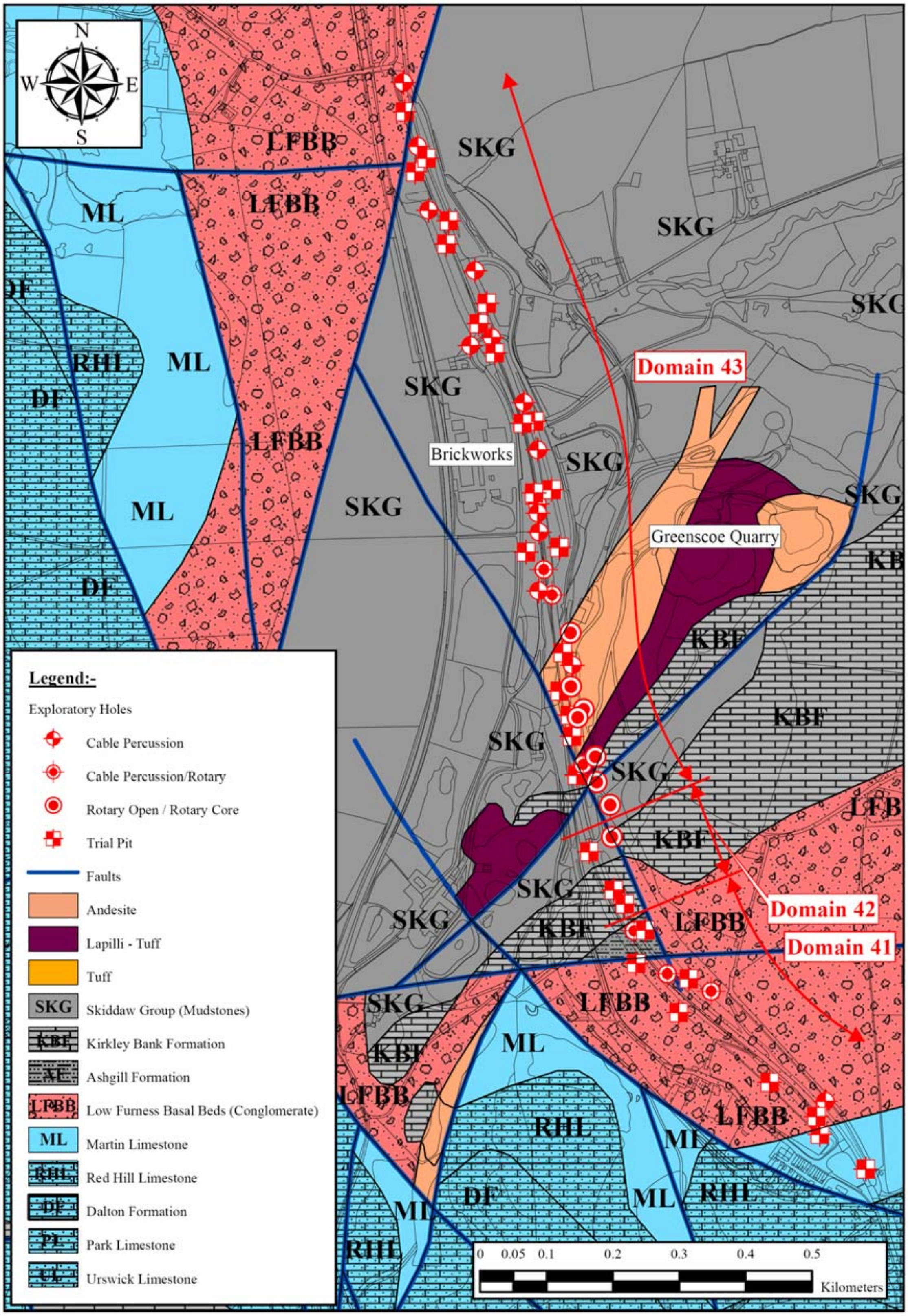

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Figure 5.8: Solid geology and site layout, Askam in Furness

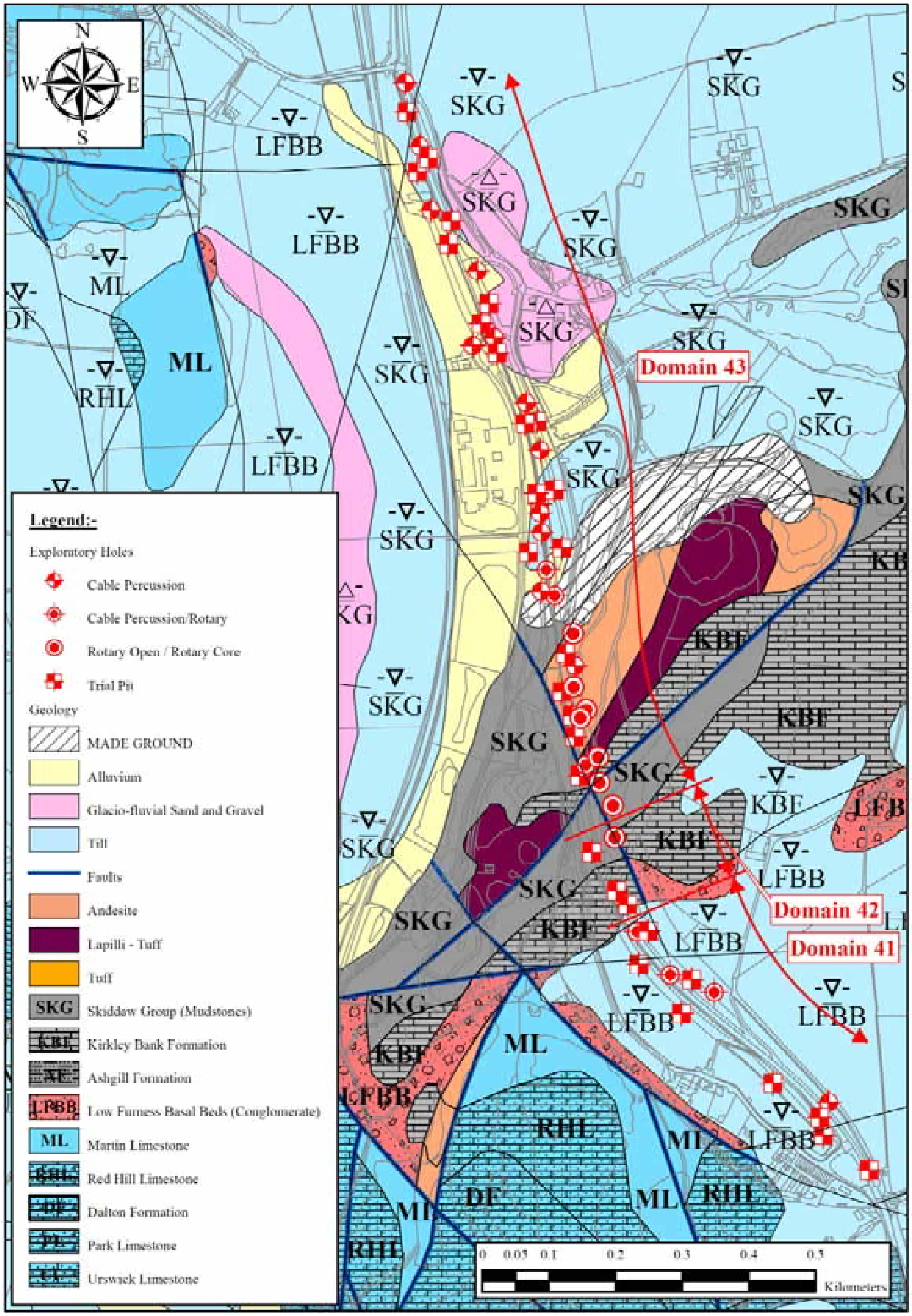

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Figure 5.9: Drift Geology and site layout, Askam-in-Furness

5.2.5. Site 5: High and Low Newton

Site Description

This investigation was carried out for a dual carriageway improvement to a 5km length of the A590 Trunk road which links Barrow-in-Furness to the M6 Motorway at Farleton near Carnforth. The site in question is located between Grange-over-Sands and Newby Bridge and passes across a variety of coarse and fine grained till types overlying Great Scar Limestone and the Bannisdale Formation. The site lies along a gently undulating valley bottom at the base of ground falling steeply down to the south and east with the high ground of Newton Fell to the north and west: a view looking along the new road is shown in Figure 5.10. A total of one hundred and seventy-six exploratory holes including cable percussion and rotary boreholes, window sampling and machine excavated trial pits were completed during 1990, with a comprehensive programme of geotechnical laboratory testing. Two distinct till types were identified within the original investigation, these being a sandy silt overlying a sandy gravelly clay with cobbles and boulders, usually described as "Boulder Clay", typical of the lodgement tills of the region: these soil types were separated at the data input stage. Following input of the data it was noted that much of what had been described as silt on the exploratory hole logs actually plotted as a clay on the Casagrande classification chart. Such data were therefore ascribed to an upper till for comparison using the statistical methodology, with the remainder of the data remaining in the category of silty till. Thus a tripartite division of till was investigated at this site.

The site straddles the boundary between two of the BGS geological maps: Sheet 48, Ulverston, published as Solid and Solid with Drift in 1997; and Sheet 49, Kirkby Lonsdale, available only as a digital reprint of the hand-coloured 1:63,360 scale map of 1892. This latter sheet lacks the level of detail found on modern geological maps and, therefore, the geology of the site is largely inferred from Sheet 48. The area is underlain by Devensian till over solid geology of the Bannisdale Formation, thinly interbedded mudstone and siltstone with subordinate sandstones. A fault running parallel with the alignment of the A590 brings the Bannisdale Formation into contact with the Carboniferous Great Scar Limestone over part of the site. The site lies close to the interfluve between the Leven and Kent ice streams, which flowed generally southwards from the main ice centre over the Cumbrian Mountains (Taylor et al., 1971; Johnson et al., 2001).

Figure 5.10: View of High and Low Newton area

Typical glacial landforms of till can be seen beyond the foreground cutting, also in till; the Furness Fells are in the middle distance, with the Lake District mountains around Coniston Old Man and Wetherlam in the far distance.

Commencing at the northern end of the area of interest, Domain 51 lies on predominantly sandstone members of the Bannisdale Formation, with subordinate siltstones and mudstones: with a few exceptions the exploratory holes lie at an elevation less than 105m A.O.D. Domain 52 lies on siltstones of the Bannisdale Formation over the summit of an area of rising ground at an elevation between 105m A.O.D. and 145m A.O.D. Domain 53 is made up of two smaller separate areas to the west of the fault which brings the Great Scar Limestone into contact with the Bannisdale Formation. There were insufficient data to carry out any meaningful statistical analysis within Domain 53, and this domain was not included in the study. The coarse fraction across all domains was described as angular or subangular, and consisting of slate and siltstone, with the exception of Domain 53 where occasional limestone gravel was recorded. A geological map showing the Domains is included in Figure 5.11.

Results

The results of the 'normality' tests carried out indicate that at the $\alpha = 0.05$ level the assumption of a Gaussian distribution could not be rejected for the individual data sets for upper and lower clay till from Domain 51: the same is true of the combined data. In Domain 52 plasticity data compared using the Anderson – Darling test was not Gaussian at a significance level of $\alpha = 0.05$ for upper, lower or combined data sets from clay till, and grading failed in all tests for the sand fraction of the lower clay till only. There was insufficient data to carry out meaningful statistical analysis of the separate density data, but the combined set passed the 'normality' tests at the $\alpha = 0.05$ level.

At the $\alpha = 0.05$ level the plasticity data for 'silty' till from Domain 51 failed the Anderson – Darling test. In Domain 52 the grading fraction for gravel and fines failed all the normality tests at the $\alpha = 0.05$ level.

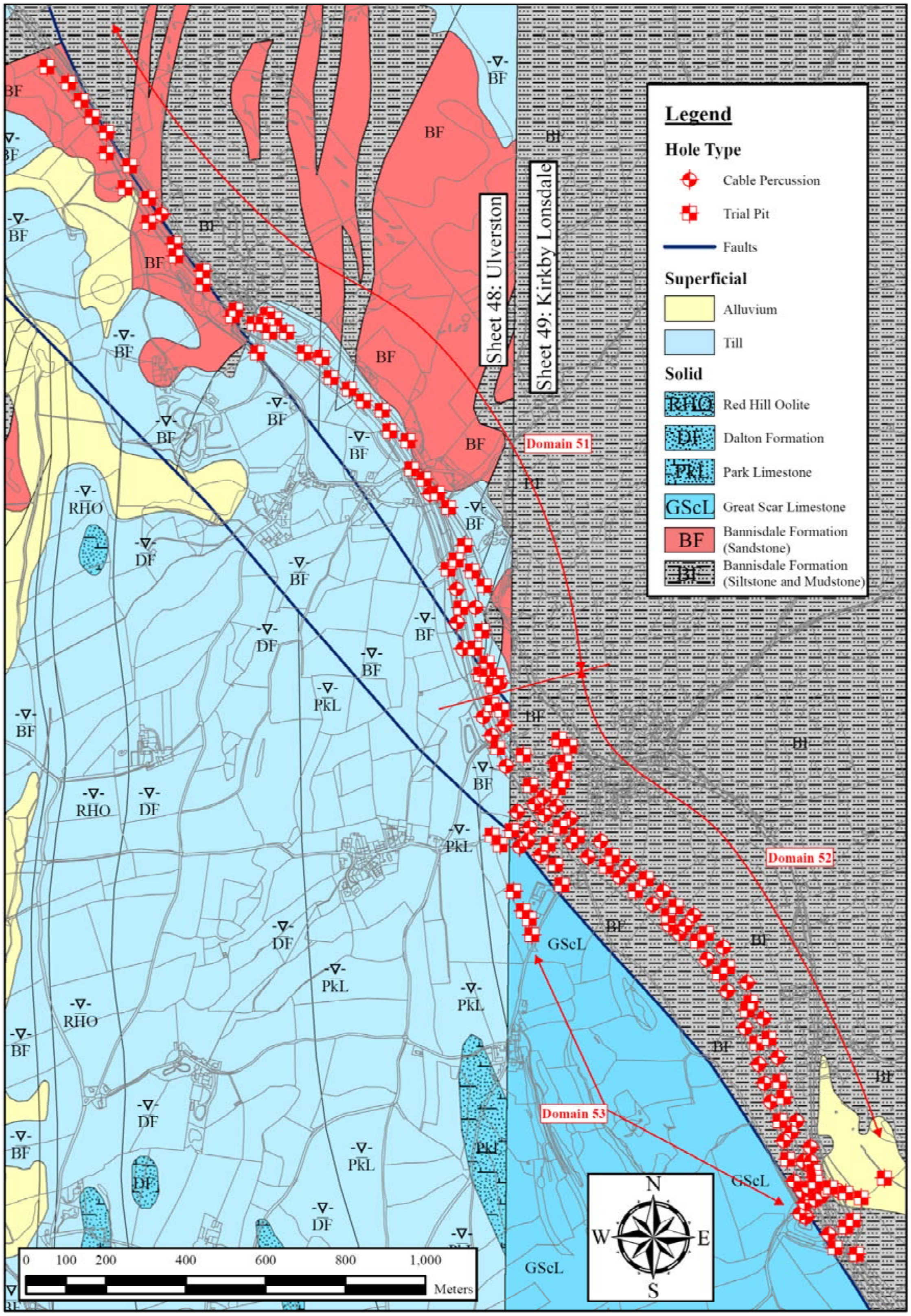

Figure 5.11: Geology and site layout, High and Low Newton

With the exception of Mood's Median Test for liquid limit there was no significant statistical difference at the $\alpha = 0.05$ level between the upper and lower clay tills within Domain 51. Two of the three non-parametric tests indicated a statistical difference at the $\alpha = 0.05$ significance level for dry density within Domain 52. These variations are not sufficiently conclusive overall to uphold the case for a difference between the upper and lower clay tills, especially given the inherent uncertainty of the original partition in what is generally an extremely heterogeneous and relatively thin deposit.

Having determined that there was no statistically significant difference between the upper and lower clay tills at Site 5, the aggregated results from the upper and lower clay till were compared with the 'silty' till within each domain. The results suggested that there is a statistically significant difference in the properties of the two till types at the $\alpha = 0.05$ level. The differences were more significant in Domain 52, with the largest differences occurring in natural water content, plastic limit and both measured densities: no statistical difference was observed in liquid limit and, somewhat surprisingly since one soil is described as clay and the other as silt, plasticity index. In Domain 51 the only parameter that recorded a statistically significant difference was the plasticity index: all other parameters were statistically indistinguishable.

In both domains there was a significantly larger interquartile range in the liquid and plastic limit data from the 'silty' till, although this was less pronounced in the plasticity index data. The liquid and plastic limits were both higher for the 'silty' till than for the combined upper and lower clay till, although in Domain 51 this was not statistically significant at the $\alpha = 0.05$ level: the plasticity index was lower in the 'silty' till. In Domain 52 the liquid and plastic limits were again higher in the 'silty' till, with a markedly larger interquartile range. The difference was statistically significant for the plastic limit, but not for the plasticity index even though the box plot diagrams suggest this might be lower in the silty till. Density results were only available in Domain 52 and the results of the statistical analysis suggest that the bulk and dry density of the ‘silty’ till is lower than that of the combined upper and lower clay till at the α = 0.05 level of significance.

Comparing the combined data for clay till between domains indicates that there is no statistical difference at the α = 0.05 level of significance with the possible exception of Mood’s Median Test on the sand grading fraction. Here a result of $\boldsymbol{p}$ = 0.012 was recorded, but the difference interval for the medians ranged from positive to negative. A similar result was recorded for the ‘silty’ till, with a corresponding $\boldsymbol{p}$ value of 0.037.

Overall it is concluded that there is insufficient evidence to confirm a difference in properties between either of the tills from Domain 51 and 52, but that there is a significant difference between the silty and clayey tills within each domain.

5.2.6. Site 6: Parton to Lillyhall

This is another composite data set gathered from a series of investigations carried out for road improvements and maintenance schemes, mainly centred around the A595 Trunk Road linking Whitehaven and Carlisle. The area of interest is a tract of land of length 4km situated along the valley of Distington Beck, running north west to south east between Whitehaven and Workington. A general view of the valley of Distington Beck is shown in Figure 5.12. The geology is described on Sheet 28, Whitehaven, of the BGS 1:50,000 scale mapping, published as Bedrock and Bedrock with Superficial editions in 2004. The landscape of the site is characterized by undulating topography, with glacial lodgement till overlying an inlier of the Chief Limestone Group to the north with surrounding Coal Measures to the south. The area lies on, or close to, the confluence of the Lake District ice sheet and the Irish Sea ice stream of the main Late Devensian glaciation. After the retreat of the Late Devensian ice-sheet, the area was re-glaciated during the Gosforth Oscillation, but escaped the ice cover of the Scottish Re-advance (Ackhurst et al., 1997).

Figure 5.12: View looking south west from above Lillyhall towards Parton

Distington Beck runs along the bottom of the valley; the west end of the new Parton - Lillyhall bypass is above the glasshouses in the centre of the view: the tower of Moresby church just above Parton is just visible against the sea at the middle right. St. Bees Head is on the horizon to the right.

Data from a total of two hundred and forty-five exploratory holes are available throughout the area of interest, between the higher elevation of Distington to the north east down to the coastal cliffs above Parton to the south east. Numerous other investigations within the area have been disregarded, either because the precise locations and bedrock geology are ill-defined, or the range of testing did not go beyond simple index properties.

Commencing in the south east of the area of interest, Domain 61 is a localized investigation carried out at the site of a major landslide in the till of the coastal cliffs above the village of Parton: the underlying solid geology is inter-bedded cyclothems of sandstone, mudstone and coal of the Lower Coal Measures. The area is shown in Figure 5.13

Figure 5.13: Domain 61 Parton Brow from the railway station looking east.

The actual area of the investigation is in the sloping till between the two groups of houses in the left of the view. Note the cliffs (right) formed from gently dipping sandstone and mudstone of the coal Measures.

Domains 62 and 63 are both underlain by sandstones, mudstones and coal seams of the Upper Coal Measures. The investigation in Domain 62 was carried out as part of a major highway improvement along the north east facing slopes of the valley of Distington Beck, starting above the coastal cliff area and terminating in the valley bottom, from where Domain 63 takes in the rising ground on the south-east facing slopes of the valley and terminates where Coal Measures rocks are down-faulted into contact with the underlying Carboniferous limestone and gritstone. Domain 64 is a shorter length of carriageway passing across Carboniferous limestone and Hensingham Grit, also part of the Carboniferous. Domain 65 lies over a further area of Lower Coal Measures rocks to the extreme north-east of the area of interest. Where the full lithology of the coarse fraction was described it was predominantly sandstone and mudstone, with occasional fragments of coal, but no differences were noted between domains. The layout of the investigation within Domain 61 is shown in Figure 5.14: a geological map showing the remaining domains is included in Figure 5.16.

Results

In Domain 61 there were insufficient data within each subset of till to compare the results from the upper and lower horizons, however the combined data set is demonstrated by all methods used to be sensibly Gaussian in distribution.

Domain 62 was found to be non-Gaussian at the $\alpha = 0.05$ significance level in all index test data sets, in the fine grading fraction and bulk density: for dry density and the remaining two grading fractions the data passed the normality tests at the $\alpha = 0.05$ significance level with the exception of the Anderson – Darling test on dry density from the combined data.

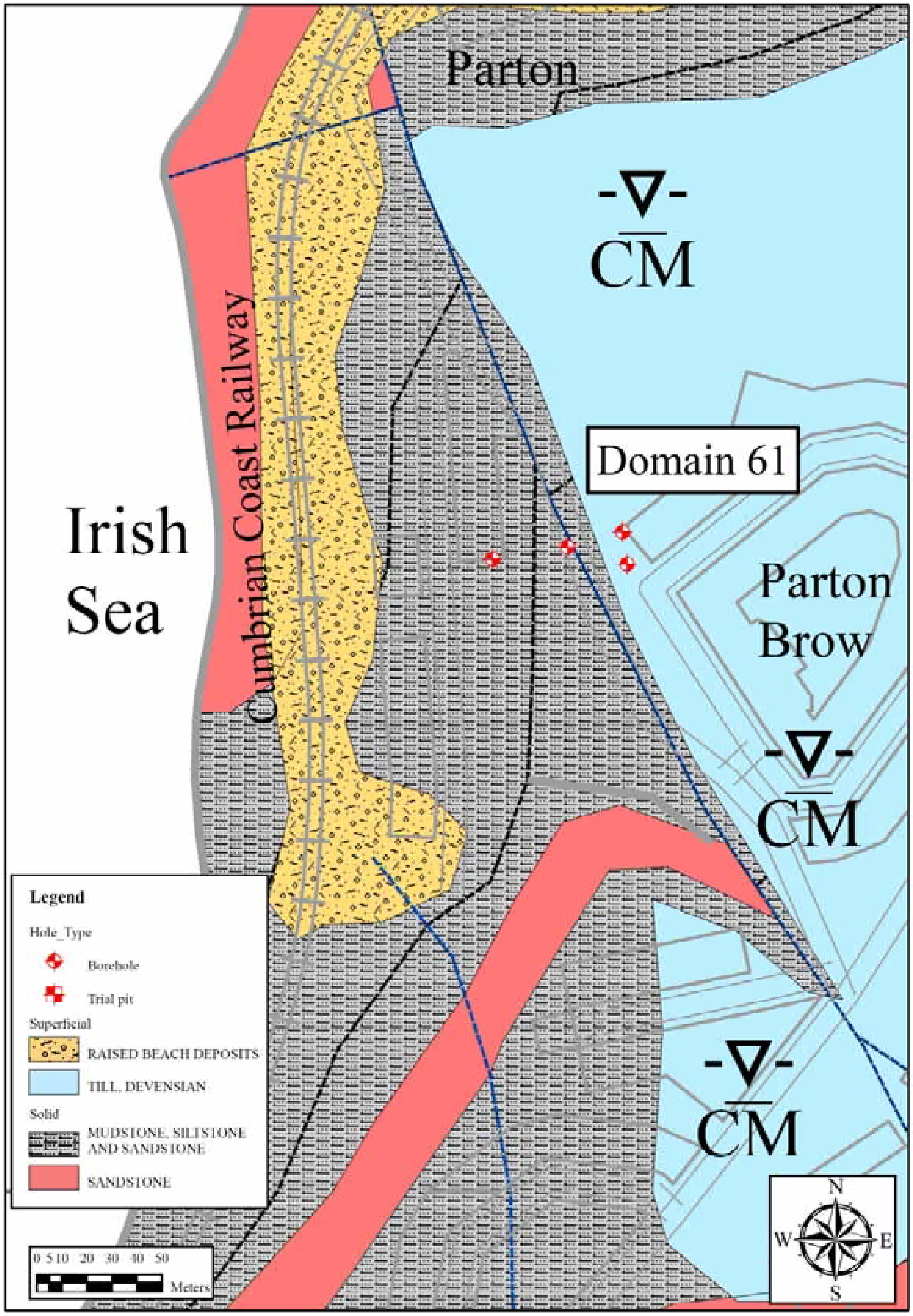

Figure 5.14: Geology and site layout, Parton landslide site

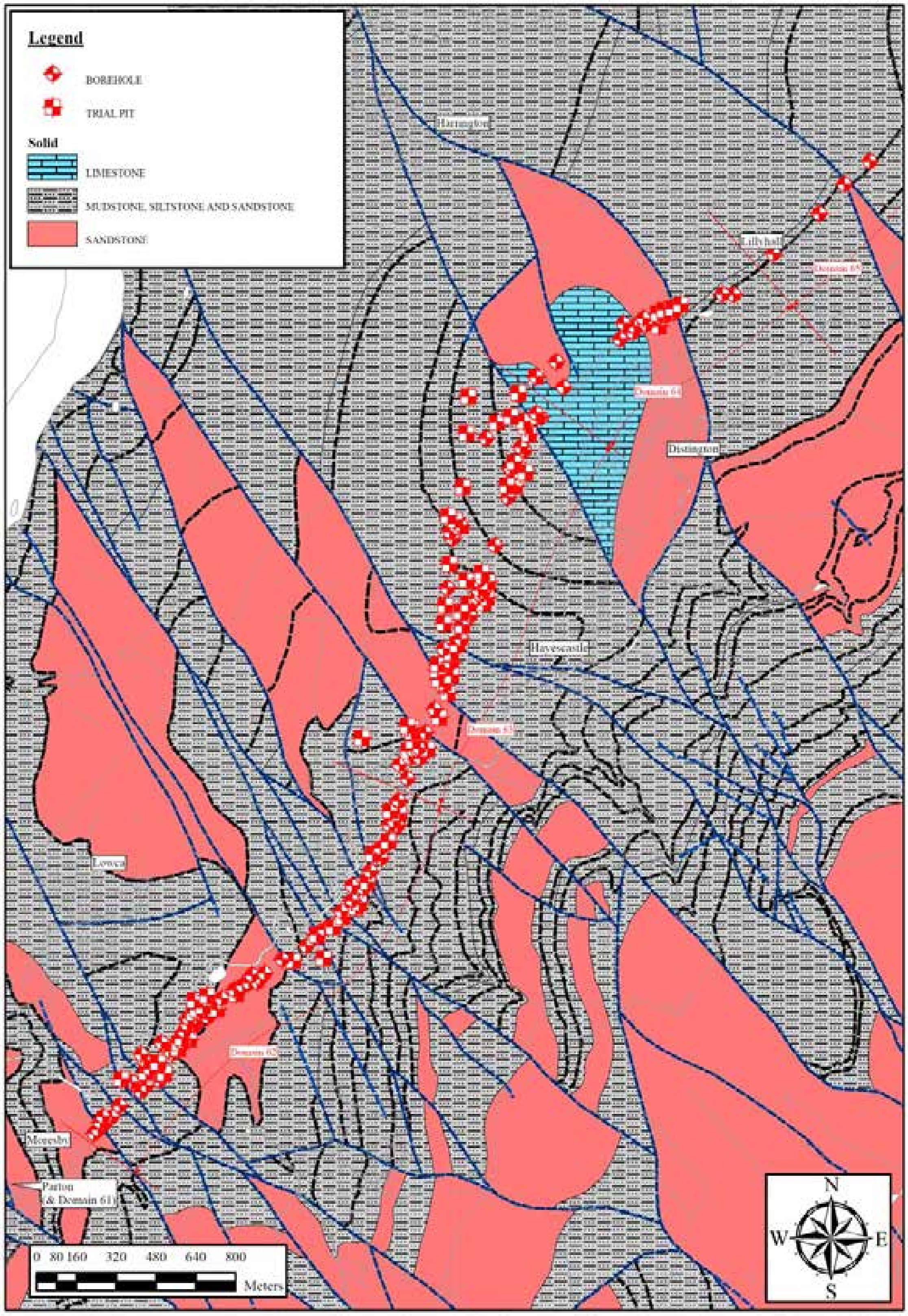

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Figure 5.15: Solid geology and site layout, Parton to Lillyhall

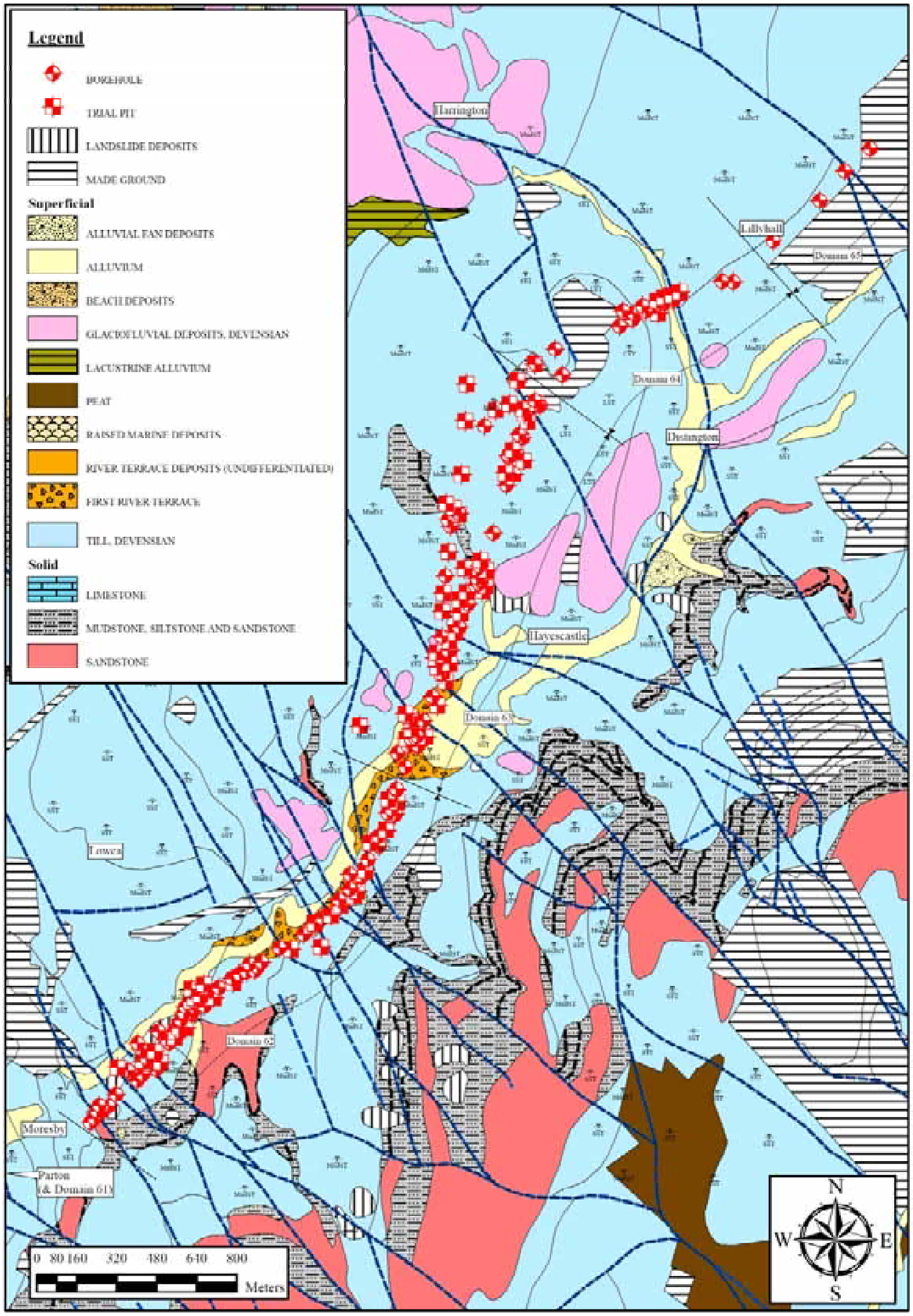

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Figure 5.16: Geology and site layout, Parton to Lillyhall

In Domain 63 only the index test results consistently failed the normality test at the α = 0.05 level of significance, although the sand grading fraction failed in the Anderson – Darling and Ryan Joiner tests on the combined data set.

Domains 64 and 65 contained insufficient grading data for the set to be statistically valid but in all the remaining data sets the tests indicate a Gaussian distribution at a significance level α = 0.05.

The small data sets from the upper and lower tills within Domain 61 were compared, but no grading or index test results were available. Natural water content and dry density were both found to be statistically different at the α = 0.05 level of significance and thus it is conjectured that different tills are present, resulting from the two main glaciation episodes. The upper till had a higher natural water content and lower bulk and dry densities than the lower till, possibly brought about by natural consolidation with time.

In Domains 62 and 63 the situation was very similar, and again the upper till had a higher water content and lower dry density than the lower till. The number of statistical outliers in the data set for index test results was greater in the upper till than the lower till, and the mean and median statistical tests suggest that the liquid and plastic limits of the upper till are higher than for the lower till, although the plasticity index is similar. There is no statistical difference at the α = 0.05 level in the principal grading fractions or the bulk density.

For Domain 64 the only difference at the α = 0.05 significance level was for plastic limit, which was higher in the upper till: there was no significant difference in the bulk or dry densities and there were insufficient data to compare the principal grading fractions. There were insufficient data in each set to enable a comparison to be made in Domain 65.

The individual and combined data sets were then compared between domains using the same set of statistical tests. For Domain 61 this could only include natural water content, bulk density and dry density, and no statistically significant differences at the $\alpha = 0.05$ level were found between Domain 61 and any of the other Domains at the site for upper, lower or combined till data sets.

The upper till within Domains 62 and 63 differ statistically at the $\alpha = 0.05$ level in that the liquid and plastic limit is lower in Domain 62: the plasticity index does not differ statistically. There is no significant statistical difference in any of the measured properties between Domains 62 and 63 for the lower till alone, nor the combined data set.

There is no statistical difference in the Atterberg index test results at the $\alpha = 0.05$ level of significance between Domain 62 and Domain 64 for the upper till and combined till datasets: there was insufficient data in the grading tests to compare the two Domains. Statistical comparison of the lower till indicates a difference at the $\alpha = 0.05$ level, with a lower plasticity index in Domain 62.

There is no statistical difference in the Atterberg limit test results at the $\alpha = 0.05$ level of significance between the upper till and the combined till dataset at Domain 62 and Domain 65, although the Mood's Median Test on the combined data sets from Domains 62 and 65 suggested a difference in the plastic limit and bulk density, and the "Student" t-test suggested a difference in the sand fraction. There were insufficient data in the lower till from Domain 65 for a statistically valid comparison of the lower till from the two Domains. Overall there is insufficient statistical evidence to differentiate between Domains 62 and 65.

The "Student" t-test for Domains 63 and 64 indicates a difference at the $\alpha = 0.05$ level for the liquid limit in the upper till, but the non-parametric tests fail to confirm this. No significant difference was found for the lower till, nor the combined datasets. Similarly, no significant difference between Domains 63 and 65 was found for the upper tills, although one non-parametric test indicated a possible difference (α = 0.047) for the plastic limit in the combined data. There were insufficient data from in Domain 65 to enable a comparison of the lower till. There is therefore insufficient evidence to confirm a difference between Domain 63 and Domains 64 or 65.

No significant difference in the upper till was found between Domains 64 and 65: there were insufficient data to compare the lower till. On non-parametric test suggested a difference at the α = 0.05 significance level for plastic limit in the overall data sets, but there is insufficient evidence to confirm a difference between Domains 64 and Domain 65.

This is the most extensive and complex site considered in the study, with many potential permutations of comparisons available. The statistical study suggests that there are differences between the upper and lower tills at all domains where sufficient data were available from both soils. The upper till was generally more variable, with statistically significant differences between Domains 62 and 63, and between Domains 63 and 64. The lower till in Domain 62 differed from that in Domain 64. Taken together these results indicate that there is evidence for two distinct tills separated vertically, possibly due to different glacial episodes, and that the properties of the lower till are different above Coal Measures rocks and Carboniferous Limestone. The differences become less pronounced nearer to the geological boundary.

Therefore, it is important to consider the glacial history of a site as well as the underlying bedrock geology when developing a putative ground model, and to assess differences from both controls.

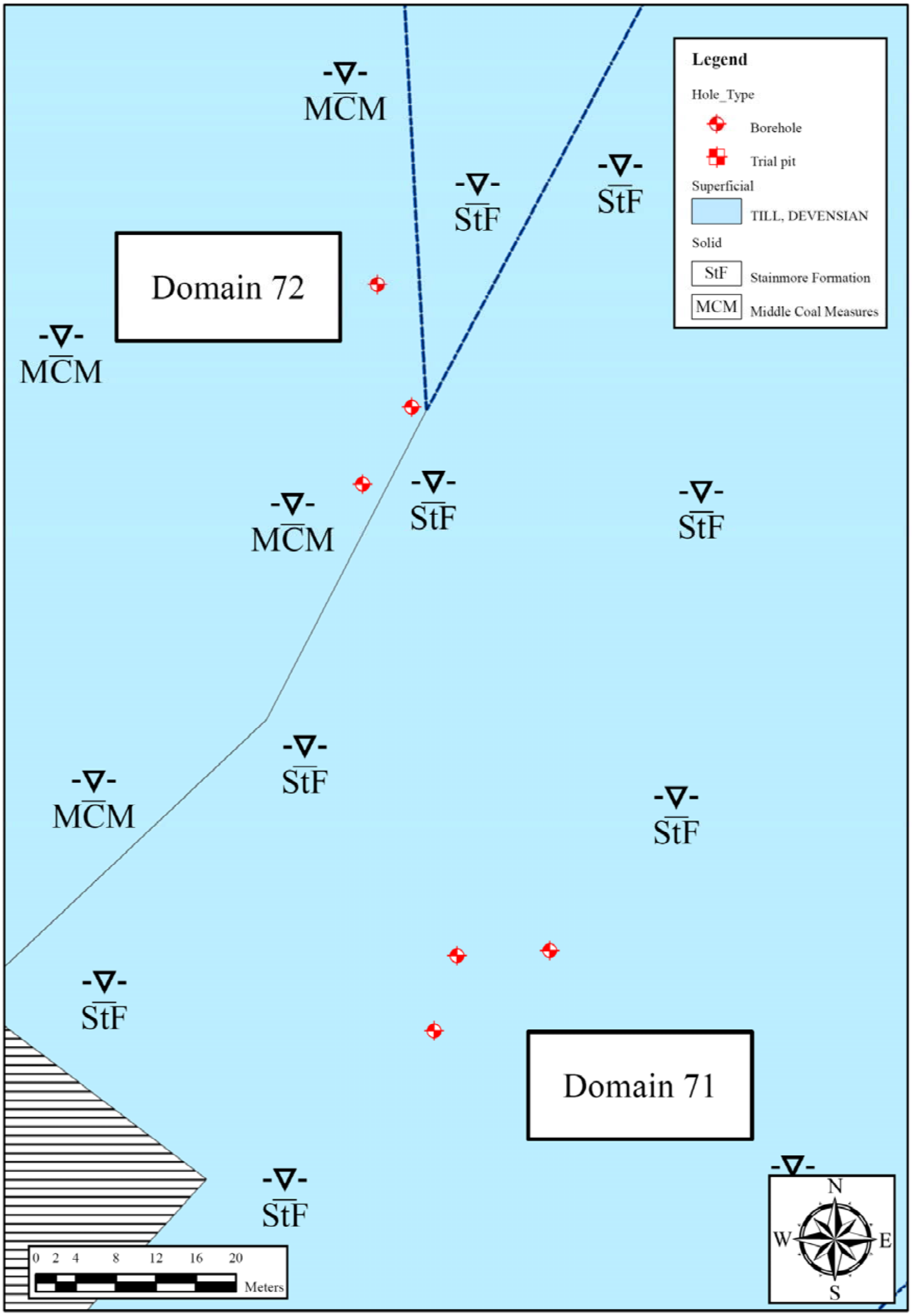

Figure 5.17: Geology and site layout, Cleator Moor

5.2.7. <u>Site 7: Cleator Moor</u>

Site Description

This is a site localized around two former iron ore mine shafts in the town of Cleator Moor, West Cumbria. The site lies on gently sloping and undulating ground near the confluence of the rivers Ehen and Keekle where Ennerdale opens onto the coastal plain at the foot of the fells forming Copeland Forest and Blengdale Forest rising to the south east. The geology is described on Sheet 28, Whitehaven, of the BGS 1:50,000 scale mapping, published as Bedrock and Bedrock with Superficial editions in 2004. This shows the site to be underlain by a complex series of faulted blocks of inter-bedded mudstone, siltstone and sandstone of the Pennine Middle Coal Measures, inter-bedded mudstone, siltstone and sandstone of the Stainmore Formation, and limestones of the Eskett Limestone Formation and Frizington Limestone Formation, both part of the Great Scar Limestone Group: the solid geology is obscured by extensive superficial deposits of till at the surface. Two complete glaciations of the area are postulated: during the Late Devensian when the area was covered by the Lake District ice sheet as it was deflected south by the Irish Sea ice stream; and during the later Gosforth Oscillation when ice flowing westwards down Ennerdale was deflected to the south, again by a major ice flow in the Irish Sea (Ackhurst et al., 1997).

The selected investigation was carried out for the design of stabilisation works for two shafts: each shaft location is initially considered as a separate domain. Thus Domain 71 is centred around Crossfield No. 2 Pit, and Domain 72 is centred around Crowgarth No. 4 Pit as indicated in Figure 5.17. A general view of the area of the former Crossfield Pit is included in Figure 5.18. Three cable percussion boreholes were drilled at each domain, with rotary cored follow-on at rockhead. Drift deposits of till were encountered to depths of between sixteen and seventeen metres at Crossfield Pit and around twenty metres at Crowgarth Pit. The test results from the till were assigned to the upper or lower divisions on the basis of consistency as described on the exploratory hole logs. The lithology of the coarse fraction was described as subangular to subrounded mudstone, siltstone and sandstone across both sites.

Figure 5.18: The site of the former Crossfield No. 2 Pit.

The pit head lay in the overgrown area immediately outwith the field fence in the centre of view, with Crowgarth No. 4 Pit in the wooded area beyond.

Results

The results of the various distribution 'normality' tests were inconclusive, with different methods giving different results. Overall it considered that the data are not Gaussian, as there are individual parameters within the plasticity and grading sets that are found to be significantly skewed. Notwithstanding this conclusion parametric statistical analysis was carried out to assess the effects of non-Gaussian data on the conclusions drawn.

The upper and lower tills in Domains 71 and 72 do not differ significantly, with the exception of the fines content (passing 63 micron sieve) in Domain 72. However, this latter result is based on a smaller than ideal sample size in the lower till, and may not be fully representative of the true situation.

There is no significant difference in the separate till data sets, nor in the combined data set, between Domain 71 and Domain 72.

5.3. RESULTS OF COMPARISONS BETWEEN SITES

5.3.1. Methodology

The aggregated data from each domain was then compared in turn against all the domains at other sites using the same statistical models to analyse potential differences over the wider area of Cumbria. Summaries of the results of the statistical analysis are contained in Table B3 of Appendix B, with a summary table of the means, medians and 95% confidence intervals is included in Appendix B5: this table also indicates the extent to which the means and medians reflect the modal value or range of values. The comparisons are summarised in Table 5.1, with box and whisker plots of individual parameters included in Figure 5.19 to Figure 5.27. The general bedrock geology of the domains is indicated by colour coding of the inter-quartile boxes as follows:

Red (plain)	Permian and Triassic sandstones
Red (hatched)	sandstone of the Bannisdale Formation

Orange	sandstone in Coal Measures
Grey	mudstone in Coal Measures
Grey-green	other mudstone
Blue	limestone

5.3.2. Results

Table 5.1 demonstrates that with few exceptions all the index and grading parameters from all domains are different statistically.

From the range of parameters indicated in the box and whisker plots in Figure 5.19 to Figure 5.22 the following general conclusions may be drawn:

The highest median liquid limit and plastic limit values are from the till in the area of Askam-in-Furness, lying over sandstone and conglomerate of the basal beds of the Carboniferous and the metamorphosed Ordovician mudstones of the Ashgill Series and Skiddaw Group: these tills also have the highest median plasticity index. The remaining domains are hard to differentiate consistently, but the plasticity index of the nearest site to Askam-in-Furness, Sowerby Wood, is also the closest in terms of median value. However, the median values of liquid limit and plastic limit are markedly lower, suggesting that bedrock geology plays a significant role in determining the engineering parameters of the till, with the glacigenic process playing a subordinate role. This is reinforced by comparing all the domains within the Coal Measures, where in spite of the evidence of two distinct tills within the area of Parton and Lillyhall (Domains 61 to 65) and no such difference at Cleator Moor (Domains 71 and 72) the overall properties are relatively close across both sites.

Key:

- (grey) Insufficient data in one or both Domains
- (green) No statistical evidence for difference
- (orange) Some statistical evidence for difference
- (red) Statistical evidence for difference in most or all parameters
- † Data in Domain 61 limited to water content and density

11																	
12	**12**																
13	13	**13**															
14	14	14	**14**														
21	21	21	21	**21**													
31	31	31	31	31	**31**												
41	41	41	41	41	41	**41**											
42	42	42	42	42	42	42	**42**										
43	43	43	43	43	43	43	43	**43**									
51	51	51	51	51	51	51	51	51	**51**								
52	52	52	52	52	52	52	52	52	52	**52**							
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61†	61†	61†	61†	61†	61†	61†	61†	61†	61†	61†	61†	**61†**					
62	62	62	62	62	62	62	62	62	62	62	62	62	**62**				
63	63	63	63	63	63	63	63	63	63	63	63	63	63	**63**			
64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	**64**		
65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	**65**	
71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	**71**
72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72

Table 5.1: Summary of differences between domains, aggregated data sets

Evidence for a glacigenic control comes from comparing the liquid limit, plastic limit and plasticity index of the tills over the metamorphosed mudstones and siltstones of the Skiddaw Group at Wythop Wood (Site 2) and Askam-in-Furness (Domain 43). The index properties at Wythop Wood are markedly lower than those at Askam-in-Furness. This is considered to be due to the different glacigenic processes at work: a valley glacier at Wythop Wood (Eastwood et al. 1968) and a broader and deeper ice stream converging with the Irish Sea ice sheet at Askam (Johnson et al., 2001).

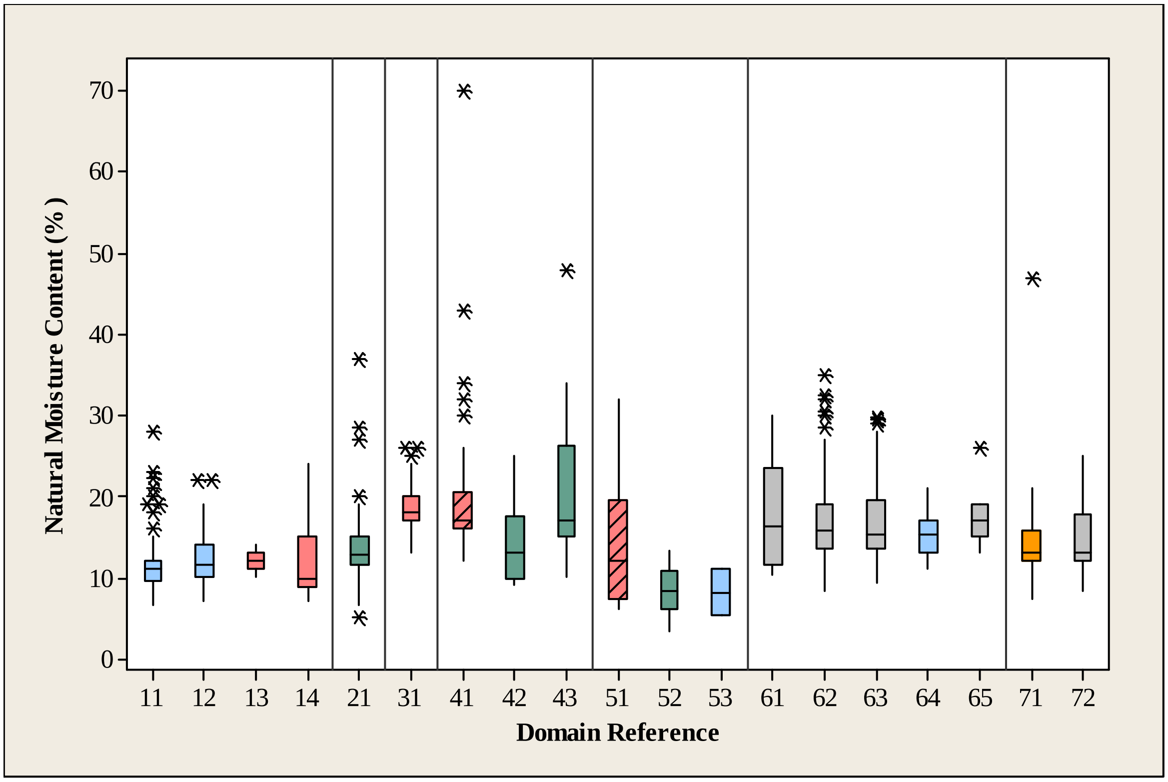

Figure 5.19: Box plot of natural water content by domain reference

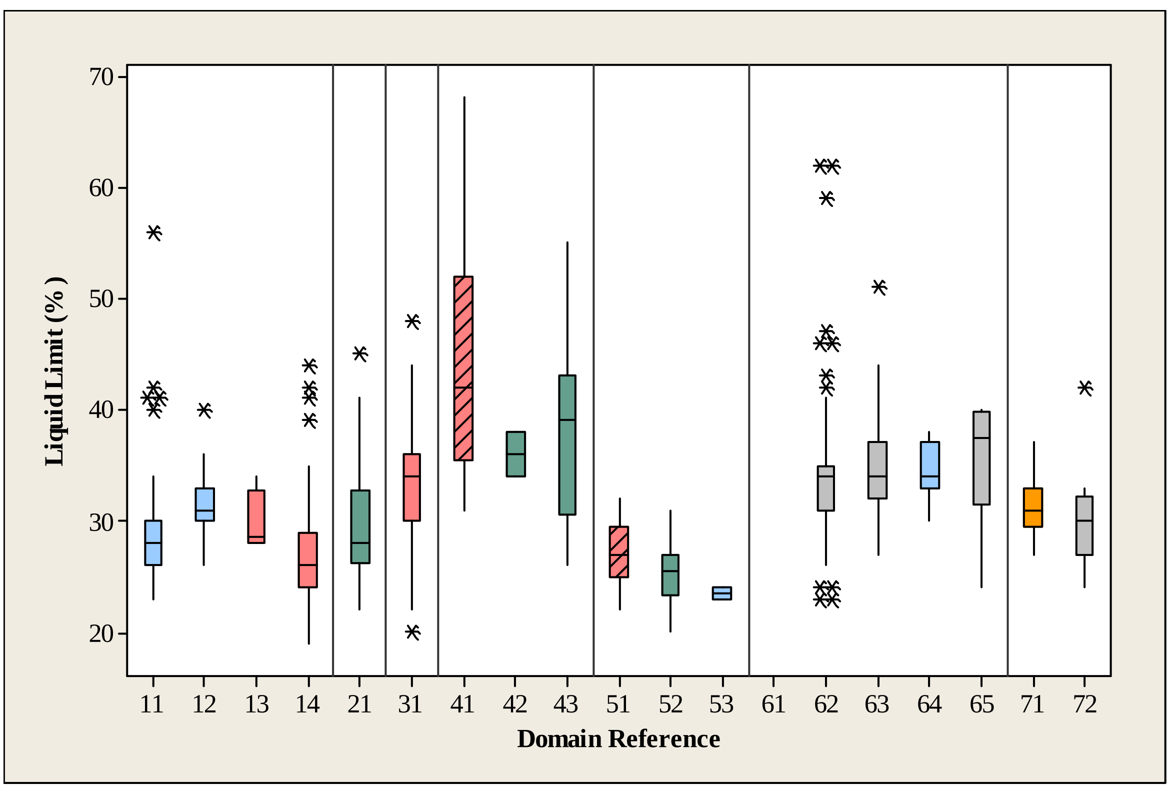

Figure 5.20: Box plot of liquid limit by domain

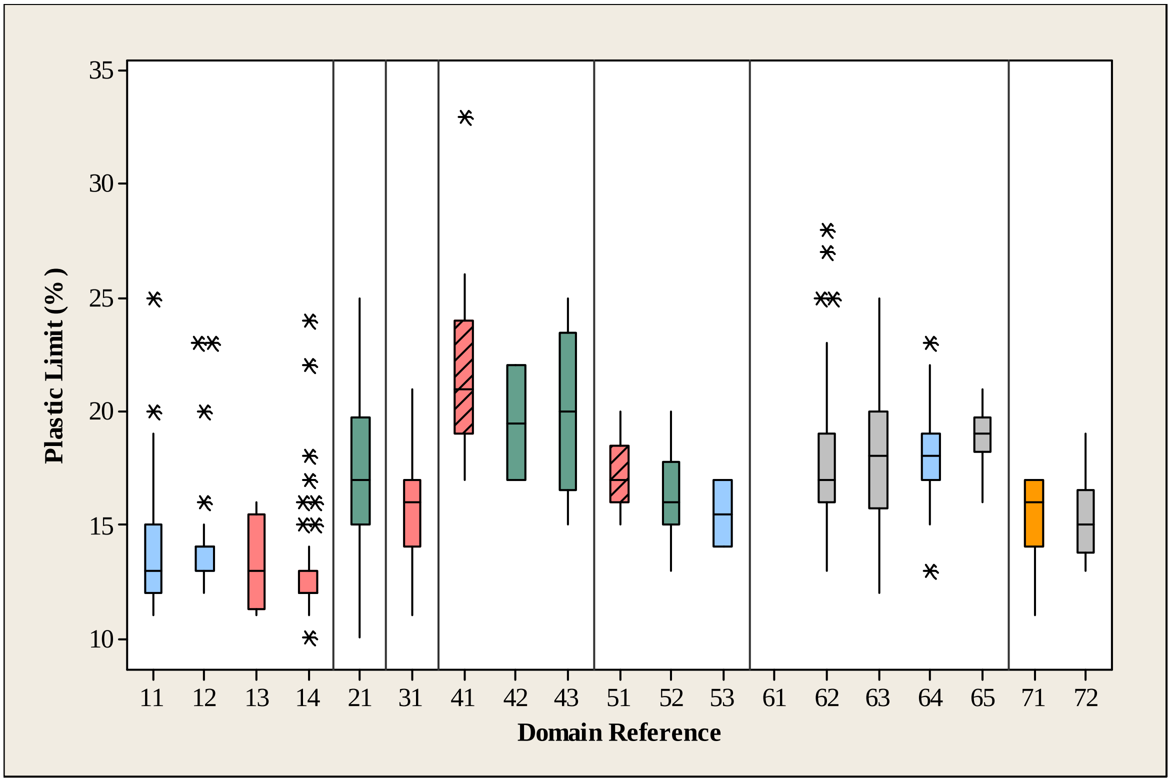

Figure 5.21: Box plot of plastic limit by domain

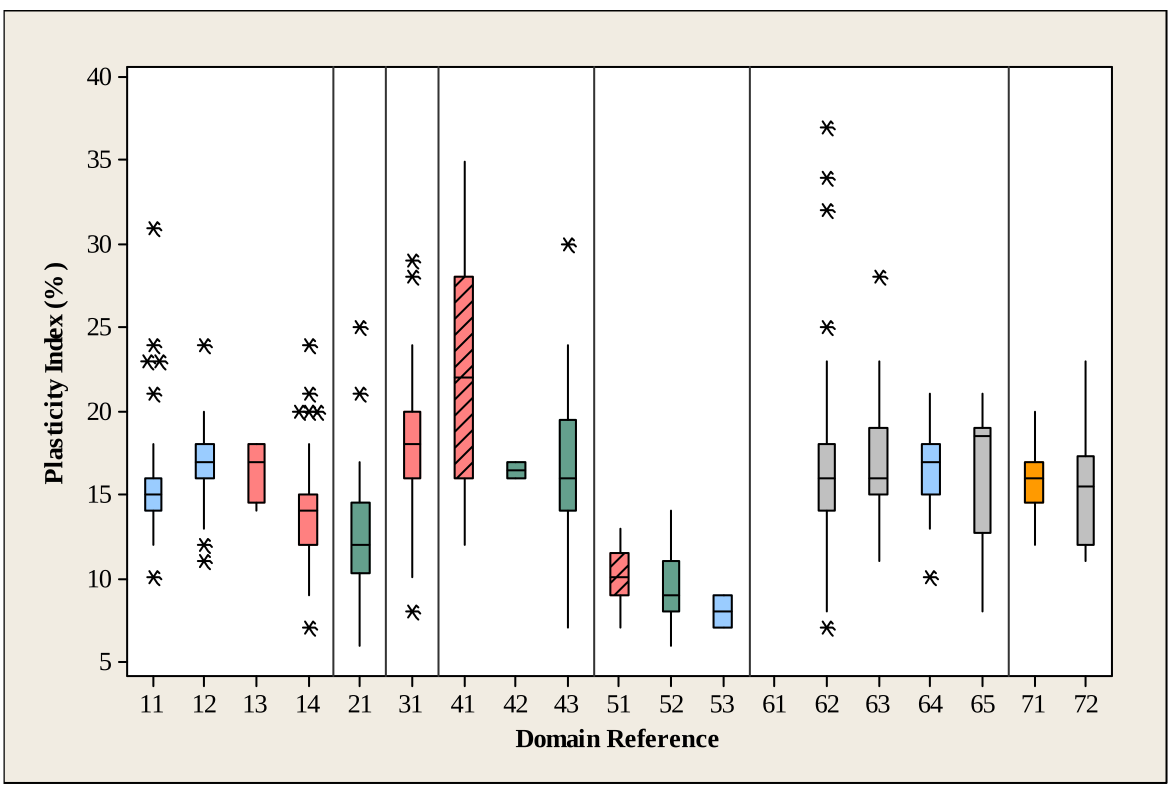

Figure 5.22: Box plot of plasticity index by domain

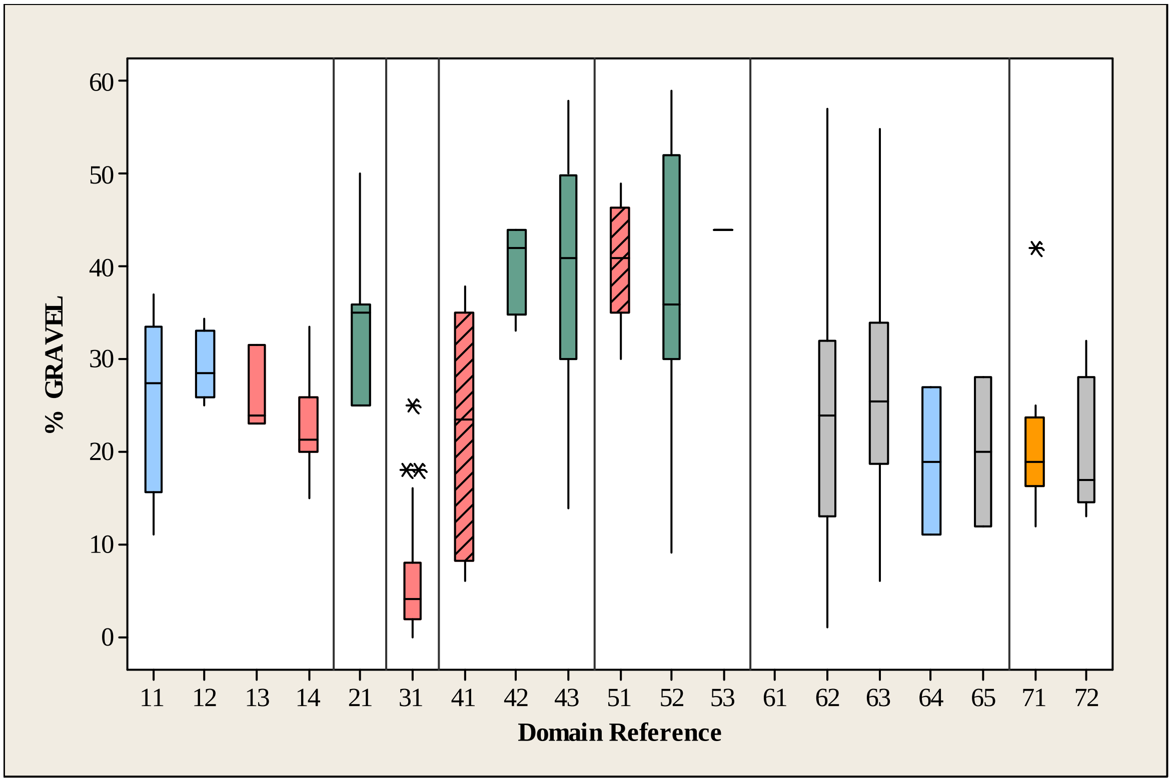

Figure 5.23: Box plot of % gravel by domain

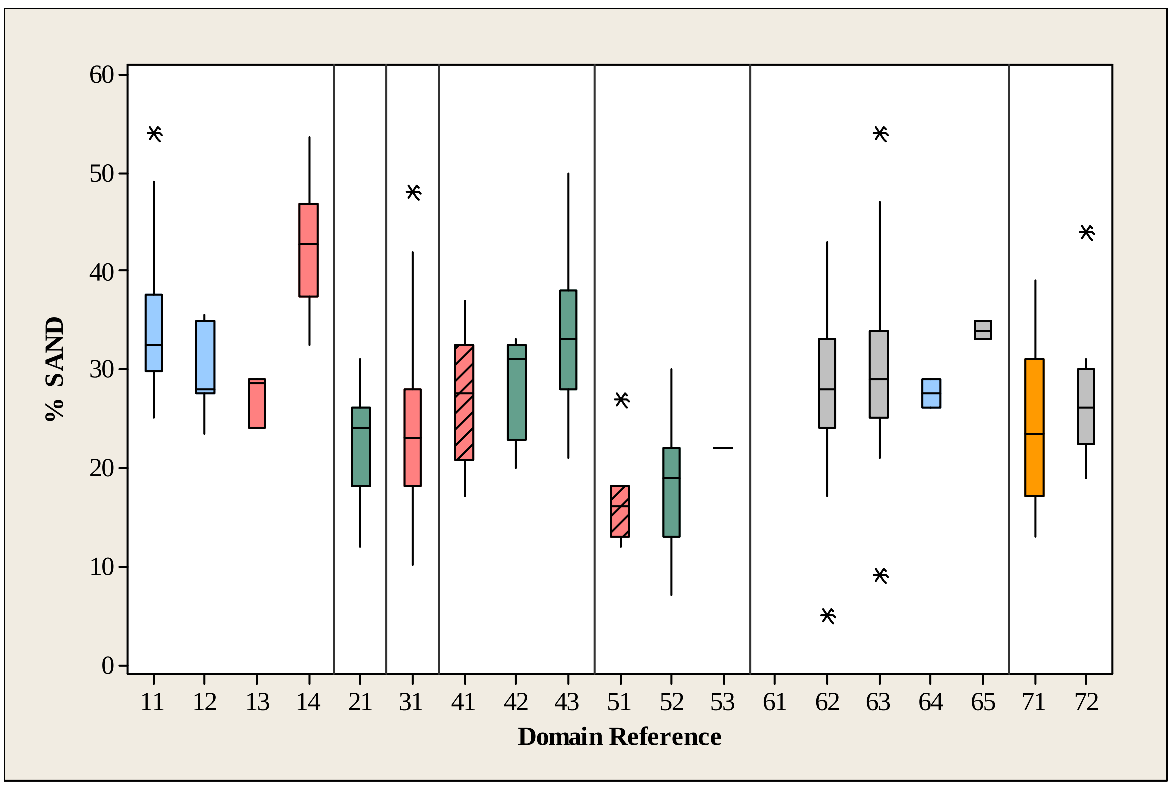

Figure 5.24: Box plot of % sand by domain

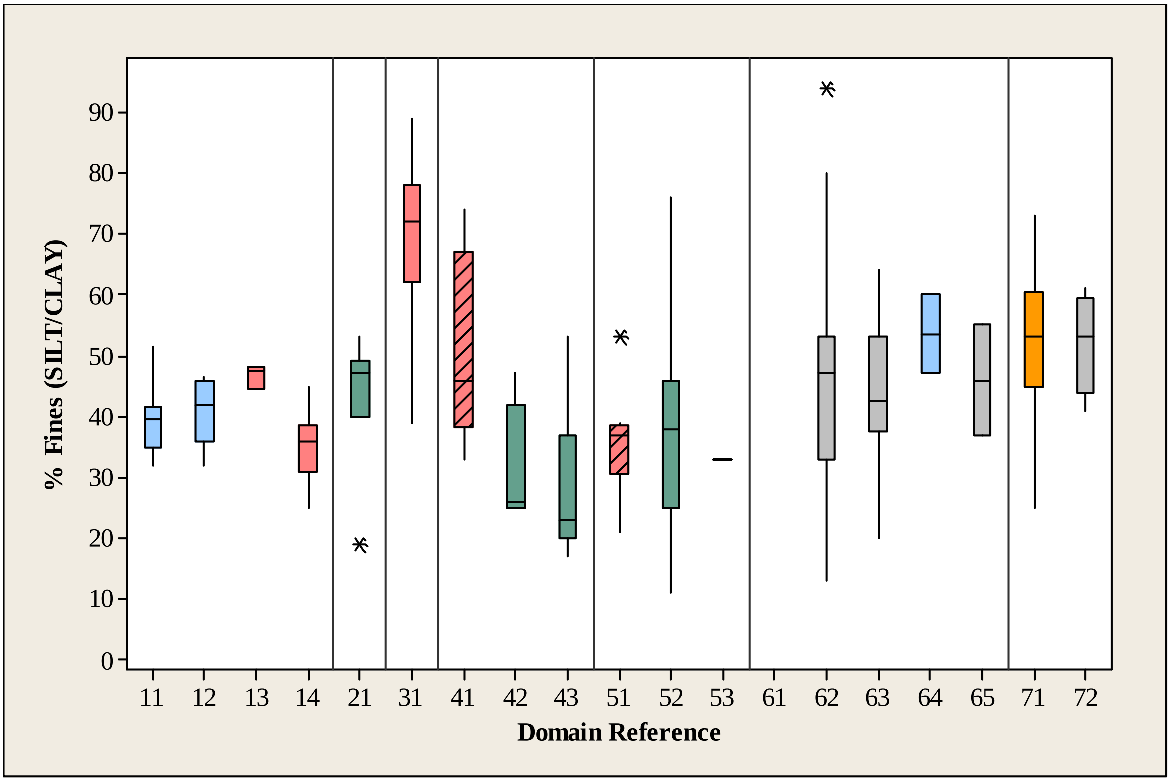

Figure 5.25: Box plot of % silt and clay by domain

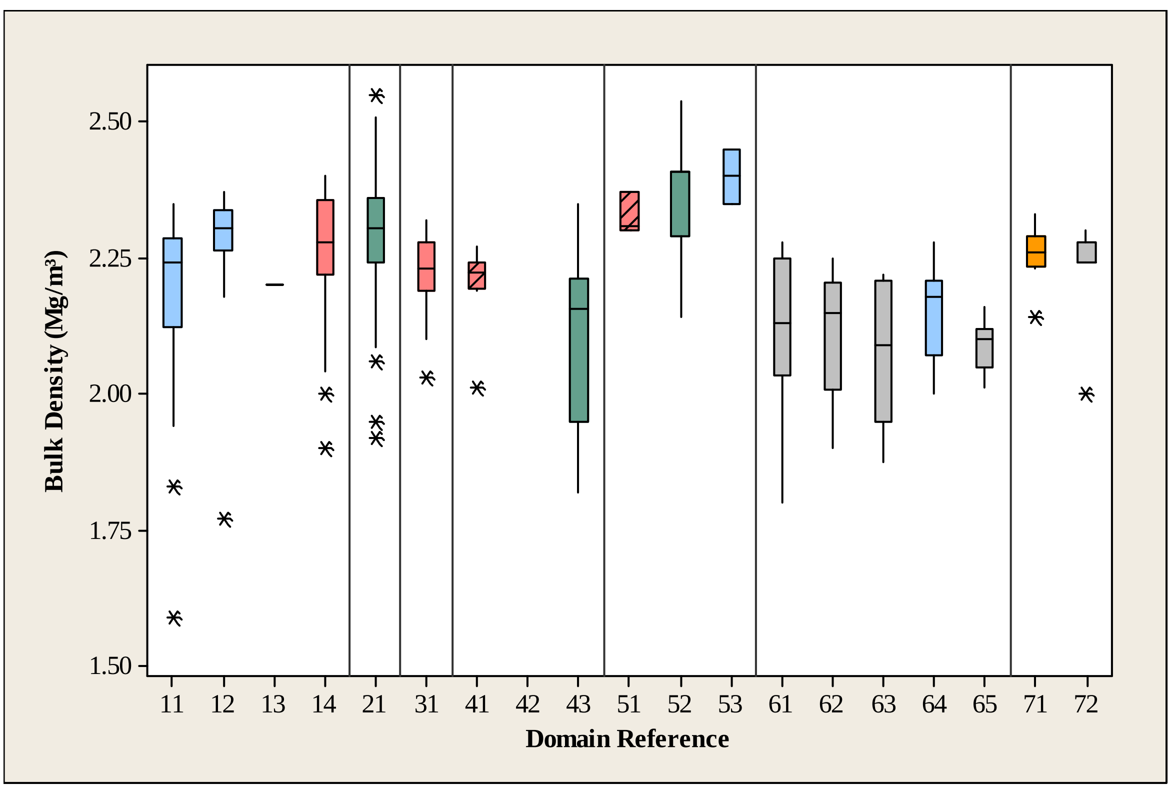

Figure 5.26: Box plot of bulk density by domain

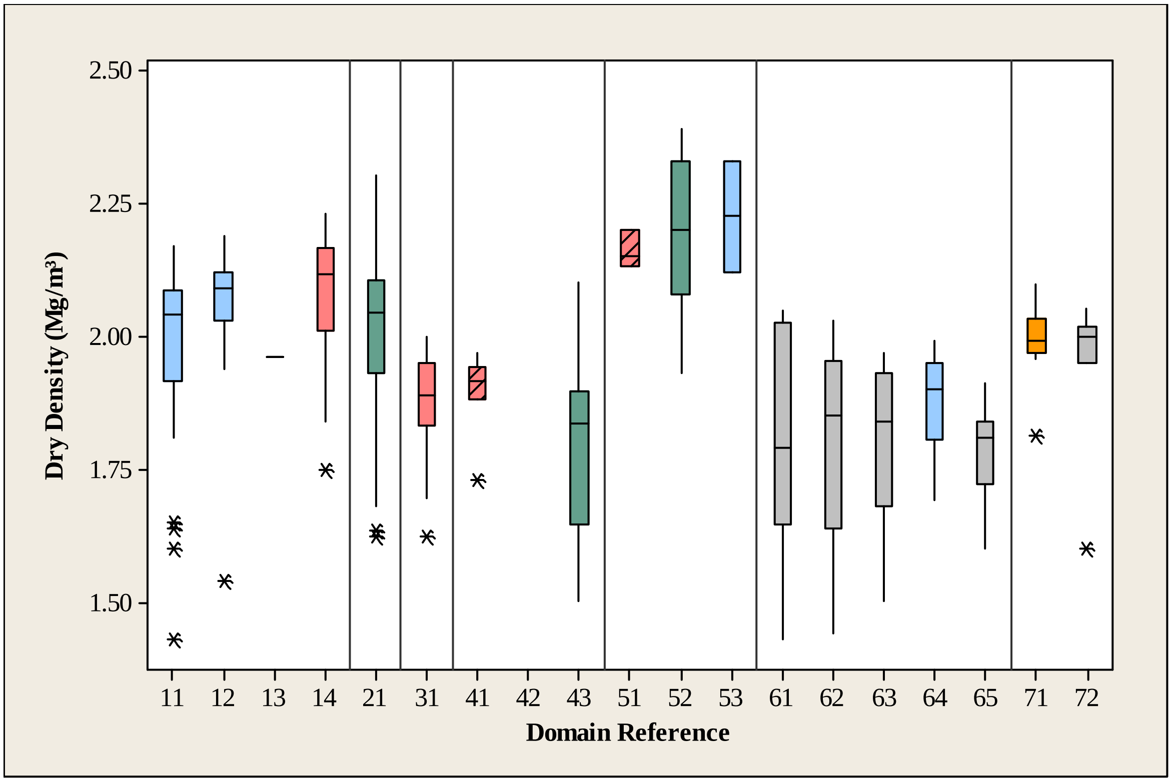

Figure 5.27: Box plot of dry density by domain

The effect of bedrock type on the grading of the till is somewhat more marked, with the metamorphosed mudstones and siltstones generally producing tills with higher gravel content and lower fines content (silt and clay) than the softer sandstone bedrock: the differences are summarised in Figure 5.23 to Figure 5.25. Breccias and conglomerates also tended to produce higher percentages of gravel in the overlying tills, as would be expected due to the harder nature of the rock in the coarse clasts. The lowest gravel fraction was measured in the tills above the Triassic St. Bees Sandstone, corresponding with the highest percentage of fines.

The box and whisker plots in Figure 5.26 and Figure 5.27 show no clear correlation between till density and bedrock type. This is conjectured to be due to the effects of very small variations in the particle density being outweighed by the vertical variation within a till deposit because of natural consolidation effects.

5.4. RESULTS FROM OTHER ANALYTICAL METHODS

5.4.1. Undrained shear strength parameters

The empirical relationship $\mathbf{c_u} = \mathbf{f_1} \times \boldsymbol{N}$ proposed by Stroud and Butler (1975) was investigated graphically on a site by site basis. As in the case of the data from Kirkby Stephen (Chapter 4), the SPT and undrained triaxial shear strength were compared by overlaying the two data sets on a site-by-site basis. At site 2, Wythop Wood, only two SPT's, one in each soil type, were driven the full penetration distance, and the comparison was disregarded. No quick undrained triaxial testing was carried out at Site 7, Cleator Moor.

The results of the comparisons gave a range of values of $\mathbf{f_1}$ between 1.75 and 7.0, with the 'most likely' values ranging from 2.0 to 6.0, as shown in Table 5.2. The values obtained in Chapter 4 for the site at Kirkby Stephen have been included to complete the information presented.

Plotting the values obtained for till in Table 5.2 gives a cloud of data of similar shape to that obtained by Stroud and Butler (1975). Although an inverse relationship between plasticity index and the empirical coefficient $\mathbf{f_1}$ is suggested by the data, all the calculated regression lines in Figure 5.28 have a coefficient of determination of less than 0.25, suggesting the derived equations do not satisfactorily explain the experimental data. A similar problem is observed with the line fitted to the data in the original paper by Stroud and Butler, where the curve presented is just one of many possible lines that could sensibly be drawn through the experimental points. In the case of silty tills around High and Low Newton in the south of the county the relationship breaks down altogether, and the value of $\mathbf{f_1}$ was approximately 1

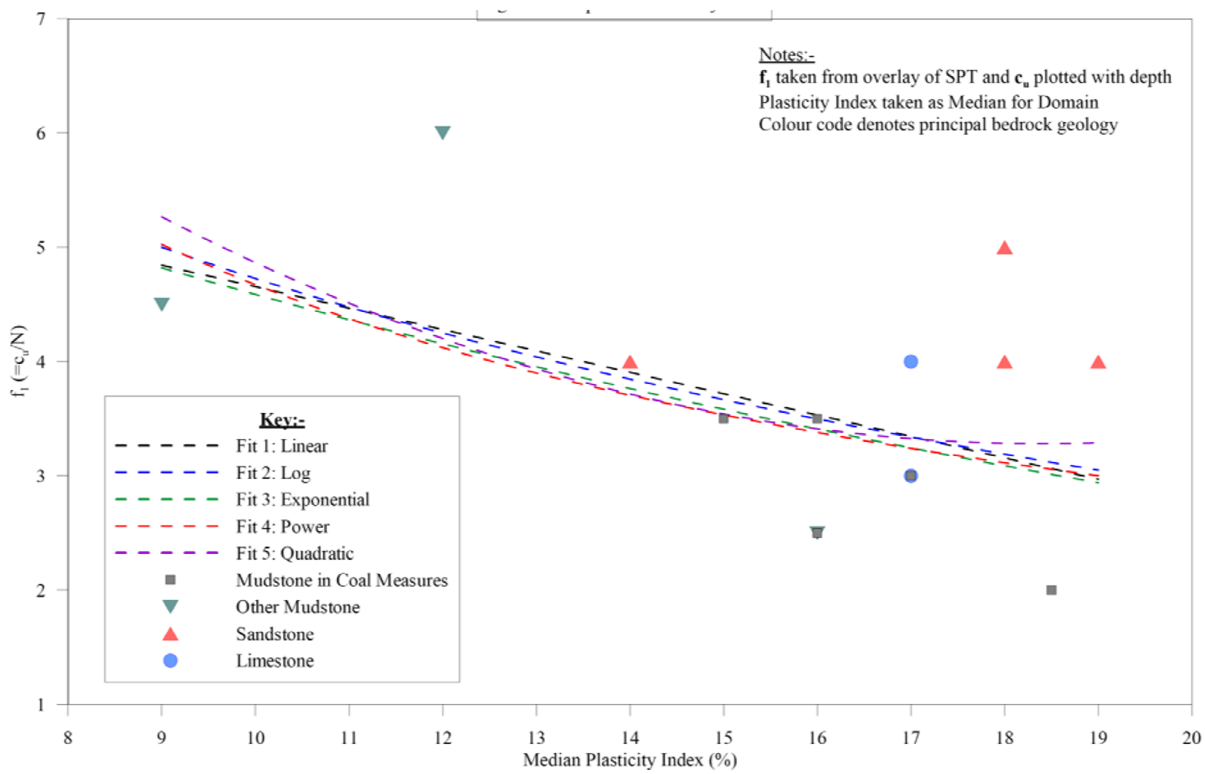

Figure 5.28: Ratio of f_1 (shear strength divided by SPT 'N' value) and plasticity index

There is no obvious correlation between the bedrock geology and the value of $\mathbf{f_1}$ obtained. However, it is concluded that generally the values of $\mathbf{f_1}$ suggested in the original paper (Stroud and Butler, 1975) are somewhat high for Cumbrian tills and that it would be prudent to carry out assessment of $\mathbf{f_1}$ on a site-by-site basis, as is recommended for all empirical relationships in Eurocode 7 (BSEN 1997-1, 2004).

Domain Reference	Range of PI	Median PI	Range of f_1	Most Likely Value of f_1	Comments
11	10 – 31	15	3.5 – 4.5	4.0	
12	11 – 24	17	3.0 – 4.0	3.0	Single c_u result
13	14 – 18	17	-	-	No strength or SPT data
14	7 – 24	14	3.5 – 4.5	4.0	
Site 2	6 – 25	12	3.5 – 7.0	6.0	till only; single SPT result
31	8 – 28	19	3.5 – 4.5	4.0	Upper till
31	10 – 29	18	4.5 – 5.5	5.0	Lower till
Site 3	8 – 29	18	3.5 – 4.5	4.0	Combined upper and lower till
41	12 – 35	22	-	-	No triaxial or SPT data
42	16 – 17	16.5	-	-	No triaxial or SPT data
43	7 – 30	16	2.0 – 2.5	2.5	Two SPT results only
51 (Silty)	1 – 9	5	-	≈ 1.0	
51 (Clayey)	7 – 13	10	-	-	No SPT results
52 (Silty)	1 – 12	9	-	≈ 1.0	
52 (Clayey)	6 – 14	9	-	4.5	Single SPT and c_u results
53 (Silty)	3 – 5	4	-	-	No triaxial test results
53 (Clayey)	7 – 9	8	-	-	No triaxial or SPT data
61	-	-	-	-	No plasticity or SPT results
62	7 – 37	17	2.75 – 3.25	3.0	Upper till
62	8 – 23	15	3.0 – 4.0	3.5	Lower till
62	7 – 37	16	3.0 – 4.0	3.5	Combined upper and lower till
63	11 – 28	17	2.75 – 3.25	3.0	Upper till
63	12 – 22	16	2.25 – 2.75	2.5	Lower till
63	11 – 28	16	2.25 – 2.75	2.5	Combined upper and lower till
64	10 – 20	17	3.0 – 5.0	4.0	Upper till
64	15 – 21	17	2.75 – 3.25	3.0	Lower till
64	10 – 21	17	2.75 – 3.25	3.0	Combined upper and lower till
65	8 – 21	18.5	1.75 – 2.5	2.0	Combined upper and lower till
Site 7	11 – 23	16	-	-	No triaxial test results

Table 5.2: Range of empirical conversion factors for SPT to undrained shear strength

Domain	Soil Type	Curved Envelope Parameters		Mohr-Coulomb Envelope Parameters		
		A	**b**	**c′**	**φ′**	Stress Range (kN/m²) *
11	Upper till	1.26	0.88	6.2	33.6	10 – 150
11	Lower till	1.37	0.86	10.1	30.9	20 – 250
Domain 11 Combined		1.40	0.85	9.4	31.3	10 – 250
12	Upper till †	1.12	0.89	9.9	29.1	20 – 400
14	Upper till †	1.34	0.88	5.3	36.2	20 – 125
21	Lower till †	1.32	0.85	19.2	26.3	100 – 400
31	Upper till †	1.12	0.87	7.4	27.9	20 – 275
41	Upper till	1.39	0.85	6.5	31.5	10 – 200
41	Lower till	2.20	0.71	15.4	21.7	25 – 225
Domain 41 Combined		1.71	0.78	10.5	26.7	10 – 250
51	Upper till †	2.00	0.88	19.7	43.1	50 – 500
52	Lower till ‡	1.73✠	0.91✠	0✠	47.1✠	100 – 500
Domain 52 Combined ‡		1.97✠	0.88✠	0✠	47.1✠	100 – 500
61	Upper till	1.91	0.78	12.7	29.3	20 – 200
61	Lower till	2.44	0.74	18.1	29.7	20 – 200
Domain 61 Combined		1.86	0.80	11.9	31.1	20 – 200
64	Upper till †	1.95	0.75	17.8	22.2	25 – 650
65	Upper till	1.00	0.92	3.6	33.6	10 – 250
65	Lower till	1.26	0.85	8.7	28.1	20 – 250
Domain 65 Combined		1.12	0.88	6.1	30.3	20 – 300
71	Upper till	1.12	0.86	5.7	28.1	20 – 200
71	Lower till	0.94	0.89	10.0	24.5	25 – 600
Domain 71 Combined		1.06	0.86	10.2	24.6	20 – 600
72	Upper till	0.67	0.97	1.3	30.2	20 – 200
72	Lower till	0.91	0.91	9.6	27.8	30 – 600
Domain 72 Combined		0.81	0.93	5.1	28.4	20 – 600

Table 5.3: Peak strength envelope parameters by domain

Notes: * stress range over which **c'**, **φ'** are applicable
† only one soil horizon represented in test results
‡ insufficient data from upper till; included in Domain combined results.
✠ approximate parameters calculated in Excel.

5.4.2. Peak effective shear strength envelope

The same analysis using least normal squares regression (Perry 1994a and b) is used to calculate the failure envelope line to the Mohr circles of stress at peak failure from the results of laboratory triaxial tests on a domain by domain basis: once again, maximum stress ratio was used as the failure criterion (Head, 1986). Two regression lines are again calculated, with a simple straight-line fit of the type $\tau = \mathbf{c'} + \boldsymbol{\sigma'_n} \tan\boldsymbol{\phi'}$, and a power curve $\tau = A\boldsymbol{\sigma'_n}^{\mathbf{b}}$. The sum of square errors was calculated and residuals were plotted graphically to assess the degree of fit of the envelope lines obtained. The results for both lines gave very similar sum of square error values, and the raw residual plots were similarly inconclusive. The plots of residuals normalised by maximum shear stress provided some indication that the curved envelope probably fitted the data somewhat better, as the range above and below the **d** = 0 line was narrower and, in general, the residuals for the curve were less than those for the straight line: the fit of the envelopes to the plotted Mohr circles in Figure 5.29 to Figure 5.38 was also assessed visually to be better. The values obtained from the analysis for **A, b, c′** and **ϕ′** (with governing stress range) for peak failure conditions within each domain are given in Table 5.3: the values obtained for the Kirkby Stephen site discussed in Chapter 4 are included for completeness.

The envelope parameters obtained range between 0.67 and 2.44 for **A**; 0.71 and 0.97 for **b**. There is no obvious correlation between the envelope parameters and the underlying bedrock geology.

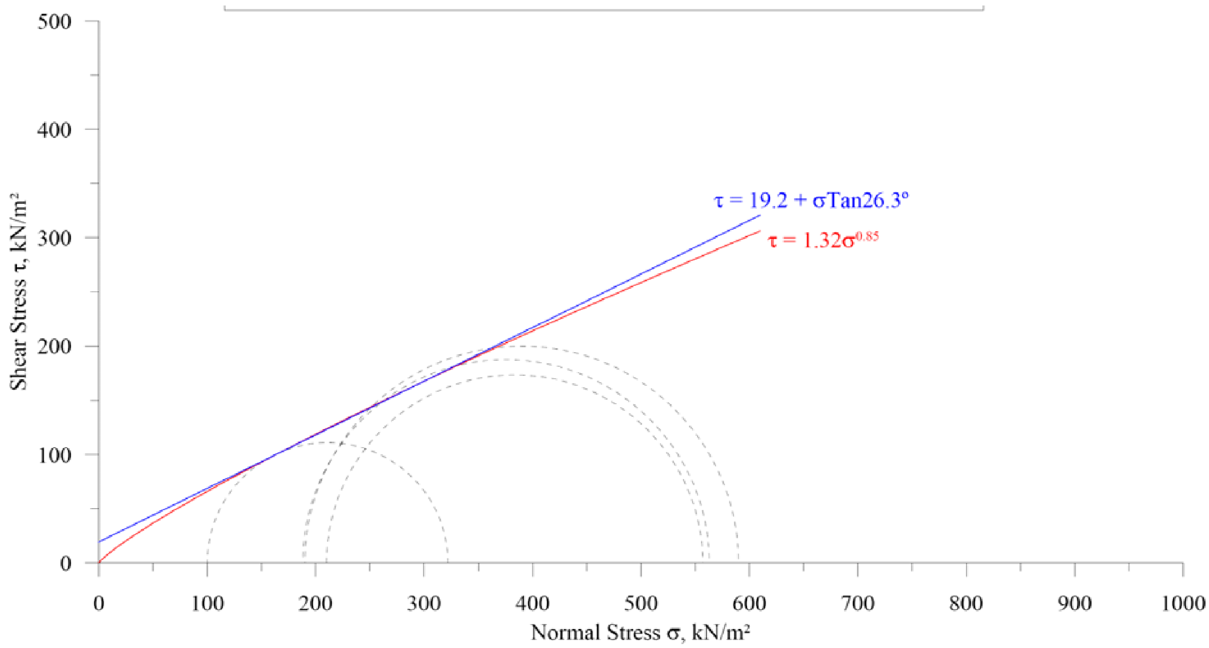

Figure 5.29: Peak shear strength envelopes for till: Site 2, Wythop Wood

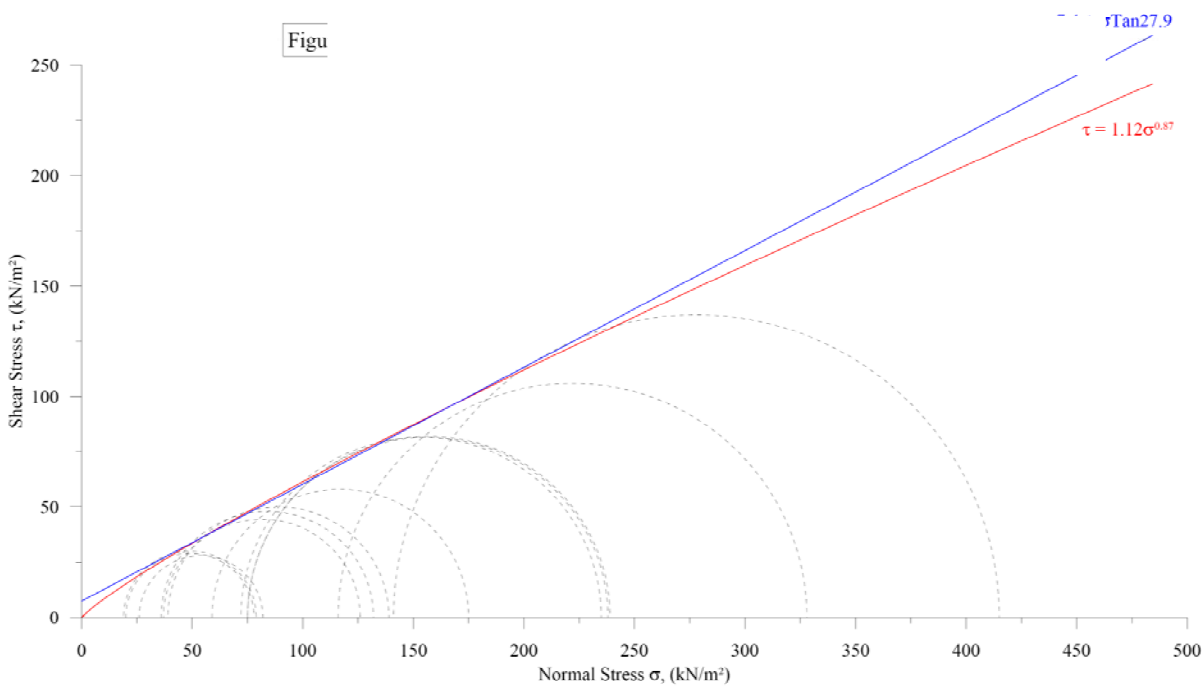

Figure 5.30: Peak shear strength envelopes for till: Site 3, Sowerby Wood

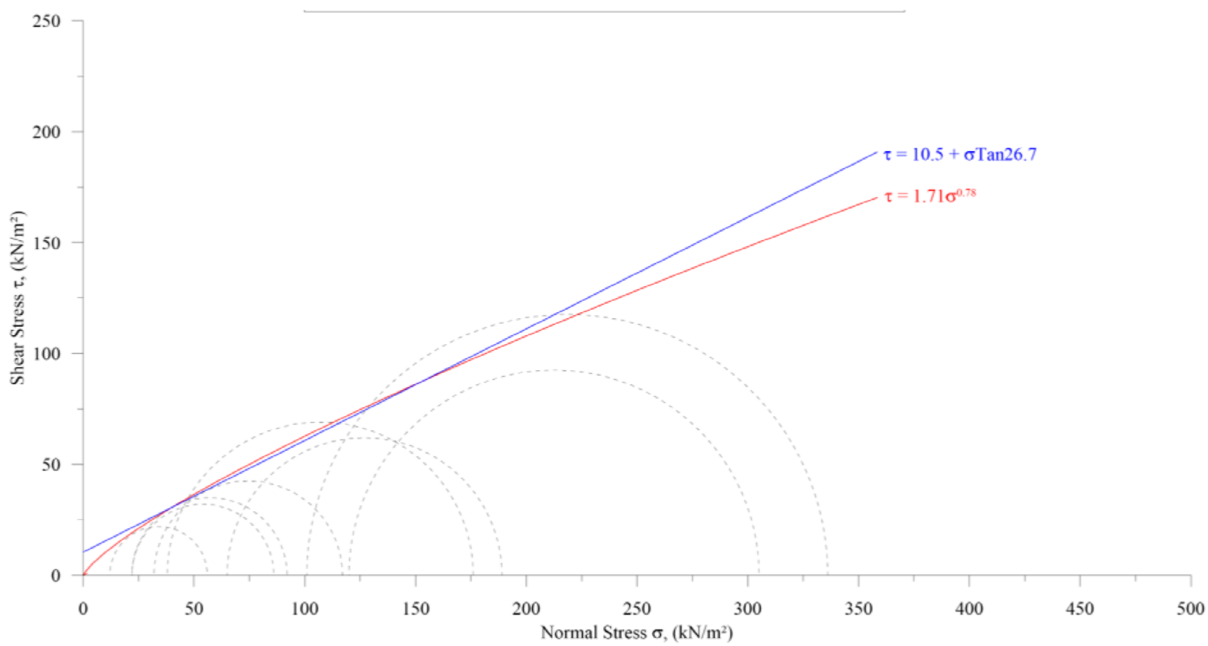

Figure 5.31: Peak shear strength envelope for till: Domain 41, Askam-in-Furness

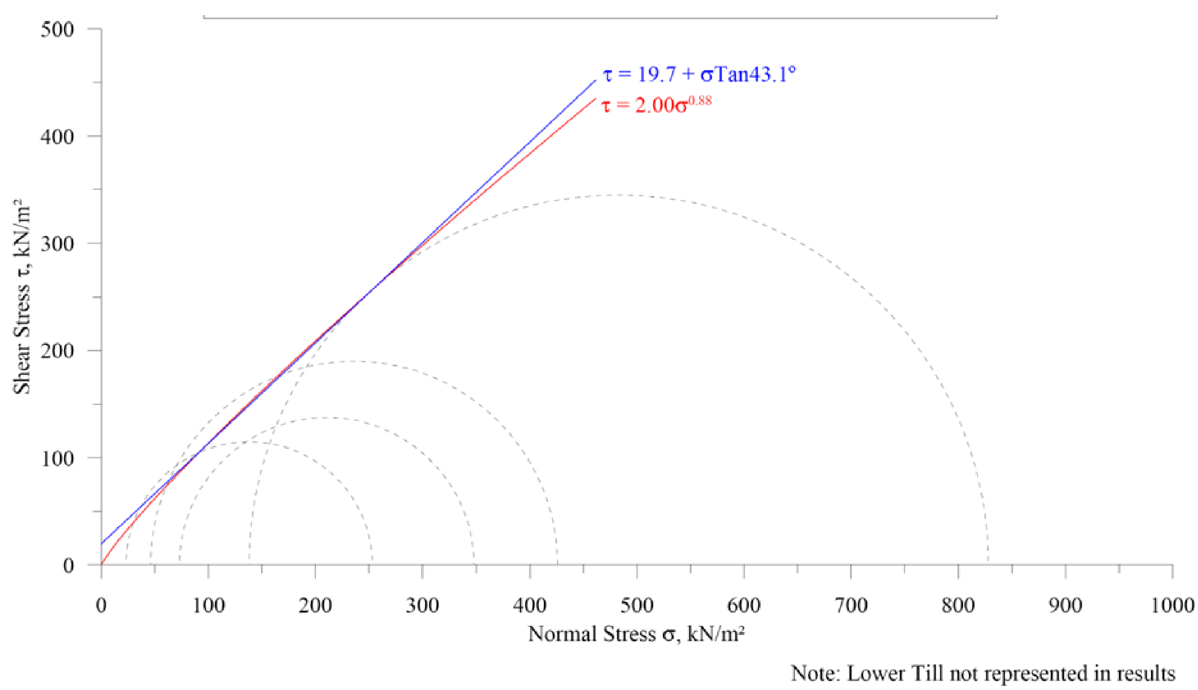

Figure 5.32: Peak shear strength envelope for till: Domain 51, High and Low Newton

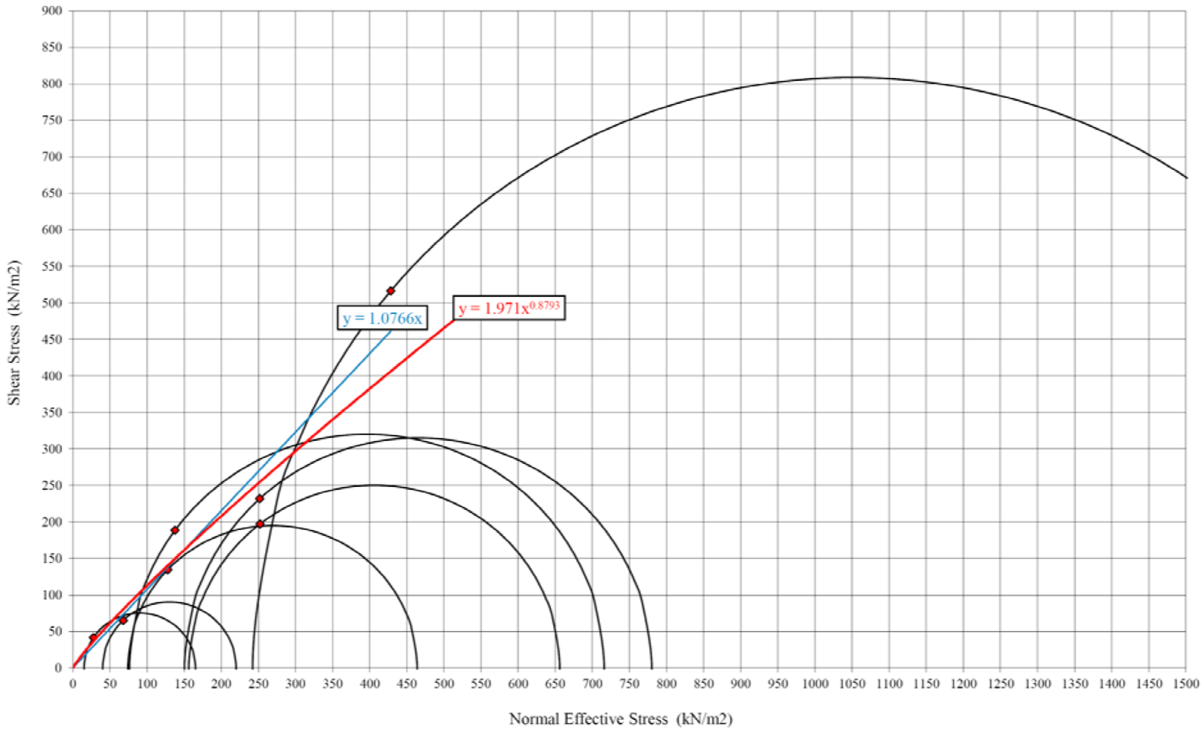

Figure 5.33: Peak shear strength envelope for till: Domain 52, High and Low Newton

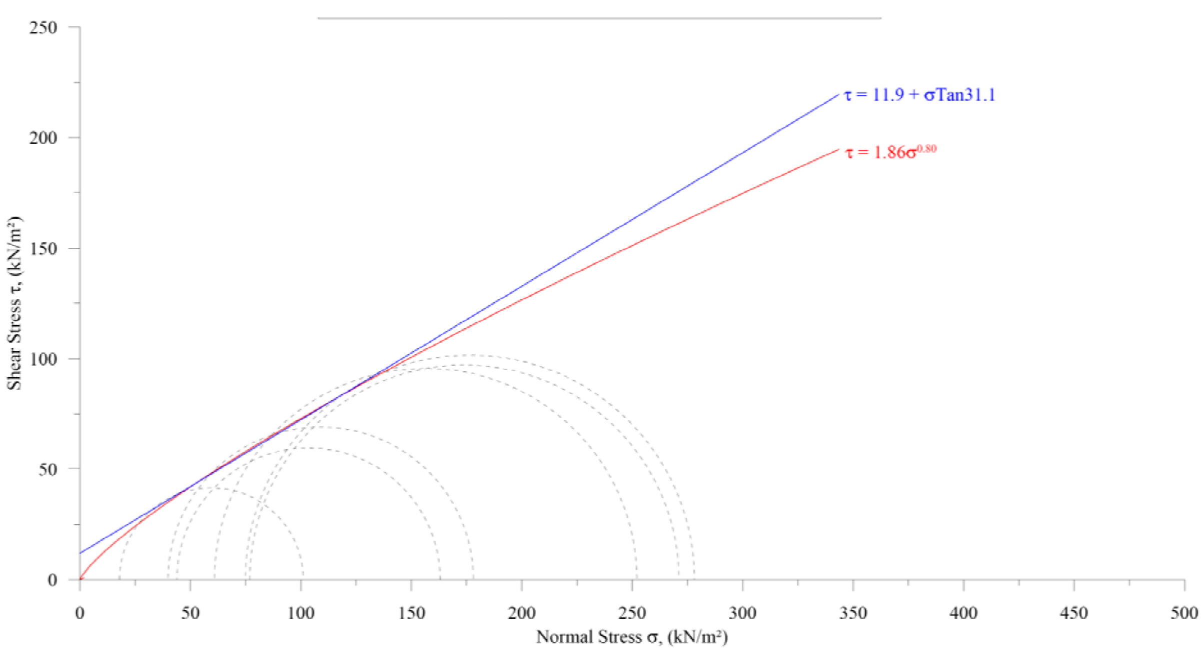

Figure 5.34: Peak shear strength envelope for till: Domain 61, Parton Brow

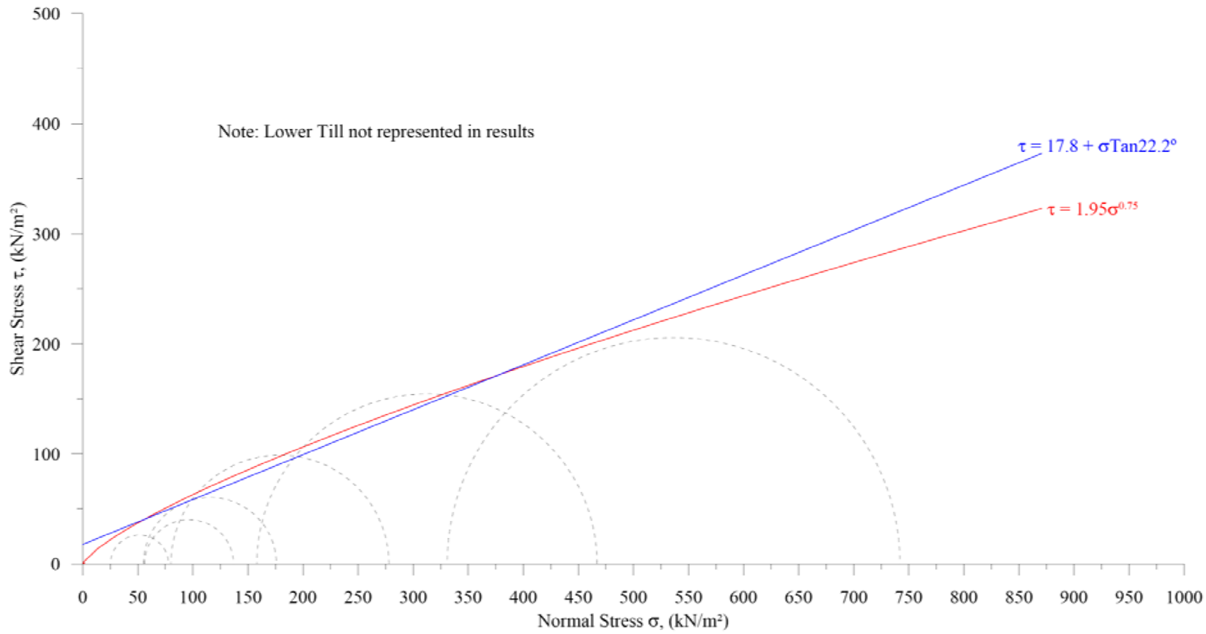

Figure 5.35: Peak shear strength envelope for till: Domain 64, Lillyhall

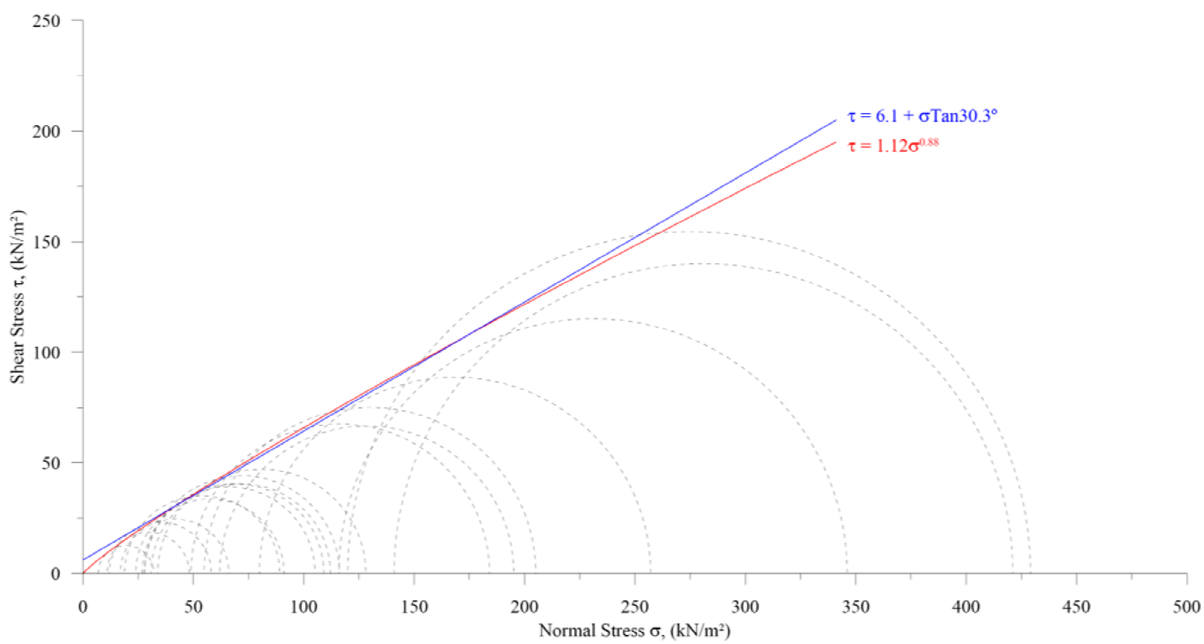

Figure 5.36: Peak shear strength envelope for till: Domain 65, Lillyhall

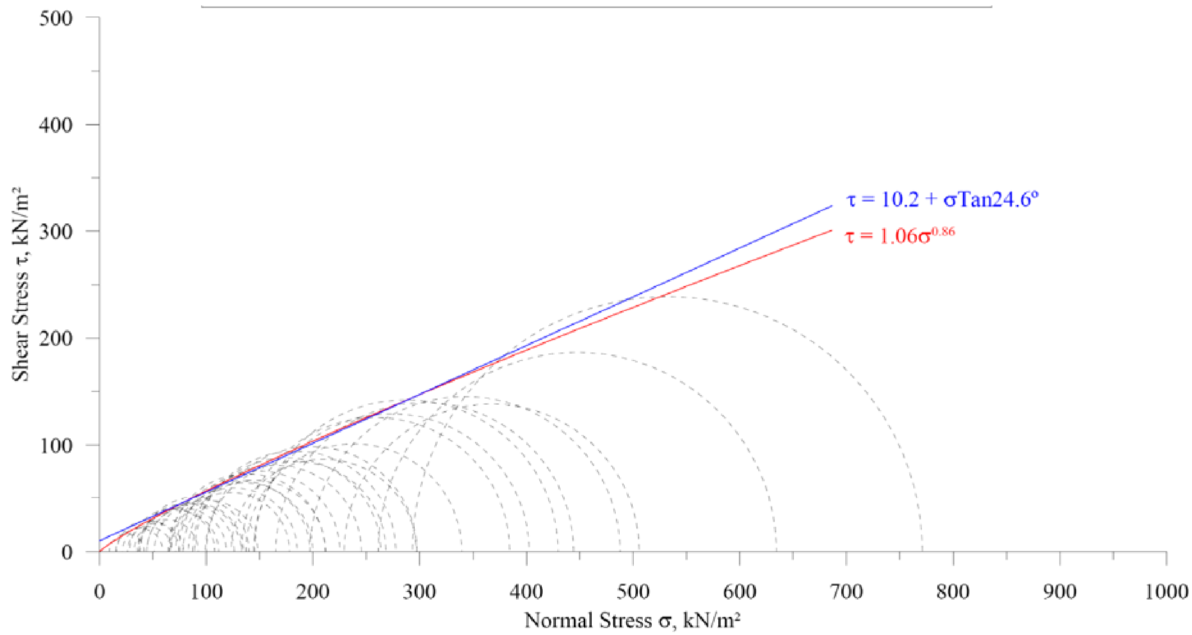

Figure 5.37: Peak shear strength envelope for till: Domain 71, Cleator Moor

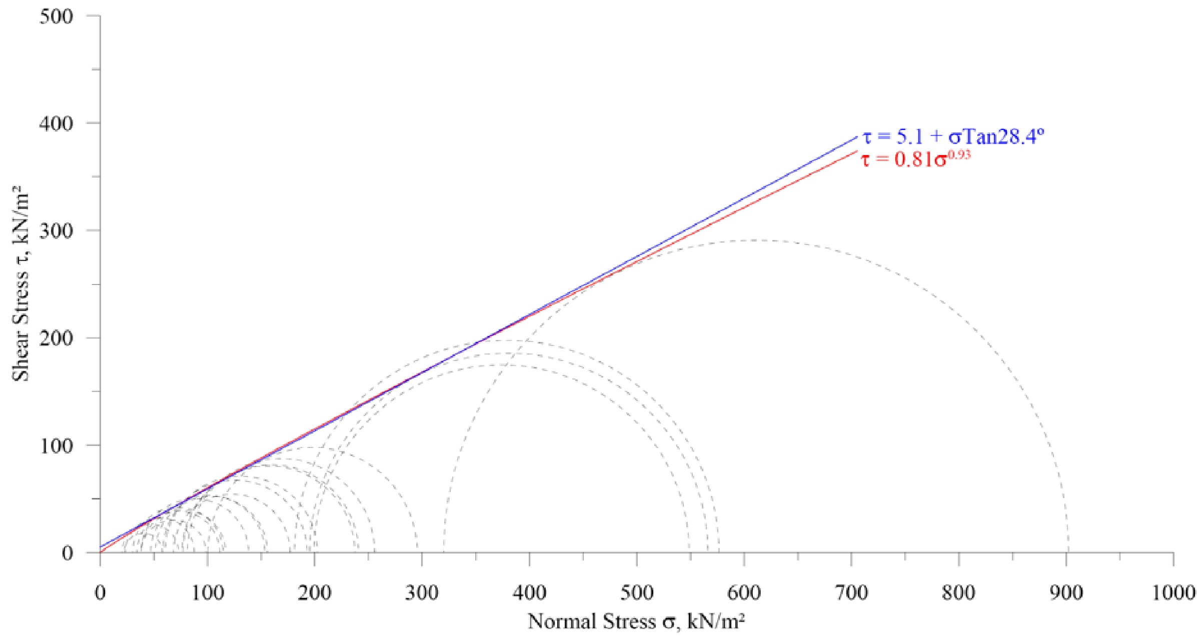

Figure 5.38: Peak shear strength envelope for till: Domain 72, Cleator Moor

To investigate the possible relationships between peak shear strength parameters and commonly measured index properties, the results were also plotted in Figure 5.39 to Figure 5.42 as the angle of shearing resistance ϕ' obtained in individual tests against dry density, percentage passing 425μm sieve, percentage of gravel fraction, and against plasticity index. In every case, as the full range of tests were not carried out on each specimen, data for passing 425μm and plasticity index were taken from the nearest available specimen in the same exploratory hole: where this specimen was further than 2m away vertically the data were ignored and the friction angle was not plotted.

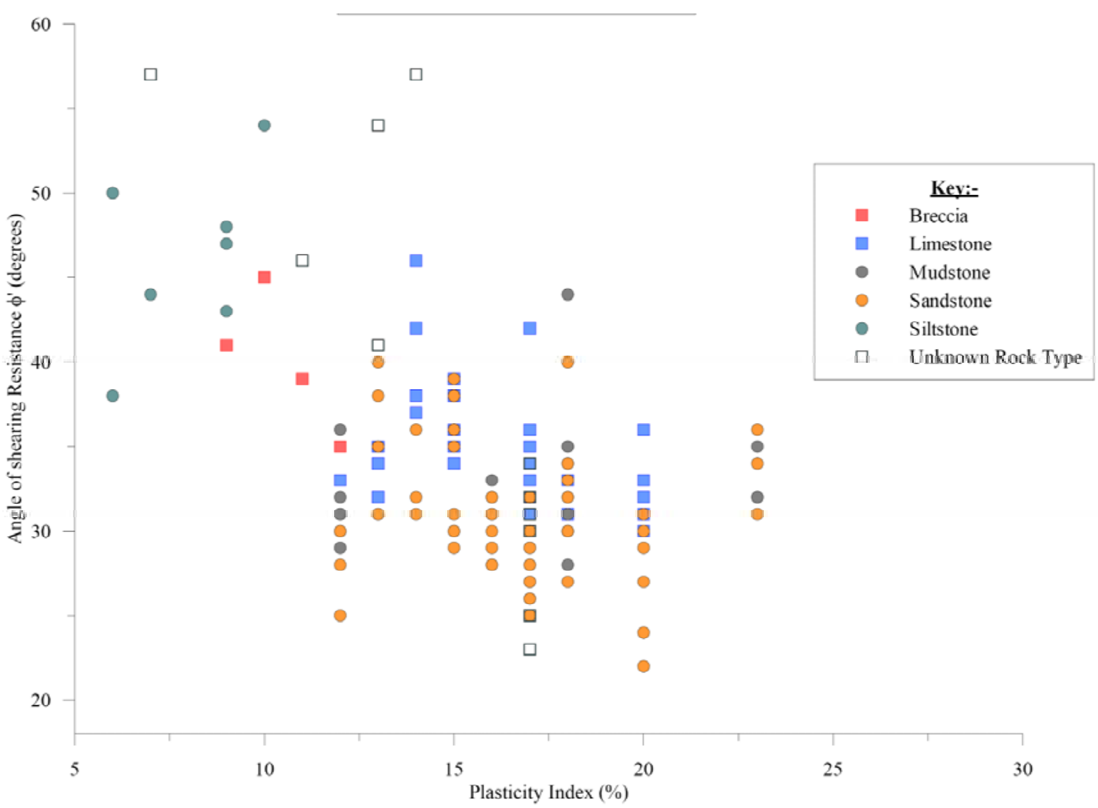

Figure 5.39: Peak angle of shearing resistance versus plasticity index

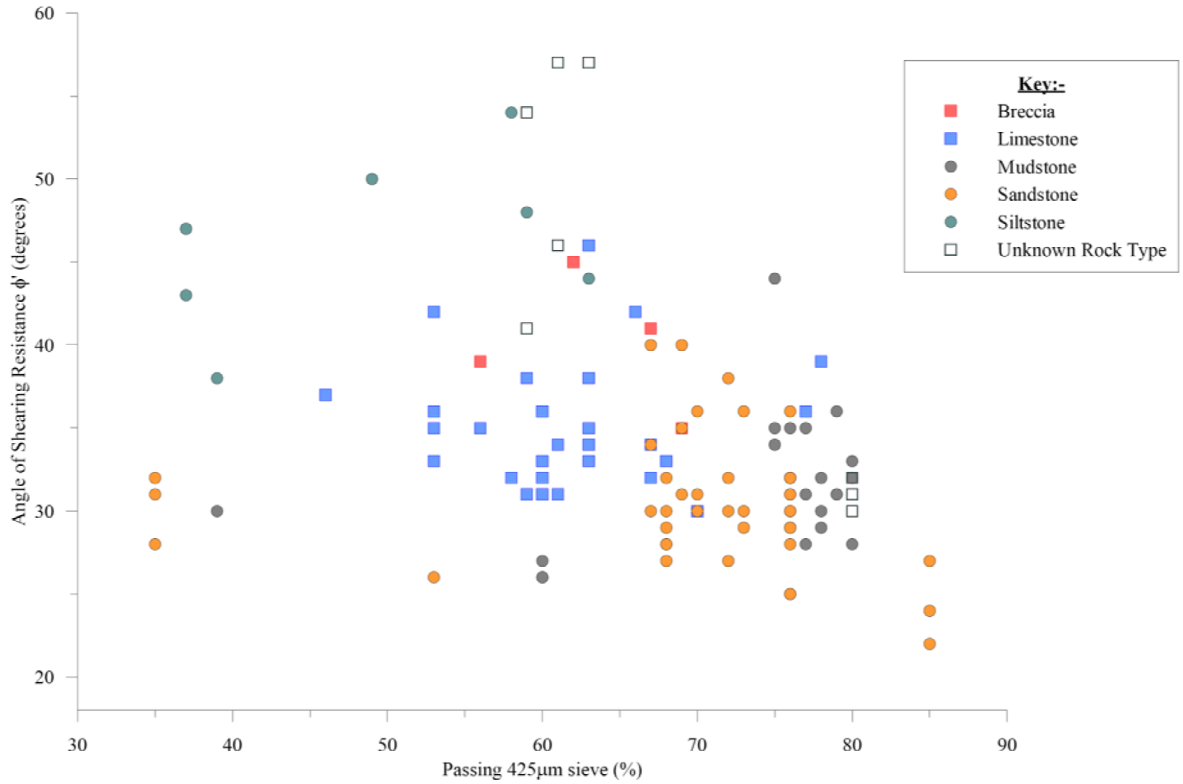

Figure 5.40: Peak angle of shearing resistance versus % passing 425 micron sieve

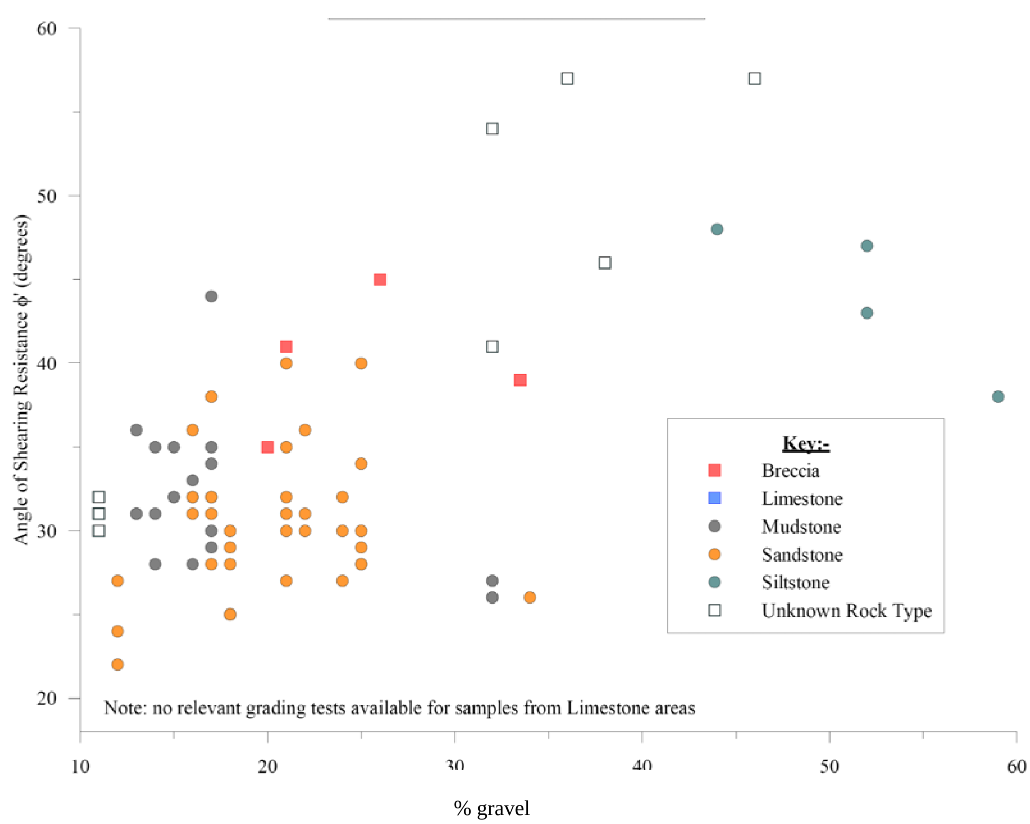

Figure 5.41: Peak angle of shearing resistance versus % gravel

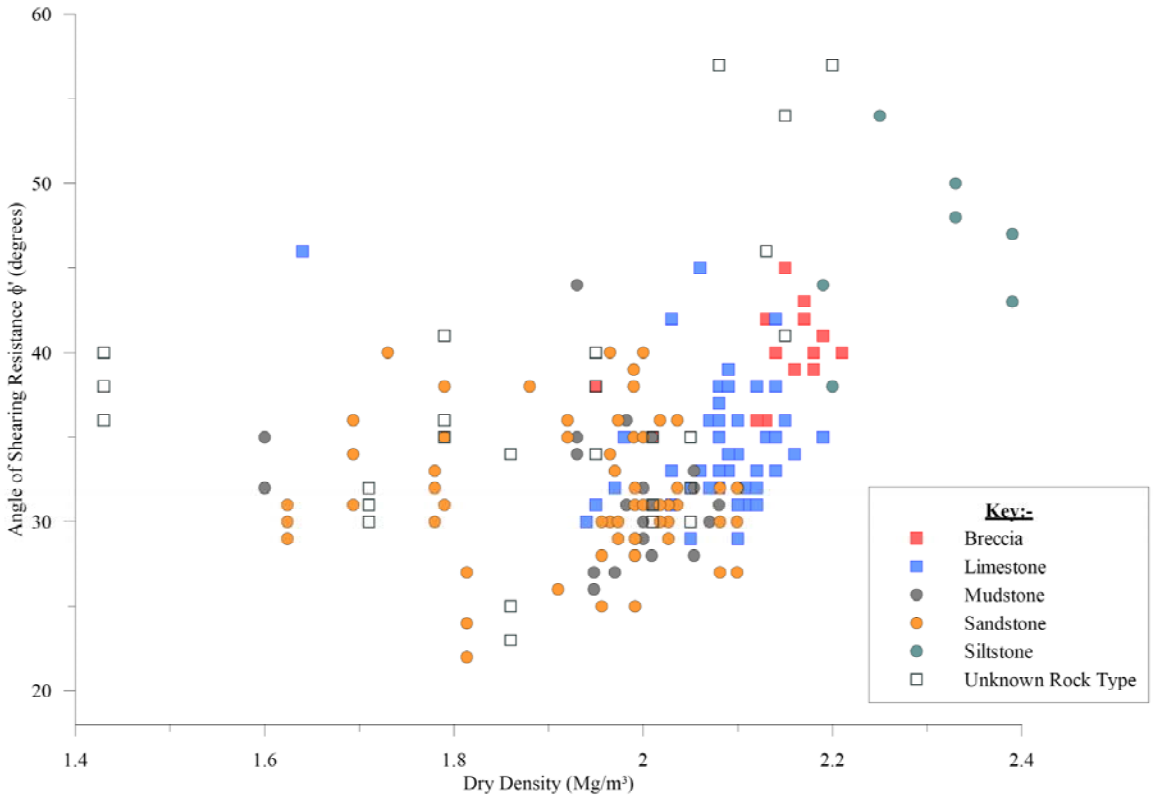

Figure 5.42: Peak angle of shearing resistance versus dry density

The graphs produced in Figure 5.39 to Figure 5.42 indicate some broad trends of increase in peak angle of shearing resistance ϕ' with increasing dry density and gravel content and with decreasing plasticity index, but no clear relationship emerged between ϕ' and the percentage passing the 425μm sieve. All the calculated regression lines have a coefficient of determination of less than 0.33, and in some cases less than 0.2, suggesting the derived equations do not satisfactorily explain the experimental data.

When the ϕ' points for maximum deviator stress conditions are plotted against plasticity index in Figure 5.43 the trend line and 95% confidence interval lies very close to the extrapolated ϕ'_{crit} line given in BS8002:1994, indicating that this may represent a state of stress approaching the

Critical State. However, it was observed that in most cases the pore pressure was still falling at 20% strain, the value at which the tests were halted by convention. This indicates that true critical state has not been attained, and it is probable that the interference caused by the presence of significant percentages of coarse grain sizes in the tills prevents the onset of critical state conditions in the failure plane.

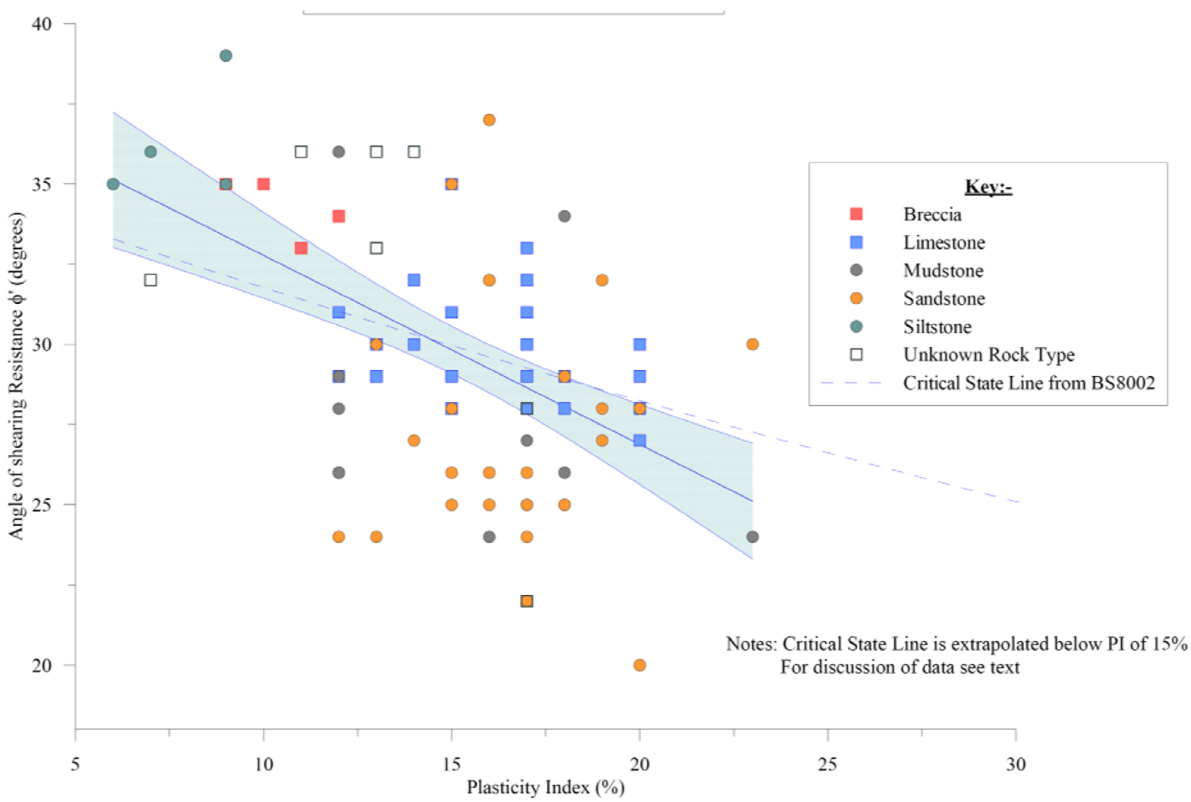

Figure 5.43: 'Critical state' angle of shearing resistance versus plasticity index

5.5. SUMMARY

The results of the statistical calculations carried out on the data sets from the seven selected sites indicates that the applied domain model is useful in determining the effects of the geological and glacigenic controls on the derived tills. Although these effects are superimposed the individual effects may be observed by consideration of the results within the context of the domain model.

Empirical relationships used to derive undrained and effective shear strength were examined as part of the study. It is suggested that the relationship proposed by Stroud and Butler (1975) relating SPT to undrained shear strength does not hold for tills in Cumbria, but that the relationship in BS8002 provides a realistic estimate critical state angle of shearing resistance with differing plasticity index.

These and other conclusions are discussed in more detail in Chapter 6.

Chapter 6. DISCUSSION OF RESULTS

6.1. GENERAL RECAPITULATION

6.1.1. Background - Eurocodes

In accordance with BS EN 1997-1 one of the purposes of a preliminary investigation is to plan further investigations, termed “design investigations”, including determining the extent of ground which may significantly influence the behaviour of a structure (BS EN 1997-1, §3.2.2 [1]P). The (design) investigation should be carried out in sufficient detail that the sub-surface profile is fully defined, including the differentiation of the formations present (BS EN 1997-1, §3.4.3 [2]). As part of the reporting of the investigation(s) characteristic values of soil and rock parameters are to be derived. Among a number of methods for deriving characteristic values, the use of statistics is allowed; in this context the mean is the only mentioned measure, implying the intended use of parametric statistics (BS EN 1997-1, §2.4.5.2 [9] to [11]).

Where correlations are used in the evaluation of geotechnical parameters the overall suitability of such correlations must be considered together with their relevance to the local ground conditions (BS EN 1997-1: 2004, §2.4.1 [10]P; BS EN 1997-2, §4.2.3 [4]P). This is particularly important when using existing published correlations, such as that between SPT blow count and undrained shear strength, $\mathbf{c_u}$ (Stroud and Butler, 1975) or plasticity index and critical state angle of shearing resistance (BS8002).

6.1.2. Aims of study

Much published research links the glacial environment to the range of properties anticipated in the resulting till (Fookes et al., 1975a; Derbyshire et al., 1976, 1985; McGown and Derbyshire, 1977; Trenter, 1999). Further refinements of these models also concentrate on the glacigenic rather than the geological environment (Eyles and Dearman, 1981; Eyles and Sladen, 1981; Eyles, 1983). Therefore, the stated principal aim of this study was to determine whether, for sites extending across more than one bedrock type, the underlying bedrock geology also affects the properties of till and, thus, whether subdivision of tills into domains based on the underlying bedrock geology could form a useful starting point for the design of ground investigations. In the course of examining this proposition various disciplines have been brought to bear on the problem, including geology, geomorphology, glaciology, geotechnical engineering and statistics.

As a result, apart from testing the main hypothesis, this study leads to the formation of important conclusions relating to the applicability of using statistical means to summarise geotechnical data. In addition, the applicability of published empirical correlations between index properties and soil shear strength and critical state angle of shearing resistance ϕ_{crit} together with that between SPT blow count and undrained shear strength c_u were also examined.

6.1.3. Data sources

To provide a realistic test-bed for the hypothesis, the study was limited to analysis of large data sets acquired during the course of commercial investigations carried out for a variety of infrastructure and development schemes. The study area was limited to Cumbria and its immediate surroundings since, although the tills of the region are the product of a limited glacigenic environment, the bedrock geology includes a variety of different bedrock types. The sites were selected according to the following criteria:

- Range and volume of data collected, including laboratory measurement of shear strength;
- Different bedrock formations included in each investigation or adjacent investigations;

- Location to give coverage of Cumbria;

In all, seven sites were chosen for detailed analysis. These are discussed in detail in Chapters 4 and 5.

6.1.4. Methodology

Each site was divided into a series of domains based on the geology of the underlying bedrock and where the extent of a linear site permitted, on the basis of topographic relief. Where the original log description differentiated two till horizons based on (colour, consistency, etcetera) within a domain, the soil was divided into upper and lower till units using the log descriptions and the elevation within the stratigraphic column. Each soil sample from within the domain was then assigned to one of the till units.

The resulting data sets were examined on a domain basis using a range of graphical and statistical techniques. Parametric and non-parametric methods were used to compare data within and between domains to assess whether there was any statistical evidence to support the hypothesis that glacial and geological controls exert an influence on the geotechnical properties of till. The validity of assigning a characteristic value on the basis of the statistical mean as opposed to the median was also assessed.

The validity for tills in Cumbria of some published empirical relationships was assessed by plotting parameters using similar formats to those in the original work. In addition, plots of shear strength parameters against commonly measured index properties were prepared.

The methodology is described in full in Chapter 3 and the results discussed in Chapters 4 and 5. A summary of the results is presented in Appendix B, with full calculations included in Appendix D.

6.2. DOMAIN CONTROLS

6.2.1. Introduction

The stated hypothesis is that the effects of bedrock geology and glacigenic origin are possible controls on the geotechnical behaviour of tills in Cumbria. The effects of each of these controls will be superimposed at any one site, but can be summarised as:

- Control due to bedrock geology
- Control due to site location relative to main ice centre
- Control due to glacial and post-glacial history

An initial test conducted using analysis of variance (ANOVA) for the effects of geology and location confirmed that, statistically, there is evidence for such controls. More detailed statistical analysis was carried out and enabled the partial disaggregation of the effects of these varied controls on some key properties of the tills of the area.

In the following paragraphs it should be noted particularly that although the use of a variety of statistical techniques has allowed differences in properties to be observed between tills in different domains, the results should be used only as confirmation that a domain approach can be used as a preliminary basis upon which to design a thorough and properly executed ground investigation and to combine the subsequent test results from within a wider domain to provide a larger data set for the estimation of characteristic values in design. The results should not be used for the prediction of particular characteristic design values of soil properties based solely on the bedrock geology and in the absence of a properly conducted geotechnical investigation.

6.2.2. Control due to bedrock geology

The box and whisker plots in Figures 5.17 to 5.25 in Chapter 5 summarise the differences in index properties between domains within each site and among the different sites. Examination of these plots indicates that for sites where there is a distinct difference in bedrock between the domains there is a corresponding difference in the index properties of the overlying till deposits. That there is a measurable difference is confirmed by the results of the statistical comparison of means and medians of the data sets involved. Statistical differences between adjacent domains were observed at the $\alpha = 0.05$ level for tills at the Kirkby Stephen site, where Carboniferous limestone and Permian sandstone bedrock underlies the domains, and similar differences were observed at Askam-in-Furness, where the bedrock is a mixture of Carboniferous limestone, Ordovician Skiddaw slates and intrusive andesites and tuffs. Statistical differences were also observed between sites. The results of the statistical tests are summarised in the tables included in Appendices A2 to A4 and full calculations are presented in detail in Appendix D.

For those sites where the original log descriptions suggested the existence of both an upper and lower till unit the same statistical tests were also applied to geotechnical data from the two possible separate soil layers. For the majority of the sites, the results of these tests showed that the number of individual domains where a difference in index values was observed between the upper and lower till, and the magnitude of the difference, were both less than the differences suggested between domains and between sites when the aggregated data from upper and lower tills were compared. The sole exception was found at Site 6 (Parton and Lillyhall) where the vertical difference within each domain was more pronounced than the differences between domains and is more suggestive of the presence of two distinct tills, each the product of a different glaciation.

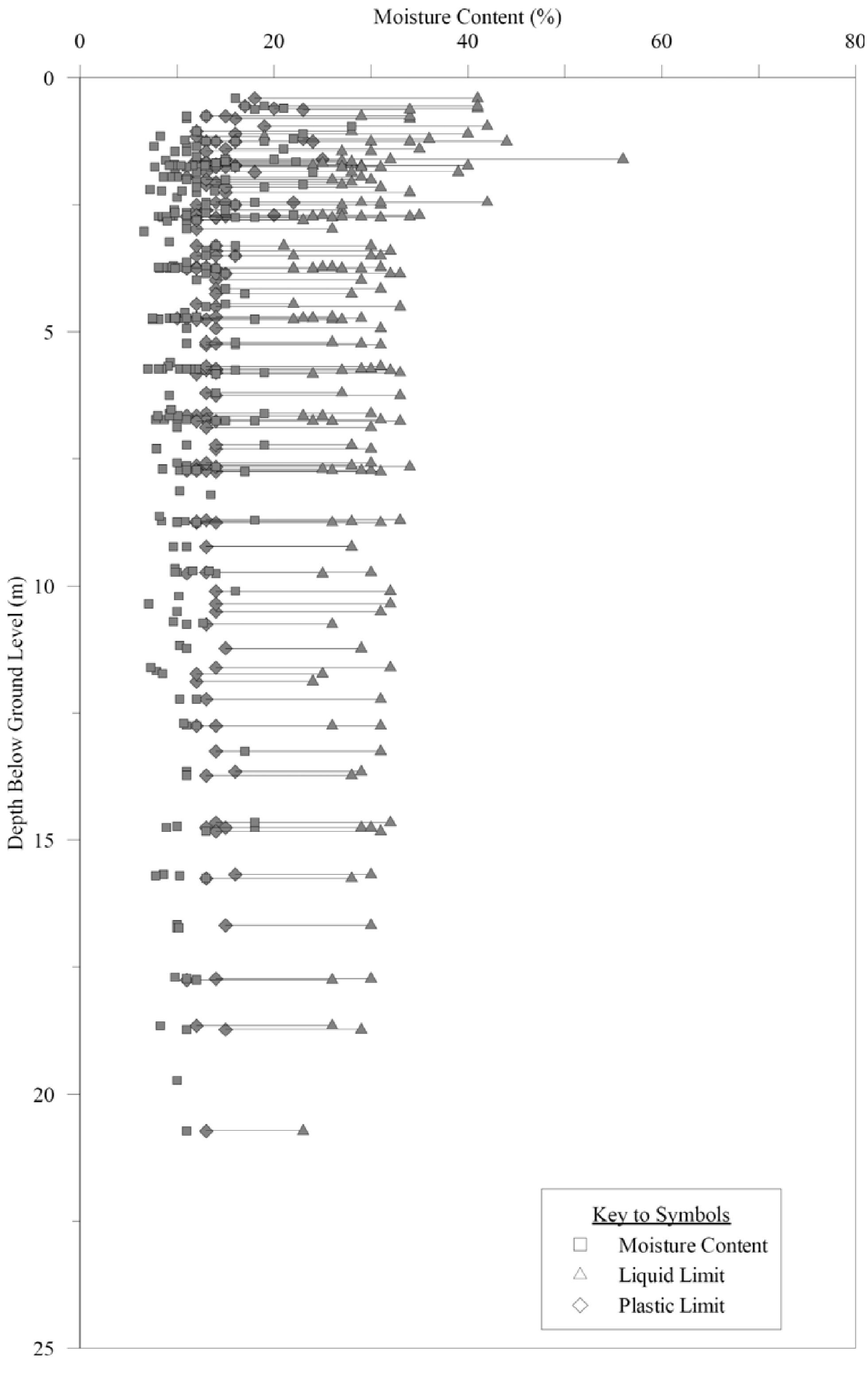

Figure 6.1: Atterberg limits: Site 1, Kirkby Stephen

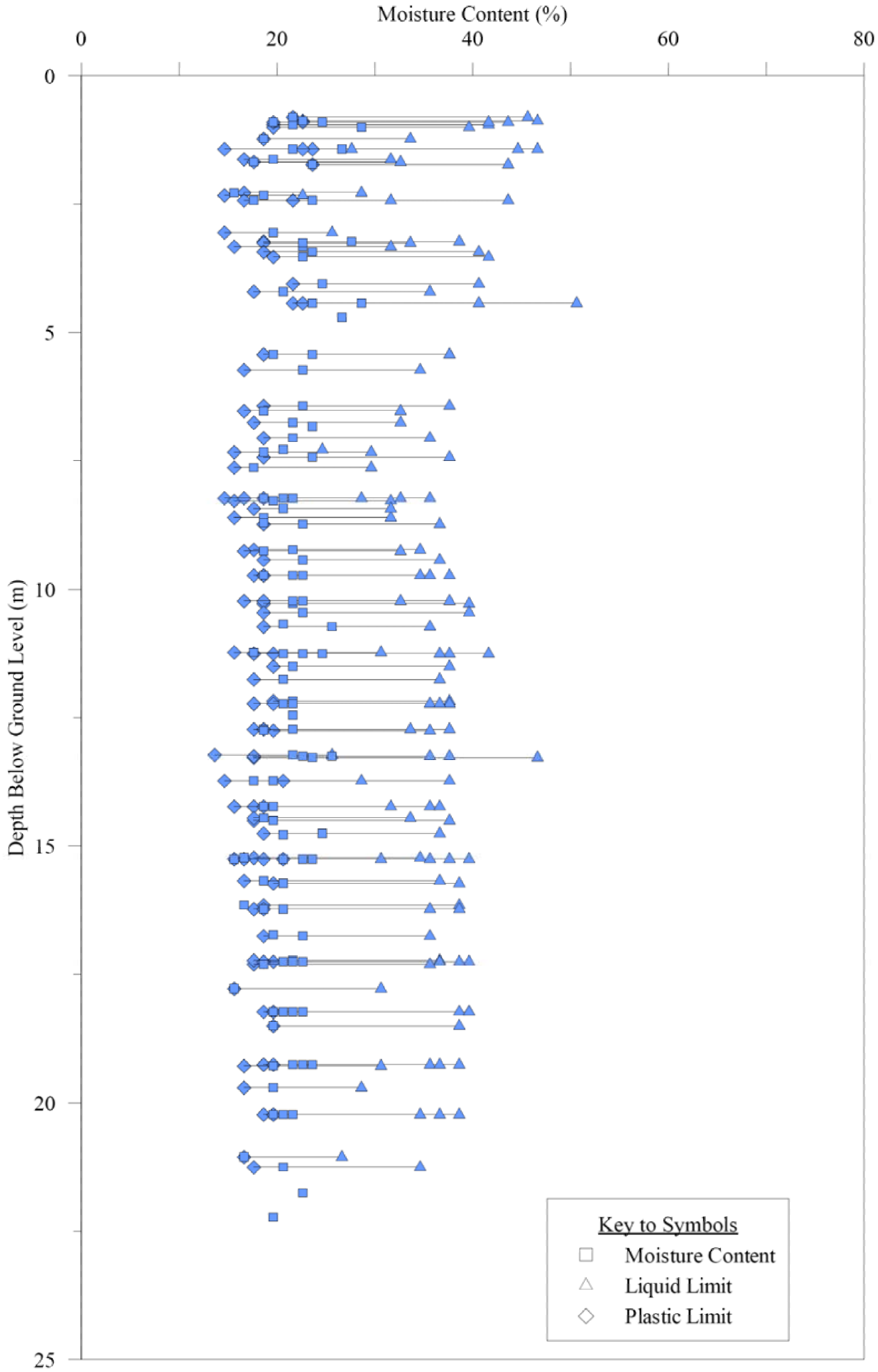

Figure 6.2: Atterberg limits: Site 3, Sowerby Wood

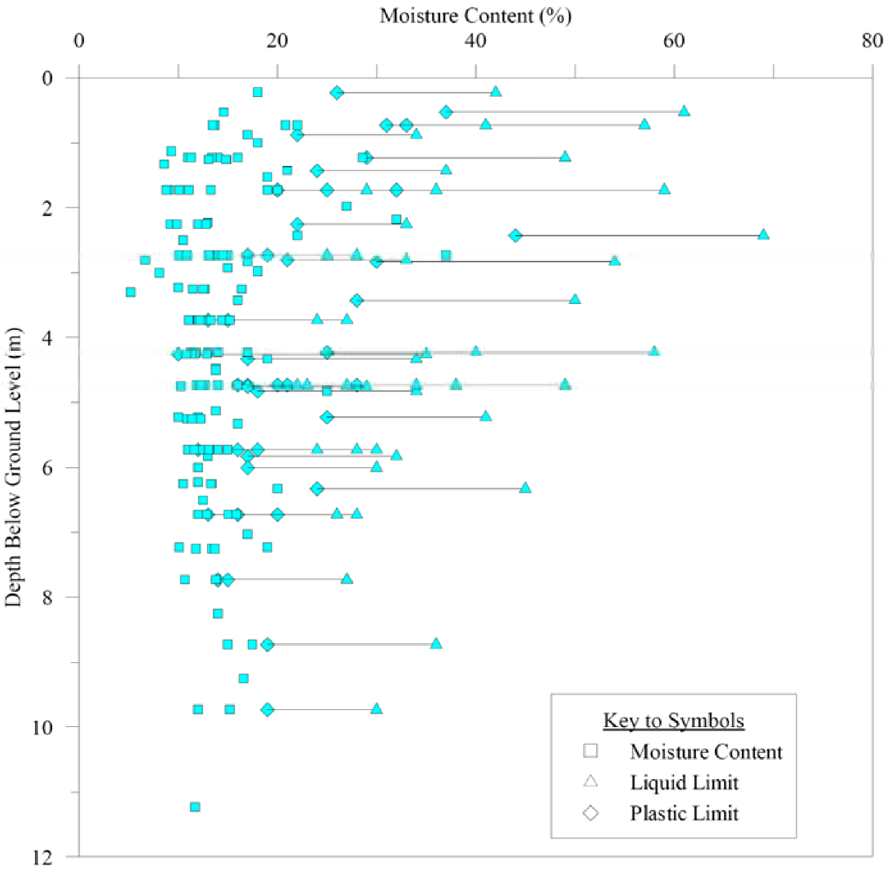

Figure 6.3: Atterberg limits: Site 2, Wythop Wood

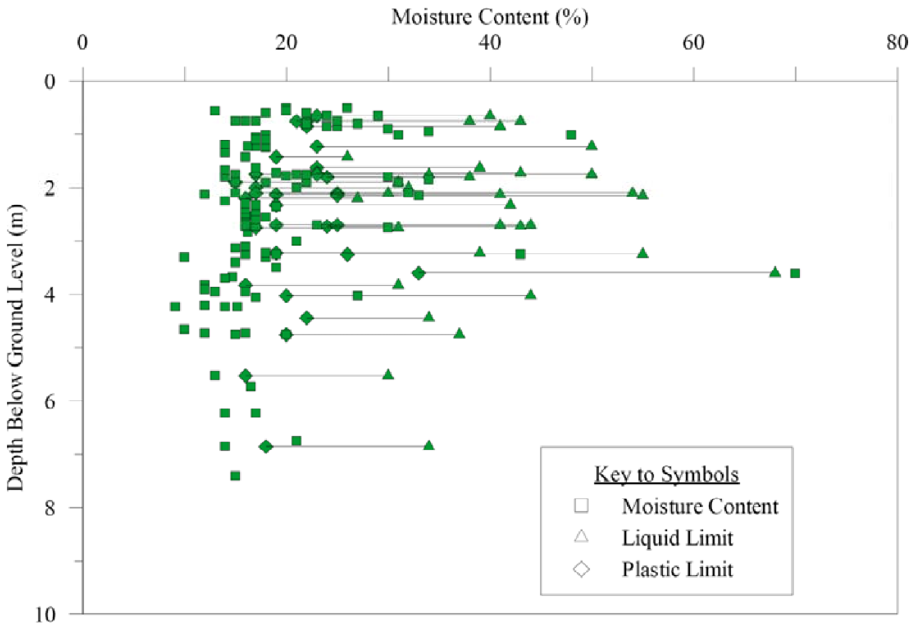

Figure 6.4: Atterberg limits: Site 4, Askam-in-Furness

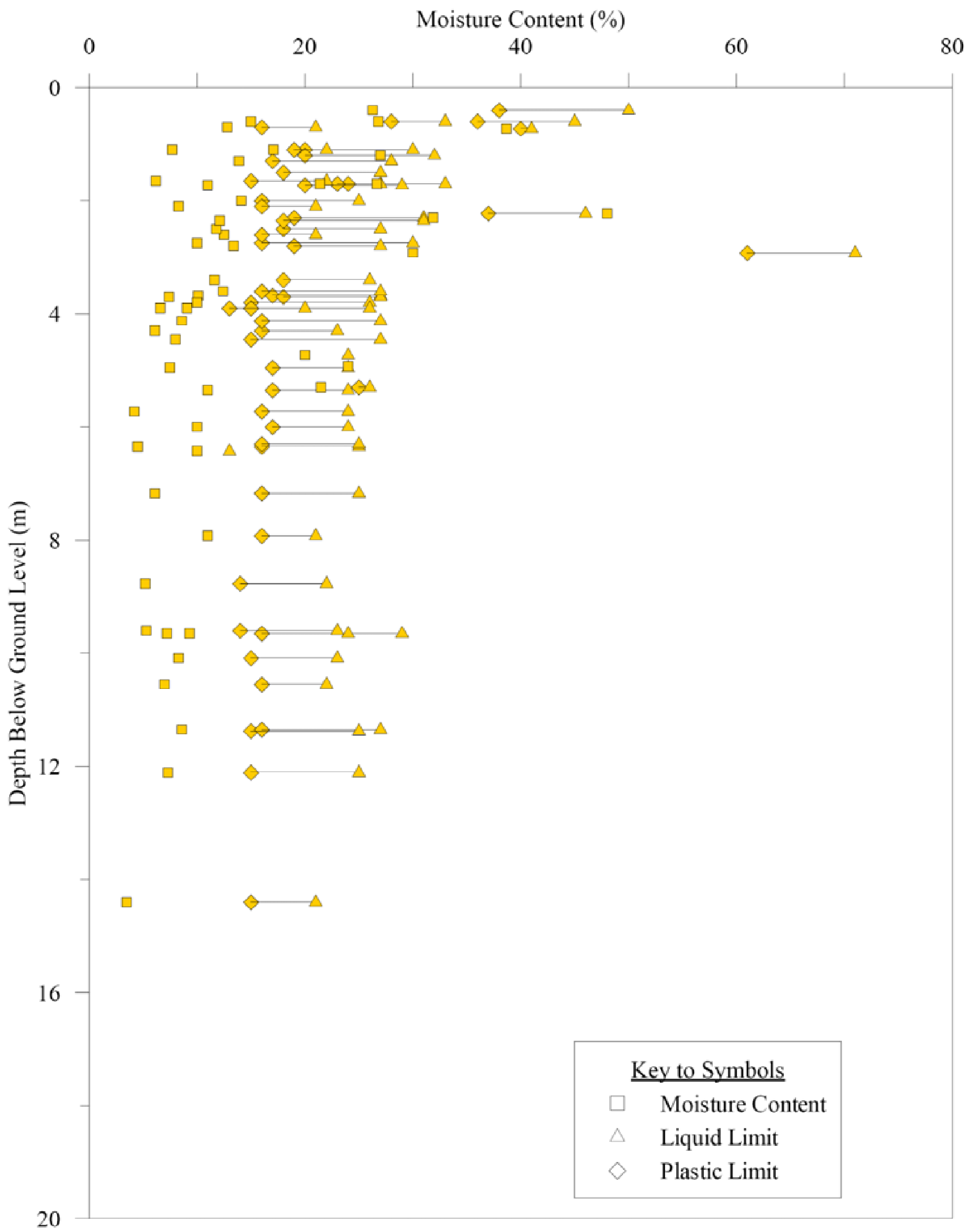

Figure 6.5: Atterberg limits: Site 5, High and Low Newton

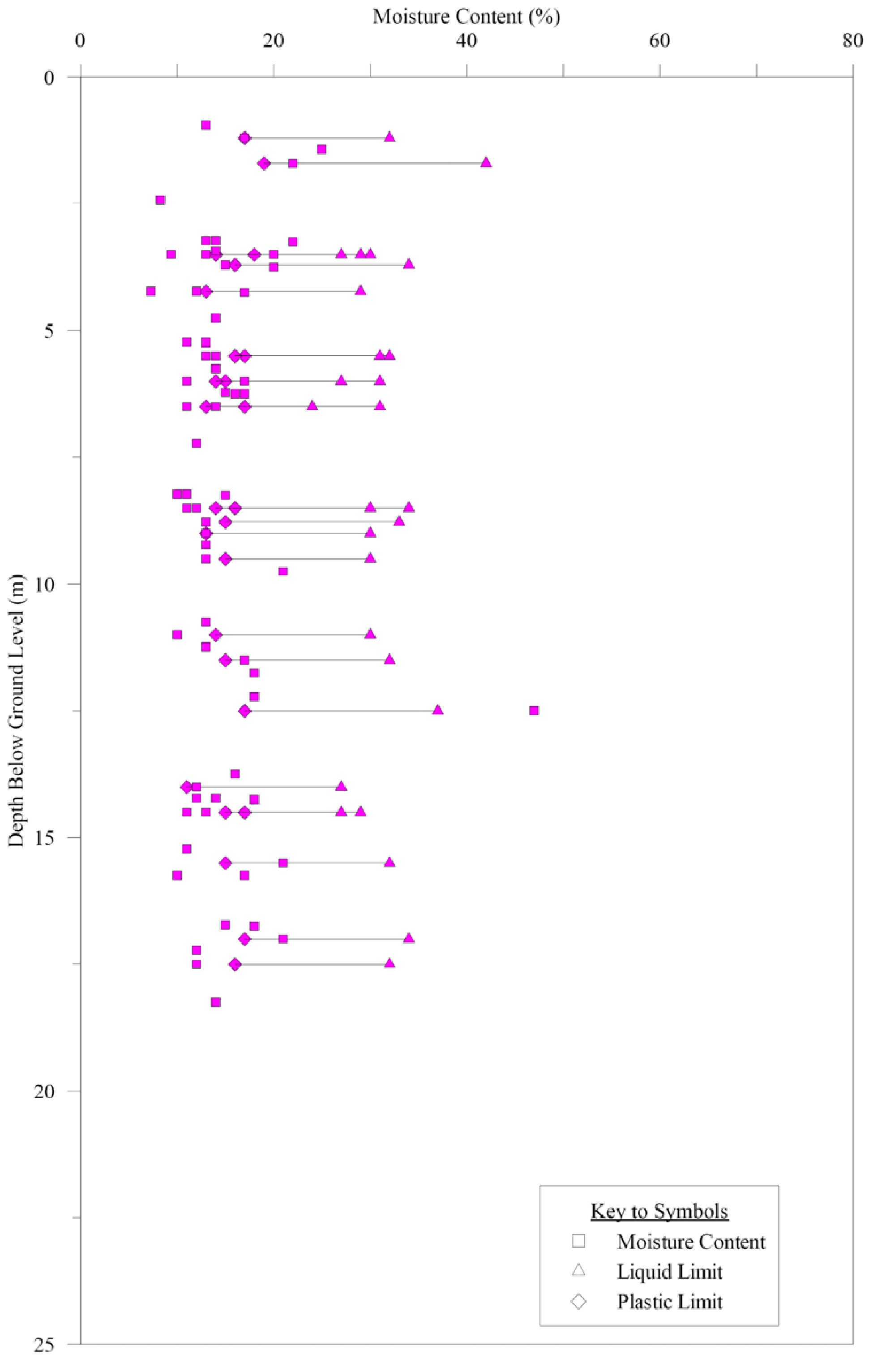

Figure 6.6: Atterberg limits: Site 7, Cleator Moor

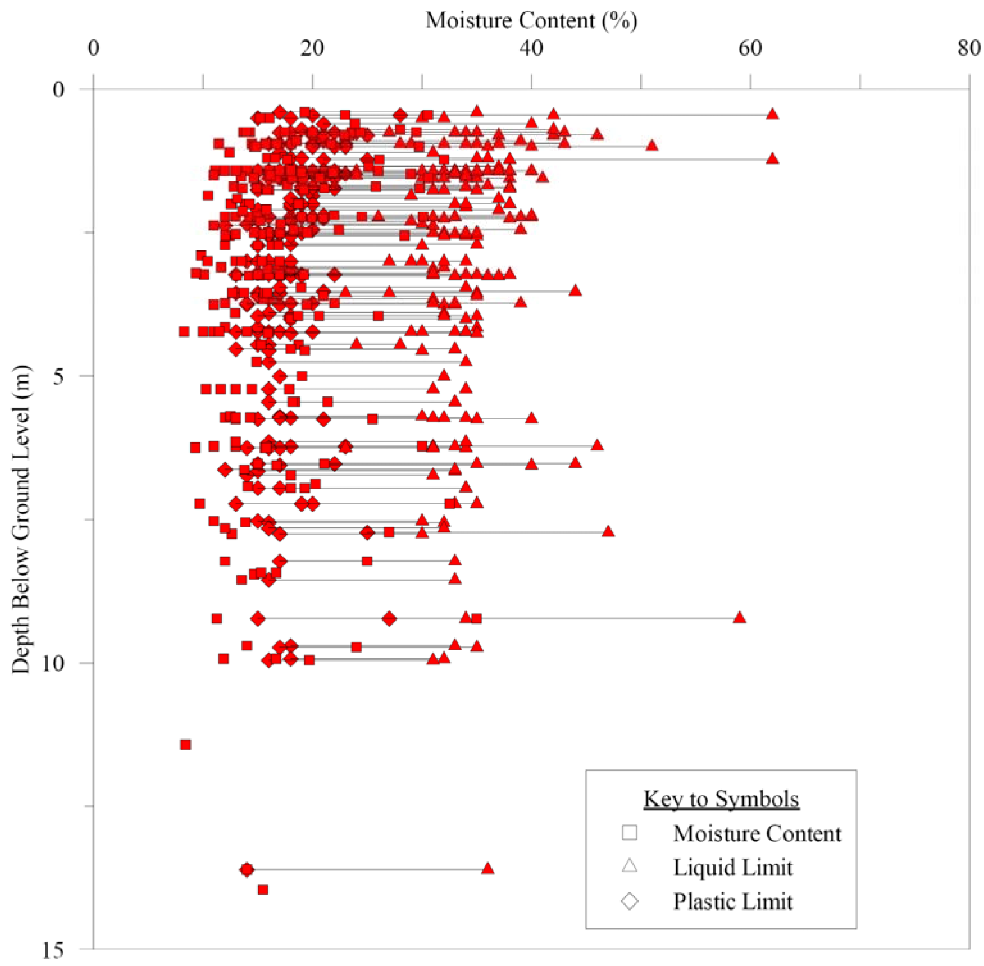

Figure 6.7: Atterberg limits: Site 6, Parton to Lillyhall

Differences were observed in all measured index properties, but were most common for the natural water content, bulk density and dry density. In each case the natural water content exhibited a slight reduction with depth over the upper part of the tills, while the density showed a corresponding slight increase: this is satisfactorily explained as the natural result of consolidation effects. Moreover, examination of Figure 6.1 to Figure 6.6 showing the index properties plotted against depth at each location indicated that such changes occur gradationally within each domain, suggesting that the differences may be ascribed to the effects of post-glacial action on a single till rather than distinct tills resulting from separate glacial periods.

Taken at face value, some of the grading results appear, at first sight, to be somewhat anomalous, in that the percentage of fine fraction (<63microns) is less in areas of mudstone bedrock than in areas of sandstone bedrock, with a concomitant increase in the percentage of gravel (>60mm). This can be explained by the effects on the mudstones of metamorphism, which tends to produce a harder basal stratum. That, coupled with the cleavage and jointing pattern of the bedrock, allows entrainment of larger clasts when compared with the massive bedding of the sandstones, which promotes a more gradual abrasion of the glacial bed.

Comparison of the statistical differences between tills within different domains at Site 6 (Parton to Lillyhall) and to a lesser extent Site 5 (High and Low Newton) revealed that, for situations where the areas of different bedrock types are of limited extent, the differences in measured properties are more difficult to distinguish and may even cease to be apparent, as illustrated in the box and whisker plots of Figure 5.17 to Figure 5.25 in Chapter 5 and the summary in Appendix B.2 to B.4. That is because the width across the different bedrock units traversed by the till is insufficient to have allowed complete development of the properties characteristic of the till associated with that rock type. On the basis of the current study, there is no calculable required minimum distance to ensure full development of the different properties but, clearly, the bedrock geology will exert a significant influence on the distance required to fully develop differences in the till. At Site 6 the lateral differences between domains are less pronounced than the vertical differences within domains, a feature discussed in greater detail in Section 6.2.4 below.

In the case of Site 7, Cleator Moor, the geological control is less well defined, as the bedrock geology is inter-bedded sandstone and mudstone typical of the cyclic deposition of Coal Measures rocks. The individual underlying bedrock types described at the base of exploratory boreholes in the investigation are indicative of single beds forming part of such a regular succession and the sub-crops of each bed are of limited extent, thus preventing the full development of different properties, as described in the preceding paragraph.

6.2.3. Control Due to Site Location Relative to Ice Centre

The various sites chosen for this study are located around the ice centre which developed over the mountains of the Lake District during the Devensian period. Examination of the box and whisker plots in Figures 5.17 to 5.25 serves to illustrate the effects of the different glacial locations on the properties of the resultant tills. Again, these differences are confirmed by the results of statistical analysis included in appendices A2 to A4 and Appendix D.

Previous studies have linked grading to glacigenic processes as part of a methodology for describing and sub-dividing tills (Fookes et al., 1975a; Derbyshire et al., 1976, 1985; McGown and Derbyshire, 1977; Trenter, 1999). However, the general expectations regarding the ranges of index properties are not plainly manifest in the results of this study. Whilst in this study it is shown to be possible to distinguish between tills from areas of differing bedrock geology on the basis of geotechnical properties, it is not possible to predict the magnitude or the direction of the differences in the means or medians of those properties.

Although there are measurable statistical differences between geological domains within each site and among the various sites, there is no direct nor consistent correlation between index properties and the underlying bedrock type. This is most clearly demonstrated by the grading diagrams in Figure 6.8 to Figure 6.14, where it can be seen that the majority of till, whether upland or lowland relative to the geographic location in Cumbria, would all be classified as predominantly well-graded and, therefore, it is difficult to discern the differences between one domain and another on this basis alone. It is only when box plots such as those in Figure 5.21 to Figure 5.23, reinforced by the results of detailed graphical and statistical analysis, are available that the differences become obvious.

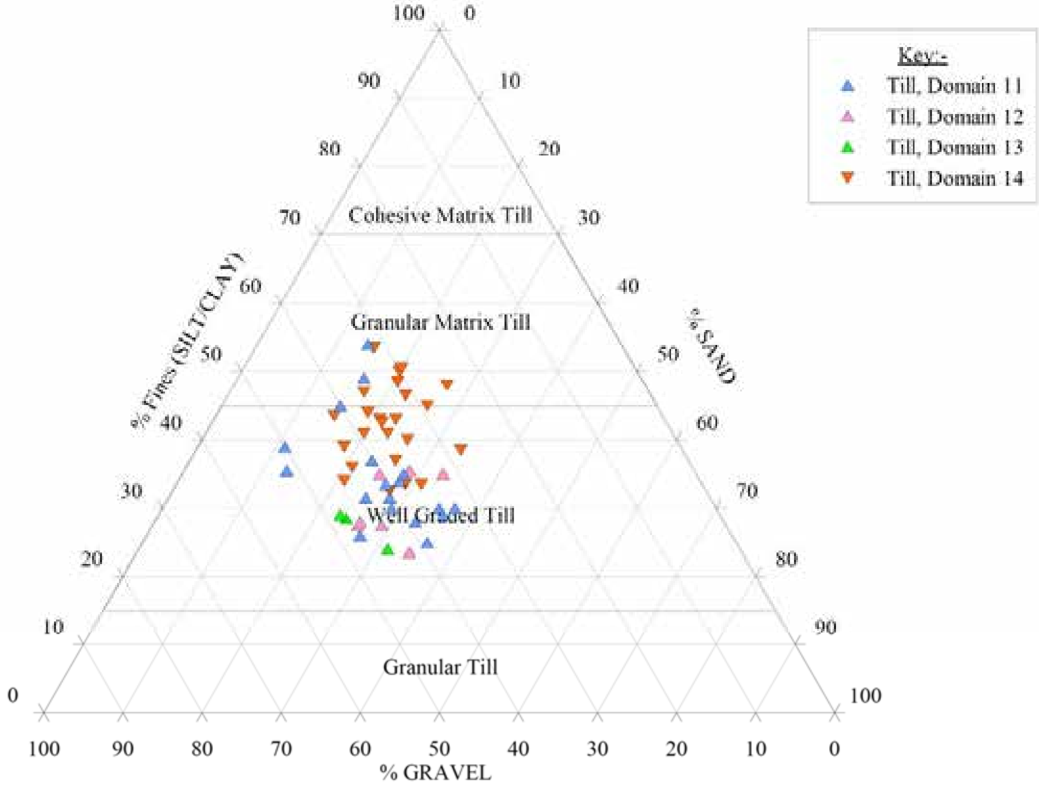

Figure 6.8: Grading: Site 1, Kirkby Stephen

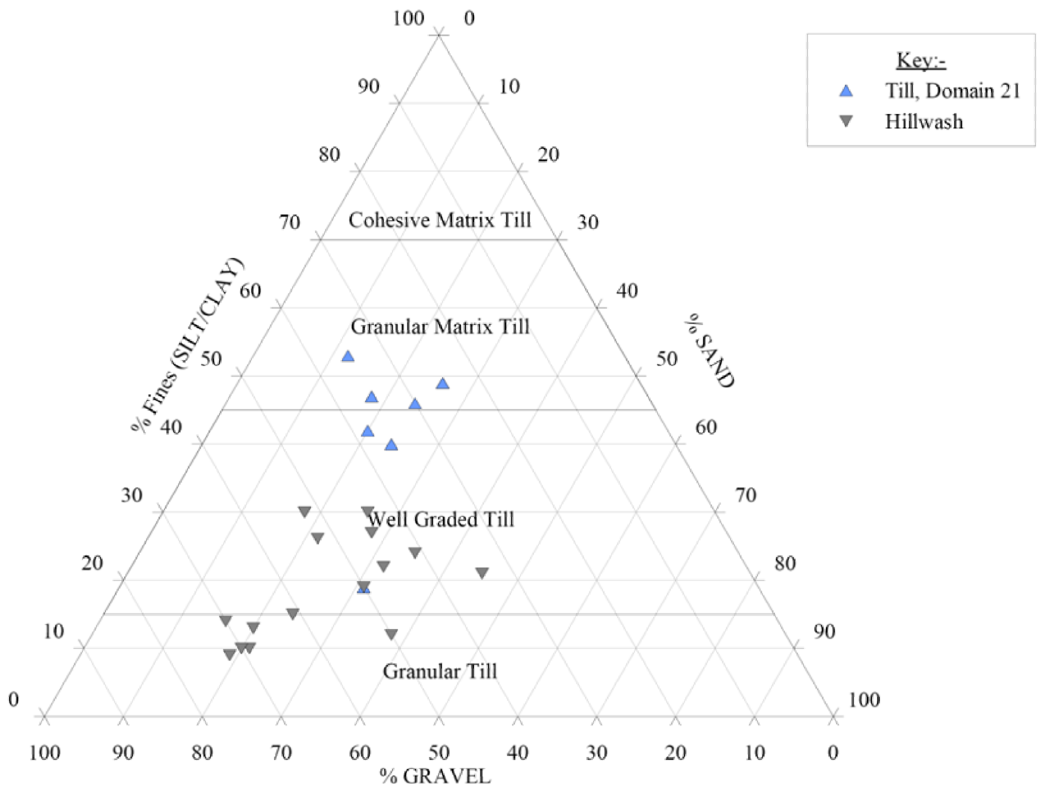

Figure 6.9: Grading: Site 2, Wythop Wood

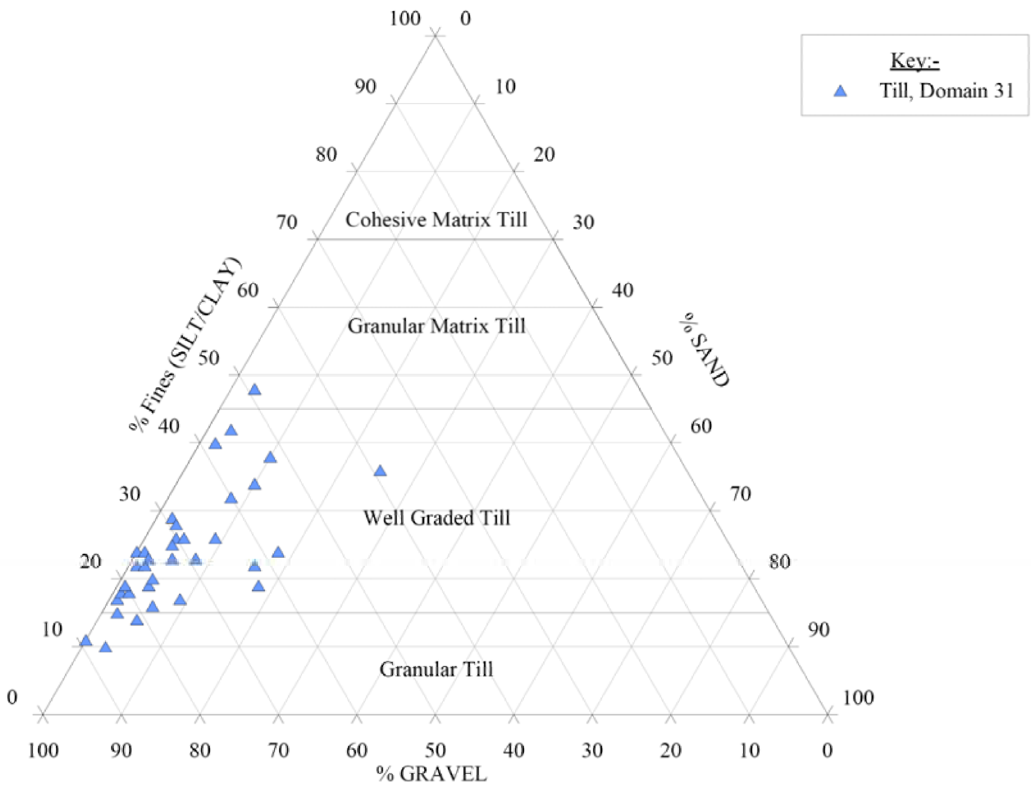

Figure 6.10: Grading: Site 3, Sowerby Wood

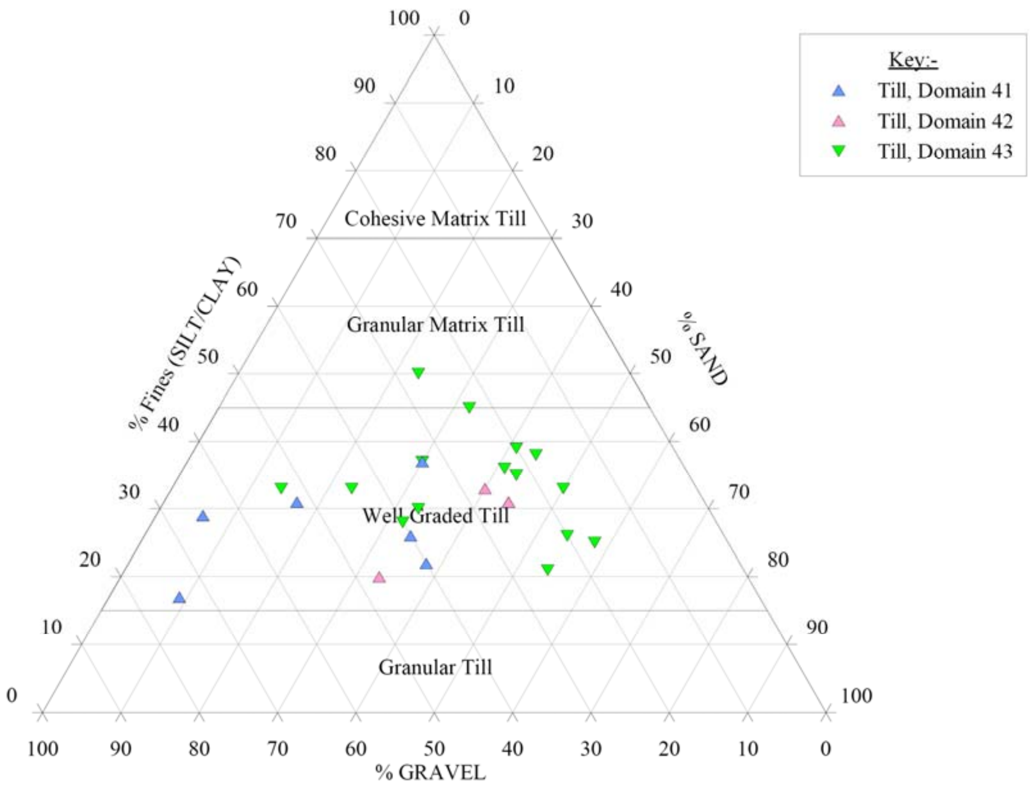

Figure 6.11: Grading: Site 4, Askam-in-Furness

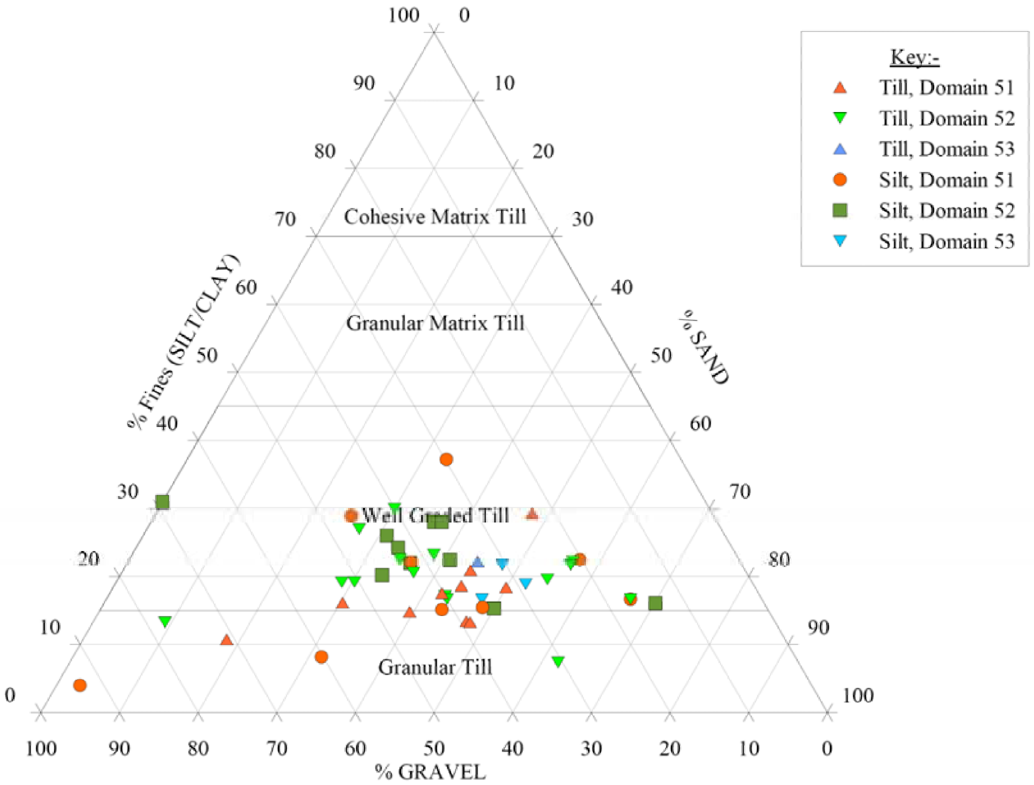

Figure 6.12: Grading: Site 5, High and Low Newton

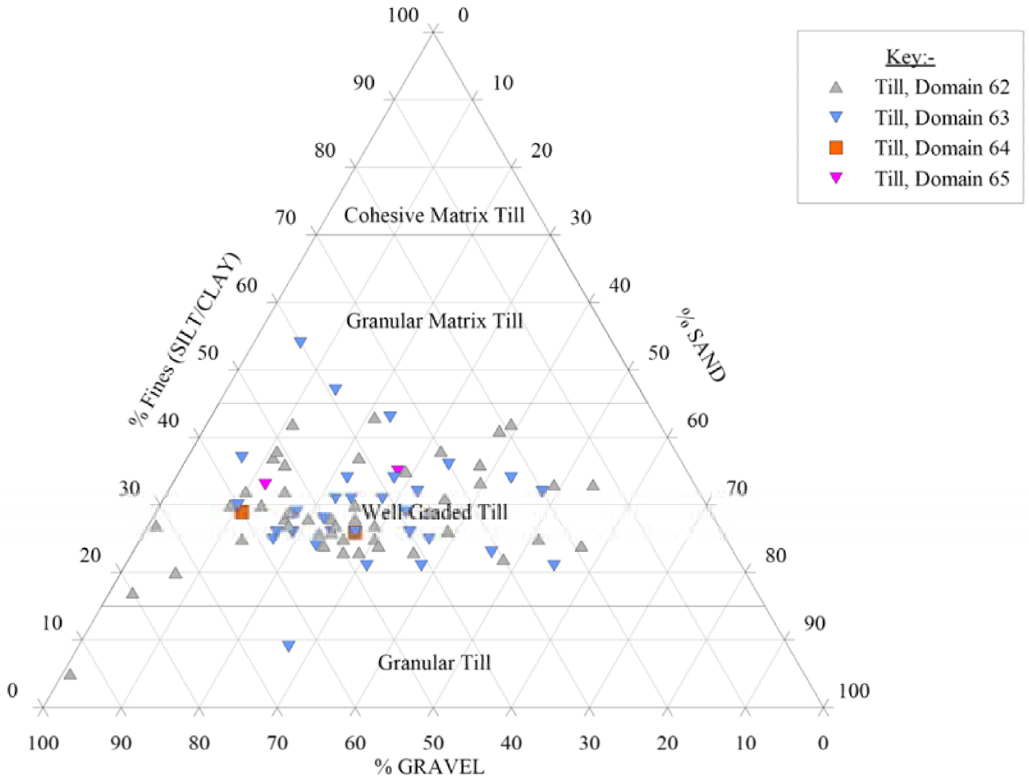

Figure 6.13: Grading: Site 6, Parton to Lillyhall

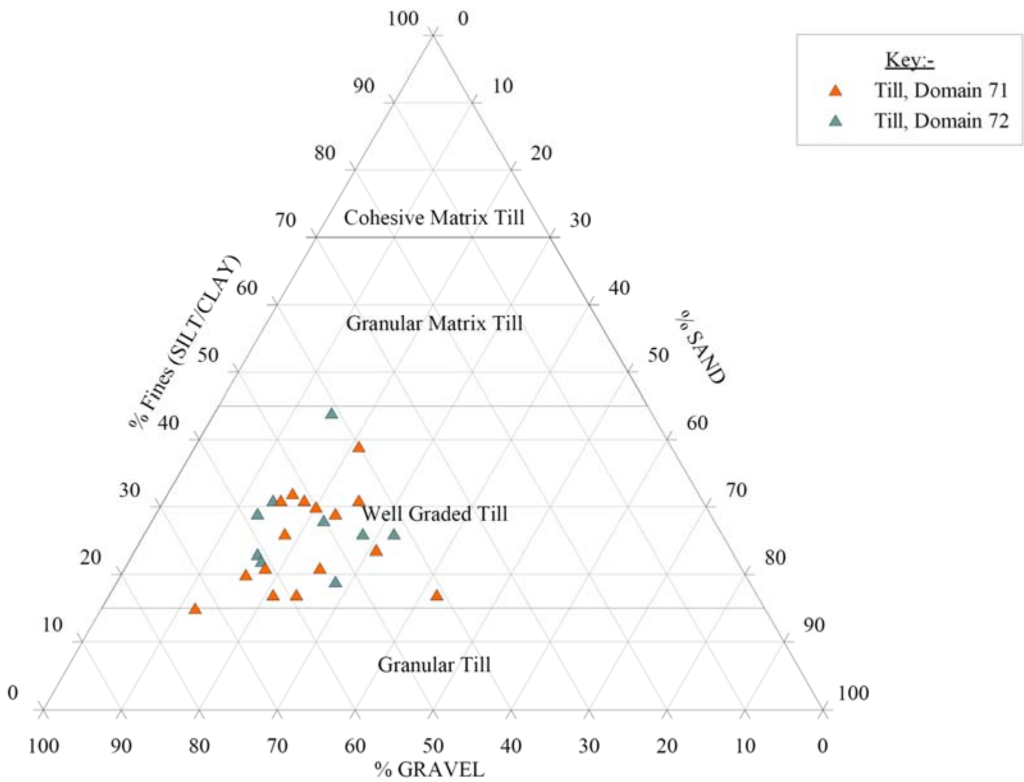

Figure 6.14: Grading: Site 7, Cleator Moor

The ranges of plasticity observed in different domains within the study area are also statistically different but, again, there is no visible direct correlation between basic description of the bedrock types and the index properties measured in the overlying till. Plasticity testing is carried out on a sub-sample of a soil passing the 425 micron sieve (BS 1377-2: 1990, §4.2). It has been demonstrated by previous researchers that apart from the mineralogy, the plasticity of a clay is heavily influenced by the dominant particle size in the fine (<63micron) fraction of the soil tested (Dumbleton and West, 1966; Boulton and Paul, 1976). This earlier work was carried out on manufactured soils using kaolinite mixed with varying amounts of quartz sand of consistent grading. The results from the index testing of the natural tills in this study, as portrayed in the graph in Figure 6.15, indicate that, while there is evidence of a trend of increasing plasticity index versus increasing fines content below 425 microns, the band-width of the data point cloud precludes calculation of any definitive mathematical relationship. The mineralogy of the clays from the study domains is unknown, as it is not common to determine mineralogy as part of engineering investigations. Although the effects of mineral variation cannot be separately assessed, nevertheless they will be present, superimposed on the differences due to grading. The scatter evident in Figure 6.15 plotting results of plasticity index against fines suggests that mineralogy will play at least as great a part in determining plasticity as does the grading within the passing 425 micron portion.

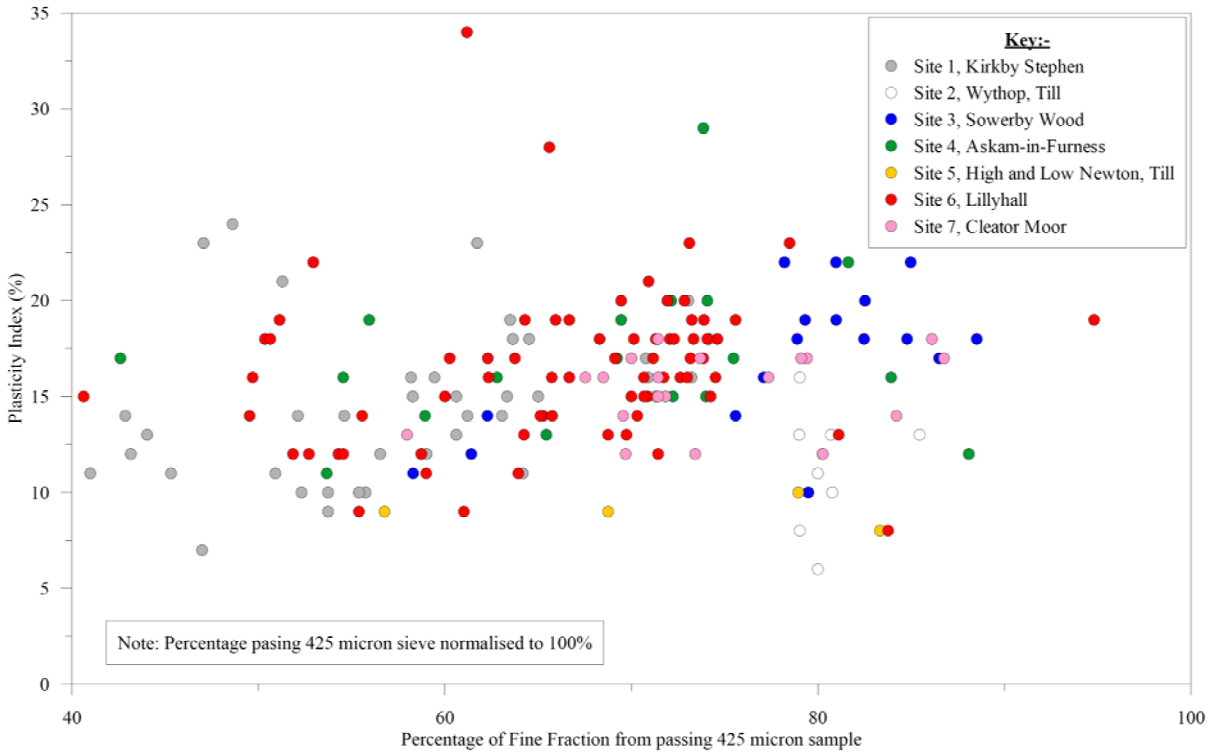

Figure 6.15: Variation of plasticity index with particle size

Denness (1974) reported that measured values of index properties varied considerably over small (<1m) distances in the tills of the English Midlands and Trenter suggested that the proportion of till passing the 425 micron sieve is often small. For these reasons, the prediction of engineering properties on the basis of plasticity therefore is probably unreliable (Trenter, 1999). In this study, the proportion of clay and silt fraction of the tills is sometimes below 30% and occasionally as low as 11%. On this evidence, taken together with the demonstrated range of variation in water content and Atterberg Limits in Figures 5.17 to 5.20

of Chapter 5, the use of parameters such as liquidity index to predict shear strength of the overall body of the material is considered unreliable if derived from so small a fraction of the soil and the quoted accuracy of the derived figures likely to be unduly optimistic if based on the results from a few samples from one or two exploratory holes. However if, as has been shown in this research, the results from a wider domain may be considered to be representative of the soil within that domain, greater reliability can be achieved.

6.2.4. Glacial and post-glacial history

Naturally, the glacial history of a site is intimately related to its location relative to the ice centre and the surrounding topography and it must be supposed that the combination of these factors will also affect the properties of the resulting tills. Parts of three of the selected sites have a limestone bedrock geology: Site 1 (Kirkby Stephen), Site 5 (High and Low Newton) and Site 6 (Lillyhall). Examination of the data sets from limestone bedrock geology at these sites highlights some of the differences attributable to glacial history. At Kirkby Stephen the till is the result of a fluctuating ice flow (Taylor at al., 1971; Burgess and Holliday, 1979) and, therefore, the till has been subject to re-working during the Devensian glaciation, while the till at Lillyhall is the result of initial glaciation during the main Devensian followed by the re-glaciation of the Gosforth Oscillation (Ackhurst et al., 1997). The site at High and Low Newton lies on the interfluve of two southward flowing ice streams emanating from the central Lake District area (Taylor et al., 1971; Johnson et al., 2001) and is considered to have been subject to a single glaciation event. Comparison of the grading of the tills from each of the domains at all these sites indicates that when compared to the High and Low Newton site the additional glacial activity at the Kirkby Stephen and Lillyhall sites has caused a general reduction of the coarse fraction of the till, with a commensurate increase in the sand and fine fractions.

In Section 6.2.2 it was pointed out that the results of statistical analysis at Site 6 (Lillyhall) showed that the differences laterally between domains are generally less pronounced than the vertical differences within a single domain. This indicates that the two distinct glacial events suggested by Ackhurst et al. (1997) have resulted in the deposition of a second superimposed till across the site, with some intervening peri-glacial effects, such as stress relief and weathering, on the lower till. Therefore, it is important for the geotechnical engineer to consider the glacial history of the area, in conjunction with the other potential controls, when designing a ground investigation, so that vertical as well as lateral distinctions in the characteristic properties of tills can be investigated appropriately.

The effects of post-glacial action are most clearly seen at two locations covered in this study, at Site 2 (Wythop Wood) and Site 5 (High and Low Newton), at both of which a near surface layer of more silty soil was evident. At Wythop this soil was ascribed in the original ground investigation to “Hillwash” and to “Silty Till” at High and Low Newton. Although in the original investigation reports the overlying soils at both sites were described in the exploratory borehole and trial pit logs in very similar general terms to the underlying tills, the outcome of statistical analysis of the laboratory test results suggested that they are actually distinct soils statistically, with differences at the $\alpha = 0.05$ level for every index parameter. The grading of the hillwash at Site 2 was markedly coarser than that of the till and the plasticity index greater, whilst the grading of the silty till at Site 5 was finer than the till and the plasticity index lower: these differences are illustrated in Figure 6.16 and Figure 6.17. In both cases the origins of the overlying soils are considered to be the results of peri- or post-glacial action on the surrounding solid geology. Again, it is important for the geotechnical engineer to consider the potential for the presence of post-glacial soils at a site to design a sufficiently rigorous investigation to ensure full definition of the characteristic properties of all the materials likely to be encountered.

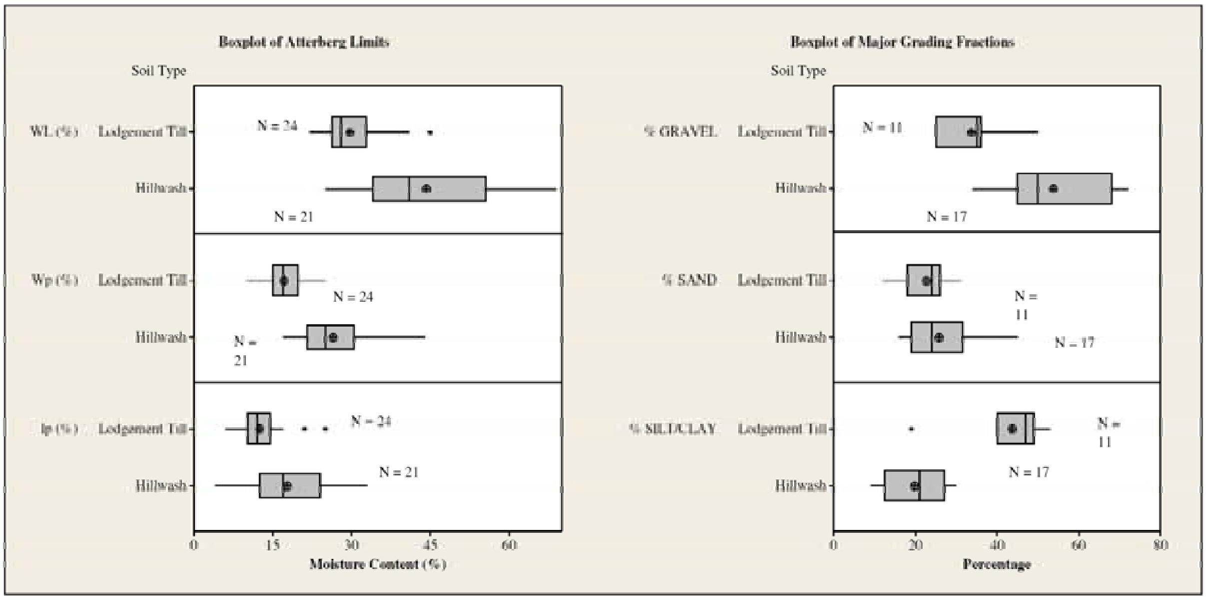

Figure 6.16: Boxplots of index parameters: Site 2, Wythop Wood

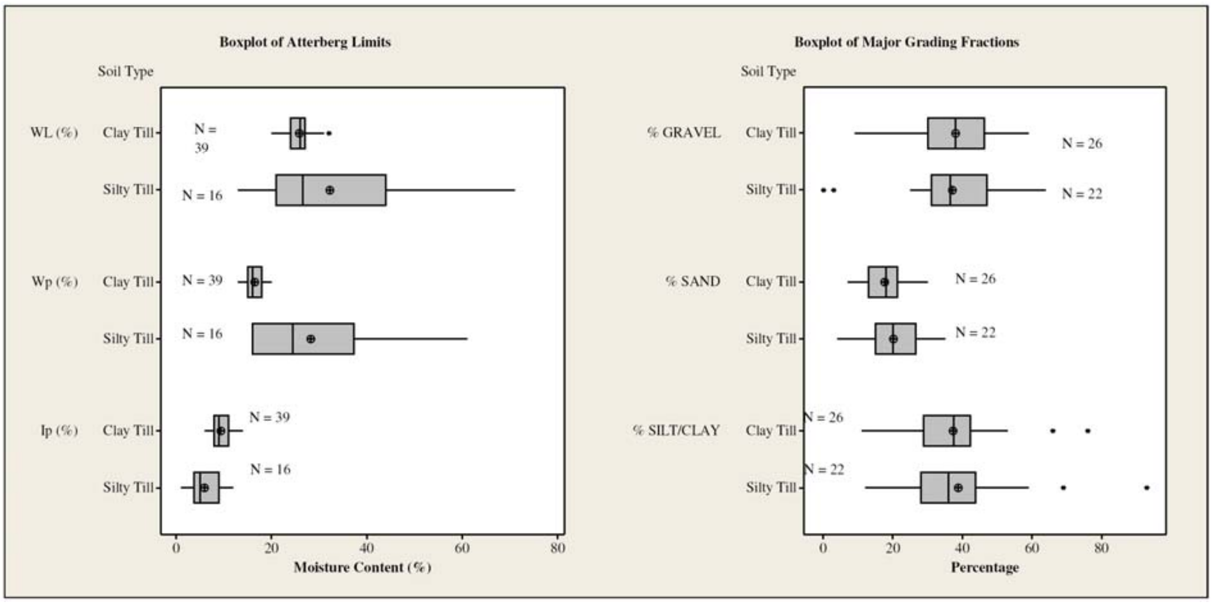

Figure 6.17: Boxplots of index parameters: Site 5, High and Low Newton

6.3. STATISTICAL ANALYSIS OF GEOTECHNICAL DATA SETS

6.3.1. Description of data sets

The results of the 'normality' tests as summarised in Appendix B.1 showed that, in many cases, it is unsafe to assume that geotechnical data sets conform to a Gaussian distribution at the 95% confidence level. The corollary to this conclusion is that, therefore, it is similarly unsafe to rely on the results of parametric statistics to summarise and compare the data sets in question, as the underlying pre-requisite assumptions for such an approach are not satisfied. With particular reference to the description using a parametric summary, the usual method, that of ascribing a mean value and standard deviation to a data set, can be seen with reference to Figures 4.16 to 4.18 of Chapter 4 and the graphs in Appendix C.2 to be unsatisfactory when deriving the characteristic value of a geotechnical parameter, in that the confidence interval for the mean value does not always encompass the modal (most commonly occurring) value or range of values. This difficulty is not overcome by the application of a logarithmic transform which, in many cases encountered in this study, will not introduce 'normality' to the data set. In any case, the statistical methods used for a Gaussian distribution are not always applicable to a transformed data set, and care must be taken when returning from the logarithmic values back to the natural values.

The problem of summarising a data set becomes a particular issue where the value of the parameter in question is to be used to derive a characteristic value or other information for use in the analysis of engineering behaviour, either directly or via an empirical relationship. As has already been discussed in Section 6.2.2, the measurement of the Atterberg Limits is carried out on material passing the 425 micron sieve: that is often the minority fraction of till soils. Thus, the use of such directly measured parameters to predict other engineering behaviour, such as shear strength, on the basis of a mean, which is itself likely to be unrepresentative of the bulk of the material portion from which it has been derived, is questionable in the case of tills, although it is probably less so in the case of the more homogeneous clay soils upon which much of the previous research is based.

6.3.2. <u>Comparison of data sets</u>

It was pointed out in Chapter 3 that there are other objections to the use of parametric statistical tests for the comparison of two data sets, not the least of them being the requirement for both data sets to be Gaussian in distribution, and to have equal variance. The latter can be overcome in specialist commercial software by the use of refinements to the methodology that make no *a-priori* presumption regarding variances of the data sets in question. However, the failure of the 'normality' test is a more fundamental obstacle.

Notwithstanding the many departures from the theoretical ideal, comparison between the various data sets was carried out using both parametric and non-parametric statistics. The overall results of the different analytical methods are broadly similar, with the parametric 'Student' t test and the various rank statistical tests used in the comparison giving a similar pattern of similarities and differences between the data sets from the current study. Therefore, it is to be expected that the use of a parametric method to compare geotechnical data will not lead to a large number of false positives or negatives in the long run, in spite of the insurmountable philosophical and mathematical objections involved. The summary results are discussed in Chapters 4 and 5, and summary tables are presented in Appendices B.2 to B.5 with full calculations in Appendix D.

In all cases the use of a non-parametric alternative to the 'Student' t test is to be preferred, as such methods make no *a-priori* assumptions about the shape of the probability distribution function and are less sensitive to outlier values and as stated in Section 6.3.1 can provide a more reliable estimate of the characteristic value. For the special case of the Gaussian distribution, the mean and median will be the same.

6.3.3. Other methods of data presentation

It has been found during this research that as well as considering the parametric and non-parametric statistical description and comparison of the soils from different domains it has been invaluable to have recourse to a variety of graphs and charts, some of which are not yet routinely used in the realm of geotechnical engineering, although they are more familiar to most geologists and soil scientists.

The box and whisker plot has proved to be very useful in presenting a visual representation of the range, mean and median of a data set, and to indicate outliers using a conventional multiple of the interquartile range. Figures such as those included in 5.17 to 5.25 of Chapter 5 facilitate easy comparison of multiple sets of data by presenting the information in a visual format and, with very little practice, they can be easily read and interpreted. Many commercially available spreadsheet and graphing programs have the inbuilt facility to prepare box and whisker plots but a little more work on the part of the user is required to automate the production if the enhanced type plots are required.

For engineering classification the particle size distribution of soils is always presented on a log/normal plot of percentage passing each of a range of sieve sizes: the particle size forms the abscissa on a logarithmic scale and the percentage passing forms the ordinate on a natural scale (BS1377-2, 1990; Form 2N). This arrangement is familiar to engineers and is very good in helping to form an impression of the overall grading and likely behaviour of a single soil in terms of the curve shape being either uniform-, well-, or gap-graded. Principal values of the soil fractions, such as the 10% passing sieve size D_{10} and other values such as D_{30}, D_{60} etcetera used in calculating uniformity and curvature coefficients can be read directly from the grading curve. It can also very clearly distinguish between markedly different soils such as uniform sand or uniform gravel. It is less useful for distinguishing the grading of different tills as these tend to be well-graded soils across the full range of particle sizes.

In this research much use has been made of ternary grading diagrams, showing the percentages of gravel, sand and fine (silt and clay) particles on one equilateral triangular grid on a natural scale: the quantities are normalised to 100% to take account of any clasts greater than the coarse gravel size of 60mm. Such a diagram allows a quick and easy visual comparison of ‘clouds’ of data from different till domains, even where the overall grading is of a similar form. The additional classifications developed by Derbyshire et al., (1976, 1985) and McGown and Derbyshire, (1977) add the refining terms matrix or clast dominant and the matrix description, either granular or cohesive matrix. To a degree, these indicate the likely engineering characteristics and behaviour of the tills and, although it takes some practice to become conversant with the ternary graph format, it is well worth the additional effort as the diagram does provide a clearer visual distinction between different tills.

6.4. RELATIONSHIPS BETWEEN INDEX AND STRENGTH PARAMETERS

6.4.1. Relationship between SPT ‘N’ value and undrained shear strength

The relationship between SPT ‘N’ value, plasticity and undrained shear strength $\mathbf{c_u}$ developed by Stroud and Butler (1975) is commonly used in geotechnical engineering where direct measurement of soil shear strength for some reason cannot be carried out. The relationship uses the equation $\mathbf{c_u} = \mathbf{f_1} \times N$, where $\mathbf{c_u}$ is the undrained shear strength, N is the SPT blow count and $\mathbf{f_1}$ is a factor dependent upon the plasticity index of the soil. It is possible that many practitioners are unaware of the variety of sources used in the derivation of the ‘design line’ in the original paper: these include Keuper Marl (Mercia Mudstone), London Clay and a range of tills from across Britain, northern Europe and North America.

The range of plasticity index for tills in Cumbria is generally between 10% and 20% and using the published relationship the expected ratio $\mathbf{f_1}$ of SPT '*N*' value to undrained shear strength $\mathbf{c_u}$ would be of the order of 5.5 to 8. However, Figure 5.26 and Table 5.2 of Chapter 5 show that the relationship breaks down for the low plasticity well graded tills of Cumbria. Whilst in Figure 5.26 there is a suggestion of a slight increase in the ratio $\mathbf{f_1}$ with a decrease in plasticity, the overall scatter of the results renders it impracticable to obtain a single mathematical relationship and Table 5.2 suggests that a value of $\mathbf{f_1}$ not exceeding 4 is more appropriate for most tills in Cumbria.

When the British tills on the Stroud and Butler (1975) diagram are considered in isolation a similar result is obtained and it is apparent that the 'design line' on the graph (Figure 3, Stroud and Butler, 1975) is only one of many such relationships that could have been drawn given the vastly different clay soils that provided the original data and the wide scatter of results displayed. Apart from failing to observe the requirement of the geotechnical Eurocodes that if an empirical relationship is used to derive a geotechnical parameter it should be established that the original derivation is relevant for the prevailing ground conditions (BS EN 1997-1: 2004, §2.4.1 [10]P), uncritical use of the Stroud and Butler relationship is probably unsafe in work with Cumbrian tills as it may overestimate the undrained shear strength.

6.4.2. Relationship between index properties and Peak ϕ' Value

The relationships between the peak angle of shearing resistance and a representative range of index property functions are shown in Figures 5.37 to 5.40 in Chapter 5. Whilst some general trends may be inferred from the resulting plots, the scatter of the data precludes any confident derivation of a measurable parametric relationship. The Coefficient of Determination $\mathbf{R^2}$ was calculated for a range of straight line, power and polynomial lines of fit: in this situation, a value of $\mathbf{R^2}$ approaching 1.0 indicates a good fit to the data and lower values indicate that the regression line does not adequately explain the data.

Figure 5.37 in Chapter 5 illustrates that there is a noticeable increase in peak angle of shearing resistance with a decrease in plasticity index. The coefficient of determination $\mathbf{R^2}$ for the range of linear and curved fits was of the order of 0.25 and rarely rose above 0.3. The data points show that, for similar plasticity index values, the angle of shearing resistance for tills from domains over limestone bedrock is, in most cases, greater than that for tills above sandstone.

The remaining plots in Figures 5.38 to 5.40 show a wide scatter of data points with no definite relationships or trends. The Coefficient of Determination $\mathbf{R^2}$ is 0.2, or lower, for the peak angle of shearing resistance versus percentage passing 425 micron sieve (Figure 5.38) and dry density (Figure 5.40), with the $\mathbf{R^2}$ values for the corresponding relationship with the gravel fraction (Figure 5.39) less than 0.3.

Further consideration of Figure 5.40 in Chapter 5 suggests that there is evidence for a lower bound line to the data points on the graph of peak angle of shearing resistance plotted against dry density. A plausible proposed line is indicated in Figure 6.18, superimposed on the original data points. The line indicates that the angle of shearing resistance is unlikely to be less than 20º at a dry density of $1.6Mg/m^3$ and below, and is likely to be 45º or above at a dry density of $2.4Mg/m^3$. Dry densities outside the range $1.4Mg/m^3$ to $2.4Mg/m^3$ are unlikely to be found in most British tills.

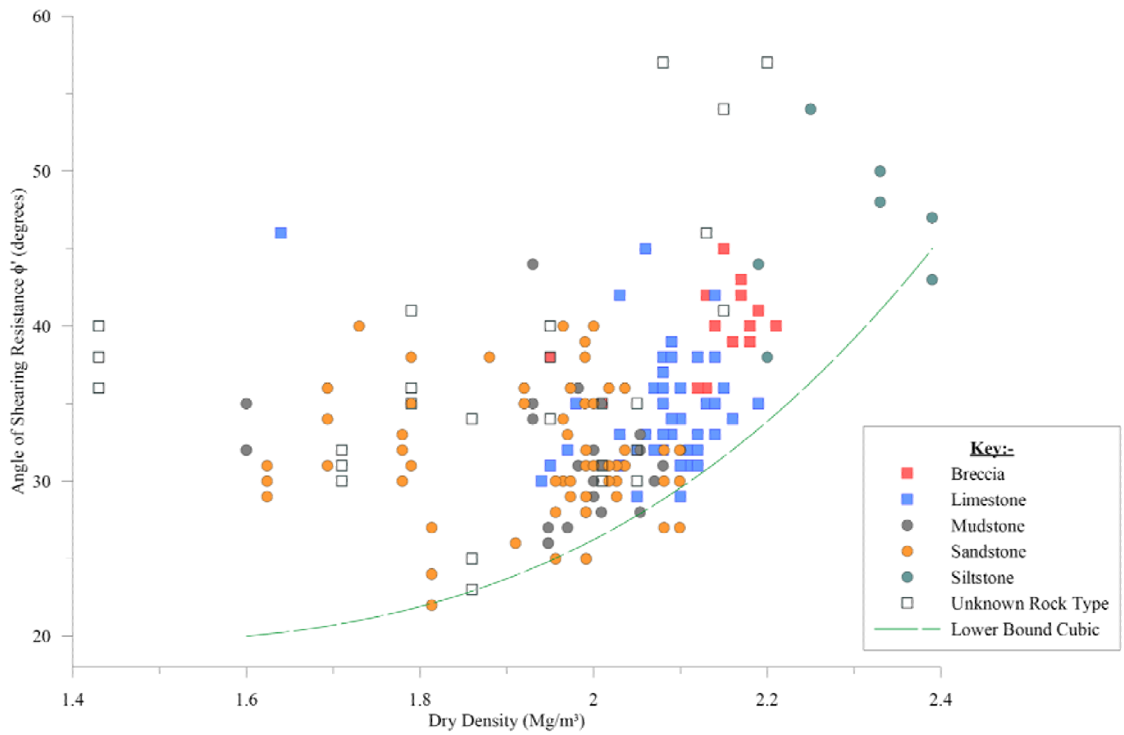

Figure 6.18: Angle of shearing resistance versus dry density

6.5. MOHR FAILURE ENVELOPES FOR PEAK ANGLE OF SHEARING RESISTANCE

6.5.1. Form of failure envelope

Earlier researchers have identified the potential for the apparent effective cohesion $\mathbf{c'}$ and the angle of shearing resistance ϕ' measured in the triaxial cell to vary depending upon the stress range of the tests, imparting a curvature to the Mohr failure envelope (Penman, 1953; Bishop, 1966; Charles and Watts, 1980). Houlsby (1991) describes the angle of shearing resistance in terms of the basic soil friction angle combined with the angle of soil dilatancy. The basic friction angle is constant, but the dilatancy is dependent upon the void ratio pertaining during failure: this void ratio varies inversely with applied stress, leading to the curvature of the failure envelope.

The results of numerous single stage and multi-stage consolidated undrained triaxial tests from the sites considered in the current study were plotted as Mohr circles for peak failure under effective stress conditions. At each site examined the curved failure envelope ($\tau = A\sigma^b$) provided a closer tangential fit to the Mohr circles over the full stress range than did the straight line ($\tau = c' + \sigma' \tan\phi'$). The curved envelope gave a better visual explanation of the Mohr circle data and the fit was confirmed by smaller and generally more regularly spaced residuals.

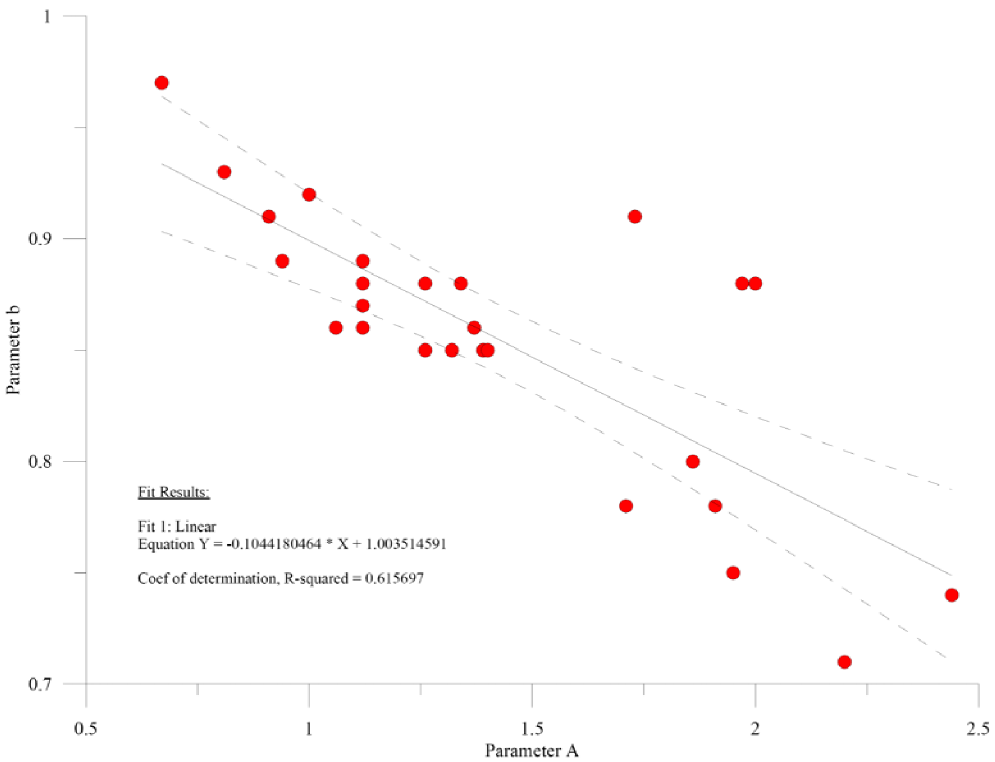

Figure 6.19: Relationship between parameters A and b

Values of **A** for the combined results at each domain were found to lie between 0.81 and 2.0, with values of **b** ranging from 0.75 and 0.93. There is no obvious correlation found between the values of **A** and **b** and the underlying bedrock geology, nor with any of the measured index properties. However, the plot of **b** versus **A** in Figure 6.19 suggests that an inverse relationship exists between the two parameters. Using linear least squares regression of **b** upon **A** gives a linear relationship approximating to **b** = 1 – 0.1(**A**): the coefficient of determination $\mathbf{R}^2$ was 0.61 for this case and no other simple power or polynomial relationship gave a higher value. This is, of itself, of little direct value for predicting values for **A** or **b**. However, pairs of parameter values that fail to approximate to this relationship may be questionable.

6.5.2. Applicability of curved failure envelope in design

The geotechnical Eurocode recognises the effects of stress range on the effective shear strength parameters and requires that the values of $\mathbf{c'}$ and ϕ' should only be assumed constant within the stress range of the testing carried out (BS EN 1997-1, §3.3.6 [4]P). As the curved envelope is continuous, there is no need to alter the potential failure envelope depending upon the stress range under consideration: this is of especial value when using computer modelling, as one peak strength model can be applied throughout the whole soil layer and, for time dependant behaviour or variable applied stress, throughout the entire modelling sequence. The use of a curved envelope also obviates the need to include an 'apparent" cohesion intercept term $\mathbf{c'}$. As the partial factors ($\gamma_{\mathbf{m}}$) for both effective cohesion ($\gamma_{c'}$) and angle of shearing resistance ($\gamma_{\phi'}$) are equal for each calculation set (BS EN 1997-1, Annex A) the factor can be applied to the shear strength calculated from the curved envelope as follows:

$$\boldsymbol{\tau} = \frac{1}{\boldsymbol{\gamma}_m}(A\boldsymbol{\sigma}^b)$$

This also tends to generate a deeper and more critical failure surface (McKecknie-Thomson and Rodin, 1975).

6.6. ONSET OF CRITICAL STATE SHEARING CONDITION

In the standard test method for testing shear strength under effective triaxial stress conditions failure is measured at maximum deviator stress, maximum stress ratio or constant shear stress and pore pressure. If the latter condition is not achieved in the test, termination occurs at 20% strain (BS1377-8:1990). Examination of the data plots from individual tests shows that, in many cases, even under multi-stage test conditions, the pore pressure was still falling when the strain was at, or approaching, 20%, indicating continued increase in void ratio, i.e. volume change of the specimen. As the definition of the critical state is failure at constant void ratio (Roscoe, Schofield and Wroth, 1958; Schofield and Wroth, 1968) it is clear that even a strain of 20% cannot be guaranteed to produce critical state conditions in tills.

The nature of the tills examined in this study, containing a significant proportion of coarse clasts, means that the triaxial shear tests are ill-conditioned in terms of critical state theory as volume change is still occurring at failure (Roscoe, Schofield and Wroth, 1958) and thus the assumption that critical state conditions have been achieved, even at 20% strain, is unjustified. It is likely that the over-riding of the coarse particles within the soil and the consequent constant remoulding along failure surfaces prevents the onset of true critical state during shearing to failure, although that cannot be directly demonstrated from the available test information, which included only sketches of the external form of the failure mechanism for the specimens tested: even they were not available in every case.

The inference of clast over-riding and interference is supported by the results of testing carried out on samples of till from Site 2 (Wythop Wood). Ring shear testing was trialled on some specimens and it was found after the completion of the tests that the shear surfaces were severely disrupted by ‘plough’ marks caused by indentations from larger clasts in the specimen: the resulting failure envelope indicated both an angle of friction and a cohesion intercept. The tests were repeated with the larger clasts removed by passing the soil through a 0.6mm sieve and a similar angle of friction was obtained, but with a zero apparent cohesion intercept: this is illustrated in Figure 6.20.

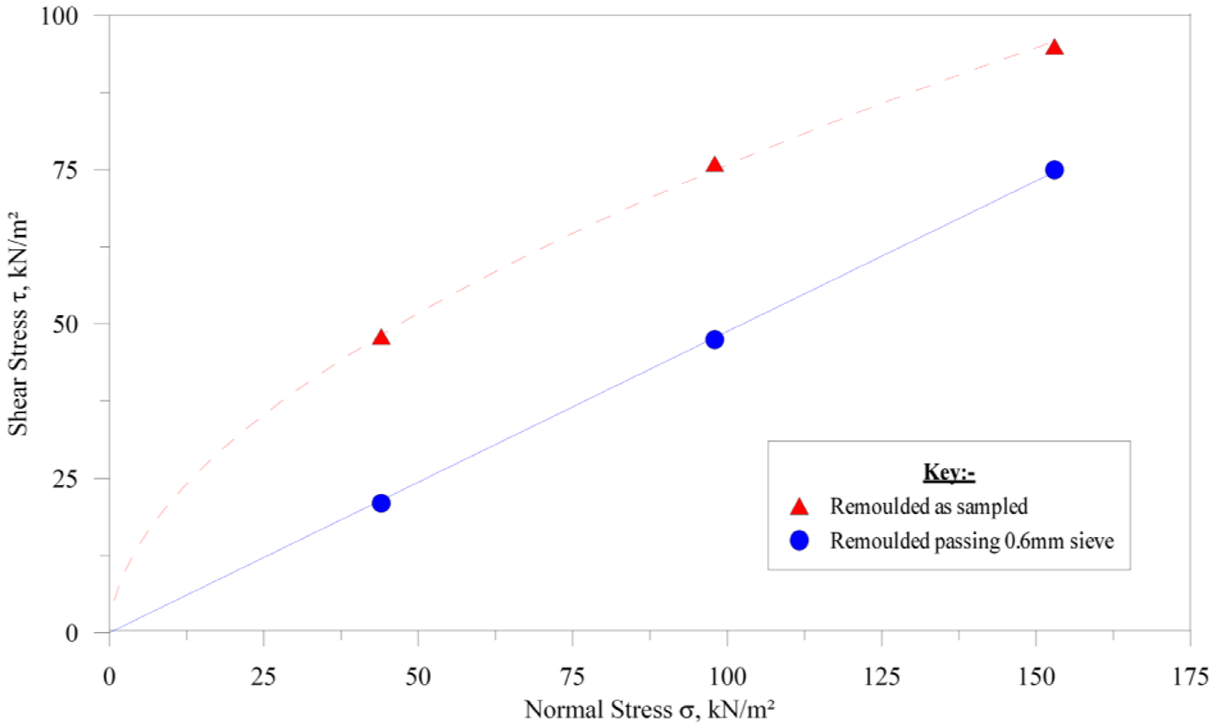

Figure 6.20: Results of ring shear tests, Site 2 Wythop Wood

The angle of shearing resistance ϕ' of the tills from all sites in the study area at either constant pore pressure or 20% strain plotted against plasticity index in Figure 5.41 in Chapter 5 exhibits a rather wide range of scatter, but a general trend of increasing ϕ' with decreasing plasticity index is still evident. The range of Coefficients of Determination obtained from straightforward fits was between 0.24 and 0.39, with the simple straight line fit offering a reasonable compromise over the range of measured plasticity. The coefficients obtained indicate no simple curve is adequate to explain the data. Nevertheless, Figure 5.41 indicates that the relationship from BS8002 commonly used to estimate the angle of shearing resistance at critical state from the measured plasticity index is a reasonably good match for the best fit straight line to the data from the tills within the study area.

6.7. SUMMARY

The principal conclusions drawn from this study are as follows:

- The geological and glacigenic controls on the deposition of till result in statistically measurable differences in soil properties.
- The mean of a parameter within a geotechnical data set (with its confidence interval) is not an appropriate descriptor for characteristic value of the parameter.
- The use of the published empirical relationship between Standard Penetration Test 'N' value and undrained shear strength is unsafe in Cumbrian tills.

The conclusions are discussed in more detail in Chapter 7.

Chapter 7. CONCLUSIONS

7.1. SUMMARY OF STUDY

7.1.1. General

The aim of the current research is to demonstrate that geological and glacigenic controls affect the geotechnical properties of till, and that these differences would be detectable under the conditions of normal commercial ground investigations and laboratory testing. Because of the diverse geology of Cumbria and the surrounding area the region provides a good test bed for this thesis. A number of investigations carried out for transport and other infrastructure projects were made available and seven were studied in detail.

7.1.2. Site selection

The seven sites were selected on the basis of the types of geological and glacigenic conditions and the range and volume of data available at each site. The sites were:

1. Kirkby Stephen
2. Wythop Wood
3. Sowerby Wood
4. Askam-in-Furness
5. High and Low Newton
6. Parton to Lillyhall
7. Cleator Moor

7.1.3. Domain approach to data analysis

The sites were subdivided into domains on the basis of the underlying bedrock in the first instance, with subdivision on the basis of topographic relief for domains of greater than one kilometre in extent.

Geotechnical data from the seven sites were divided into sets according to the domain from which the test specimens were taken, and further subdivided into upper and lower till on the basis of vertical location within each exploratory hole and the soil description on the original logs, although these did not always include comprehensive lithological descriptions.

7.1.4. Methodology

Data sets were compared within and between domains using a combination of graphical and statistical techniques:

Graphical:

- Box and whisker plots showing ranges, quartiles and medians of geotechnical properties
- Histograms of geotechnical properties
- Casagrande classification plots
- Plots of water content relationships with depth
- Particle size distribution curves and ternary grading diagrams
- Plots of undrained shear strength superimposed on SPT blow count with depth
- Mohr failure envelopes under effective stress conditions

Statistical tests for Gaussian (normal) distribution:

- Anderson – Darling “normality” test
- Kolmogorov – Smirnov “normality” test

- Ryan – Joiner “normality” test

Statistical tests for comparing means and medians:

- ‘Student’ t test (mean)
- Kolmogorov – Smirnov median test
- Kruskal – Wallis median test
- Mood’s median test

7.2. CONCLUSIONS

7.2.1. General

The results of the data analysis confirm the main thesis that the bedrock geology, the history of glacigenic deposition and the post glacial history all affect the geotechnical properties of the resulting till, and that these effects are detectable at the precision of a normal commercial investigation. It is therefore important when engineering in till to consider all the potential controls on material properties at the design stage of an investigation which straddles domains with differing bedrock geology or depositional history. The routine inclusion of a full lithological description of the coarser fraction (gravel and larger clasts) on exploratory hole logs would be of considerable benefit when subdividing tills into domains.

7.2.2. Effects of geological controls

The effects of bedrock geology appear to have the greater and most pervasive effects, in that the measured properties of the overlying tills differ depending upon the bedrock geology, and these differences are detectable even in the upper, near surface, layers. This difference was detectable, albeit to a lesser degree, even where two distinct major glaciations are believed to have occurred, as in the sites at Parton and Lillyhall on the West Cumbrian coastal margin north east of Whitehaven.

Where the sub-crop of different bedrock types is of limited extent, the measurable effects on the overlying till are less marked, and in some instances are not detectable. This suggests that there is a limiting minimum bed distance that the ice sheet must traverse to develop fully the distinct characteristics of the resulting till; however, the data from the current research is insufficient to determine this minimum distance.

Whilst a detectable difference occurs in the measured properties of tills from above different bedrock types, the differences are not consistent even for similar geologies and there is insufficient data to predict with any confidence the precise range of properties to be expected. However, the research strongly suggests that the use of a domain based approach does allow confident aggregation of results from within a similar domain at a single site, to provide a larger data set from which characteristic values may be more confidently derived.

7.2.3. Effects of glacigenic controls

Differences in measured properties were also detected for tills above similar geology but in different locations relative to the main ice centres in and surrounding the study region. This indicates that detectable differences in properties occur due to glacigenic history as well as from the effects of bedrock geology discussed in the preceding section.

The vertical differences detected in the measured properties within domains from the sites on the West Cumbrian coastal margins at Parton and Lillyhall suggest that the two main glacial events postulated by Ackhurst et al (1997) have resulted in different tills overlaid one upon another, albeit with some remoulding at the vertical boundary. These vertical differences are more pronounced than the differences between domains, although such differences are still present.

The prolonged glacial activity along the Eden Valley, with main glaciation ice flow towards Teesdale to the east, followed by ice movement north westwards due to ice wasting conditions, has resulted in a noticeable reduction in the percentage of the coarse (gravel) fraction, with a commensurate increase in the sand and fines (clay/silt) fraction when compared with till from similar bedrock geology areas in the south west of Cumbria.

7.2.4. Post glacial effects

In most domains examined the effects of post glacial changes were gradual, and had no marked effect on the tills beyond a colour change and increased water content, both localised towards the top of the till. However, in two location in more steeply sloping terrain where post glacial actions have led to the deposition of soils above the till, the differences between the post-glacial soils and the underlying tills were more pronounced, even though the initial engineering descriptions from the exploratory hole logs were similar.

7.2.5. Graphical techniques

A range of graphical techniques were employed to analyse and display data sets. The most generally useful was found to be the box plot, allowing the range, inter-quartile range and median to be compared visually across multiple data sets. With little practice such plots can be read quickly and assimilated easily, providing a useful preliminary assessment of the data and any potential significant differences between different sets. Data sets were also plotted as histograms, but the shapes of the resulting graphs were sensitive to binning width and care was needed in constructing truly representative illustrations of the distribution shape. The diagrams were, however, useful as a visual check on the likelihood of the data being of Gaussian form.

On the Casagrande chart the plasticity ranges for the tills from the current research plot parallel to and slightly above the A-line, but are in general too closely clustered in the low to intermediate plasticity range to enable easy separation of tills of different provenance. The results confirm the earlier work of Boulton and Paul (1976), who postulated a second T-line indicative of tills above the Casagrande A-line. Plots of water content relationships versus depth below ground level within a single domain indicate a gradual rather than stepped change in liquid and plastic limit, suggesting that the results generally originate within a single till horizon rather than in distinct tills. The range of results obtained overlap to such an extent that differences between tills from different domains are masked and visual comparison is not reliable.

Plotting grading fractions as ternary plots of gravel, sand and fines, normalised to 100% as necessary, provided better comparison between the gradings of different till than did the conventional logarithmic particle size distribution plot. Even where the tills were both of the well-graded type the different extents of the plotted data clouds were immediately obvious, enabling the tills to be distinguished. Such differences were not so apparent on the conventional continuous grading curves, which all tended towards the same basic shape.

7.2.6. Results of statistical analysis

The results of ‘normality’ testing indicate that the data distributions were commonly not Gaussian, and therefore parametric statistics are not universally applicable. In several cases the confidence interval of the mean for a measured index parameter did not encompass the modal value or range of values. In most cases the median value was a better indicator, in that the associated confidence interval generally included the modal value or range of values.

Although the comparisons of data sets using parametric (mean) and non-parametric (median) statistics gave broadly similar results, the use of parametric methods is considered inappropriate since the non-Gaussian form of most of the data violates one of the fundamental requirements of the test methodology. The ‘Student’ t test is built into commonly available proprietary spreadsheet software, and of the three non-parametric methods the Kolmogorov – Smirnov median test is most amenable to spreadsheet programming and assumes no prior form of the cumulative distribution function. Nevertheless, the use of either the Kruskal – Wallis or Mood's median tests is considered to be the most useful overall technique since a confidence interval can be calculated based on the analytical results and this can in turn be used in the derivation of a characteristic value.

For a Gaussian data set the mean and median will be equal and since the median and its associated confidence interval are usually a better indicator of the characteristic value of a parameter, and are less sensitive to skewed data sets and outlier values, it is considered the median should be adopted as the preferred descriptor for geotechnical data sets.

7.2.7. Geostatistics

The application of geostatistics to the data sets used in the current research was unsuccessful. This is because the geostatistical model requires evenly spaced exploratory points over an area, as in mineral prospecting, rather than the linear investigations common in gathering geotechnical data for infrastructure projects. The layout of exploratory points within each of the investigations used in the research was designed to obtain geotechnical information at specific potential problem locations, such as bridge sites and deep cuttings, and for the definition of changes in stratigraphy between preliminary exploratory points, and did not lend itself to the application of geostatistical methods. The scatter of data in the semi-variogram was too wide to allow the confident definition of a sill value, and the method was discontinued at an early stage in the research.

7.2.8. Undrained shear strength

The relationship between undrained shear strength $\mathbf{c_u}$ in laboratory triaxial testing and the Standard Penetration Test blow count $\boldsymbol{N}$ was examined by overlaying plots of each measure of the shear strength versus depth. The range of values of $\mathbf{f_1}$ obtained generally lies between 2 and 5, and an appropriate safe upper bound of 4 is suggested. Uncritical acceptance of the commonly used empirical relationship linking SPT blow count and undrained shear strength for tills of varying plasticity published by Stroud and Butler (1975) is found to be potentially unsafe when applied to the tills of Cumbria, as the ratio overestimates the derived shear strength for the typical plasticity of the tills involved. The relationship breaks down altogether in the case of the silty tills encountered in the south of Cumbria, where the value of $\mathbf{f_1}$ was found to be around 1.

7.2.9. Peak shear strength under effective stress conditions

The Mohr failure envelope for peak strength tested in triaxial shear under effective stress conditions was evaluated using least normal squares regression and the consideration of the magnitude and distribution of residuals. The envelope is best described by a power curve of the form:

$$\tau = \mathbf{A}\sigma_n^{\mathbf{b}}$$

This is considered to be due to the effects of dilation during failure. The values of **A** vary between 0.81 and 2.0, and those for **b** between 0.75 and 0.93; the combination of pairs of values for **A** and **b** generally satisfies the relationship **b** = 1 – 0.1 **A**.

7.2.10. Onset of critical state conditions

A relationship between critical state angle of shearing resistance and plasticity index is published in BS8002. The standard test methodology for effective stress triaxial testing is to suspend the test when either peak deviator stress or 20% strain occurs (BS1377 Part 8, 1990). For many of the tests carried out in the investigations used in the current research, pore water pressures were still falling, albeit slowly, even at 20% strain, indicating that critical state conditions had not developed. Observations taken from a set of ring shear tests suggest that the presence of larger clasts in the till matrix interferes with the creation of a critical sate failure zone by the action of remoulding and ploughing.

For the purposes of comparing the results of the current research with the relationship published in BS8002 the angle of shearing resistance at peak deviator stress is used in place of ϕ_{crit}. The results obtained for the different tills in Cumbria is close to the line given in BS8002, indicating that the relationship may be safe to use for peak deviator stress even if critical state conditions have not fully developed.

7.2.11. Other relationships

Relationships between angle of shearing resistance and plasticity index, percent gravel and percent passing 425 micron sieve are not observed in practice, although some qualitative trends were observed.

The peak angle of shearing resistance showed a decrease with corresponding increase in plasticity index, and for similar plasticity the peak angle of shearing resistance for tills lying above limestone was generally greater than that for tills overlying sandstone.

The peak angle of shearing resistance also exhibited a general trend of increase with increasing dry density, and the plotted data cloud has a lower bound line indicating an angle of shearing resistance of 20º at a dry density of 1.6Mg/m^3 rising to 45º at a dry density of 2.4Mg/m^3 and above. This range encompasses the measured values of dry density in Cumbrian tills.

7.3. SUGGESTIONS FOR FURTHER RESEARCH

7.3.1. Further examination of geological controls

The results of the current research suggest that there is a detectable qualitative difference in geotechnical properties in tills from domains with different bedrock geology. A fruitful line of research would be to examine the differences further, possibly with the addition of more data sets, with the aim of determining whether a definable relationship exists between geotechnical properties and bedrock geology. These further studies should also examine the part played by differing mineralogy, but this would require additional sampling as mineralogy is not determined during routine geotechnical investigations.

7.3.2. Empirical relationship between SPT *N* value and undrained shear strength

Further study of the empirical relationship between undrained shear strength $\mathbf{c_u}$ and SPT ***N*** value with differing plasticity would allow better definition of the range of the conversion factor $\mathbf{f_1}$ linking the two measurements. Detailed examination of the failure mechanism in triaxial shear, with particular reference to whether failure occurs in the cohesion of the matrix or in adhesion between the matrix and the larger clasts, would assist in determining the reason for the lower results obtained in the current research when compared with the published relationship (Stroud and Butler, 1975).

7.3.3. Peak shear strength envelope in effective stress

The current research indicates that a curved envelope of the form $\boldsymbol{\tau} = \mathbf{A}\boldsymbol{\sigma}_\mathbf{n}^\mathbf{b}$ provides the best fit to the Mohr circles of peak shear strength in effective stress triaxial tests. It would be of use to examine the relationship between **A** and **b** and a range of commonly measured index parameters for the soil in conjunction with the underlying bedrock geology.

There is also some evidence of a relationship between **A** and **b**, and further study would confirm or disprove the existence of such a relationship, and whether there is any correlation with geology.

7.3.4. Extension of domain approach methodology into adjacent geographic areas

The research area was confined to Cumbria and the potential limitations of this relatively narrow geographic area should be tested by extending the study into adjacent areas of south west Scotland, north east England and Lancashire. The areas of north east England and Lancashire are more developed in terms of infrastructure, and larger data sets should be more readily available from a variety of sources such as local authorities, the Highways Agency and the Coal Authority.

APPENDICES

APPENDIX A: LIST OF REFERENCES

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COMPUTER PROGRAMMES USED

Apart from general word processing and publishing software, the following specialist programs were used:

Program	**Version**	**Publisher**	**Main Use**
ACCESS	2007	Microsoft	Database program to store and manage ground investigation data
ARCGIS		ESRI	Preparation of topographic and geological maps and site layout plans.
EXCEL	2007	Microsoft	Spreadsheet program to manipulate data, perform calculations and prepare data for other specialist applications.
GRAPHER	8.8.957	Golden Software	Preparation of technical graphs and data plots.
HOLEBASE	3	Keynetix Ltd.	Geotechnical database management program, also used to import and convert AGS data to EXCEL
MINTAB	15.1.0.0	Minitab Inc.	Statistical calculations and preparation of specialist graphs.
MOHR	2.0	Capita Symonds (Carlisle)	Calculation of least normal squares regression lines to Mohr circles of stress.

APPENDIX B: SUMMARY OF STATISTICAL ANALYSIS

Appendix B.1: Results of ‘normality’ testing

TABLE B.1

Summary of “Normality” test results for each Domain.

Key to Table Entries:-

Ip (%)
1.820 (<0.005)
0.477 (0.183)
0.488* (0.057)*

Parameter

Upper Figure Test Statistic

Lower Figure (in parentheses) Calculated ***p***-value

Cell background colour:

red	not Gaussian at $\alpha = 0.05$ level
green	Gaussian
orange	not Gaussian at $\alpha = 0.10$ level

Asterisk * Small sample size

Site 1: Kirkby Stephen

Normality Test, Domain 11

Test \ Parameter		w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	1.820 (<0.005)	2.167 (<0.005)	1.834 (<0.005)	1.874 (<0.005)	0.599 (0.086)	0.513 (0.145)	0.482 (0.177)	0.877 (0.017)	0.875 (0.017)
	Lower Till	2.433 (<0.005)	0.743 (0.046)	0.658 (0.076)	0.958 (0.013)	0.369 (0.331	0.157 (0.921)	0.335 (0.406)	2.222 (<0.005)	1.717 (<0.005)
	Combined	6.067 (<0.005)	5.065 (<0.005)	2.750 (<0.005)	4.863 (<0.005)	0.598 (0.102)	0.805 (0.030)	0.542 (0.121)	2.278 (<0.005)	2.482 (<0.005)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.924 (<0.010)	0.872 (<0.010)	0.902 (<0.010)	0.899 (<0.010)	0.946 (>0.100)	0.948 (>0.100)	0.950 (>0.100)	0.931 (0.063)	0.923 (0.045)
	Lower Till	0.913 (<0.010)	0.980 (>0.100)	0.999 (>0.100)	0.971 (>0.100)	0.964 (>0.100)	0.991 (>0.100)	0.972 (>0.100)	0.864 (<0.010)	0.900 (<0.010)
	Combined	0.880 (<0.010)	0.822 (<0.010)	0.900 (<0.010)	0.851 (<0.010)	0.966 (>0.100)	0.941 (0.041)	0.968 (>0.100)	0.901 (<0.010)	0.914 (<0.010)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.193 (<0.010)	0.267 (<0.010)	0.244 (<0.010)	0.234 (<0.010)	0.250 (0.076)	0.199 (>0.150)	0.217 (>0.150)	0.254 (0.038)	0.275 (0.017)
	Lower Till	0.146 (0.014)	0.088 (>0.150)	0.044 (>0.150)	0.077 (>0.150)	0.222 (>0.150)	0.116 (>0.150)	0.194 (>0.150)	0.173 (<0.010)	0.166 (0.017)
	Combined	0.208 (<0.010)	0.270 (<0.010)	0.135 (0.042)	0.243 (<0.010)	0.154 (>0.150)	0.177 (0.139)	0.190 (0.084)	0.188 (<0.010)	0.176 (<0.010)

Normality Test, Domain 12

Test \ Parameter		**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	0.323 (0.450)	0.406 (0.274)	0.797 (0.024)	0.292 (0.524)	Insufficient Data				
	Lower Till	2.285 (<0.005)	1.372 (<0.005)	4.573 (<0.005)	1.409 (<0.005)	0.256 (0.497)	0.480 (0.097)	0.245 (0.522)	0.935 (0.015)	0.111 (0.006)
	Combined	2.320 (<0.005)	1.437 (<0.005)	8.937 (<0.005)	1.461 (<0.005)	0.385 (0.285)	0.579 (0.081)	0.251 (0.614)	3.162 (<0.005)	2.416 (<0.005)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.982 (>0.100)	0.981 (>0.100)	0.929 (0.098)	0.974 (>0.100)	Insufficient Data				
	Lower Till	0.962 (<0.010)	0.983 (>0.100)	0.999 (>0.100)	0.974 (0.048)	0.968 (>0.100)	0.904 (>0.100)	0.975 (>0.100)	0.963 (0.047)	0.958 (0.035)
	Combined	0.962 (<0.010)	0.968 (<0.010)	0.785 (<0.010)	0.972 0.024	0.960 (>0.100)	0.941 (>0.100)	0.971 (>0.100)	0.772 (<0.010)	0.826 (<0.010)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.153 (>0.150)	0.134 (>0.150)	0.254 (0.091)	0.200 (>0.150)	Insufficient Data				
	Lower Till	0.129 (<0.010)	0.055 (>0.150)	0.055 (>0.150)	0.045 (>0.150)	0.267 (>0.150)	0.290 (>0.150)	0.237 (>0.150)	0.127 (>0.150)	0.165 (0.042)
	Combined	0.121 (<0.010)	0.082 (>0.150)	0.245 (<0.010)	0.073 (>0.150)	0.199 (>0.150)	0.254 (>0.150)	0.157 (>0.150)	0.209 (<0.010)	0.222 (<0.010)

(Domain 13: Insufficient Data)

Normality Test, Domain 14

Test \ Parameter		**w** (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	4.058 (<0.005)	1.860 (<0.005)	3.216 (<0.005)	0.647 (0.081)	0.196 (0.857)	0.299 (0.527)	0.168 (0.915)	0.848 (0.025)	0.793 (0.035)
	Lower Till	0.832 (0.028)	0.424 (0.295)	1.579 (<0.005)	0.566 (0.128)	0.389 (0.326)	0.398 (0.309)	0.228 (0.759)	0.161 (0.907)	0.218 (0.741)
	Combined	3.970 (<0.005)	2.801 (<0.005)	5.499 (<0.005)	1.126 (<0.005)	0.411 (0.316)	0.188 (0.892)	0.244 (0.736)	1.334 (<0.005)	0.917 (0.018)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.892 (<0.010)	0.916 (<0.010)	0.871 (<0.010)	0.977 (>0.100)	0.990 (>0.100)	0.977 (>0.100)	0.989 (>0.100)	0.968 (0.089)	0.972 (>0.100)
	Lower Till	0.975 (>0.100)	0.993 (>0.100)	0.961 (0.063)	0.988 (>0.100)	0.974 (>0.100)	0.967 (>0.100)	0.990 (>0.100)	0.992 (>0.100)	0.989 (>0.100)
	Combined	0.930 (<0.010)	0.914 (<0.010)	0.855 (<0.010)	0.977 (0.048)	0.987 (>0.100)	0.992 (>0.100)	0.993 (>0.100)	0.933 (<0.010)	0.959 (0.018)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.279 (<0.010)	0.219 (<0.010)	0.261 (<0.010)	0.128 (>0.150)	0.134 (>0.150)	0.125 (>0.150)	0.113 (>0.150)	0.171 (0.037)	0.155 (0.074)
	Lower Till	0.122 (>0.150)	0.068 (>0.150)	0.111 (>0.150)	0.086 (>0.150)	0.180 (>0.150)	0.184 (>0.150)	0.103 (>0.150)	0.158 (>0.150)	0.133 (>0.150)
	Combined	0.208 (<0.010)	0.157 (<0.010)	0.212 (<0.010)	0.112 (0.107)	0.139 (>0.150)	0.083 (>0.150)	0.106 (>0.150)	0.143 (0.064)	0.147 (0.048)

Site 2: Wythop Wood

Normality Test (Single Domain)

Test \ Parameter		**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Hillwash	0.809 (0.034)	0.462 (0.233)	0.291 (0.574)	0.194 (0.881)	0.771 (0.036)	0.581 (0.112)	0.495 (0.185)	0.245 (0.716)	0.271 (0.624)
	Till	5.490 (<0.005)	0.760 (0.041)	0.250 (0.714)	0.699 (0.059)	0.638 (0.070)	0.434 (0.245)	1.054 (0.005)	0.534 (0.163)	0.784 (0.039)
Ryan – Joiner Test, (***p*** value)	Hillwash	0.958 (<0.010)	0.980 (>0.100)	0.974 (>0.100)	0.994 (>0.100)	0.958 (>0.100)	0.958 (>0.100)	0.979 (>0.100)	0.985 (>0.100)	0.980 (>0.100)
	Till	0.844 (<0.010)	0.953 (0.043)	0.994 (>0.100)	0.963 (0.086)	0.956 (>0.100)	0.980 (>0.100)	0.868 (<0.010)	0.979 (0.086)	0.977 (0.065)
Kolmogorov – Smirnov Test, (***p*** value)	Hillwash	0.139 (0.037)	0.145 (>0.150)	0.100 (>0.150)	0.090 (>0.150)	0.176 (>0.150)	0.190 (0.100)	0.147 (>0.150)	0.139 (>0.150)	0.122 (>0.150)
	Till	0.192 (<0.010)	0.143 (>0.150)	0.075 (>0.150)	0.142 (>0.150)	0.186 (>0.150)	0.148 (>0.150)	0.234 (0.089)	0.095 (>0.150)	0.131 (0.043)

Site 3: Sowerby Wood

Normality Test (Single Domain)

Test \ Parameter		w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	0.702 (0.063)	0.324 (0.516)	0.994 (0.012)	0.489 (0.212)	1.697 (<0.005)	0.347 (0.434)	0.612 (0.092)	0.424 (0.286)	0.302 (0.541)
	Lower Till	0.829 (0.031)	2.441 (<0.005)	2.116 (<0.005)	1.923 (<0.005)	1.152 (<0.005)	0.744 (0.043)	0.247 (0.716)	0.442 (0.265)	0.527 (0.161)
	Combined	1.262 (<0.005)	1.063 (<0.005)	2.277 (<0.005)	1.333 (<0.005)	2.497 (<0.005)	0.795 (0.035)	0.577 (0.124)	0.768 (0.042)	0.938 (0.016)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.989 (>0.100)	0.996 (>0.100)	0.988 (>0.100)	0.993 (>0.100)	0.863 (<0.010)	0.982 (>0.100)	0.956 (>0.100)	0.972 (>0.100)	0.981 (>0.100)
	Lower Till	0.998 (>0.100)	0.958 (<0.010)	0.986 (>0.100)	0.946 (<0.010)	0.922 (<0.010)	0.950 (0.060)	0.990 (>0.100)	0.984 (>0.100)	0.977 (>0.100)
	Combined	0.993 (>0.100)	0.991 (>0.100)	0.990 (0.084)	0.984 (0.015)	0.897 (<0.010)	0.970 (0.067)	0.978 (>0.100)	0.974 (0.058)	0.960 (<0.010)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.062 (>0.150)	0.075 (>0.150)	0.077 (>0.150)	0.054 (>0.150)	0.268 (<0.010)	0.172 (>0.150)	0.178 (>0.150)	0.124 (>0.150)	0.143 (>0.150)
	Lower Till	0.024 (>0.150)	0.146 (<0.010)	0.069 (>0.150)	0.092 (>0.150)	0.180 (0.102)	0.157 (>0.150)	0.080 (>0.150)	0.105 (>0.150)	0.121 (>0.150)
	Combined	0.032 (>0.150)	0.069 (>0.150)	0.060 (>0.150)	0.061 (>0.150)	0.200 (<0.010)	0.137 (0.095)	0.120 (>0.150)	0.089 (>0.150)	0.108 (>0.150)

Site 4: Askam in Furness

Normality Test, Domain 41

Test \ Parameter		**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	1.724 (<0.005)	0.394 (0.183)†	0.416 (0.155)†	0.385 (0.183)†	Insufficient Data			0.621 (0.045)	0.469 (0.131)
	Lower Till	3.828 (<0.005)	0.457 (0.199)	0.576 (0.095)	0.217 (0.773)	0.331 (0.342)	0.194 (0.777)	0.303 (0.414)	Insufficient Data	
	Combined	6.926 (<0.005)	0311 (0.510)	0.508 (0.162)	0.275 (0.600)	0.309 (0.433)	0.128 (0.961)	0.303 (0.449)	1.027 (<0.005)	0.694 (0.042)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.909 (<0.010)	0.982 (>0.100)†	0.974 (>0.100)†	0.985 (>0.100)†	Insufficient Data			0.870 (0.041)	0.929 (>0.100)
	Lower Till	0.739 (<0.010)	0.950 (>0.100)	0.937 (>0.100)	0.992 (>0.100)	0.955 (>0.100)	0.984 (>0.100)	0.995 (>0.100)	Insufficient Data	
	Combined	0.748 (<0.010)	0.971 (>0.100)	0.949 (>0.100)	0.990 (>0.100)	0.965 (>0.100)	0.997 (>0.100)	0.976 (>0.100)	0.835 (<0.010)	0.897 (0.042)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.131 (0.133)	0.228 (>0.150)†	0.250 (>0.150)†	0.218 (>0.150)†	Insufficient Data			0.338 (0.059)	0.283 (>0.150)
	Lower Till	0.342 (<0.010)	0.264 (0.071)	0.227 (>0.150)	0.149 (>0.150)	0.218 (>0.150)	0.171 (>0.150)	0.162 (>0.150)	Insufficient Data	
	Combined	0.251 (<0.010)	0.170 (>0.150)	0.127 (>0.150)	0.104 (>0.150)	0.215 (>0.150)	0.118 (>0.150)	0.163 (>0.150)	0.326 (0.017)	0.232 (>0.150)

(Domain 2: Insufficient Data)

Normality Test, Domain 43

Test \ Parameter		**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	0.454 (0.245)	0.387 (0.283)	0.390 (0.277)	0.357 (0.341)	0.238 (0.597)	0.282 (0.472)	0.480 (0.120)	0.625 (0.032)†	0.441 (0.127)†
	Lower Till	1.021 (0.009)	0.486 (0.173)	0.511 (0.148)	0.310 (0.497)	0.189 (0.866)	0.314 (0.486)	0.782 (0.028)	0.303 (0.492)	0.215 (0.770)
	Combined	2.397 (<0.005)	0.408 (0.309)	0.630 (0.084)	0.399 (0.326)	0.233 (0.756)	0.203 (0.849)	0.763 (0.036)	0.384 (0.334)	0.288 (0.555)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.965 (>0.100)	0.947 (>0.100)	0.963 (>0.100)	0.960 (>0.100)	0.973 (>0.100)	0.961 (>0.100)	0.947 (>0.100)	0.847 (0.025)†	0.965 (>0.100)†
	Lower Till	0.940 (<0.010)	0.965 (>0.100)	0.957 (>0.100)	0.978 (>0.100)	0.986 (>0.100)	0.958 (>0.100)	0.923 (0.064)	0.973 (>0.100)	0.985 (>0.100)
	Combined	0.933 (<0.010)	0.974 (>0.100)	0.972 (>0.100)	0.971 (>0.100)	0.991 (>0.100)	0.988 (>0.100)	0.946 (0.080)	0.973 (>0.100)	0.983 (>0.100)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.109 (>0.150)	0.221 (>0.150)	0.173 (>0.150)	0.244 (>0.150)	0.231 (>0.150)	0.236 (>0.150)	0.294 (>0.150)	0.392 (0.037)†	0.271 (>0.150)
	Lower Till	0.146 (0.128)	0.187 (>0.150)	0.174 (>0.150)	0.143 (>0.150)	0.152 (>0.150)	0.138 (>0.150)	0.262 (0.050)	0.194 (>0.150)	0.167 (>0.150)
	Combined	0.204 (<0.010)	0.122 (>0.150)	0.156 (>0.150)	0.137 (>0.150)	0.122 (>0.150)	0.118 (>0.150)	0.205 (0.088)	0.212 (0.141)	0.189 (>0.150)

Site 5: Lindale:

Normality Test, Domain 51

Test \ Parameter		**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	0.393 (0.224)	0.485 (0.159)	0.511 (0.134)	0.357 (0.357)	0.187 (0.858)	0.592 (0.081)	0.336 (0.406)	Insufficient Data	
	Lower Till	0.188 (0.797)	0.409 (0.201)	0.359 (0.283)	0.423 (0.182)	Insufficient Data			No Data	
	Combined	0.664 (0.058)	0.219 (0.792)	0.591 (0.099)	0.295 (0.542)	0.372 (0.347)	0.500 (0.158)	0.584 (0.095)	Insufficient Data	
	Silt	0.506 (0.129)	0.781 (0.022)	0.836 (0.015)	0.654 (0.050)	0.273 (0.572)	0.283 (0.544)	0.429 (0.238)	No Data	
Ryan – Joiner Test, (***p*** value)	Upper Till	0.927 (>0.100)	0.986 (>0.100)	0.996 (>0.100)	0.984 (>0.100)	0.991 (>0.100)	0.918 (0.083)	0.957 (>0.100)	Insufficient Data	
	Lower Till	0.988 (>0.100)	0.923 (>0.100)	0.980 (>0.100)	0.956 (>0.100)	Insufficient Data			No Data	
	Combined	0.922 (0.062)	0.996 (>0.100)	0.978 (>0.100)	0.995 (>0.100)	0.953 (>0.100)	0.938 (>0.100)	0.936 (>0.100)	Insufficient Data	
	Silt	0.934 (>0.100)	0.993 (>0.100)	0.982 (>0.100)	1.000 (>0.100)	0.984 (>0.100)	0.978 (>0.100)	0.937 (>0.100)	No Data	
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.226 (>0.150)	0.128 (>0.150)	0.096 (>0.150)	0.131 (>0.150)	0.130 (>0.150)	0.236 (>0.150)	0.213 (>0.150)	Insufficient Data	
	Lower Till	0.182 (>0.150)	0.240 (>0.150)	0.244 (>0.150)	0.224 (>0.150)	Insufficient Data			No Data	
	Combined	0.212 (>0.150)	0.074 (>0.150)	0.133 (>0.150)	0.065 (>0.150)	0.142 (>0.150)	0.186 (>0.150)	0.284 (0.031)	Insufficient Data	
	Silt	0.296 (0.063)	0.157 (>0.150)	0.192 (>0.150)	0.107 (>0.150)	0.150 (>0.150)	0.190 (>0.150)	0.199 (>0.150)	No Data	

Normality Test, Domain 52

Test \ Parameter		$\mathbf{w}$ (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	0.318 (0.508)	0.295 (0.554)	0.578 (0.114)	0.806 (0.029)	0.343 (0.410)	0.269 (0.598)	0.526 (0.133)	Insufficient Data	
	Lower Till	0.291 (0.506)	0.239 (0.658)	0.900 (0.010)	0.299 (0.486)	0.455 (0.145)	0.874 (0.008)	0.420 (0.186)	Insufficient Data	
	Combined	0.173 (0.917)	0.308 (0.535)	0.986 (0.011)	0.614 (0.097)	0.403 (0.313)	0.222 (0.790)	0.312 (0.513)	0.370 (0.313)	0.202 (0.798)
	Silt	0.515 (0.130)	0.336 (0.387)	0.368 (0.237)	0.273 (0.503)	0.764 (0.031)	0.238 (0.707)	0.709 (0.043)	Insufficient Data	
Ryan – Joiner Test, (***p*** value)	Upper Till	0.981 (>0.100)	0.997 (>0.100)	0.995 (>0.100)	0.972 (>0.100)	0.963 (>0.100)	0.979 (>0.100)	0.938 (>0.100)	Insufficient Data	
	Lower Till	0.964 (>0.100)	0.987 (>0.100)	0.960 (>0.100)	0.990 (>0.100)	0.929 (>0.100)	0.823 (<0.010)	0.935 (>0.100)	Insufficient Data	
	Combined	0.994 (>0.100)	0.998 (>0.100)	0.987 (>0.100)	0.986 (>0.100)	0.976 (>0.100)	0.990 (>0.100)	0.966 (>0.100)	0.981 (>0.100)	0.980 (>0.100)
	Silt	0.926 (>0.100)	0.961 (>0.100)	0.936 (>0.100)	0.969 (>0.100)	0.910 (0.042)	0.986 (>0.100)	0.917 (0.050)	Insufficient Data	
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.105 (>0.150)	0.084 (>0.150)	0.076 (>0.150)	0.163 (>0.150)	0.180 (>0.150)	0.151 (>0.150)	0.224 (>0.150)	Insufficient Data	
	Lower Till	0.197 (>0.150)	0.152 (>0.150)	0.184 (>0.150)	0.125 (>0.150)	0.283 (0.133)	0.402 (<0.010)	0.256 (>0.150)	Insufficient Data	
	Combined	0.078 (>0.150)	0.055 (>0.150)	0.093 (>0.150)	0.107 (>0.150)	0.127 (>0.150)	0.136 (>0.150)	0.131 (>0.150)	0.169 (>0.150)	0.200 (>0.150)
	Silt	0.208 (>0.150)	0.259 (>0.150)	0.268 (>0.150)	0.254 (>0.150)	0.283 (0.032)	0.124 (>0.150)	0.247 (0.082)	Insufficient Data	

(Domain 3: Insufficient Data)

<u>Site 6: Distington</u>

Normality Test, Domain 61

Test \ Parameter		**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	Insufficient Data	No Data						Insufficient Data	
	Lower Till	Insufficient Data	No Data						Insufficient Data	
	Combined	0.411 (0.266)	No Data						0.373 (0.335)	0.411 (0.265)
Ryan – Joiner Test, (***p*** value)	Upper Till	Insufficient Data	No Data						Insufficient Data	
	Lower Till	Insufficient Data	No Data						Insufficient Data	
	Combined	0.953 (>0.100)	No Data						0.949 (>0.100)	0.956 (>0.100)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	Insufficient Data	No Data						Insufficient Data	
	Lower Till	Insufficient Data	No Data						Insufficient Data	
	Combined	0.201 (>0.150)	No Data						0.175 (>0.150)	0.177 (>0.150)

Normality Test, Domain 62

Test \ Parameter		**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	1.380 (<0.005)	4.702 (<0.005)	1.225 (<0.005)	2.516 (<0.005)	0.200 (0.871)	0.274 (0.637)	0.346 (0.459)	0.473 (0.214)	0.355 (0.420)
	Lower Till	0.807 (0.034)	0.974 (0.013)	0.788 (0.037)	0.633 (0.092)	0.677 (0.065)	0.669 (0.068)	1.066 (0.006)	1.117 (<0.005)	0.599 (0.089)
	Combined	2.868 (<0.005)	6.432 (<0.005)	2.072 (<0.005)	2.955 (<0.005)	0.336 (0.493)	0.576 (0.127)	0.706 (0.061)	1.235 (<0.005)	0.842 (0.026)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.970 (<0.010)	0.886 (<0.010)	0.978 (0.020)	0.932 (<0.010)	0.995 (>0.100)	0.980 (>0.100)	0.983 (>0.100)	0.997 (>0.100)	0.981 (>0.100)
	Lower Till	0.950 (<0.010)	0.966 (0.034)	0.998 (>0.100)	0.988 (>0.100)	0.950 (0.059)	0.970 (>0.100)	0.940 (0.035)	0.902 (0.026)	0.936 (0.091)
	Combined	0.958 (<0.010)	0.884 (<0.010)	0.973 (<0.010)	0.939 (<0.010)	0.991 (>0.100)	0.976 (0.059)	0.979 (0.098)	0.955 (0.030)	0.965 (0.065)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.112 (<0.010)	0.175 (<0.010)	0.072 (>0.150)	0.141 (<0.010)	0.067 (>0.150)	0.075 (>0.150)	0.123 (>0.150)	0.150 (>0.150)	0.156 (>0.150)
	Lower Till	0.120 (0.131)	0.100 (>0.150)	0.037 (>0.150)	0.075 (>0.150)	0.164 (>0.150)	0.123 (>0.150)	0.245 (<0.010)	0.297 (<0.010)	0.225 (0.121)
	Combined	0.121 (<0.010)	0.197 (<0.010)	0.076 (0.104)	0.112 (<0.010)	0.067 (>0.150)	0.081 (>0.150)	0.115 (0.119)	0.180 (0.024)	0.146 (0.112)

Normality Test, Domain 63

Test \ Parameter		**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	1.407 (<0.005)	0.612 0.100	0.302 0.553	0.506 0.185	0.150 0.953	0.557 0.130	0.513 0.170	0.343 0.316	0.182 0.819
	Lower Till	0.412 0.321	1.002 0.010	0.629 0.092	0.603 0.107	0.453 0.218	0.182 0.888	0.461 0.208	0.516 0.111	0.363 0.307
	Combined	2.243 (<0.005)	1.736 (<0.005)	0.625 0.099	0.897 0.021	0.256 0.703	0.785 0.037	0.209 0.849	0.375 0.348	0.454 0.216
Ryan – Joiner Test, (***p*** value)	Upper Till	0.936 (<0.010)	0.964 0.073	0.999 (>0.100)	0.977 (>0.100)	0.994 (>0.100)	0.965 (>0.100)	0.975 (>0.100)	0.954 (>0.100)	0.990 (>0.100)
	Lower Till	0.987 (>0.100)	0.939 (<0.010)	0.992 (>0.100)	0.990 (>0.100)	0.961 (>0.100)	0.997 (>0.100)	0.963 (>0.100)	0.937 (>0.100)	0.952 (>0.100)
	Combined	0.948 (<0.010)	0.954 (<0.010)	0.997 (>0.100)	0.977 0.042	0.990 (>0.100)	0.962 0.044	0.993 (>0.100)	0.997 (>0.100)	0.953 (>0.100)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.246 (<0.010)	0.120 (>0.150)	0.047 (>0.150)	0.117 (>0.150)	0.086 (>0.150)	0.140 (>0.150)	0.163 (>0.150)	0.292 (>0.150)	0.184 (>0.150)
	Lower Till	0.121 (>0.150)	0.115 (>0.150)	0.063 (>0.150)	0.079 (>0.150)	0.156 (>0.150)	0.103 (>0.150)	0.205 (>0.150)	0.278 (>0.150)	0.205 (>0.150)
	Combined	0.174 (<0.010)	0.136 (<0.010)	0.053 (>0.150)	0.064 (>0.150)	0.082 (>0.150)	0.110 (>0.150)	0.067 (>0.150)	0.144 (>0.150)	0.237 0.083

Normality Test, Domain 64

Test \ Parameter		**w** (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	0.340 (0.439)	0.438 (0.258)	0.515 (0.163)	0.392 (0.336)	Insufficient Data			0.178 (0.873)	0.265 (0.556)
	Lower Till	0.326 (0.462)	0.368 (0.363)	0.486 (0.178)	0.352 (0.397)	Insufficient Data			0.413 (0.221)	0.348 (0.338)
	Combined	0.351 (0.440)	0.485 (0.209)	0.506 (0.185)	0.512 (0.178)	Insufficient Data			0.330 (0.463)	0.440 (0.246)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.979 (>0.100)	0.989 (>0.100)	0.988 (>0.100)	0.981 (>0.100)	Insufficient Data			0.989 (>0.100)	0.991 (>0.100)
	Lower Till	0.970 (>0.100)	0.986 (>0.100)	0.995 (>0.100)	0.990 (>0.100)	Insufficient Data			0.932 (>0.100)	0.969 (>0.100)
	Combined	0.984 (>0.100)	0.995 (>0.100)	0.993 (>0.100)	0.985 (>0.100)	Insufficient Data			0.981 (>0.100)	0.979 (>0.100)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.162 (>0.150)	0.099 (>0.150)	0.117 (>0.150)	0.104 (>0.150)	Insufficient Data			0.159 (>0.150)	0.172 (>0.150)
	Lower Till	0.139 (>0.150)	0.100 (>0.150)	0.097 (>0.150)	0.110 (>0.150)	Insufficient Data			0.253 (>0.150)	0.190 (>0.150)
	Combined	0.113 (>0.150)	0.085 (>0.150)	0.078 (>0.150)	0.063 (>0.150)	Insufficient Data			0.192 (>0.150)	0.155 (>0.150)

Normality Test, Domain 65

Test \ Parameter		**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	0.437 (0.188)	0.392 (0.272)	0.350 (0.355)	0.595 (0.073)	Insufficient Data			0.221 (0.704)	0.314 (0.418)
	Lower Till	Insufficient Data				No Data			Insufficient Data	
	Combined	0.402 (0.256)	0.532 (0.119)	0.521 (0.125)	0.560 (0.099)	Insufficient Data			0.241 (0.652)	0.250 (0.617)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.935 (>0.100)	0.942 (>0.100)	0.980 (>0.100)	0.965 (>0.100)	Insufficient Data			0.992 (>0.100)	0.958 (>0.100)
	Lower Till	Insufficient Data				No Data			Insufficient Data	
	Combined	0.953 (>0.100)	0.939 (>0.100)	0.975 (>0.100)	0.947 (>0.100)	Insufficient Data			0.985 (>0.100)	0.970 (>0.100)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.210 (>0.150)	0.237 (>0.150)	0.150 (>0.150)	0.274 (0.112)	Insufficient Data			0.154 (>0.150)	0.264 (>0.150)
	Lower Till	Insufficient Data				No Data			Insufficient Data	
	Combined	0.167 (>0.150)	0.248 (>0.150)	0.149 (>0.150)	0.269 (0.087)	Insufficient Data			0.191 (>0.150)	0.190 (>0.150)

Site 7: Cleator Moor

Normality Test, Domain 71

Test \ Parameter		w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
Anderson Darling Test, (***p*** value)	Upper Till	0.735 (0.044)	0.207 (0.758)	0.590 (0.067)	0.279 (0.513)	0.269 (0.555)	0.479 (0.155)	0.199 (0.808)	0.361 (0.234)	0.205 (0.669)
	Lower Till	3.045 (<0.005)	0.295 (0.532)	0.521 (0.143)	0.590 (0.095)	0.668 (0.053)	0.510 (0.142)	0.197 (0.838)	0.337 (0.403)	0.383 (0.304)
	Combined	4.081 (<0.005)	0.305 (0.531)	0.788 (0.035)	0.311 (0.519)	0.951 (0.012)	0.599 (0.124)	0.227 (0.777)	0.395 (0.315)	0.605 (0.089)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.971 (>0.100)	0.992 (>0.100)	0.979 (>0.100)	0.975 (>0.100)	0.973 (>0.100)	0.968 (>0.100)	0.979 (>0.100)	0.973 (>0.100)	0.983 (>0.100)
	Lower Till	0.770 (<0.010)	0.992 (>0.100)	0.965 (>0.100)	0.960 (>0.100)	0.900 (0.038)	0.962 (>0.100)	0.980 (>0.100)	0.965 (>0.100)	0.945 (>0.100)
	Combined	0.765 (<0.010)	0.995 (>0.100)	0.984 (>0.100)	0.995 (>0.100)	0.888 (<0.010)	0.973 (>0.100)	0.979 (>0.100)	0.955 (>0.100)	0.926 (0.049)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.150 (>0.150)	0.138 (>0.150)	0.242 (>0.150)	0.167 (>0.150)	0.205 (>0.150)	0.274 (0.110)	0.152 (>0.150)	0.204 (>0.150)	0.223 (>0.150)
	Lower Till	0.189 (0.011)	0.188 (>0.150)	0.117 (>0.150)	0.153 (>0.150)	0.242 (0.130)	0.161 (>0.150)	0.156 (>0.150)	0.135 (>0.150)	0.219 (>0.150)
	Combined	0.197 (<0.010)	0.061 (>0.150)	0.116 (>0.150)	0.062 (>0.150)	0.170 (>0.150)	0.164 (>0.150)	0.113 (>0.150)	0.155 (>0.150)	0.217 (0.118)

Normality Test, Domain 72

Test \ Parameter		**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m^3)	γ_d (Mg/m^3)
Anderson Darling Test, (***p*** value)	Upper Till	0.351 (0.428)	0.626 (0.060)	0.556 (0.095)	0.383 (0.289)	0.323 (0.397)	0.549 (0.089)	0.197 (0.795)	0.598* (0.040)*	0.560* (0.053)*
	Lower Till	0.809 (0.022)	0.338* (0.200)*	0.488* (0.057)*	0.230* (0.487)*	0.230* (0.487)*	0.385* (0.184)*	0.488* (0.057)*	0.338* (0.200)*	0.338* (0.200)*
	Combined	1.069 (0.007)	0.524 (0.135)	0.477 (0.183)	0.432 (0.242)	0.535 (0.131)	0.505 (0.147)	0.266 (0.594)	1.158 (<0.005)	1.166 (<0.005)
Ryan – Joiner Test, (***p*** value)	Upper Till	0.991 (>0.100)	0.902 (0.061)	0.949 (>0.100)	0.959 (>0.100)	0.973 (>0.100)	0.917 (>0.100)	0.983 (>0.100)	0.893* (0.094)*	0.868* (0.045)*
	Lower Till	0.919 (0.069)	0.933* (>0.100)*	1.000* (>0.100)*	0.982* (>0.100)*	0.982* (>0.100)*	0.912* (>0.100)*	1.000* (>0.100)*	0.933* (>0.100)*	0.933* (>0.100)*
	Combined	0.964 (0.080)	0.931 (0.089)	0.971 (>0.100)	0.963 (>0.100)	0.948 (>0.100)	0.925 (0.087)	0.986 (>0.100)	0.825 (<0.010)	0.792 (<0.010)
Kolmogorov – Smirnov Test, (***p*** value)	Upper Till	0.106 (>0.150)	0.317 (0.040)	0.238 (>0.150)	0.153 (>0.150)	0.184 (>0.150)	0.317 (0.057)	0.165 (>0.150)	0.150* (>0.150)*	0.374* (0.048)*
	Lower Till	0.197 (>0.150)	0.328* (>0.150)*	0.218* (>0.150)*	0.253* (>0.150)*	0.253* (>0.150)*	0.349* (>0.150)*	0.218* (>0.150)*	0.328* (>0.150)*	0.328* (>0.150)*
	Combined	0.182 (0.035)	0.203 (>0.150)	0.144 (>0.150)	0.134 (>0.150)	0.246 (0.115)	0.205 (>0.150)	0.124 (>0.150)	0.288 (0.079)	0.366 (<0.010)

Appendix B.2: Summary tables of results within Domains

TABLE B.2

Summary of Statistical Comparisons Within Domains

Key to Table Entries:-

Comparison test method

K-S test is a simple (Y)es or (N)o

Parameter / Test	$\mathbf{w_L}$ (%)
"Student" 'T' Test, ***p*** value	0.430
Kolmogorov – Smirnov Test	Y (N)
Kruskal – Wallis ***p*** value	0.085 (0.083)
Moods Median Test ***p*** value	0.033*

Figures are calculated α values

Lower letter in parentheses is for α = 0.01 level

Cell background colour:

Clear No difference at α = 0.05 level

Bronze Difference at α = 0.05 level

Grey Difference at α = 0.10 level

Lower figure in parentheses is adjusted for ties

Asterisk (*) one or more small sample sizes

<u>Site 1: Kirkby Stephen</u>

<u>Comparison of Upper and Lower Till, Domain 11</u>

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.045	0.092	0.362	0.033	0.093	0.047	0.855	0.672	0.577
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.156 (0.153)	0.833 (0.832)	0.650 (0.643)	0.278 (0.266)	0.351 (0.350)	0.083 (0.082)	0.722 (0.721)	0.784	0.886
Moods Median Test ***p*** value	0.271	0.676	0.203	0.938	1.000	0.343	1.000	0.868	0.505

<u>Comparison of Upper and Lower Till, Domain 12</u>

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.026	0.158	0.049	0.465	0.869	0.531	0.411	0.371	0.338
Kolmogorov – Smirnov Test	Y (N)	Y (Y)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.006	0.084 (0.078)	0.012 (0.006)	0.155 (0.147)	0.596 (0.593)	0.289 (0.280)	0.480	0.027 (0.026)	0.022 (0.021)
Moods Median Test ***p*** value	0.011	0.074	0.234	0.496	0.659	0.659	0.659	0.144	0.170

(Domain 13: Sample too small for Statistical analysis)

Comparison of Upper and Lower Till, Domain 14

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.566	0.193	0.204	0.282	0.294	0.277	0.788	0.041	0.050
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.196	0.806 (0.805)	0.716 (0.699)	0.434 (0.431)	0.453 (0.452)	0.225	0.862	0.011 (0.010)	0.020
Moods Median Test ***p*** value	0.035	0.867	0.645	0.482	0.414	0.102	0.673	0.035	0.035

Comparison of Upper Till, Domains 11 and 12

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.092	0.430	0.133	0.703	0.231	0.094	0.294	0.528	0.486
Kolmogorov – Smirnov Test	Y (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.032	0.085 (0.083)	0.028 (0.026)	0.962	0.612	0.091	0.272 (0.271)	0.201 (0.200)	0.144 (0.142)
Moods Median Test ***p*** value	0.004	0.033	0.189	0.628	0.612	0.612	0.416	0.127	0.127

Comparison of Lower Till, Domains 11 and 12

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.019	0.000	0.552	0.000	0.978	0.787	0.854	0.000	0.001
Kolmogorov – Smirnov Test	Y (N)	Y (Y)	N (N)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.067 (0.066)	0.000	0.570 (0.543)	0.000	0.799	0.734 (0.733)	0.799 (0.798)	0.000	0.001
Moods Median Test ***p*** value	0.004	0.000	0.182	0.000	0.221	1.000	1.000	0.000	0.001

Comparison of Upper Till, Domains 11 and 14

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.300	0.149	0.406	0.071	0.779	0.359	0.132	0.016	0.021
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.137	0.048 (0.046)	0.185 (0.164)	0.054 (0.052)	0.644	0.249 (0.248)	0.166	0.012	0.009
Moods Median Test ***p*** value	0.005	0.577	0.109	0.316	1.000	0.184	0.392	0.024	0.008

Comparison of Lower Till, Domains 11 and 14

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.064	0.006	0.008	0.093	0.003	0.000	0.021	0.374	0.606
Kolmogorov – Smirnov Test	Y (N)	Y (N)	Y (N)	N (N)	Y (N)	Y (Y)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.184 (0.180)	0.008	0.006 (0.005)	0.032 (0.029)	0.003	0.001	0.041 (0.040)	0.230 (0.229)	0.357 (0.356)
Moods Median Test ***p*** value	0.303	0.002	0.004	0.023	0.006	0.001	0.028	0.363	0.298

Comparison of Upper Till, Domains 12 and 14

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.020	0.011	0.044	0.253	0.255	0.049	0.039	0.372	0.319
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.007	0.011	0.004 (0.003)	0.212 (0.209)	0.194 (0.192)	0.030	0.043	0.027	0.022
Moods Median Test ***p*** value	0.008	0.000	0.002	0.169	0.438	0.070	0.038	0.157	0.214

Comparison of Lower Till, Domains 12 and 14

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.732	0.000	0.000	0.000	0.006	0.005	0.282	0.038	0.084
Kolmogorov – Smirnov Test	N (N)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (N)	N (N)	Y (N)	N (N)
Kruskal – Wallis ***p*** value	0.911 (0.910)	0.000	0.000	0.000	0.009	0.008	0.203 (0.200)	0.009	0.027
Moods Median Test ***p*** value	0.866	0.000	0.000	0.003	0.021	0.021	0.551	0.062	0.086

Site 2: Wythop Wood

Comparison of Supraglacial and Lodgement Tills

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.185	0.000	0.000	0.006	0.000	0.230	0.000	0.009	0.027
Kolmogorov – Smirnov Test	N (N)	Y (Y)	Y (Y)	Y (N)	Y (Y)	N (N)	Y (Y)	Y (Y)	N (N)
Kruskal – Wallis ***p*** value	0.110	0.000	0.000	0.007	0.000	0.424 (0.422)	0.000	0.002	0.014
Moods Median Test ***p*** value	0.046	0.000	0.000	0.002	0.001	0.576	0.000	0.021	0.021

Site 3: Sowerby Wood, Barrow-in-Furness

Comparison of Upper and Lower Till

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.016	0.285	0.086	0.332	0.781	0.956	0.918	0.003	0.003
Kolmogorov – Smirnov Test	N (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.025 (0.024)	0.263 (0.261)	0.291 (0.282)	0.229 (0.226)	0.175 (0.172)	0.778	0.608 (0.607)	0.002	0.004
Moods Median Test ***p*** value	0.059	0.060	0.539	0.208	0.332	0.251	0.404	0.009	0.001

Site 4: Dalton-in-Furness

Comparison of Upper and Lower Till, Domain 41

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.701	0.822	0.591	0.967	Insufficient Data in Upper Till			0.612	0.550
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.024 (0.023)	1.000	0.939 (0.938)	0.877 (0.876)	0.770	0.143	0.143 (0.137)	0.766 (0.764)	1.000
Moods Median Test ***p*** value	0.028	0.164	0.853	0.853	Insufficient Data in Upper Till			0.465	0.465

Comparison of Upper and Lower Till, Domain 43

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.131	0.003	0.593	0.654	0.882	0.665	0.571	0.805
Kolmogorov – Smirnov Test	Y (Y)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.143 (0.142)	0.011	0.435 (0.432)	0.462 (0.461)	0.716 (0.712)	0.270 (0.269)	0.734	0.865
Moods Median Test ***p*** value	0.000	0.034	0.008	0.092	0.264	0.464	0.464	0.221	1.000

(Domain 42: Sample too small for Statistical analysis)

Comparison of Upper Till, Domains 41 and 43

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.667	0.284	0.301	Insufficient Data			0.457	0.382
Kolmogorov – Smirnov Test	Y (Y)	N (N)	N (N)	N (N)	Insufficient Data			N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000 (0.000)	0.508* (0.506)*	0.186* (0.175)*	0.299* (0.295)*	Insufficient Data			0.142*	0.221* (0.217)*
Moods Median Test ***p*** value	0.002	0.477*	0.125*	0.137*	Insufficient Data			0.016*	0.058*

Comparison of Lowe r Till, Domains 41 and 43

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.132	0.041	0.070	0.043	0.051	0.030	0.013	0.131	0.196
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	Y (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.328 (0.324)	0.037 (0.037)	0.045 (0.044)	0.055 (0.054)	0.050	0.043 (0.043)	0.010 (0.010)	0.358* (0.357)*	0.307*
Moods Median Test ***p*** value	0.485	0.040	0.260	0.110	0.143	0.143	0.003	0.387*	0.387*

Site 5: Lindale

Comparison of Upper and Lower Till, Domain 51

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.111	0.256	0.149	0.578	0.700	0.083	0.449	No Data in Lower Till	
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	No Data in Lower Till	
Kruskal – Wallis ***p*** value	0.175	0.107 (0.103)	0.124 (0.116)	0.380 (0.372)	0.794 (0.793)	0.090 (0.087)	0.151 (0.150)	No Data in Lower Till	
Moods Median Test ***p*** value	0.058	0.015	0.071	0.207	1.000	0.197	0.114	No Data in Lower Till	

Comparison of Clayey and Silty Tills, Domain 51

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.333	0.654	0.161	0.005	0.770	0.602	0.754	No Data in Silty Till	
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	Y (N)	N (N)	N (N)	N (N)	No Data in Silty Till	
Kruskal – Wallis ***p*** value	0.380	0.606 (0.604)	0.452 (0.436)	0.002	0.775 (0.774)	0.624 (0.623)	0.935	No Data in Silty Till	
Moods Median Test ***p*** value	0.772	0.848	0.639	0.007	0.809	0.845	0.809	No Data in Silty Till	

Comparison of Upper and Lower Till, Domain 52

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.075	0.141	0.262	0.292	0.232	0.400	0.717	0.192	0.079
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.112	0.162 (0.158)	0.228 (0.210)	0.465 (0.458)	0.358 (0.356)	0.298 (0.297)	0.903 (0.902)	0.157 (0.142)	0.034
Moods Median Test ***p*** value	0.025	0.178	0.112	0.751	0.464	0.143	0.714	0.270	0.047

Comparison of Clayey and Silty Tills, Domain 52

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.004	0.182	0.038	0.407	0.759	0.070	0.642	0.046	0.019
Kolmogorov – Smirnov Test	Y (Y)	N (N)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.000	0.202 (0.198)	0.001 (0.000)	0.624 (0.620)	0.824	0.056 (0.055)	0.598	0.008 (0.007)	0.008
Moods Median Test ***p*** value	0.002	0.354	0.003	0.775	0.742	0.072	0.870	0.022	0.022

(Domain 53: Sample too small for Statistical analysis)

Comparison of Upper Clay Till in Domains 51 and 52

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.767	0.741	0.946	0.684	0.231	0.396	0.690	0.623*	0.355*
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.875	0.771 (0.766)	0.930 (0.927)	0.485 (0.478)	0.183 (0.180)	0.505 (0.504)	0.534 (0.533)	0.513*	0.275*
Moods Median Test ***p*** value	0.611	0.891	0.915	0.484	0.387	0.343	0.343	0.414*	0.414*

Comparison of Lower Clay Till in Domains 51 and 52

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.060	0.072	0.065	0.131	0.592*	0.148*	0.460*	No Data in Domain 1	
Kolmogorov – Smirnov Test	Y (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)	No Data in Domain 1	
Kruskal – Wallis ***p*** value	0.042	0.051	0.062 (0.052)	0.088 (0.085)	0.245*	0.245* (0.241)*	0.245*	No Data in Domain 1	
Moods Median Test ***p*** value	0.079	0.079	0.023	0.079	0.147*	0.147*	0.809*	No Data in Domain 1	

Comparison of Silty Till in Domains 51 and 52

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.970	0.388	0.139	0.503	0.936	0.186	0.842	No Data in Domain 1	
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	No Data in Domain 1	
Kruskal – Wallis ***p*** value	0.487	0.277 (0.272)	0.088 (0.083)	0.516 (0.505)	0.775 (0.774)	0.178 (0.177)	0.806	No Data in Domain 1	
Moods Median Test ***p*** value	0.782	0.593	0.079	0.276	0.845	0.037 †	0.809	No Data in Domain 1	

Site 6: Distington

Comparison of Upper and Lower Till, Domain 61

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.038	No Data						0.088	0.046
Kolmogorov – Smirnov Test	N (N)	No Data						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.027 *	No Data						0.089 *	0.037 *
Moods Median Test ***p*** value	0.016 *	No Data						0.099 *	0.099 *

Comparison of Upper and Lower Till, Domain 62

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.006	0.000	0.246	0.691	0.650	0.888	0.101	0.024
Kolmogorov – Smirnov Test	Y (Y)	N (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.047 (0.045)	0.001	0.355 (0.353)	0.778	0.610	0.665 (0.664)	0.111 (0.110)	0.041
Moods Median Test ***p*** value	0.000	0.024	0.018	0.150	0.676	0.373	0.312	0.057	0.196

Comparison of Upper and Lower Till, Domain 63

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.467	0.817	0.262	0.649	0.193	0.097
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.483 (0.479)	0.763	0.344 (0.342)	0.505 (0.504)	0.315 (0.313)	0.022
Moods Median Test ***p*** value	0.022	0.000	0.000	0.300	0.705	0.389	0.058	0.740	0.122

Comparison of Upper and Lower Till, Domain 64

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.385	0.760	0.018	0.060	Insufficient Data			0.521	0.224
Kolmogorov – Smirnov Test	N (N)	N (N)	Y (N)	N (N)	Insufficient Data			N (N)	N (N)
Kruskal – Wallis ***p*** value	0.271 (0.270)	0.786 (0.784)	0.018 (0.016)	0.089 (0.083)	Insufficient Data			0.432 (0.431)	0.199 (0.192)
Moods Median Test ***p*** value	0.219	0.930	0.004	0.238	Insufficient Data			0.797	0.170

(Domain 65: Sample too small for Statistical analysis)

Comparison of Domains 61 and 62 Upper

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.323	No Data Domain 61						0.582	0.615
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.238	No Data Domain 61						0.628	0.602
Moods Median Test ***p*** value	0.646*	No Data Domain 61						0.692*	0.538*

Comparison of Domains 61 and 62 Lower

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.285*	No Data Domain 61						0.294*	0.288*
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.227*	No Data Domain 61						0.068* (0.067)*	0.103* (0.102)*`
Moods Median Test ***p*** value	0.295*	No Data Domain 61						0.185*	0.185*

Comparison of Domains 61 and 63 Upper

Parameter / Test	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
“Student” ‘T’ Test, ***p*** value	0.788	No Data Domain 61						0.832	0.848
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.644	No Data Domain 61						0.835 (0.834)	0.917
Moods Median Test ***p*** value	0.684*	No Data Domain 61						0.527*	0.527*

Comparison of Domains 61 and 63 Lower

Parameter / Test	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
“Student” ‘T’ Test, ***p*** value	0.162*	No Data Domain 61						0.171*	0.250*
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.097*	No Data Domain 61						0.136* (0.134)*	0.201*
Moods Median Test ***p*** value	0.316*	No Data Domain 61						0.197*	0.197*

Comparison of Domains 61 and 64 Upper

Parameter / Test	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.136	No Data Domain 61						0.313	0.192
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.068	No Data Domain 61						0.417 (0.416)	0.223 (0.220)
Moods Median Test ***p*** value	0.114*	No Data Domain 61						0.558*	0.079*

Comparison of Domains 61 and 64 Lower

Parameter / Test	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.204*	No Data Domain 61						0.393*	0.388*
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.117*	No Data Domain 61						0.136*	0.201* (0.199)*
Moods Median Test ***p*** value	0.310*	No Data Domain 61						0.197*	0.065*

Comparison of Domains 61 and 65 Upper (Insufficient Data in Domain 65 Lower)

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.295	No Data Domain 61						0.554	0.418
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.273 (0.272)	No Data Domain 61						0.784 (0.783)	0.361
Moods Median Test ***p*** value	0.376*	No Data Domain 61						0.740*	0.122*

Comparison of Domains 62 and 63 Upper

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.077	0.105	0.006	0.712	0.547	0.540	0.647	0.393	0.734
Kolmogorov – Smirnov Test	N (N)	N (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.133	0.011 (0.010)	0.003	0.480 (0.478)	0.509 (0.508)	0.618	0.897 (0.896)	0.233 (0.232)	0.655 (0.654)
Moods Median Test ***p*** value	0.961	0.050	0.011	0.467	0.676	0.510	0.259	0.692*	0.692*

Comparison of Domains 62 and 63 Lower

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.364	0.600	0.636	0.335	0.719	0.796	0.871	0.562	0.923
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.503	0.808 (0.807)	0.482 (0.475)	0.298 (0.294)	0.880	0.863	0.813	0.651 (0.650)	0.725 (0.724)
Moods Median Test ***p*** value	0.892	0.636	0.724	0.768	0.705	0.705	0.389	0.402	0.627

Comparison of Domains 62 and 64 Upper

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.018	0.515	0.654	0.271	Insufficient Data			0.355	0.109
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	Insufficient Data			N (N)	N (N)
Kruskal – Wallis ***p*** value	0.159	0.631 (0.629)	0.451 (0.447)	0.551 (0.549)	Insufficient Data			0.431	0.238
Moods Median Test ***p*** value	0.045	0.951	0.746	0.172	Insufficient Data			0.748	0.568

Comparison of Domains 62 and 64 Lower

Test \ Parameter	**w** (%)	**w**$_L$ (%)	**w**$_P$ (%)	**I**$_P$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.629	0.059	0.819	0.046	Insufficient Data			0.800	0.681
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	Insufficient Data			N (N)	N (N)
Kruskal – Wallis ***p*** value	0.878	0.119 (0.117)	0.815 (0.812)	0.064 (0.062)	Insufficient Data			0.190	0.960
Moods Median Test ***p*** value	0.788	0.184	0.306	0.044	Insufficient Data			0.901	0.858

Comparison of Domains 62 and 65 Upper (Insufficient Data in Domain 65 Lower)

Test \ Parameter	**w** (%)	**w**$_L$ (%)	**w**$_P$ (%)	**I**$_P$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.765	0.787	0.468	0.523	0.704*	0.029*	0.916*	0.922	0.569
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.777	0.668 (0.666)	0.373 (0.369)	0.966	0.678* (0.677)*	0.339* (0.338)*	0.678* (0.677)*	0.973	0.816 (0.815)
Moods Median Test ***p*** value	0.414	0.524	0.133	0.282	1.000*	0.118*	0.922*	1.000	0.346

Comparison of Domains 63 and 64 Upper

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.002	0.018	0.064	0.180	Insufficient Data			0.196	0.193
Kolmogorov – Smirnov Test	Y (N)	N (N)	N (N)	N (N)	Insufficient Data			N (N)	N (N)
Kruskal – Wallis ***p*** value	0.075	0.065 (0.063)	0.060 (0.056)	0.280 (0.276)	Insufficient Data			0.223	0.123 (0.122)
Moods Median Test ***p*** value	0.823	0.189	0.122	0.087	Insufficient Data			0.558	0.558

Comparison of Domains 63 and 64 Lower

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.915	0.139	0.593	0.180	Insufficient Data			0.438	0.555
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	Insufficient Data			N (N)	N (N)
Kruskal – Wallis ***p*** value	0.797	0.083 (0.080)	0.558 (0.552)	0.183 (0.178)	Insufficient Data			0.378 (0.377)	0.689 (0.688)
Moods Median Test ***p*** value	0.726	0.105	0.216	0.079	Insufficient Data			0.248	0.248

Comparison of Domains 63 and 65 Upper (Insufficient Data in Domain 65 Lower)

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.199	0.293	0.163	0.422	0.579*	0.223*	0.780*	0.373	0.474
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.407 (0.406)	0.406 (0.404)	0.259 (0.254)	0.701 (0.698)	0.472* (0.471)*	0.281* (0.280)*	0.952*	0.465 (0.464)	0.648 (0.647)
Moods Median Test ***p*** value	1.000	0.671	0.203	0.549	0.943*	0.119*	0.943*	0.740	0.740

Comparison of Domains 64 and 65 Upper (Insufficient Data in Domain 65 Lower)

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.440	0.997	0.775	0.901	Insufficient Data			0.377	0.321
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	Insufficient Data			N (N)	N (N)
Kruskal – Wallis ***p*** value	0.599 (0.597)	0.570 (0.567)	0.526 (0.518)	0.640 (0.637)	Insufficient Data			0.568 (0.566)	0.391
Moods Median Test ***p*** value	0.876	0.554	0.134	0.066	Insufficient Data			0.797	0.391

<u>Site 7: Cleator Moor</u>

<u>Comparison of Upper and Lower Till, Domain 71</u>

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.159	0.511	0.599	0.175	0.451	0.152	0.103	0.957*	0.854*
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.652 (0.648)	0.580 (0.575)	0.580 (0.569)	0.132 (0.125)	0.597 (0.595)	0.186 (0.183)	0.090	0.865* (0.864)*	0.865*
Moods Median Test ***p*** value	0.392	0.402	0.349	0.235	0.614	0.131	0.131	0.408*	1.000*

<u>Comparison of Upper and Lower Till, Domain 72</u>

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.014	0.935*	0.850*	0.985*	0.074*	0.480*	0.019*	0.352*	0.266*
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.056 (0.053)	0.494* (0.491)*	0.425* (0.416)*	0.732* (0.728)*	0.302* (0.300)*	0.606* (0.604)*	0.039* (0.038)*	0.289* (0.271)*	0.157*
Moods Median Test ***p*** value	0.075	0.260*	0.880*	0.490*	0.058*	0.635*	0.018*	0.270*	0.270*

Comparison of Upper Till in Domains 71 and 72

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.026	0.922	0.661	0.874	0.317	0.843	0.749	0.371*	0.339*
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.101 (0.098)	0.391 (0.387)	0.668 (0.663)	0.830 (0.829)	0.432 (0.431)	0.520 (0.517)	0.886	0.386* (0.372)*	0.248*
Moods Median Test ***p*** value	0.019	0.170	0.170	0.725	0.170	0.135	0.797	0.157*	0.157*

Comparison of Lower Till in Domains 71 and 72

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.101	0.708*	0.815*	0.635*	0.071*	0.369*	0.494*	0.876*	0.430*
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.250 (0.243)	0.815* (0.812)*	0.938* (0.936)*	0.697* (0.689)*	0.096* (0.095*	0.229* (0.225)*	0.518* (0.515)*	0.919* (0.918)*	0.414*
Moods Median Test ***p*** value	0.267	0.837*	0.707*	0.707*	0.091*	0.046*	0.505*	0.621*	0.387*

Appendix B.3: Summary tables of results between Domains

TABLE B.3

Summary of Statistical Comparisons Between Domains

Key to Table Entries:-

Parameter / Test	**w_L** (%)
"Student" 'T' Test, ***p*** value	0.430
Kolmogorov – Smirnov Test	Y (N)
Kruskal – Wallis ***p*** value	0.085 (0.083)
Moods Median Test ***p*** value	0.033†

Comparison test method

K-S test is a simple (Y)es or (N)o

Figures are calculated α values

Lower letter in parentheses is for α = 0.01 level

Cell background colour:

Clear No difference at α = 0.05 level

Bronze Difference at α = 0.05 level

Grey Difference at α = 0.10 level

Lower figure in parentheses is adjusted for ties

Obelisk (†) one or more small sample sizes

<u>Comparison Between Sites, Domain by Domain</u>

<u>Comparison of Domains 11 and 12</u>

Test \ Parameter	$\mathbf{w}$ (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.195	0.033	0.475	0.007	0.194	0.112	0.667	0.003	0.012
Kolmogorov – Smirnov Test	N (N)	Y (Y)	Y (N)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	N (N)
Kruskal – Wallis ***p*** value	0.066 (0.065)	0.000	0.062 (0.053)	0.000	0.565	0.204 (0.203)	0.486 (0.485)	0.000	0.002
Moods Median Test ***p*** value	0.010	0.000	0.006	0.000	0.275	0.748	0.275	0.001	0.002

<u>Comparison of Domains 11 and 14</u>

Test \ Parameter	$\mathbf{w}$ (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.720	0.030	0.082	0.027	0.204	0.002	0.009	0.010	0.002
Kolmogorov – Smirnov Test	Y (N)	Y (Y)	Y (N)	Y (N)	N (N)	Y (Y)	N (N)	N (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.509 (0.508)	0.001	0.004 (0.003)	0.005	0.127	0.001	0.016	0.007	0.002
Moods Median Test ***p*** value	0.341	0.007	0.012	0.022	0.032	0.002	0.016	0.312	0.078

Comparison of Domains 11 and 21

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.002	0.907	0.000	0.006	0.013	0.000	0.218	0.000	0.423
Kolmogorov – Smirnov Test	Y (Y)	N (N)	Y (Y)	Y (Y)	N (N)	Y (Y)	N (N)	Y (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.710 (0.709)	0.000	0.000	0.043 (0.042)	0.000	0.031 (0.030)	0.000	0.371
Moods Median Test ***p*** value	0.000	0.851	0.000	0.019	0.039	0.006	0.039	0.008	1.000

Comparison of Domains 11 and 31

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.118	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.781	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.893	0.000

Comparison of Domains 11 and 41

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.003	0.600	0.052	0.135	0.813	0.020
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.001	0.790	0.057	0.134 (0.131)	0.433 (0.432)	0.017
Moods Median Test ***p*** value	0.000	0.000	0.000	0.001	1.000	0.059	0.465	0.061	0.002

Comparison of Domains 11 and 42

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.338	0.206	0.272	0.259	0.003	0.153	0.208	No data from Domain 42	
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	No data from Domain 42	
Kruskal – Wallis ***p*** value	0.172 (0.170)	0.067† (0.065)†	0.034† (0.031)†	0.135† (0.126)†	0.007†	0.268†	0.081† (0.080)†	No data from Domain 42	
Moods Median Test ***p*** value	0.077	0.116†	0.132†	0.203†	0.015†	0.364†	0.364†	No data from Domain 42	

Comparison of Domains 11 and 43

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.001	0.000	0.277	0.004	0.803	0.001	0.411	0.007
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (N)	Y (N)	N (N)	Y (Y)	N (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.080 (0.076)	0.007	0.971	0.002	0.082	0.002
Moods Median Test ***p*** value	0.000	0.000	0.000	0.005	0.009	0.849	0.007	0.010	0.010

Comparison of Domains 11 and 51

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.362	0.046	0.000	0.000	0.003	0.000	0.763	0.003	0.000
Kolmogorov – Smirnov Test	N (N)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.898 (0.897)	0.185 (0.181)	0.000	0.000	0.001	0.000	0.195 (0.194)	0.028† (0.027)†	0.007†
Moods Median Test ***p*** value	0.236	0.410	0.000	0.000	0.002	0.000	0.115	0.069†	0.049†

Comparison of Domains 11 and 52

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.000	0.007	0.000	0.471	0.010	0.011
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (N)	Y (N)	N (N)	Y (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.000	0.006	0.000	0.396 (0.394)	0.002	0.003
Moods Median Test ***p*** value	0.005	0.000	0.000	0.000	0.062	0.000	0.849	0.029	0.029

(Domain 53: sample too small for statistical analysis)

Comparison of Domains 11 and 61

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.038	No data from Domain 61						0.226	0.062
Kolmogorov – Smirnov Test	Y (Y)	No data from Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.002	No data from Domain 61						0.086 (0.085)	0.009
Moods Median Test ***p*** value	0.001	No data from Domain 61						0.154	0.100

Comparison of Domains 11 and 62

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.134	0.808	0.010	0.066	0.008	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (N)	Y (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.007	0.567	0.007	0.063	0.000	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.000	0.134	0.048	0.001	0.002	0.000

Comparison of Domains 11 and 63

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.044	0.648	0.048	0.147	0.016	0.003
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.000	0.949	0.031	0.148 (0.147)	0.004	0.001
Moods Median Test ***p*** value	0.000	0.000	0.000	0.001	0.654	0.233	0.117	0.000	0.000

Comparison of Domains 11 and 64

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.126	0.571	0.030	0.287	0.163	0.003
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.002	0.257† (0.256)†	0.101†	0.051† (0.050)†	0.039 (0.038)	0.001
Moods Median Test ***p*** value	0.000	0.000	0.000	0.000	0.178	0.178	0.068	0.006	0.000

Comparison of Domains 11 and 65

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.011	0 026	0.000	0.627	0.621	0.776	0.619	0.002	0.001
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.013 (0.012)	0.000	0.223 (0.216)	0.413 (0.411)	0.753 (0.752)	0.488 (0.487)	0.012 (0.011)	0.001
Moods Median Test ***p*** value	0.000	0.022	0.000	0.276	1.000	1.000	1.000	0.005	0.010

Comparison of Domains 11 and 71

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.004	0.110	0.018	0.636	0.073	0.001	0.001	0.011	0.700
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (N)	Y (N)	Y (Y)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.001	0.003 (0.002)	0.067 (0.062)	0.067	0.002	0.000	0.268 (0.267)	0.488
Moods Median Test ***p*** value	0.000	0.000	0.002	0.005	0.015	0.082	0.001	0.438	0.245

Comparison of Domains 11 and 72

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.001	0.577	0.110	0.853	0.124	0.032	0.001	0.505	0.569
Kolmogorov – Smirnov Test	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (N)	Y (Y)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.137 (0.134)	0.033 (0.031)	0.991	0.198 (0.197)	0.010	0.000	0.950	0.207 (0.206)
Moods Median Test ***p*** value	0.000	0.128	0.055	0.745	0.276	0.057	0.001	0.802	0.061

Comparison of Domains 12 and 14

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.402	0.000	0.007	0.000	0.003	0.000	0.034	0.622	0.556
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (N)	Y (Y)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.032	0.000	0.000	0.000	0.008 (0.007)	0.001	0.022	0.868	0.311 (0.310)
Moods Median Test ***p*** value	0.104	0.000	0.000	0.000	0.002	0.004	0.112	0.647	0.627

Comparison of Domains 12 and 21

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.029	0.129	0.001	0.000	0.087	0.007	0.414	0.537	0.091
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.004	0.005 (0.004)	0.000	0.000	0.124 (0.121)	0.010 (0.009)	0.113 (0.111)	0.616	0.057
Moods Median Test ***p*** value	0.042	0.358	0.000	0.002	0.147	0.001	0.147	1.000	0.022

Comparison of Domains 12 and 31

Test \ Parameter	**w** (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.001	0.000	0.095	0.000	0.022	0.000	0.020	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (N)	Y (Y)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.072 (0.069)	0.000	0.028	0.000	0.000	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.010	0.004	0.018	0.006	0.000	0.000

Comparison of Domains 12 and 41

Test \ Parameter	**w** (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.001	0.000	0.015	0.303	0.361	0.212	0.037	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.009 (0.008)	0.6668	0.475 (0.474)	0.391 (0.389)	0.003	0.000
Moods Median Test ***p*** value	0.000	0.001	0.000	0.097	0.797	0.797	0.797	0.003	0.004

Comparison of Domains 12 and 42

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.482	0.268	0.286	0.437	0.018	0.676	0.183	No data from Domain 42	
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	No data from Domain 42	
Kruskal – Wallis ***p*** value	0.550 (0.549)	0.037 (0.034)	0.030 (0.018)	0.386 (0.376)	0.018† (0.017)†	0.705† (0.705)†	0.186† (0.185)†	No data from Domain 42	
Moods Median Test ***p*** value	0.398	0.091	0.390	0.220	0.044†	0.554†	0.303†	No data from Domain 42	

Comparison of Domains 12 and 43

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.006	0.000	0.914	0.019	0.189	0.001	0.005	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.008 (0.007)	0.000	0.614 (0.610)	0.091 (0.090)	0.259 (0.258)	0.014	0.000	0.000
Moods Median Test ***p*** value	0.000	0.074	0.000	0.858	0.170	0.867	0.022	0.002	0.001

Comparison of Domains 12 and 51

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.498	0.000	0.000	0.000	0.017	0.000	0.609	0.162	0.011
Kolmogorov – Smirnov Test	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (N)	Y (Y)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.825	0.000	0.000	0.000	0.019	0.001	0.223 (0.222)	0.361† (0.359)†	0.022† (0.021)†
Moods Median Test ***p*** value	0.943	0.027	0.000	0.003	0.024	0.000	0.092	0.805†	0.048†

Comparison of Domains 12 and 52

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.000	0.034	0.000	0.366	0.133	0.064
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.000	0.038 0.037)	0.001	0.307 (0.306)	0.037 (0.036)	0.026 (0.025)
Moods Median Test ***p*** value	0.008	0.000	0.000	0.000	0.170	0.001	0.290	0.139	0.139

(Domain 53: sample too small for statistical analysis)

Comparison of Domains 12 and 61

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
“Student” ‘T’ Test, ***p*** value	0.061	No data from Domain 61						0.015	0.012
Kolmogorov – Smirnov Test	N (N)	No data from Domain 61						Y (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.013 (0.012)	No data from Domain 61						0.001	0.000
Moods Median Test ***p*** value	0.151	No data from Domain 61						0.002	0.003

Comparison of Domains 12 and 62

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
“Student” ‘T’ Test, ***p*** value	0.000	0.000	0.000	0.212	0.110	0.480	0.205	0.000	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (N)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.029 (0.028)	0.252 (0.251)	0.545	0.236	0.000	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.252	0.404	0.928	0.069	0.000	0.000

Comparison of Domains 12 and 63

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.536	0.456	0.809	0.392	0.000	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.207 (0.203)	0.352	0.574 (0.573)	0.497	0.000	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.537	0.509	0.855	0.734	0.000	0.000

Comparison of Domains 12 and 64

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.295	0.439	0.302	0.314	0.000	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.238 (0.230)	0.242† (0.240)†	0.558† (0.555)†	0.040†	0.000	0.000
Moods Median Test ***p*** value	0.001	0.000	0.000	0.222	0.151†	0.858†	0.073†	0.000	0.000

Comparison of Domains 12 and 65

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.018	0.103	0.000	0.618	0.472	0.123	0.676	0.000	0.000
Kolmogorov – Smirnov Test	Y (N)	Y (N)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.002	0.014 (0.013)	0.000	0.710 (0.706)	0.242† (0.240)†	0.556† (0.550)†	0.558† (0.550)†	0.000	0.000
Moods Median Test ***p*** value	0.003	0.063	0.000	0.317	0.151†	0.858†	0.858†	0.004	0.007

Comparison of Domains 12 and 71

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.025	0.718	0.042	0.024	0.001	0.039	0.004	0.376	0.030
Kolmogorov – Smirnov Test	Y (N)	N (N)	Y (Y)	N (N)	Y (Y)	N (N)	N (N)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.002	0.725 (0.721)	0.001	0.012 (0.011)	0.001	0.109 (0.108)	0.010	0.035	0.008
Moods Median Test ***p*** value	0.031	0.606	0.000	0.053	0.001	0.554	0.002	0.012	0.019

Comparison of Domains 12 and 72

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.005	0.541	0.210	0.147	0.011	0.381	0.005	0.205	0.105
Kolmogorov – Smirnov Test	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.001	0.114 (0.108)	0.068 (0.048)	0.037 (0.034)	0.030	0.244 (0.243)	0.017	0.028	0.010
Moods Median Test ***p*** value	0.014	0.550	0.630	0.160	0.341	0.614	0.036	0.015	0.007

(Domain 13: Sample too small for Statistical analysis)

Comparison of Domains 14 and 21

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.008	0.053	0.000	0.159	0.001	0.000	0.014	0.270	0.022
Kolmogorov – Smirnov Test	Y (Y)	Y (N)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.012	0.000	0.059 (0.058)	0.000	0.000	0.001	0.359	0.035
Moods Median Test ***p*** value	0.000	0.016	0.000	0.034	0.030	0.000	0.001	0.659	0.378

Comparison of Domains 14 and 31

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.082	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.010	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.096	0.000

Comparison of Domains 14 and 41

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.001	0.955	0.003	0.067	0.075	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (N)	N (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.000	0.979	0.001	0.015	0.048	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.001	1.000	0.006	0.044	0.019	0.002

Comparison of Domains 14 and 42

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.381	0.148	0.237	0.034	0.008	0.014	0.497	No data from Domain 42	
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)	N (N)	No data from Domain 42	
Kruskal – Wallis ***p*** value	0.227	0.050† (0.049)†	0.032† (0.024)†	0.148† (0.145)†	0.002†	0.002†	0.149† (0.148)†	No data from Domain 42	
Moods Median Test ***p*** value	0.332	0.100†	0.087†	0.044†	0.031†	0.044†	0.280†	No data from Domain 42	

Comparison of Domains 14 and 43

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.031	0.000	0.002	0.028	0.009	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.007	0.000	0.001	0.011	0.001	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.004	0.000	0.001	0.054	0.008	0.001

Comparison of Domains 14 and 51

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.403	0.944	0.000	0.000	0.001	0.000	0.445	0.091	0.026
Kolmogorov – Smirnov Test	N (N)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.921	0.346 (0.343)	0.000	0.000	0.000	0.000	0.521 (0.520)	0.399 (0.398)	0.236 (0.235)
Moods Median Test ***p*** value	0.502	0.188	0.000	0.001	0.003	0.000	0.229	0.458	0.347

Comparison of Domains 14 and 52

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.074	0.000	0.000	0.001	0.000	0.733	0.089	0.094
Kolmogorov – Smirnov Test	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (N)	N (N)
Kruskal – Wallis ***p*** value	0.001	0.388 (0.385)	0.000	0.000	0.000	0.000	0.762 (0.761)	0.028 (0.027)	0.030
Moods Median Test ***p*** value	0.283	0.762	0.000	0.000	0.000	0.000	0.332	0.191	0.113

(Domain 53: sample too small for statistical analysis)

Comparison of Domains 14 and 61

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.045	No data from Domain 61						0.024	0.008
Kolmogorov – Smirnov Test	Y (N)	No data from Domain 61						N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.004	No data from Domain 61						0.006	0.001
Moods Median Test ***p*** value	0.004	No data from Domain 61						0.024	0.001

Comparison of Domains 14 and 62

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.000	0.318	0.000	0.001	0.000	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.00	0.000	0.535	0.000	0.002	0.000	0.000
Moods Median Test ***p*** value	0.000	0..000	0.000	0.000	0.079	0.000	0.000	0.000	0.000

Comparison of Domains 14 and 63

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.000	0.077	0.000	0.001	0.000	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.000	0.098	0.000	0.001	0.000	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.000	0.088	0.000	0.001	0.000	0.000

Comparison of Domains 14 and 64

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.000	0.728	0.017	0.220	0.001	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.000	0.665† (0.664)†	0.021†	0.021†	0.000	0.000
Moods Median Test ***p*** value	0.000	0.000	0.000	0.000	1.000	0.141	0.086	0.001	0.000

Comparison of Domains 14 and 65

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.010	0.004	0.000	0.176	0.797	0.003	0.445	0.000	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.002	0.002	0.000	0.077 (0.075)	0.773† (0.772)†	0.068† (0.067†	0.124† (0.123)†	0.001	0.000
Moods Median Test ***p*** value	0.002	0.015	0.001	0.018	1.000	0.141	0.086	0.005	0.007

Comparison of Domains 14 and 71

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.009	0.000	0.000	0.006	0.322	0.000	0.000	0.744	0.006
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.005	0.092 (0.091)	0.000	0.000	0.425 (0.424)	0.006
Moods Median Test ***p*** value	0.000	0.000	0.000	0.001	0.240	0.000	0.000	0.505	0.008

Comparison of Domains 14 and 72

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.001	0.060	0.009	0.312	0.431	0.000	0.000	0.320	0.069
Kolmogorov – Smirnov Test	Y (Y)	Y (N)	Y (Y)	N (N)	N (N)	Y (Y)	Y (Y)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.008	0.001 (0.000)	0.325 (0.322)	0.322 (0.321)	0.000	0.000	0.292	0.013
Moods Median Test ***p*** value	0.000	0.005	0.000	0.085	0.776	0.009	0.000	0.241	0.007

Comparison of Domains 21 and 31

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.004	0.052	0.000	0.000	0.451	0.000	0.002	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (N)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.019 (0.017)	0.000	0.000	979	0.000	0.000	0.000
Moods Median Test ***p*** value	0.000	0.005	0.132	0.001	0.000	0.300	0.001	0.008	0.000

Comparison of Domains 21 and 41

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.004	0.000	0.106	0.218	0.367	0.014	0.004
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (N)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.000	0.000	0.002	0.000	0.108 (0.105)	0.228 (0.223)	0.688 (0.685)	0.010	0.017
Moods Median Test ***p*** value	0.000	0.001	0.029	0.000	0.064	0.232	0.585	0.002	0.002

Comparison of Domains 21 and 42

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.855	0.221	0.535	0.002	0.094	0.142	0.102	No data from Domain 42	
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	No data from Domain 42	
Kruskal – Wallis ***p*** value	0.828	0.092 (0.091)	0.312 (0.309)	0.092 (0.090)	0.117 (0.114)	0.078 (0.074)	0.090 (0.087)	No data from Domain 42	
Moods Median Test ***p*** value	0.397	0.141	0.727	0.112	0.185	0.185	0.310	No data from Domain 42	

Comparison of Domains 21 and 43

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.001	0.009	0.006	0.273	0.000	0.001	0.003	0.003
Kolmogorov – Smirnov Test	Y (Y)	Y (N)	N (N)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.001	0.019	0.002	0.392 (0.391)	0.001 (0.000)	0.003	0.000	0.001
Moods Median Test ***p*** value	0.000	0.003	0.047	0.000	0.391	0.000	0.000	0.010	0.010

Comparison of Domains 21 and 51

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.826	0.070	0.919	0.021	0.246	0.007	0.299	0.336	0.001
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	Y (N)	Y (N))	N (N)
Kruskal – Wallis ***p*** value	0.567	0.187 (0.184)	0.949	0.037 (0.036)	0.130 (0.128)	0.012	0.073 (0.072)	0.603	0.037
Moods Median Test ***p*** value	0.939	0.373	0.682	0.022	0.017	0.004	0.016	0.623	0.069

Comparison of Domains 21 and 52

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.002	0.243	0.002	0.363	0.074	0.164	0.215	0.020
Kolmogorov – Smirnov Test	Y (Y)	Y (N)	N (N)	Y (Y)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.001	0.236 (0.230)	0.002	0.312 (0.310)	0.087 (0.086)	0.073 (0.072)	0.157	0.009
Moods Median Test ***p*** value	0.000	0.001	0.042	0.000	0.391	0.126	0.047	0.171	0.038

(Domain 53: sample too small for statistical analysis)

Comparison of Domains 21 and 61

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.149	No data from Domain 61						0.009	0.036
Kolmogorov – Smirnov Test	N (N)	No data from Domain 61						Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.157	No data from Domain 61						0.002	0.010
Moods Median Test ***p*** value	0.244	No data from Domain 61						0.001	0.079

Comparison of Domains 21 and 62

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.001	0.500	0.000	0.007	0.004	0.737	0.000	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (N)	Y (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.477 (0.474)	0.000	0.020	0.009 (0.008)	0.641	0.000	0.000
Moods Median Test ***p*** value	0.000	0.006	0.446	0.001	0.053	0.008	0.452	0.000	0.001

Comparison of Domains 21 and 63

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.331	0.000	0.038	0.003	0.917	0.000	0.001
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.282 (0.280)	0.000	0.031 (0.030)	0.005	0.769 (0.768)	0.000	0.000
Moods Median Test ***p*** value	0.000	0.003	0.694	0.002	0.040	0.007	0.249	0.000	0.000

Comparison of Domains 21 and 64

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.038	0.000	0.451	0.000	0.328	0.111	0.398	0.000	0.000
Kolmogorov – Smirnov Test	Y (N)	Y (Y)	N (N)	Y (Y)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.004	0.000	0.341 (0.336)	0.000	0.114 (0.110)	0.139 (0.131)	0.236 (0.230)	0.000	0.002
Moods Median Test ***p*** value	0.062	0.001	0.304	0.000	0.305	0.097	0.715	0.001	0.000

Comparison of Domains 21 and 65

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.050	0.032	0.067	0.052	0.348	0.000	0.849	0.000	0.000
Kolmogorov – Smirnov Test	Y (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.004	0.022	0.117 (0.115)	0.035 (0.034)	0.114† (0.110†	0.030† (0.028)†	0.844† (0.842)†	0.000	0.001
Moods Median Test ***p*** value	0.045	0.004	0.014	0.102	0.305†	0.097†	0.715†	0.005	0.005

Comparison of Domains 21 and 71

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.405	0.233	0.039	0.002	0.000	0.490	0.044	0.117	0.657
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	Y (Y)	Y (Y)	N (N)	Y (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.209	0.064 (0.063)	0.072 (0.068)	0.001	0.000	0.604 (0.603)	0.020	0.125	0.406
Moods Median Test ***p*** value	0.867	0.058	0.146	0.001	0.000	0.484	0.002	0.027	0.197

Comparison of Domains 21 and 72

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.153	0.666	0.051	0.073	0.001	0.108	0.044	0.113	0.349
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	Y (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.108	0.461 (0.459)	0.082 (0.080)	0.067 (0.064)	0.003	0.129 (0.125)	0.048 (0.047)	0.071	0.198
Moods Median Test ***p*** value	1.000	0.329	0.041	0.329	0.006	0.178	0.178	0.061	0.049

Comparison of Domains 31 and 41

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.338	0.003	0.000	0.029	0.031	0.427.	0.036	0.378	0.722
Kolmogorov – Smirnov Test	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.147 (0.144)	0.000	0.000	0.010	0.002	0.328	0.008	0.319 (0.317)	0.756
Moods Median Test ***p*** value	0.068	0.017	0.000	0.086	0.007	0.343	0.089	0.555	0.762

Comparison of Domains 31 and 42

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.127	0.427	0.365	0.253	0.001	0.248	0.006	No data from Domain 42	
Kolmogorov – Smirnov Test	Y (Y)	N (N)	N (N)	N (N)	Y (Y)	N (N)	Y (Y)	No data from Domain 42	
Kruskal – Wallis ***p*** value	0.008 (0.007)	0.337† (0.335)†	0.049† (0.045)†	0.349† (0.346)†	0.001†	0.203† (0.202)†	0.001†	No data from Domain 42	
Moods Median Test ***p*** value	0.115	0.820†	0.196†	0.212†	0.023†	0.267†	0.040†	No data from Domain 42	

Comparison of Domains 31 and 43

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.083	0.053	0.000	0.526	0.000	0.000	0.000	0.033	0.180
Kolmogorov – Smirnov Test	Y (N)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.585 (0.582)	0.041	0.000	0.266 (0.263)	0.000	0.001	0.000	0.009 (0.008)	0.107
Moods Median Test ***p*** value	0.250	0.192	0.000	0.818	0.000	0.001	0.000	0.046	0.141

Comparison of Domains 31 and 51

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.173	0.000	0.012	0.000	0.000	0.000	0.000	0.054	0.001
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.007	0.000	0.011 (0.010)	0.000	0.000	0.002	0.000	0.009	0.004
Moods Median Test ***p*** value	0.071	0.000	0.035	0.002	0.000	0.013	0.001	0.073	0.061

Comparison of Domains 31 and 52

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.129	0.000	0.000	0.011	0.000	0.030	0.002
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.174 (0.166)	0.000	0.000	0.033	0.000	0.003	0.000
Moods Median Test ***p*** value	0.000	0.000	0.259	0.000	0.000	0.025	0.000	0.023	0.002

(Domain 53: sample too small for statistical analysis)

Comparison of Domains 31 and 61

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.687	No data from Domain 61						0.072	0.393
Kolmogorov – Smirnov Test	N (N)	No data from Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.208 (0.205)	No data from Domain 61						0.029	0.681
Moods Median Test ***p*** value	0.346	No data from Domain 61						0.396	0.810

Comparison of Domains 31 and 62

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.002	0.245	0.000	0.011	0.000	0.017	0.000	0.000	0.021
Kolmogorov – Smirnov Test	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (N)	Y (Y)	Y (Y)	Y (N)
Kruskal – Wallis ***p*** value	0.000	0.954	0.000	0.00	0.000	0.002	0.000	0.000	0.150 (0.149)
Moods Median Test ***p*** value	0.000	0.462	0.000	0.000	0.000	0.001	0.000	0.000	0.230

Comparison of Domains 31 and 63

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.165	0.049	0.000	0.050	0.000	0.014	0.000	0.002	0.117
Kolmogorov – Smirnov Test	Y (Y)	N (N)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)
Kruskal – Wallis ***p*** value	0.001	0.231 (0.229)	0.000	0.014 (0.013)	0.000	0.003	0.000	0.000	0.107
Moods Median Test ***p*** value	0.061	0.772	0.000	0.036	0.000	0.011	0.000	0.000	0.091

Comparison of Domains 31 and 64

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.112	0.000	0.026	0.345	0.224	0.247	0.006	0.689
Kolmogorov – Smirnov Test	Y (Y)	N (N)	Y (Y)	Y (N)	N (N)	N (N)	N (N)	Y (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.246 (0.244)	0.000	0.032 (0.031)	0.037 (0.036)	0.254 (0.253)	0.075	0.002	0.741
Moods Median Test ***p*** value	0.001	0.815	0.000	0.014	0.096	0.135	0.157	0.004	0.752

Comparison of Domains 31 and 65

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.658	0.396	0.000	0.371	0.325	0.001	0.232	0.000	0.033
Kolmogorov – Smirnov Test	N (N)	N (N)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (Y)	N (N)
Kruskal – Wallis ***p*** value	0.260 (0.256)	0.170 (0.168)	0.000	0.567 (0.564)	0.037 (0.036)	0.107	0.034	0.000	0.005
Moods Median Test ***p*** value	0.728	0.257	0.011	0.748	0.096	0.135	0.157	0.015	0.042

Comparison of Domains 31 and 71

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.009	0.564	0.001	0.000	0.971	0.000	0.091	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (N)	N (N)	Y (N)	Y (Y)	N (N)	Y (Y)	N (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.019 (0.018)	0.961 (0.960)	0.003	0.000	0.895	0.000	0.124 (0.123)	0.000
Moods Median Test ***p*** value	0.000	0.025	0.932	0.003	0.000	0.776	0.000	0.246	0.001

Comparison of Domains 31 and 72

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.001	0.098	0.535	0.058	0.000	0.265	0.000	0.870	0.357
Kolmogorov – Smirnov Test	Y (Y)	Y (N)	N (N)	N (N)	Y (Y)	N (N)	Y (Y)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.024 (0.023)	0.332 (0.324)	0.017 (0.016)	0.000	0.146 (0.145)	0.000	0.685 (0.684)	0.010
Moods Median Test ***p*** value	0.013	0.010	0.145	0.036	0.000	0.262	0.002	0.857	0.042

Comparison of Domains 41 and 43

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.599	0.040	0.307	0.023	0.040	0.077	0.019	0.125	0.158
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	Y (N)	N (N)	N (N)	Y (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.772 (0.771)	0.069 (0.068)	0.414 (0.412)	0.031	0.039	0.087 (0.086)	0.007	0.090 (0.089)	0.123 (0.122)
Moods Median Test ***p*** value	0.805	0.065	0.713	0.012	0.407	0.201	0.018	0.028	0.361

Comparison of Domains 41 and 51

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.106	0.000	0.002	0.000	0.036	0.011	0.152	0.010	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (N)	Y (Y)	N (N)	Y (N)	N (N)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.013	0.000	0.001	0.000	0.023 (0.022)	0.008	0.065	0.014	0.014
Moods Median Test ***p*** value	0.358	0.000	0.016	0.000	0.039	0.039	0.039	0.007	0.026

Comparison of Domains 41 and 52

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.001	0.000	0.045	0.031	0.103	0.014	0.002
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.000	0.067 (0.066)	0.027 (0.026)	0.102 (0.101)	0.015	0.003
Moods Median Test ***p*** value	0.000	0.000	0.001	0.000	0.407	0.038	0.477	0.005	0.005

(Domain 53: sample too small for statistical analysis)

Comparison of Domains 41 and 61

Test \ Parameter	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.431	No data from Domain 61						0.198	0.345
Kolmogorov – Smirnov Test	N (N)	No data from Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.295	No data from Domain 61						0.386 (0.385)	0.810 (0.809)
Moods Median Test ***p*** value	0.490	No data from Domain 61						0.229	0.819

Comparison of Domains 41 and 62

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.031	0.005	0.005	0.008	0.678	0.589	0.448	0.025	0.031
Kolmogorov – Smirnov Test	Y (N)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.004	0.000	0.000	0.002	0.757	0.604 (0.603)	0.537	0.018	0.347 (0.346)
Moods Median Test ***p*** value	0.017	0.006	0.008	0.015	0.961	0.805	0.961	0.063	0.289

Comparison of Domains 41 and 63

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.109	0.008	0.009	0.011	0.467	0.431	0.329	0.019	0.105
Kolmogorov – Smirnov Test	Y (N)	Y (Y)	Y (N)	Y (Y)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.024	0.001	0.002	0.005	0.524	0.538 (0.537)	0.373 (0.372)	0.017 (0.016)	0.148 (0.147)
Moods Median Test ***p*** value	0.089	0.015	0.002	0.040	1.000	0.549	1.000	0.040	0.125

Comparison of Domains 41 and 64

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.001	0.006	0.007	0.009	0.764	0.883	0.779	0.168	0.553
Kolmogorov – Smirnov Test	N (N)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.001	0.002	0.001	0.008 (0.007)	0.739†	1.000†	0.739† (0.737)†	0.089 (0.088)	0.638 (0.635)
Moods Median Test ***p*** value	0.061	0.005	0.001	0.018	1.000†	1.000†	1.000†	0.071	0.604

Comparison of Domains 41 and 65

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.358	0.018	0.040	0.020	0.833	0.069	0.716	0.009	0.031
Kolmogorov – Smirnov Test	N (N)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.606 (0.605)	0.030	0.082 (0.076)	0.036 (0.035	0.739†	0.182†	0.739† (0.737)†	0.013	0.018 (0.017)
Moods Median Test ***p*** value	0.890	0.002	0.104	0.011	1.000†	0.102†	1.000†	0.001	0.057

Comparison of Domains 41 and 71

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.001	0.001	0.000	0.004	0.787	0.466	0.845	0.096	0.010
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.008	0.912	0.507 (0.504)	0.685	0.028 (0.027)	0.003
Moods Median Test ***p*** value	0.000	0.001	0.000	0.004	1.000	0.793	0.484	0.017	0.006

Comparison of Domains 41 and 72

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.002	0.001	0.000	0.004	0.777	0.884	0.868	0.661	0.464
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.001	0.001	0.000	0.014	0.680 (0.679)	0.953	0.556 (0.555)	0.132 (0.126)	0.037
Moods Median Test ***p*** value	0.069	0.001	0.002	0.019	0.833	0.833	0.398	0.057	0.072

Comparison of Domains 43 and 51

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.066	0.000	0.003	0.000	0.988	0.000	0.046	0.001	0.000
Kolmogorov – Smirnov Test	Y (N)	Y (Y)	N (N)	Y (Y)	N (N)	Y (Y)	Y (N)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.015	0.000	0.018 (0.017)	0.000	1.000	0.000	0.040	0.021†	0.009†
Moods Median Test ***p*** value	0.296	0.001	0.024	0.000	1.000	0.000	0.072	0.038	0.018

Comparison of Domains 43 and 52

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.000	0.000	0.891	0.000	0.090	0.002	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)	N (N)	Y (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.000	0.000	0.787	0.000	0.074	0.005	0.001
Moods Median Test ***p*** value	0.000	0.000	0.003	0.000	0.715	0.000	0.068	0.011	0.000

(Domain 53: sample too small for statistical analysis)

Comparison of Domains 43 and 61

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.275	No data from Domain 61						0.906	0.942
Kolmogorov – Smirnov Test	N (N)	No data from Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.191 (0.190)	No data from Domain 61						0.972	0.943
Moods Median Test ***p*** value	0.416	No data from Domain 61						0.801	0.801

Comparison of Domains 43 and 62

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.004	0.126	0.009	0.713	0.002	0.029	0.000	0.984	0.870
Kolmogorov – Smirnov Test	N (N)	Y (Y)	Y (N)	N (N)	Y (N)	N (N)	Y (Y)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.005	0.105 (0.103)	0.07 (0.006)	0.639 (0.637)	0.002	0.026	0.001	0.909	0.966
Moods Median Test ***p*** value	0.088	0.089	0.059	0.955	0.008	0.026	0.000	0.613	0.699

Comparison of Domains 43 and 63

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.023	0.216	0.022	0.903	0.009	0.099	0.000	0.607	0.958
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	Y (N)	N (N)	Y (Y)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.022	0.276 (0.275)	0.018	0.965 (0.964)	0.009	0.057	0.000	0.518	0.951
Moods Median Test ***p*** value	0.041	0.161	0.050	0.930	0.020	0.034	0.006	0.133	0.855

Comparison of Domains 43 and 64

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.144	0.016	0.751	0.271	0.040	0.172	0.521	0.283
Kolmogorov – Smirnov Test	Y (N)	Y (Y)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.003	0.181 (0.179)	0.032 (0.031)	0.981	0.074 (0.073)	0.205 (0.204)	0.037	0.663	0.289 (0.288)
Moods Median Test ***p*** value	0.025	0.353	0.022	0.431	0.156	0.208	0.110	0.543	0.543

Comparison of Domains 43 and 65

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.187	0.447	0.170	0.737	0.284	0.976	0.306	0.715	0.642
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.543 (0.542)	0.466 (0.465)	0.398 (0.393)	1.000	0.074† (0.073)†	1.000†	0.086†	0.272	0.526 (0.525)
Moods Median Test ***p*** value	0.799	0.471	0.189	0.319	0.156†	0.929†	0.110†	0.027	0.210

Comparison of Domains 43 and 71

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.005	0.000	0.390	0.000	0.002	0.000	0.011	0.005
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.019	0.000	0.469 (0.465)	0.000	0.003	0.000	0.007	0.009
Moods Median Test ***p*** value	0.000	0.016	0.000	0.486	0.001	0.049	0.000	0.004	0.001

Comparison of Domains 43 and 72

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.009	0.000	0.316	0.000	0.055	0.000	0.087	0.106
Kolmogorov – Smirnov Test	Y (Y)	Y (N)	Y (N)	N (N)	Y (Y)	N (N)	Y (Y)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.001	0.024 (0.023)	0.001	0.303 (0.301)	0.002	0.037	0.000	0.063	0.083
Moods Median Test ***p*** value	0.035	0.025	0.006	0.722	0.003	0.035	0.000	0.011	0.011

Comparison of Domains 51 and 52

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.067	0.088	0.146	0.199	0.876	0.268	0.751	0.492	0.582
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.039	0.095 (0.091)	0.143 (0.132)	0.157 (0.152)	0.677 (0.676)	0.166 (0.164)	0.846	0.425 (0.416)	0.494 (0.493)
Moods Median Test ***p*** value	0.452	0.161	0.139	0.098	0.622	0.012 †	0.405	0.490	0.490

(Domain 53: sample too small for statistical analysis)

Comparison of Domains 51 and 61

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.397	No data from Domain 61						0.005	0.002
Kolmogorov – Smirnov Test	N (N)	No data from Domain 61						N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.253	No data from Domain 61						0.013†	0.013† (0.012)†
Moods Median Test ***p*** value	0.498	No data from Domain 61						0.046†	0.046†

Comparison of Domains 51 and 62

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.393	0.000	0.263	0.000	0.002	0.000	0.187	0.000	0.000
Kolmogorov – Smirnov Test	N (N)	Y (Y)	N (N)	Y (Y)	Y (Y)	Y (Y)	Y (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.060	0.000	0.461 (0.456)	0.000	0.004	0.000	0.216	0.005†	0.005†
Moods Median Test ***p*** value	0.197	0.000	0.295	0.001	0.004	0.002	0.042	0.053†	0.069†

Comparison of Domains 51 and 63

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.314	0.000	0.147	0.000	0.008	0.000	0.298	0.000	0.000
Kolmogorov – Smirnov Test	N (N)	Y (Y)	N (N)	Y (Y)	Y (N)	Y (Y)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.064	0.000	0.301 (0.298)	0.000	0.009	0.000	0.118	0.010†	0.010†
Moods Median Test ***p*** value	0.186	0.000	0.311	0.001	0.003	0.010	0.044	0.051†	0.051†

Comparison of Domains 51 and 64

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.737	0.000	0.258	0.000	0.267	0.012	0.300	0.001	0.000
Kolmogorov – Smirnov Test	N (N)	Y (Y)	N (N)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.199 (0.198)	0.000	0.236 (0.230)	0.000	0.053†	0.053† (0.052)†	0.133† (0.132)†	0.009†	0.009† (0.008)†
Moods Median Test ***p*** value	0.132	0.000	0.209	0.000	0.190†	0.121†	0.067†	0.055†	0.055†

Comparison of Domains 51 and 65

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.677	0.008	0.793	0.001	0.294	0.000	0.646	0.000	0.000
Kolmogorov – Smirnov Test	N (N)	Y (Y)	N (N)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.240	0.014 (0.013	0.121 (0.113)	0.001	0.072†	0.036†	0.436†	0.017† (0.016)†	0.017†
Moods Median Test ***p*** value	0.025	0.012	0.012	0.003	0.198†	0.119†	0.943†	0.011†	0.038†

Comparison of Domains 51 and 71

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.946	0.000	0.011	0.000	0.000	0.002	0.013	0.078	0.001
Kolmogorov – Smirnov Test	N (N)	Y (N)	N (N)	Y (Y)	Y (Y)	Y (N)	Y (Y)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.410 (0.407)	0.001	0.035 (0.031)	0.000	0.001	0.006 (0.005)	0.008	0.036†	0.009†
Moods Median Test ***p*** value	0.897	0.016	0.310	0.000	0.001	0.003	0.016	0.038†	0.038†

Comparison of Domains 51 and 72

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.796	0.069	0.029	0.001	0.000	0.001	0.013	0.047	0.010
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	Y (N)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.340 (0.339)	0.063 (0.061)	0.018 (0.017)	0.001	0.001	0.001	0.010	0.023† (0.021)†	0.017†
Moods Median Test ***p*** value	0.836	0.062	0.099	0.007	0.003	0.001	0.012	0.038†	0.038†

Comparison of Domains 52 and 61

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.005	No data from Domain 61						0.004	0.001
Kolmogorov – Smirnov Test	Y (Y)	No data from Domain 61						Y (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	No data from Domain 61						0.004	0.004
Moods Median Test ***p*** value	0.000	No data from Domain 61						0.012	0.012

Comparison of Domains 52 and 62

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.001	0.000	0.005	0.000	0.092	0.001	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (N)	Y (Y)	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.007 (0.006)	0.000	0.002	0.000	0.048 (0.047)	0.001	0.000
Moods Median Test ***p*** value	0.000	0.000	0.058	0.000	0.005	0.001	0.053	0.035	0.003

Comparison of Domains 52 and 63

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.001	0.000	0.016	0.000	0.156	0.000	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (N)	Y (Y)	Y (N)	Y (Y)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.009 (0.008)	0.000	0.010	0.000	0.075	0.001	0.001
Moods Median Test ***p*** value	0.000	0.000	0.006	0.000	0.138	0.006	0.140	0.016	0.005

Comparison of Domains 52 and 64

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.005	0.000	0.281	0.014	0.272	0.003	0.001
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.000	0.006 (0.005)	0.000	0.074† (0.072)†	0.074† (0.073)†	0.101†	0.002	0.001
Moods Median Test ***p*** value	0.000	0.000	0.050	0.000	0.156†	0.072†	0.072†	0.007	0.000

Comparison of Domains 52 and 65

Test \ Parameter	**w** (%)	**w_L** (%)	**w_P** (%)	**I_P** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.040	0.013	0.646	0.002	0.299	0.000	0.546	0.177	0.092
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.016	0.005	0.046 (0.043)	0.001 (0.000)	0.079† (0.078)†	0.021† (0.020)†	0.355† (0.354†)	0.174 (0.172)	0.077
Moods Median Test ***p*** value	0.003	0.000	0.013	0.008	0.223†	0.127†	0.957†	0.040	0.016

Comparison of Domains 52 and 71

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.000	0.118	0.000	0.000	0.024	0.004	0.068	0.014
Kolmogorov – Smirnov Test	Y (Y)	Y (Y)	N (N)	Y (Y)	Y (Y)	N (N)	Y (N)	N (N)	Y (N)
Kruskal – Wallis ***p*** value	0.000	0.000	0.272 (0.262)	0.000	0.000	0.050	0.002	0.020	0.014
Moods Median Test ***p*** value	0.000	0.000	0.678	0.000	0.000	0.104	0.002	0.017	0.011

Comparison of Domains 52 and 72

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.000	0.009	0.177	0.000	0.001	0.007	0.005	0.038	0.011
Kolmogorov – Smirnov Test	Y (Y)	Y (N)	N (N)	Y (Y)	Y (Y)	Y (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.000	0.001	0.082 (0.075)	0.000	0.003	0.005	0.003	0.025 (0.024)	0.018
Moods Median Test ***p*** value	0.000	0.005	0.050	0.000	0.019	0.003	0.003	0.008	0.008

(Domain 53: sample too small for statistical analysis)

Comparison of Domains 61 and 62

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.799	No Data Domain 61						0.897	0.841
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.946	No Data Domain 61						0.503	0.571
Moods Median Test ***p*** value	0.730	No Data Domain 61						0.703	0.841

Comparison of Domains 61 and 63

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.967	No Data Domain 61						0.542	0.907
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.809	No Data Domain 61						0.382 (0.381)	0.849
Moods Median Test ***p*** value	0.719	No Data Domain 61						0.653	0.653

Comparison of Domains 61 and 64

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.389	No Data Domain 61						0.653	0.489
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.840	No Data Domain 61						0.973	0.815 (0.814)
Moods Median Test ***p*** value	0.619	No Data Domain 61						0.665	0.665

Comparison of Domains 61 and 65

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.941	No Data Domain 61						0.630	0.668
Kolmogorov – Smirnov Test	N (N)	No Data Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.634 (0.633)	No Data Domain 61						0.459	0.597 (0.596)
Moods Median Test ***p*** value	0.614	No Data Domain 61						0.614	0.614

Comparison of Domains 61 and 71

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.262	No data from Domain 61						0.029	0.047
Kolmogorov – Smirnov Test	N (N)	No data from Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.286 (0.283)	No data from Domain 61						0.012 (0.011)	0.076
Moods Median Test ***p*** value	0.669	No data from Domain 61						0.044	0.256

Comparison of Domains 61 and 72

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.357	No data from Domain 61						0.136	0.200
Kolmogorov – Smirnov Test	N (N)	No data from Domain 61						N (N)	N (N)
Kruskal – Wallis ***p*** value	0.571 (0.570)	No data from Domain 61						0.125 (0.022)	0.315 (0.314)
Moods Median Test ***p*** value	0.327	No data from Domain 61						0.377	0.131

Comparison of Domains 62 and 63

Parameter / Test	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.548	0.451	0.542	0.571	0.488	0.612	0.616	0.447	0.909
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.803	0.271 (0.268)	0.417 (0.413)	0.364 (0.361)	0.487	0.691	0.672	0.467	0.809 (0.808)
Moods Median Test ***p*** value	0.630	0.751	0.361	0.952	0.927	0.459	0.508	0.115	0.499

Comparison of Domains 62 and 64

Parameter / Test	w (%)	w_L (%)	w_P (%)	I_P (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.042	0.806	0.819	0.920	0.605	0.568	0.436	0.289	0.085
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.285	0.197 (0.194)	0.545 (0.541)	0.530 (0.527)	0.578	0.899	0.377 (0.376)	0.463 (0.462)	0.355 (0.354)
Moods Median Test ***p*** value	0.973	0.485	0.585	0.284	0.976	0.882	0.976	0.453	0.317

Comparison of Domains 62 and 65

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.636	0.646	0.069	0.909	0.659	0.023	0.931	0.475	0.694
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.476	0.214 (0.212)	0.070 (0.068)	0.549 (0.547)	0.649	0.216 (0.215)	0.762	0.484	0.484
Moods Median Test ***p*** value	0.698	0.155	0.023	0.421	0.976	0.125	0.976	0.035	0.206

Comparison of Domains 62 and 71

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.021	0.001	0.000	0.288	0.114	0.058	0.064	0.000	0.000
Kolmogorov – Smirnov Test	Y (Y)	Y (N)	Y (Y)	N (N)	Y (N)	Y (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.000	0.005	0.001	0.560 (0.557)	0.207 (0.206)	0.068	0.054	0.000	0.000
Moods Median Test ***p*** value	0.000	0.032	0.000	0.335	0.036	0.948	0.050	0.000	0.000

Comparison of Domains 62 and 72

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.071	0.042	0.003	0.332	0.177	0.359	0.062	0.032	0.057
Kolmogorov – Smirnov Test	Y (N)	N (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	Y (N)	Y (N)
Kruskal – Wallis ***p*** value	0.086	0006	0.003	0.313 (0.311	0.415	0.475	0.121	0.004 (0.003)	0.012
Moods Median Test ***p*** value	0.237	0.012	0.112	0.636	0.390	0.529	0.275	0.035	0.035

Comparison of Domains 63 and 64

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.031	0.555	0.772	0.663	0.514	0.353	0.377	0.146	0.209
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.250 (0.249)	0.734 (0.732)	0.828 (0.827)	0.992	0.392 (0.391)	0.726 (0.725)	0.199	0.247 (0.246)	0.354 (0.353)
Moods Median Test ***p*** value	0.941	0.676	0.456	0.456	1.000*	0.198*	0.144*	0.219	0.219

Comparison of Domains 63 and 65

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.862	0.862	0.184	0.755	0.556*	0.044*	0.823*	0.772	0.656
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.586	0.467 (0.465)	0.242 (0.239)	0.746 (0.744)	0.484* (0.483)*	0.186* (0.184)*	0.907*	0.964	0.365 (0.364)
Moods Median Test ***p*** value	0.688	0.220	0.047	0.451	1.000*	0.144*	1.000*	0.629	0.280

Comparison of Domains 63 and 71

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.015	0.000	0.000	0.111	0.028	0.038	0.018	0.000	0.002
Kolmogorov – Smirnov Test	Y (N)	Y (N)	Y (Y)	N (N)	Y (N)	N (N)	N (N)	Y (N)	Y (Y)
Kruskal – Wallis ***p*** value	0.001	0.001	0.001	0.227 (0.222)	0.029	0.054 (0.053)	0.013	0.000	0.001
Moods Median Test ***p*** value	0.002	0.016	0.000	0.344	0.040	0.536	0.013	0.000	0.000

Comparison of Domains 63 and 72

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.045	0.021	0.002	0.225	0.059	0.464	0.017	0.017	0.085
Kolmogorov – Smirnov Test	N (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.059	0.002	0.004	0.158 (0.155)	0.102	0.325 (0.323)	0.030	0.006	0.016
Moods Median Test ***p*** value	0.176	0.006	0.085	0.628	0.379	0.292	0.219	0.016	0.016

Comparison of Domains 64 and 65

Test \ Parameter	**w** (%)	**w$_L$** (%)	**w$_P$** (%)	**I$_P$** (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.209	0.703	0.133	0.879	Insufficient Data			0.097	0.064
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	Insufficient Data			N (N)	N (N)
Kruskal – Wallis ***p*** value	0.163 (0.162)	0.255 (0.251)	0.116 (0.112)	0.596 (0.592)	Insufficient Data			0.166 (0.164)	0.075 (0.073)
Moods Median Test ***p*** value	0.598	0.369	0.021	0.091	Insufficient Data			0.085	0.160

Comparison of Domains 64 and 71

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.461	0.000	0.000	0.266	0.870	0.255	0.878	0.001	0.001
Kolmogorov – Smirnov Test	N (N)	Y (Y)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.093 (0.091)	0.000	0.000	0.219 (0.213)	0.888†	0.779† (0.777)†	1.000†	0.001	0.000
Moods Median Test ***p*** value	0.034	0.005	0.000	0.122	1.000†	0.867†	1.000†	0.001	0.000

Comparison of Domains 64 and 72

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.835	0.033	0.003	0.314	0.883	0.985	0.856	0.124	0.297
Kolmogorov – Smirnov Test	N (N)	Y (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.522 (0.520)	0.001	0.004	0.194 (0.188)	0.480† (0.478)†	0.724† (0.721)†	0.814† (0.813)†	0.024	0.036 (0.035)
Moods Median Test ***p*** value	0.258	0.051	0.082	0.297	0.887†	0.887†	0.887†	0.007	0.160

Comparison of Domains 65 and 71

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.120	0.090	0.000	0.770	0.947	0.001	0.633	0.000	0.001
Kolmogorov – Smirnov Test	N (N)	N (N)	Y (Y)	N (N)	N (N)	N (N)	N (N)	Y (Y)	Y (Y)
Kruskal – Wallis ***p*** value	0.017 (0.016)	0.029 (0.028)	0.000	0.308 (0.304)	0.944†	0.049† (0.048)†	0.482†	0.001	0.001
Moods Median Test ***p*** value	0.007	0.014	0.015	0.201	1.000†	0.134†	1.000†	0.002	0.002

Comparison of Domains 65 and 72

Test \ Parameter	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.188	0.080	0.000	0.591	0.958	0.038	0.642	0.016	0.040
Kolmogorov – Smirnov Test	N (N)	N (N)	Y (N)	N (N)	N (N)	N (N)	N (N)	Y (N)	N (N)
Kruskal – Wallis ***p*** value	0.118 (0.115)	0.069 (0.068)	0.003 (0.002)	0.307 (0.303)	0.637† (0.634)†	0.099† (0.098)†	0.409† (0.407)†	0.025	0.021
Moods Median Test ***p*** value	0.375	0.058	0.004	0.343	0.887†	0.087†	0.887†	0.008	0.008

Comparison of Domains 71 and 72

Parameter / Test	**w** (%)	$\mathbf{w_L}$ (%)	$\mathbf{w_P}$ (%)	$\mathbf{I_P}$ (%)	Gravel (%) (60mm – 2mm)	Sand (%) (2mm – 63mm)	Fines (%) (<63mm)	γ_b (Mg/m³)	γ_d (Mg/m³)
"Student" 'T' Test, ***p*** value	0.641	0.665	0.842	0.654	0.965	0.315	0.951	0.392	0.454
Kolmogorov – Smirnov Test	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)	N (N)
Kruskal – Wallis ***p*** value	0.560 (0.556)	0.315 (0.311)	0.547 (0.540)	0.514 (0.509)	0.777	0.462 (0.460)	0.865	0.447 (0.444)	0.767
Moods Median Test ***p*** value	0.899	0.384	0.247	0.807	0.790	0.973	0.790	0.210	0.515

Appendix B.4: Summary table of differences between Domains

11																	
12	**12**																
13	13	**13**															
14	14	14	**14**														
21	21	21	21	**21**													
31	31	31	31	31	**31**												
41	41	41	41	41	41	**41**											
42	42	42	42	42	42	42	**42**										
43	43	43	43	43	43	43	43	**43**									
51	51	51	51	51	51	51	51	51	**51**								
52	52	52	52	52	52	52	52	52	52	**52**							
53	53	53	53	53	53	53	53	53	53	53	**53**						
61†	61†	61†	61†	61†	61†	61†	61†	61†	61†	61†	61†	**61†**					
62	62	62	62	62	62	62	62	62	62	62	62	62	**62**				
63	63	63	63	63	63	63	63	63	63	63	63	63	63	**63**			
64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	**64**		
65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	**65**	
71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	**71**
72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72

Key:-

- Insufficient data in one or both Domains
- No statistical evidence for difference
- Some statistical evidence for difference
- Statistical evidence for difference in most or all parameters
- † Data in Domain 61 limited to water content and density

Table B4: Summary of Differences Between Domains

Appendix B.5: Summary of Means, Medians and 95% Confidence Intervals

TABLE B.5

Summary of Means, Medians and 95% Confidence Intervals by Domain.

Key to Table Entries:-

Mean 95% CI	2.266 2.228-2.305	2.296 † 2.258-2.334
Median 95% CI	2.280 2.230-2.340	2.305 † 2.258-2.342

Obelus denotes two or more modal values in data set.

Green background denotes mean or median at or close to modal value

Yellow background denotes confidence interval includes modal value

Red background denotes confidence interval does not include modal value

Appendix B5: Table of Means, Medians and confidence Intervals

▼ Parameter	Domain ▶	Domain 11	Domain 12	Domain 14	Domain 21 (Till)	Domain 31	Domain 41	Domain 43	Domain 51 (Till)	Domain 52 (Till)	Domain 61	Domain 62	Domain 63	Domain 64	Domain 65	Domain 71	Domain 72
w (%)	Mean	11.666	12.388	11.892	13.723	18.472	19.604	20.440	14.360	8.479 †	17.50	16.879	17.397	15.340 †	17.714 †	14.561	15.127
	95% CI	10.827-12.506	11.673-13.104	10.960-12.824	12.752-14.694	18.030-18.914	17.30-21.907	18.244-22.636	8.090-20.630	7.307-9.652	12.165-22.835	15.988-17.770	15.930-18.863	14.132-16.548	13.765-21.664	12.799-16.323	13.412-16.841
	Median	11.0	11.60	9.850	12.90	18.0	17.0	17.0	12.0	8.450 †	16.30	15.870	15.380	15.440 †	17.0 †	13.0	13.0
	95% CI	10.378-11.0	10.615-12.943	9.387-11.050	12.287-13.438	18.0-19.0	16.237-18.0	16.0-19.328	7.397-20.489	6.931-10.0	11.523-24.960	15.20-16.70	14.678-17.173	13.107-17.0	14.467-20.867	13.0-14.0	12.650-17.0
wL (%)	Mean	29.50 †	31.491	27.0	29.667	33.411	44.462 †	37.353 †	27.077 †	25.333		34.265	34.879	34.444	35.250	31.235	30.50 †
	95% CI	27.764-31.236	30.893-32.088	25.529-28.471	27.388-31.995	32.502-34.320	38.049-50.874	33.442-41.264	25.324-28.829	24.181-26.486		33.133-35.398	33.722-36.037	33.518-35.371	30.568-39.932	29.893-35.278	27.040-33.960
	Median	28.0 †	31.0	26.0	28.0	34.0	42.0 †	39.0 †	27.0 †	25.50		34.0	34.0	34.0	37.50	31.0	30.0 †
	95% CI	27.0-29.0	31.0-32.0	25.0-27.0	27.0-30.346	33.0-35.0	36.054-51.261	31.0-42.952	25.0-29.315	24.0-27.0		33.0-34.0	33.0-35.0	33.0-35.0	30.55-40.0	30.0-32.0	27.0-32.342
wP (%)	Mean	13.957	14.291	13.039	17.167	15.622	21.846	20.294 †	17.077	16.208		17.699	17.983	17.815	18.875	15.353	15.20
	95% CI	13.195-14.718	13.744-14.838	12.315-13.764	15.648-18.685	15.254-15.989	19.202-24.490	18.478-22.110	16.046-18.108	15.527-16.890		17.183-18.215	17.216-18.750	16.930-18.70	17.656-20.094	14.463-16.242	13.777-16.323
	Median	13.0	14.0	12.0	17.0	16.0	21.0	20.0 †	17.0	16.0		17.0	18.0	18.0	19.0	16.0	15.0
	95% CI	13.0-14.0	14.0-14.0	12.0-13.0	15.827-19.0	15.0-16.0	19.0-23.631	17.024-23.0	16.0-18.315	15.0-16.173		17.0-18.0	17.0-18.954	17.0-18.030	17.871-20.064	14.024-17.0	13.658-16.685
PI (%)	Mean	15.543	17.20	13.961	12.50	17.892	22.615	17.059 †	10.0	9.125		16.566	16.897	16.630	16.375	15.882	15.30
	95% CI	14.478-16.609	16.639-17.761	13.030-14.892	10.632-14.368	17.292-18.492	18.520-26.710	14.409-19.709	8.897-11.103	8.233-10.017		15.731-17.402	16.095-17.698	15.685-17.574	12.692-20.058	14.872-16.893	12.644-17.956
	Median	15.0	17.0	14.0	12.0	18.0	22.0	16.0 †	10.0	9.0		16.0	16.0	17.0	18.50	16.0	15.50
	95% CI	14.0-15.0	17.0-18.0	13.0-14.0	11.0-13.0	17.717-19.0	16.369-27.631	14.024-19.0	9.0-11.315	8.0-10.173		15.628-17.0	16.0-17.954	15.970-17.030	11.743-19.129	15.0-17.0	12.0-17.342
Fines (%)	Mean	39.806 †	40.857	35.208	43.727	70.086		27.933 †	38.50	36.667		44.979 †	43.367 †			52.125	51.889
	95% CI	37.117-42.495	35.944-47.771	33.038-37.378	37.577-49.878	66.168-74.004		21.836-34.030	29.431-47.569	27.962-45.372		40.034-49.923	39.171-47.562			46.10-58.150	46.004-57.774
	Median	39.50 †	42.0	36.0	47.0	72.0		23.0 †	37.50	38.0		47.0 †	42.50 †			53.0	53.0
	95% CI	36.036-40.741	34.933-46.133	31.413-37.087	40.0-49.0	69.0-76.0		20.0-35.506	30.658-43.793	26.121-44.132		42.137-50.621	39.0-49.543			47.051-59.475	42.912-60.316
Sand (%)	Mean	34.611	30.286 †	42.125 †	22.636	24.286 †		33.933	16.0 †	18.467		28.745 †	29.70			24.375 †	27.556
	95% CI	30.715-38.507	25.843-34.728	39.641-44.609	19.129-26.144	21.283-27.288		29.745-38.122	12.628-19.372	15.086-21.847		26.610-30.879	26.537-32.863			20.290-28.460	22.024-33.087
	Median	32.50	28.0 †	42.750 †	24.0	23.0 †		33.0	16.0 †	19.0		28.0 †	29.0			23.5 †	26.0
	95% CI	30.0-36.223	26.433-35.133	38.913-45.260	18.0-26.0	19.305-25.695		28.747-37.626	12.658-18.0	13.747-21.626		25.379-30.0	26.0-31.771			17.0-31.0	22.228-30.544
Gravel (%)	Mean	25.583	28.857 †	22.667	33.636 †	5.629		38.133 †	38.20	37.467		24.894 †	26.933			20.688	20.556 †
	95% CI	21.338-29.829	25.473-32.242	20.661-24.672	29.697-38.576	3.631-7.627		31.002-45.265	31.241-45.159	30.017-44.917		20.892-28.895	22.549-31.318			17.059-24.316	15.065-26.046
	Median	27.50	28.50 †	21.250	35.0 †	4.0		41.0 †	39.50	36.0		24.0 †	25.50			19.0	17.0 †
	95% CI	19.626-30.928	25.733-33.40	20.0-26.0	25.0-36.164	2.0-5.0		30.747-47.579	31.315-46.342	30.0-49.012		20.0-29.0	22.0-31.771			16.763-23.237	14.228-28.0
γ_b (Mg/m³)	Mean	2.191	2.279	2.266	2.296 †	2.228	2.20	2.112		2.364	2.120 †	2.113	2.081 †	2.146	2.093	2.258	2.221
	95% CI	2.149-2.234	2.241-2.318	2.228-2.305	2.258-2.334	2.208-2.248	2.133-2.268	2.009-2.215		2.249-2.480	2.002-2.238	2.072-2.153	2.002-2.160	2.094-2.198	2.047-2.139	2.228-2.289	2.129-2.314
	Median	2.240	2.305	2.280	2.305 †	2.230	2.225	2.155		2.410	2.130 †	2.150	2.090 †	2.180	2.10	2.260	2.240
	95% CI	2.178-2.270	2.290-2.330	2.230-2.340	2.258-2.342	2.217-2.260	2.178-2.242	1.949-2.212		2.250-2.445	2.011-2.255	2.035-2.20	1.949-2.211	2.077-2.206	2.039-2.131	2.233-2.290	2.176-2.285
γ_d (Mg/m³)	Mean	1.982	2.060	2.077	2.008	1.885	1.895	1.810		2.196	1.817 †	1.80	2.806	1.873	1.780	1.994	1.944
	95% CI	1.937-2.027	2.018-2.102	2.038-2.116	1.962-2.053	1.860-1.909	1.834-1.956	1.698-1.922		2.053-2.338	1.646-1.988	1.733-1.867	1.708-1.905	1.818-1.928	1.688-1.872	1.948-2.039	1.801-2.088
	Median	2.040	2.090	2.115	2.043	1.890	1.915	1.835		2.20	1.790 †	1.850	1.840	1.90	1.810	1.991	2.0
	95% CI	1.960-2.060	2.070-2.120	2.037-2.153	1.964-2.085	1.871-1.927	1.870-1.951	1.646-1.897		2.040-2.346	1.582-2.033	1.727-1.930	1.676-1.933	1.807-1.950	1.688-1.859	1.967-2.034	1.855

APPENDIX C: GRAPHS AND CHARTS

Appendix C.1: Descriptive statistics by Domain

Appendix C.1: Descriptive Statistics: By Domain

Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
Natural Water Content (%)	11	80	11.666	6.600	9.625	11.000	12.000	28.000
	12	84	12.388	7.100	10.000	11.600	14.000	22.000
	13	5	12.000	10.000	11.000	12.000	13.000	14.000
	14	78	11.892	7.000	8.850	9.850	15.000	24.000
	21	78	13.723	5.200	11.675	12.900	15.000	37.000
	31	125	18.472	13.000	17.000	18.000	20.000	26.000
	41	57	19.60	12.00	16.00	17.00	20.50	70.00
	42	6	14.18	9.10	9.78	13.00	17.50	25.00
	43	50	20.44	10.00	15.00	17.00	26.25	48.00
	51	10	14.36	6.20	7.42	12.00	19.58	31.90
	52	24	8.479	3.500	6.225	8.450	10.750	13.400
	53	2	8.15	5.30	*	8.15	*	11.00
	61	9	17.50	10.30	11.55	16.30	23.60	30.10
	62	131	16.879	8.270	13.540	15.870	19.150	35.000
	63	55	17.397	9.340	13.600	15.380	19.520	29.810
	64	24	15.340	11.000	13.000	15.440	17.000	20.990
	65	7	17.71	13.00	15.00	17.00	19.00	26.00
	71	44	14.561	7.300	12.000	13.000	15.750	47.000
	72	26	15.127	8.300	12.000	13.000	17.750	25.000

Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
Liquid Limit (%)	11	46	29.500	23.000	26.000	28.000	30.000	56.000
	12	55	31.491	26.000	30.000	31.000	33.000	40.000
	13	4	29.75	28.00	28.00	28.50	32.75	34.00
	14	51	27.000	19.000	24.000	26.000	29.000	44.000
	21	24	29.67	22.00	26.25	28.00	32.75	45.00
	31	112	33.411	20.000	30.000	34.000	36.000	48.000
	41	13	44.46	31.00	35.50	42.00	52.00	68.00
	42	2	36.00	34.00	*	36.00	*	38.00
	43	17	37.35	26.00	30.50	39.00	43.00	55.00
	51	13	27.077	22.000	25.000	27.000	29.500	32.000
	52	24	25.333	20.000	23.250	25.500	27.000	31.000
	53	2	23.500	23.000	*	23.500	*	24.000
	61	0	*	*	*	*	*	*
	62	113	34.265	23.000	31.000	34.000	35.000	62.000
	63	58	34.879	27.000	32.000	34.000	37.000	51.000
	64	27	34.444	30.000	33.000	34.000	37.000	38.000
	65	8	35.25	24.00	31.50	37.50	39.75	40.00
	71	17	31.235	27.000	29.500	31.000	33.000	37.000
	72	10	30.50	24.00	27.00	30.00	32.25	42.00

Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
Plastic Limit (%)	11	46	13.957	11.000	12.000	13.000	15.000	25.000
	12	55	14.291	12.000	13.000	14.000	14.000	23.000
	13	4	13.25	11.00	11.25	13.00	15.50	16.00
	14	51	13.039	10.000	12.000	12.000	13.000	24.000
	21	24	17.167	10.000	15.000	17.000	19.750	25.000
	31	111	15.622	11.000	14.000	16.000	17.000	21.000
	41	13	21.85	17.00	19.00	21.00	24.00	33.00
	42	2	19.50	17.00	*	19.50	*	22.00
	43	17	20.294	15.000	16.500	20.000	23.500	25.000
	51	13	17.077	15.000	16.000	17.000	18.500	20.000
	52	24	16.208	13.000	15.000	16.000	17.750	20.000
	53	2	15.50	14.00	*	15.50	*	17.00
	61	0	*	*	*	*	*	*
	62	113	17.699	13.000	16.000	17.000	19.000	28.000
	63	58	17.983	12.000	15.750	18.000	20.000	25.000
	64	27	17.815	13.000	17.000	18.000	19.000	23.000
	65	8	18.875	16.000	18.250	19.000	19.750	21.000
	71	17	15.353	11.000	14.000	16.000	17.000	17.000
	72	10	15.200	13.000	13.750	15.000	16.500	19.000

Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
Plasticity Index (%)	11	46	15.543	10.000	14.000	15.000	16.000	31.000
	12	55	17.200	11.000	16.000	17.000	18.000	24.000
	13	4	16.500	14.000	14.500	17.000	18.000	18.000
	14	51	13.961	7.000	12.000	14.000	15.000	24.000
	21	24	12.500	6.000	10.250	12.000	14.500	25.000
	31	111	17.892	8.000	16.000	18.000	20.000	29.000
	41	13	22.62	12.00	16.00	22.00	28.00	35.00
	42	2	16.500	16.000	*	16.500	*	17.000
	43	17	17.06	7.00	14.00	16.00	19.50	30.00
	51	13	10.000	7.000	9.000	10.000	11.500	13.000
	52	24	9.125	6.000	8.000	9.000	11.000	14.000
	53	2	8.00	7.00	*	8.00	*	9.00
	61	0	*	*	*	*	*	*
	62	113	16.566	7.000	14.000	16.000	18.000	37.000
	63	58	16.897	11.000	15.000	16.000	19.000	28.000
	64	27	16.630	10.000	15.000	17.000	18.000	21.000
	65	8	16.38	8.00	12.75	18.50	19.00	21.00
	71	17	15.882	12.000	14.500	16.000	17.000	20.000
	72	10	15.30	11.00	12.00	15.50	17.25	23.00

Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
% GRAVEL	11	18	25.58	11.00	15.75	27.50	33.50	37.00
	12	7	28.86	25.00	26.00	28.50	33.00	34.50
	13	3	26.17	23.00	23.00	24.00	31.50	31.50
	14	24	22.667	15.000	20.000	21.250	26.000	33.500
	21	11	33.64	25.00	25.00	35.00	36.00	50.00
	31	35	5.629	0.000	2.000	4.000	8.000	25.000
	41	6	22.33	6.00	8.25	23.50	35.00	38.00
	42	4	40.25	33.00	34.75	42.00	44.00	44.00
	43	15	38.13	14.00	30.00	41.00	50.00	58.00
	51	10	38.20	17.00	31.50	39.50	46.25	49.00
	52	15	37.47	9.00	30.00	36.00	52.00	59.00
	53	1	44.000	44.000	*	44.000	*	44.000
	61	0	*	*	*	*	*	*
	62	47	24.89	1.00	13.00	24.00	32.00	57.00
	63	30	26.93	6.00	18.75	25.50	34.00	55.00
	64	2	19.00	11.00	*	19.00	*	27.00
	65	2	20.00	12.00	*	20.00	*	28.00
	71	16	20.69	12.00	16.25	19.00	23.75	42.00
	72	9	20.56	13.00	14.50	17.00	28.00	32.00

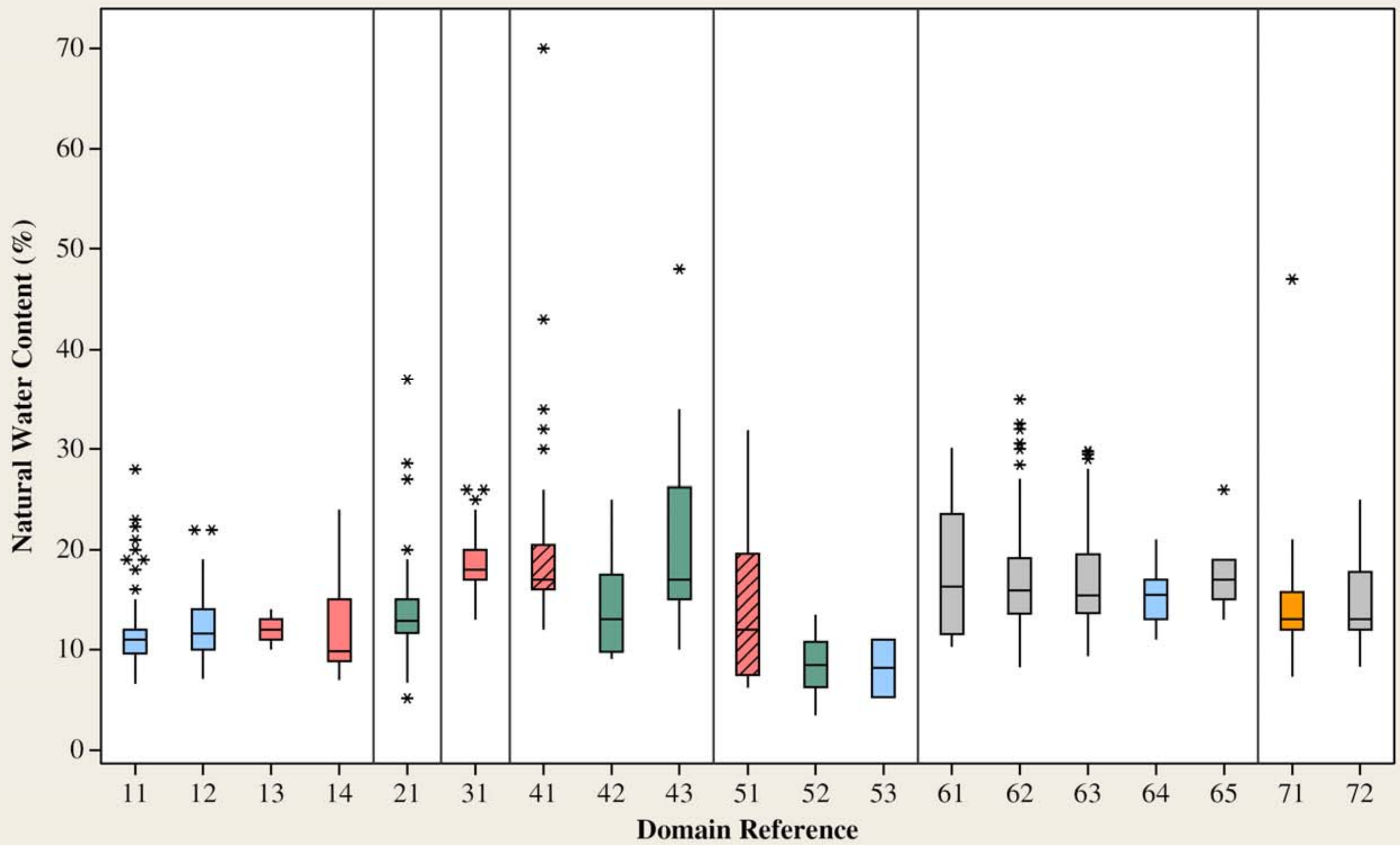
Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
% SAND	11	18	34.61	25.00	29.75	32.50	37.50	54.00
	12	7	30.29	23.50	27.50	28.00	35.00	35.50
	13	3	27.17	24.00	24.00	28.50	29.00	29.00
	14	24	42.13	32.50	37.38	42.75	46.88	53.50
	21	11	22.64	12.00	18.00	24.00	26.00	31.00
	31	35	24.29	10.00	18.00	23.00	28.00	48.00
	41	6	27.00	17.00	20.75	27.50	32.50	37.00
	42	4	28.75	20.00	22.75	31.00	32.50	33.00
	43	15	33.93	21.00	28.00	33.00	38.00	50.00
	51	10	16.00	10.00	12.75	16.00	18.00	27.00
	52	15	18.47	7.00	13.00	19.00	22.00	30.00
	53	1	22.000	22.000	*	22.000	*	22.000
	61	0	*	*	*	*	*	*
	62	47	28.74	5.00	24.00	28.00	33.00	43.00
	63	30	29.70	9.00	25.00	29.00	34.00	54.00
	64	2	27.50	26.00	*	27.50	*	29.00
	65	2	34.00	33.00	*	34.00	*	35.00
	71	16	24.37	13.00	17.00	23.50	31.00	39.00
	72	9	27.56	19.00	22.50	26.00	30.00	44.00

Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
% Fines (SILT/CLAY)	11	18	39.81	32.00	35.00	39.50	41.63	51.50
	12	7	40.86	32.00	36.00	42.00	46.00	46.50
	13	3	46.67	44.50	44.50	47.50	48.00	48.00
	14	24	35.21	25.00	31.00	36.00	38.63	45.00
	21	11	43.73	19.00	40.00	47.00	49.00	53.00
	31	35	70.09	39.00	62.00	72.00	78.00	89.00
	41	6	50.67	33.00	38.25	46.00	67.25	74.00
	42	4	31.00	25.00	25.00	26.00	42.00	47.00
	43	15	27.93	17.00	20.00	23.00	37.00	53.00
	51	10	38.50	21.00	30.75	37.50	42.50	66.00
	52	15	36.67	11.00	25.00	38.00	46.00	76.00
	53	1	33.000	33.000	*	33.000	*	33.000
	61	0	*	*	*	*	*	*
	62	47	44.98	13.00	33.00	47.00	53.00	94.00
	63	30	43.37	20.00	37.50	42.50	53.00	64.00
	64	2	53.50	47.00	*	53.50	*	60.00
	65	2	46.00	37.00	*	46.00	*	55.00
	71	16	52.13	25.00	45.00	53.00	60.50	73.00
	72	9	51.89	41.00	44.00	53.00	59.50	61.00

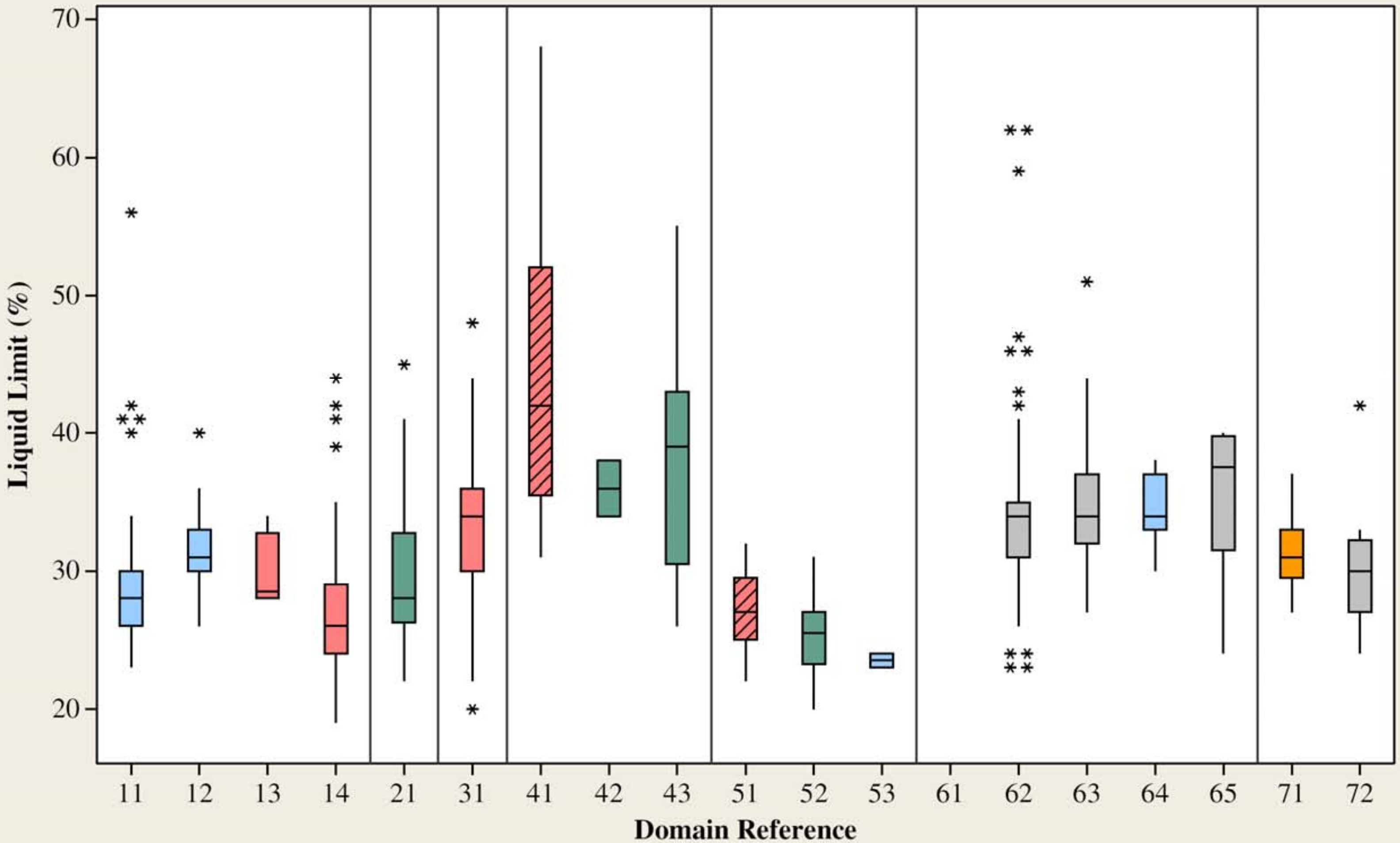
Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
Particle Density	11	3	2.6600	2.6400	2.6400	2.6700	2.6700	2.6700
	12	2	2.6550	2.6500	*	2.6550	*	2.6600
	13	0	*	*	*	*	*	*
	14	0	*	*	*	*	*	*
	21	0	*	*	*	*	*	*
	31	17	2.6735	2.6100	2.6600	2.6800	2.6900	2.7000
	41	9	2.7611	2.7300	2.7300	2.7700	2.7800	2.7800
	42	1	2.7300	2.7300	*	2.7300	*	2.7300
	43	6	2.7217	2.6300	2.6675	2.7350	2.7725	2.7800
	51	0	*	*	*	*	*	*
	52	0	*	*	*	*	*	*
	53	0	*	*	*	*	*	*
	61	0	*	*	*	*	*	*
	62	0	*	*	*	*	*	*
	63	0	*	*	*	*	*	*
	64	0	*	*	*	*	*	*
	65	0	*	*	*	*	*	*
	71	0	*	*	*	*	*	*
	72	0	*	*	*	*	*	*

Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
Bulk Density (Mg/m³)	11	48	2.1915	1.5900	2.1225	2.2400	2.2875	2.3500
	12	32	2.2794	1.7700	2.2625	2.3050	2.3400	2.3700
	13	1	2.2000	2.2000	*	2.2000	*	2.2000
	14	36	2.2661	1.9000	2.2200	2.2800	2.3575	2.4000
	21	48	2.2959	1.9190	2.2400	2.3050	2.3595	2.5480
	31	43	2.2281	2.0300	2.1900	2.2300	2.2800	2.3200
	41	8	2.2000	2.0100	2.1925	2.2250	2.2400	2.2700
	42	0	*	*	*	*	*	*
	43	12	2.1117	1.8200	1.9475	2.1550	2.2125	2.3500
	51	3	2.3267	2.3000	2.3000	2.3100	2.3700	2.3700
	52	7	2.3643	2.1400	2.2900	2.4100	2.4100	2.5400
	53	2	2.4000	2.3500	*	2.4000	*	2.4500
	61	9	2.1200	1.8000	2.0350	2.1300	2.2500	2.2800
	62	29	2.1127	1.9000	2.0084	2.1500	2.2045	2.2500
	63	11	2.0810	1.8745	1.9500	2.0900	2.2100	2.2200
	64	13	2.1462	2.0000	2.0700	2.1800	2.2100	2.2800
	65	7	2.0929	2.0100	2.0500	2.1000	2.1200	2.1600
	71	12	2.2583	2.1400	2.2325	2.2600	2.2900	2.3300
	72	7	2.2214	2.0000	2.2400	2.2400	2.2800	2.3000

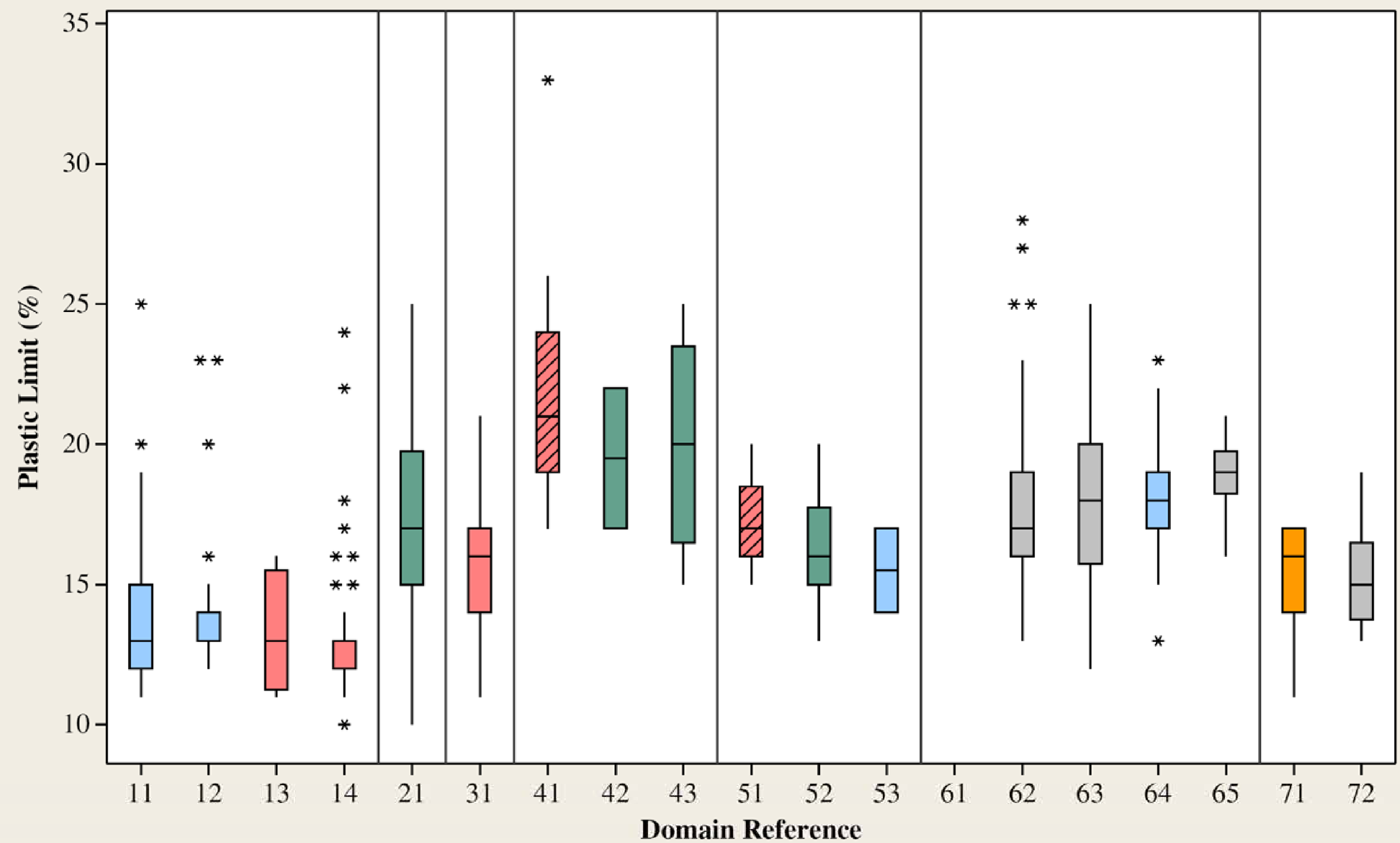
Variable	Domain Reference	N	Mean	Minimum	Q1	Median	Q3	Maximum
Dry Density (Mg/m³)	11	48	1.9819	1.4300	1.9150	2.0400	2.0875	2.1700
	12	32	2.0600	1.5400	2.0300	2.0900	2.1200	2.1900
	13	1	1.9600	1.9600	*	1.9600	*	1.9600
	14	36	2.0767	1.7500	2.0100	2.1150	2.1675	2.2300
	21	48	2.0075	1.6220	1.9305	2.0430	2.1055	2.3020
	31	43	1.8845	1.6240	1.8300	1.8900	1.9487	2.0000
	41	8	1.8950	1.7300	1.8800	1.9150	1.9425	1.9700
	42	0	*	*	*	*	*	*
	43	12	1.8100	1.5000	1.6450	1.8350	1.8975	2.1000
	51	3	2.1600	2.1300	2.1300	2.1500	2.2000	2.2000
	52	7	2.1957	1.9300	2.0800	2.2000	2.3300	2.3900
	53	2	2.225	2.120	*	2.225	*	2.330
	61	9	1.8166	1.4300	1.6448	1.7900	2.0250	2.0500
	62	29	1.8000	1.4400	1.6400	1.8500	1.9550	2.0300
	63	11	1.8064	1.5000	1.6800	1.8400	1.9300	1.9700
	64	13	1.8731	1.6900	1.8050	1.9000	1.9500	1.9900
	65	7	1.7800	1.6000	1.7200	1.8100	1.8400	1.9100
	71	12	1.9937	1.8136	1.9670	1.9913	2.0337	2.0991
	72	7	1.9443	1.6000	1.9478	2.0000	2.0177	2.0536



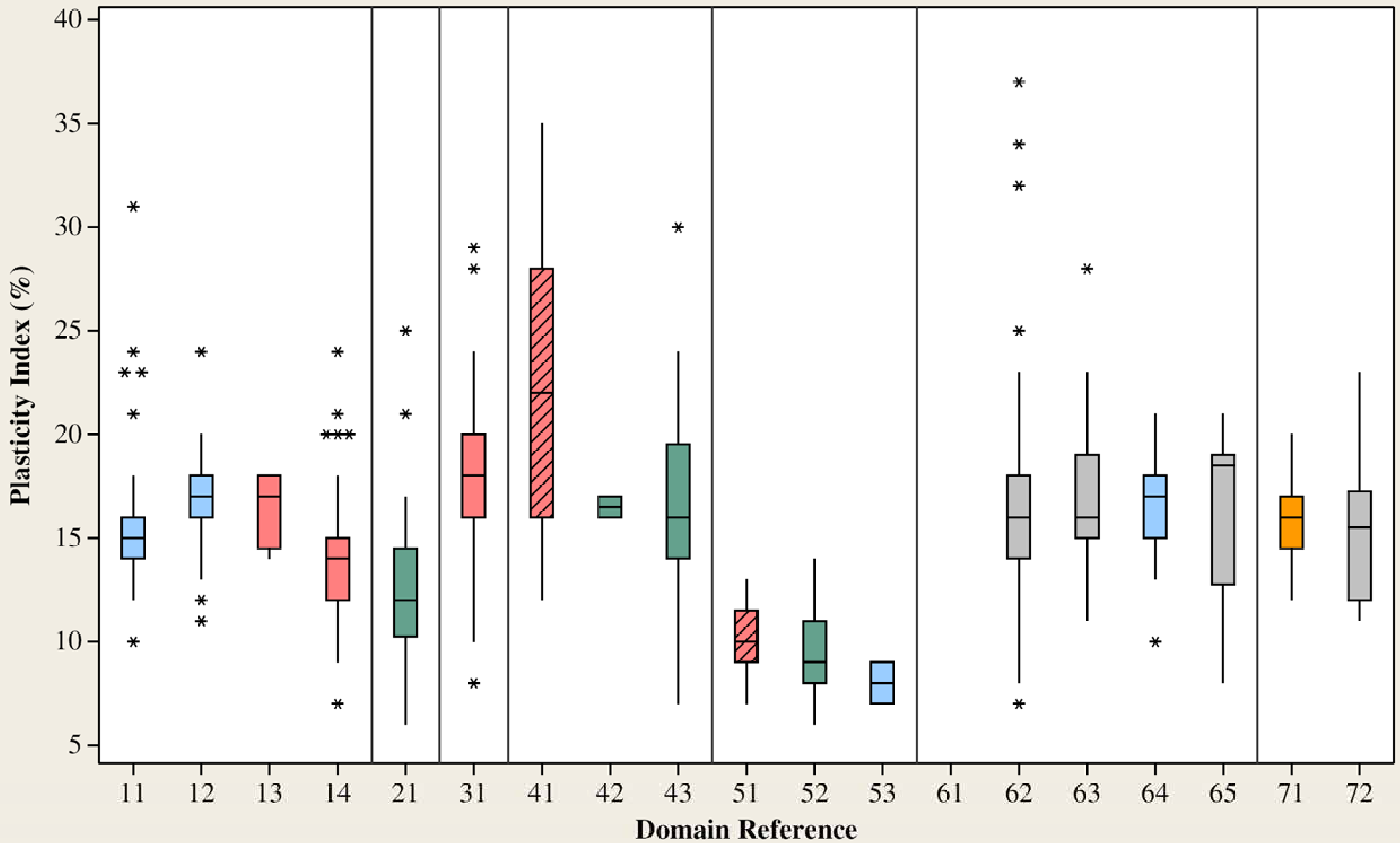
Boxplot of Natural Water Content Subdivided by Domain Reference



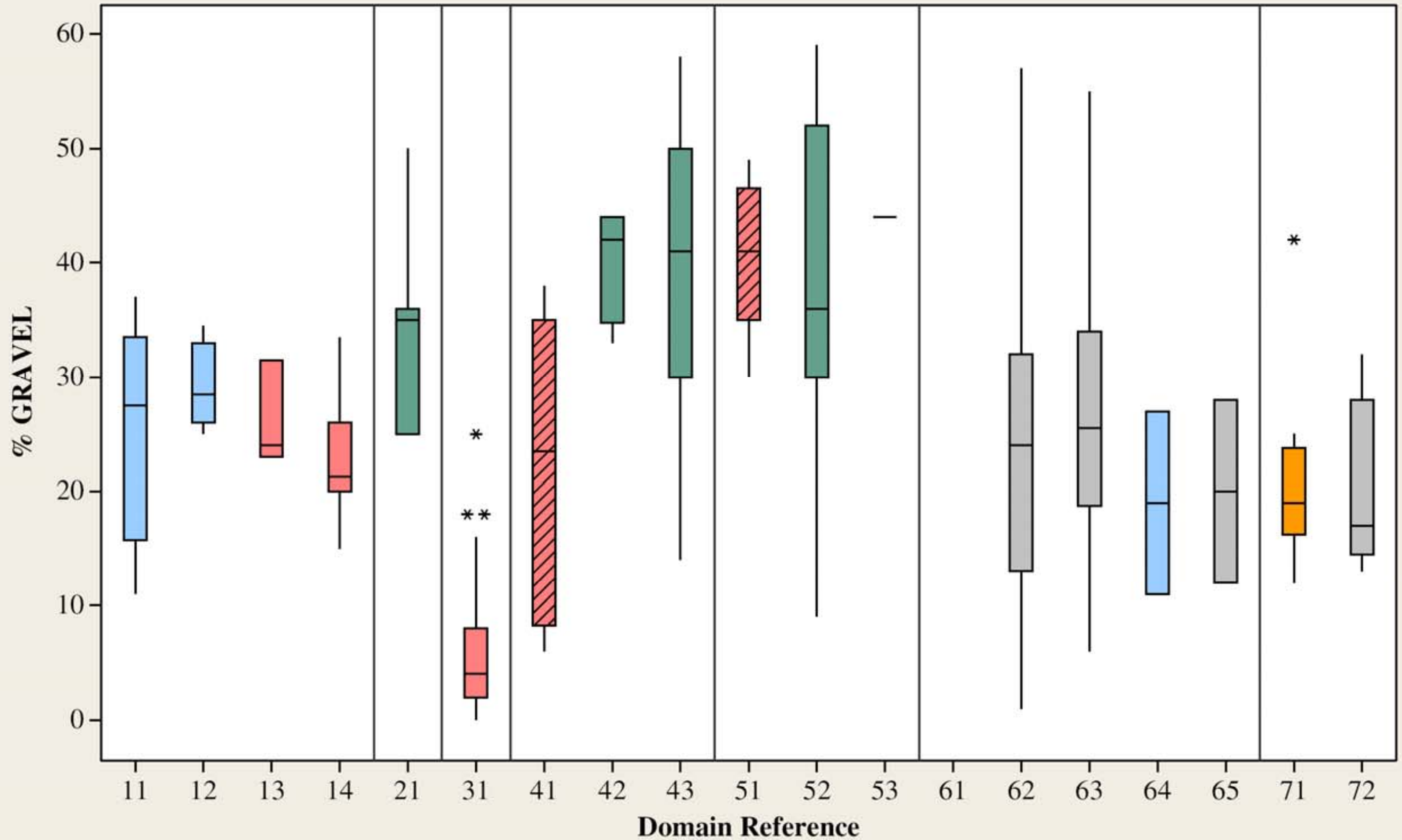
Boxplot of Liquid Limit Subdivided by Domain Reference



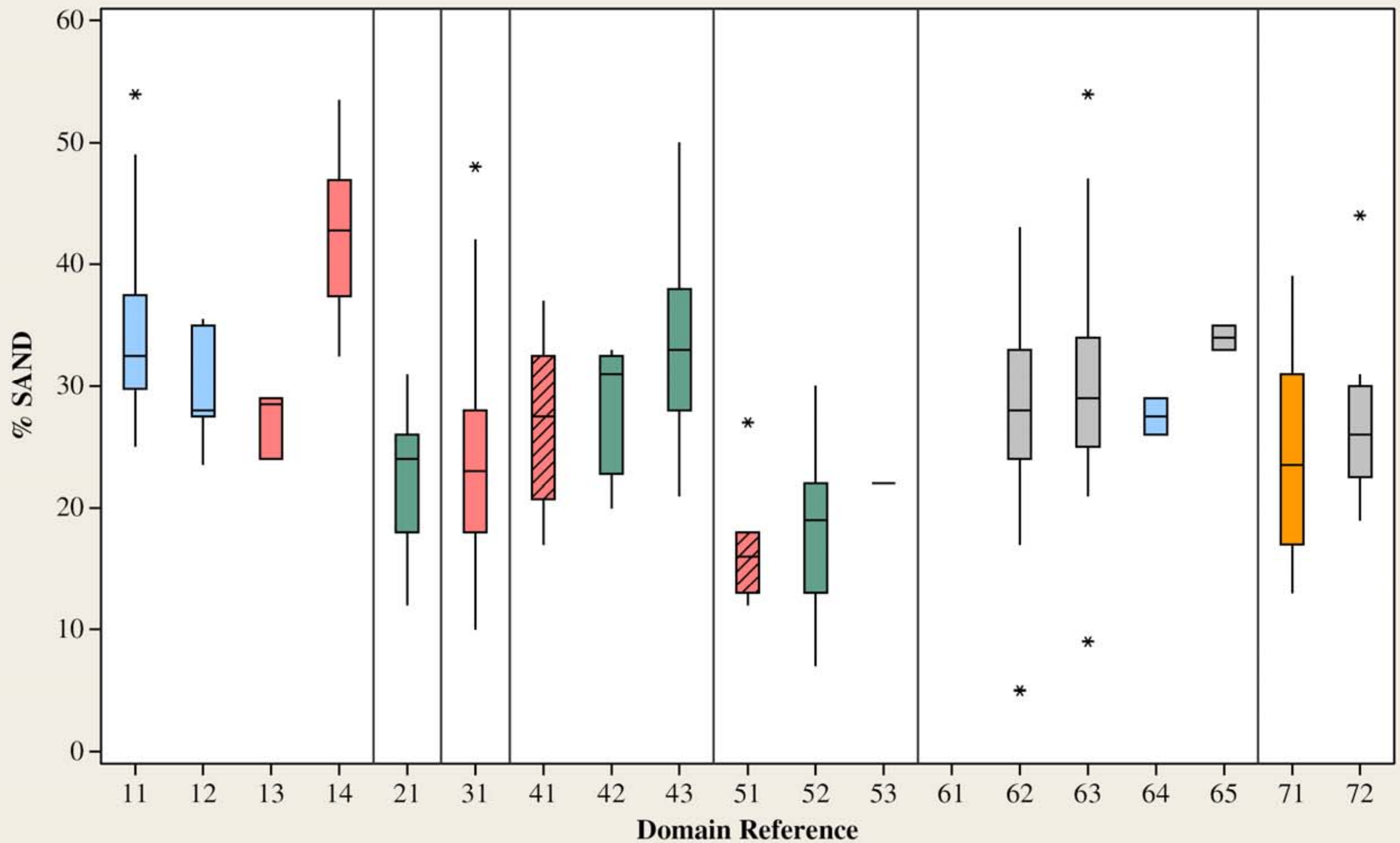
Boxplot of Plastic Limit Subdivided by Domain Reference



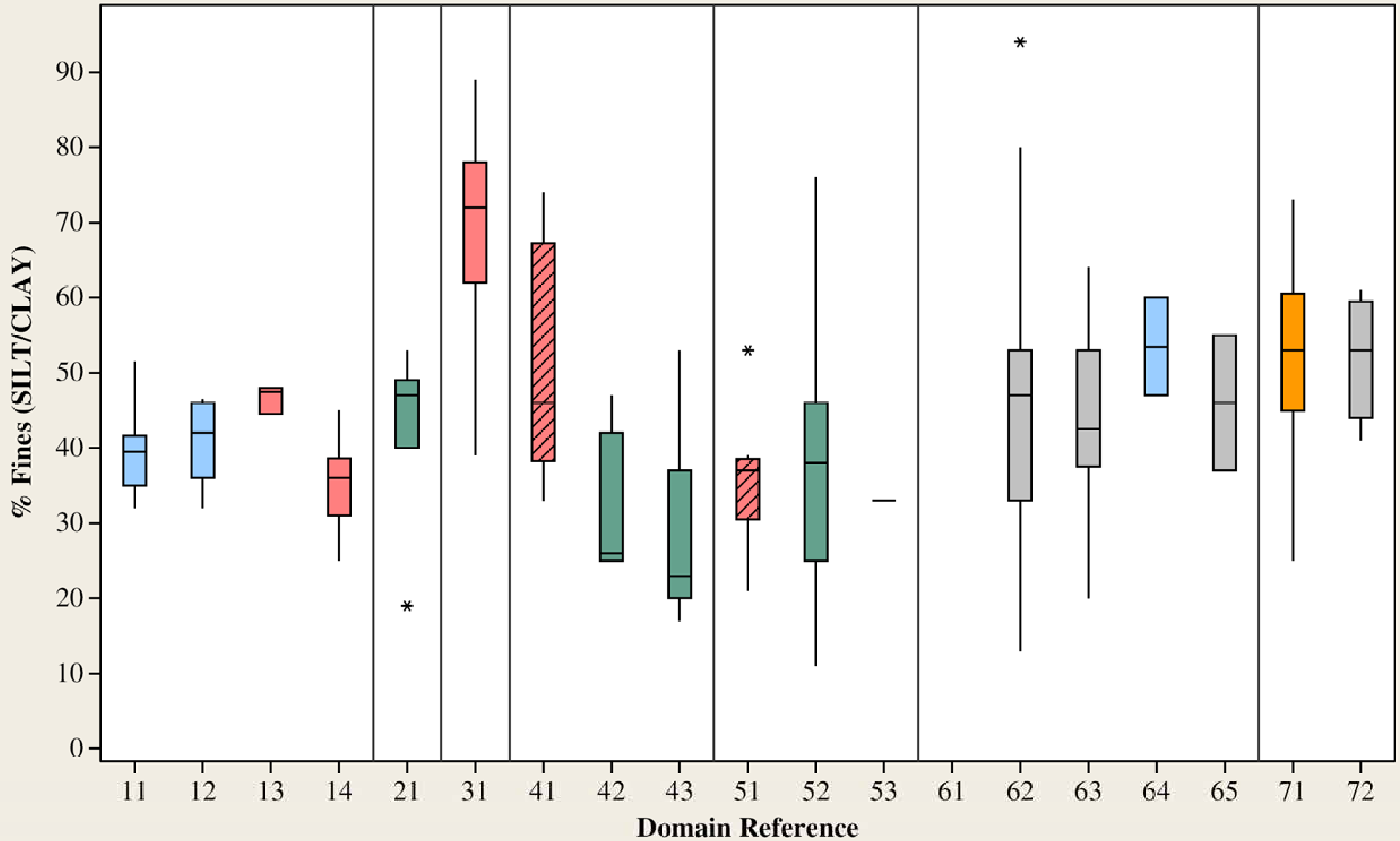
Boxplot of Plasticity Index Subdivided by Domain Reference



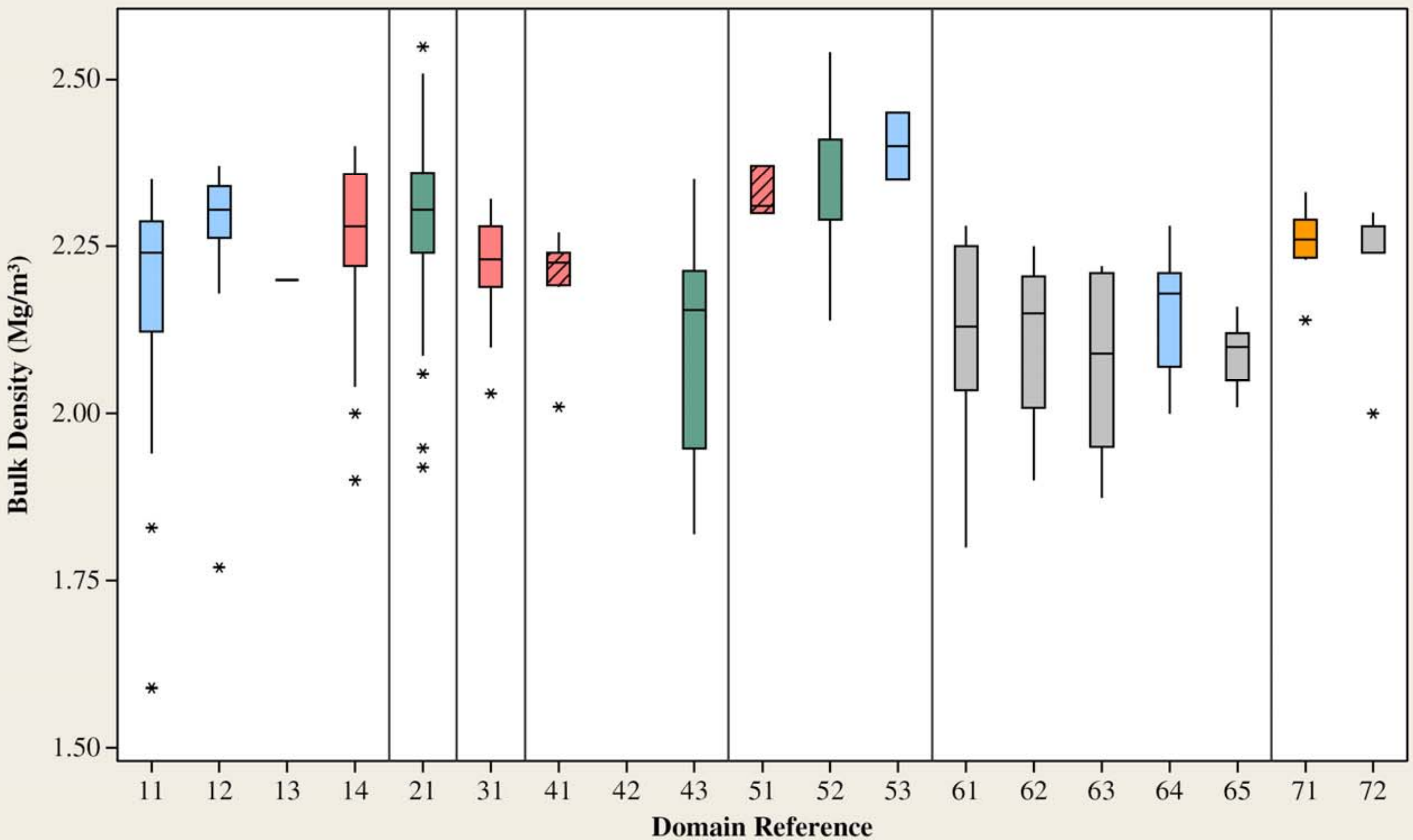
Boxplot of Gravel Fraction Subdivided by Domain Reference



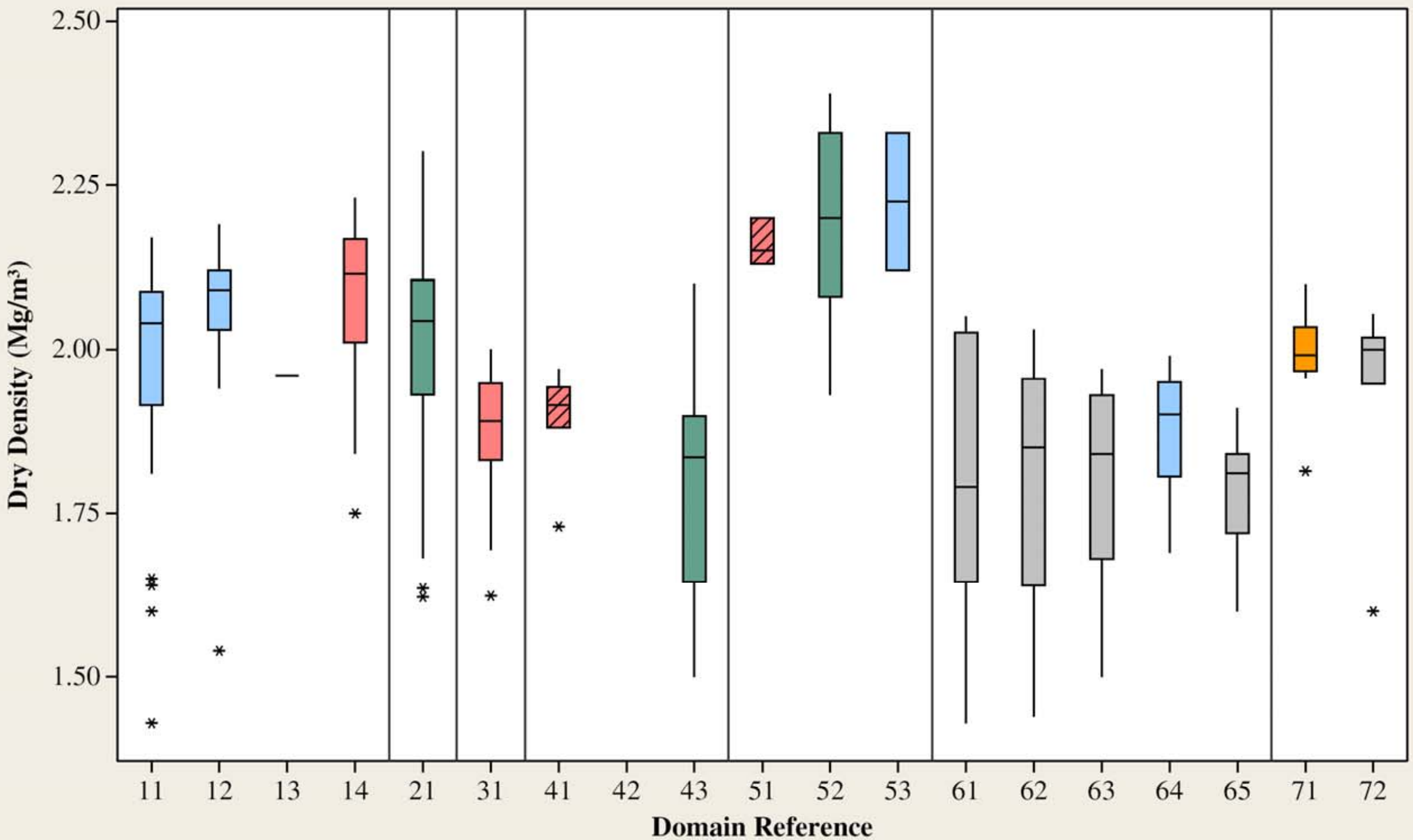
Boxplot of Sand Fraction Subdivided by Domain Reference



Boxplot of Fine (Silt & Clay) Fraction Subdivided by Domain Reference



Boxplot of Bulk Density Subdivided by Domain Reference



Boxplot of Dry Density Subdivided by Domain Reference

Appendix C.2: Data histograms by Domain

Appendix C.2 Data Histograms by Domain

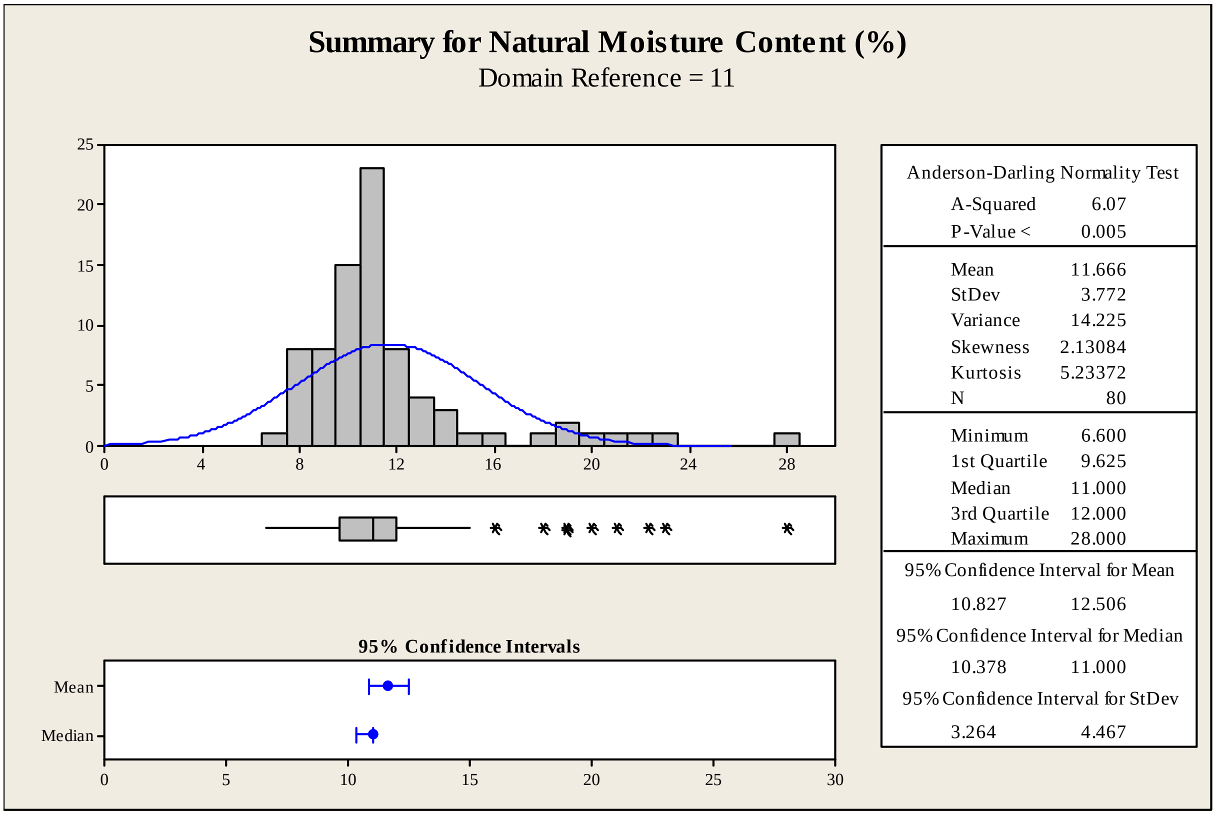
In the following diagrams the data histograms for each parameter are plotted with a Gaussian (Normal) distribution superimposed as a blue curve: the binning width in each case is equal to one data unit. Below each data histogram is included a boxplot of the data and 95% confidence intervals for both the mean and median: all three graphs within a panel are plotted to the same horizontal scale.

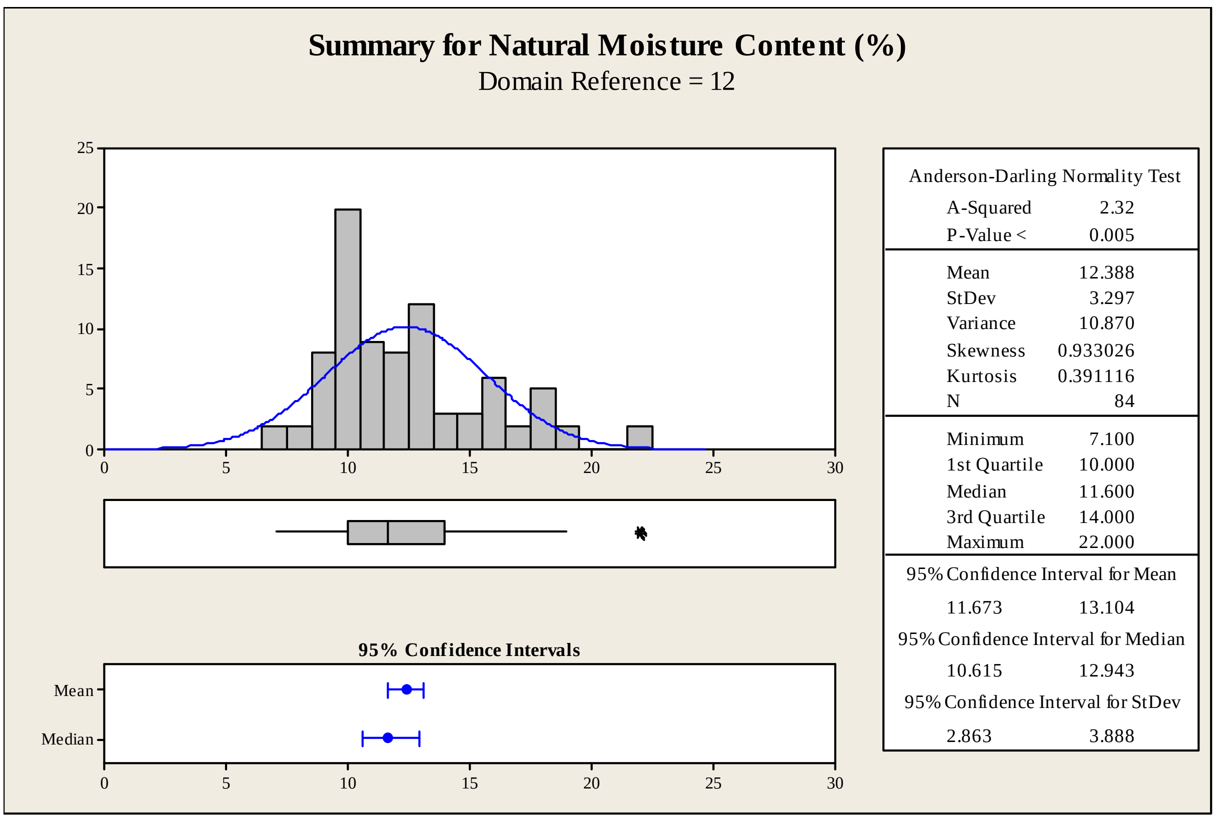
The inset table on each histogram gives information concerning the data count and range; the parametric mean, standard deviation, variance, skewness and kurtosis; the non-parametric inter-quartile range and median; and the confidence intervals for the mean, median and standard deviation of the data set. Also included is the Anderson-Darling test statistic, and the calculated p-value: this is compared against a conventional α-value of 0.05. If $p < \alpha$ the data is non-Gaussian to a statistically significant degree.

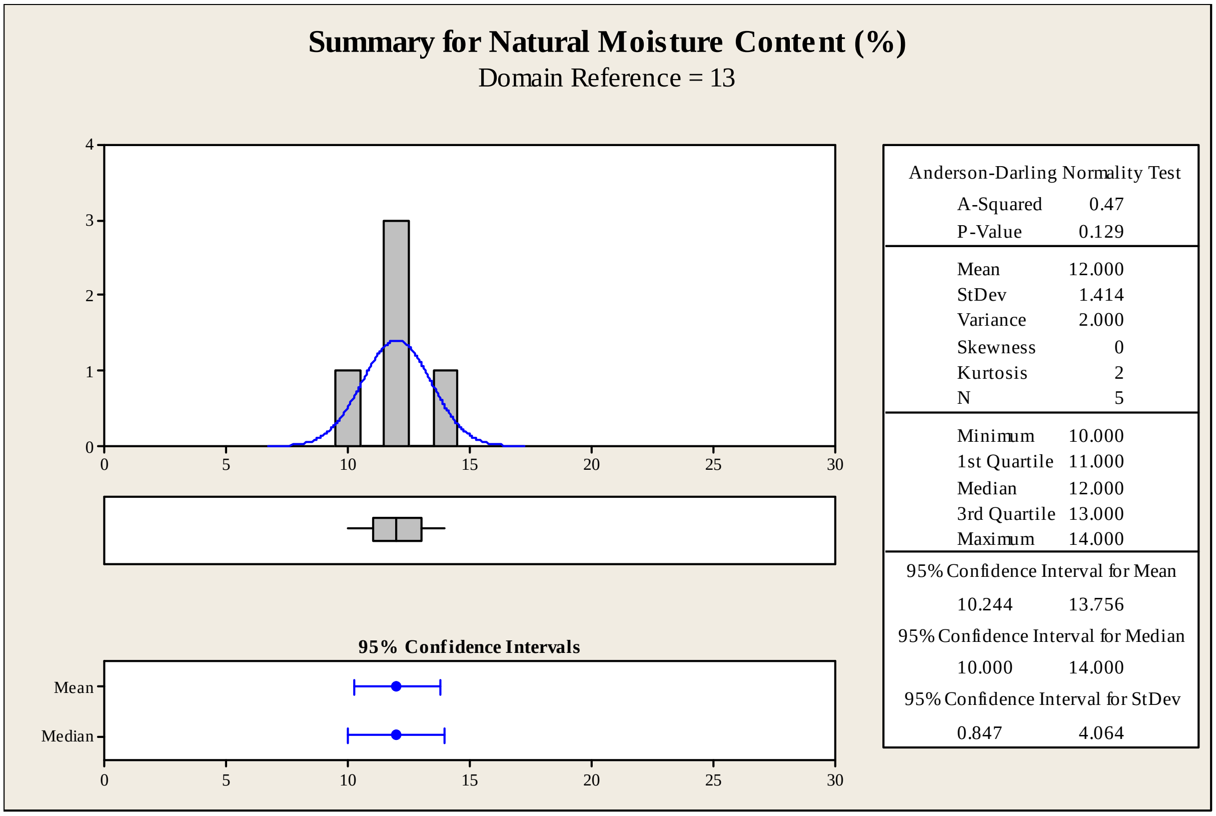
The results of more detailed 'Normality' testing are summarised in Appendix A1.

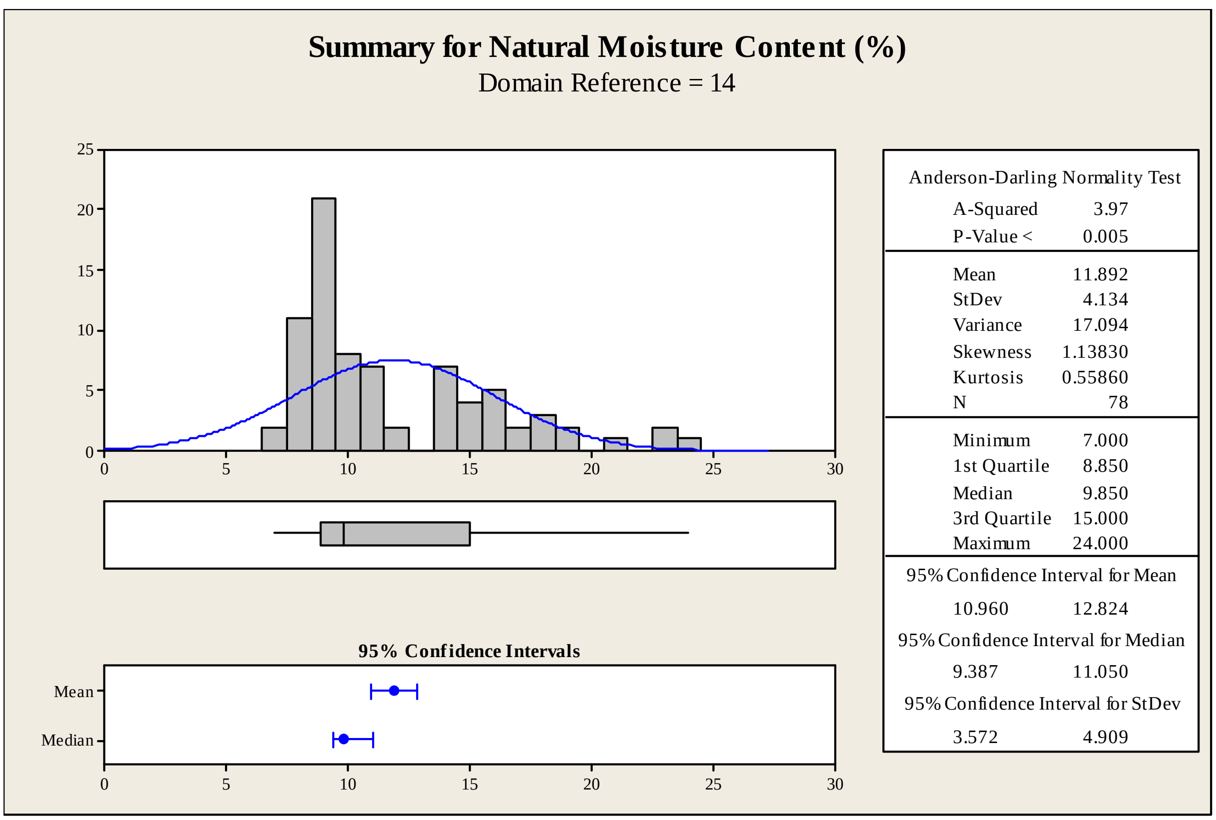
Only data from till soils are plotted.

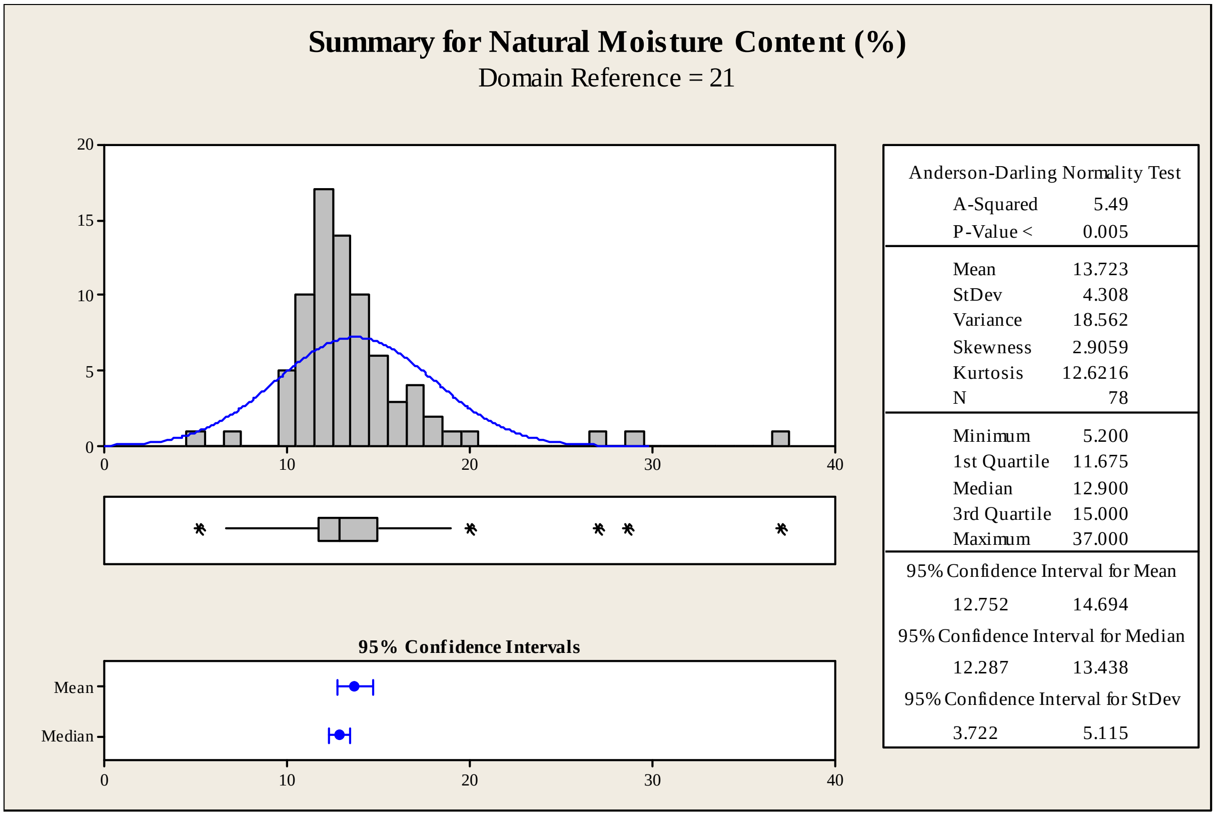
<u>**Natural Water Content**</u>

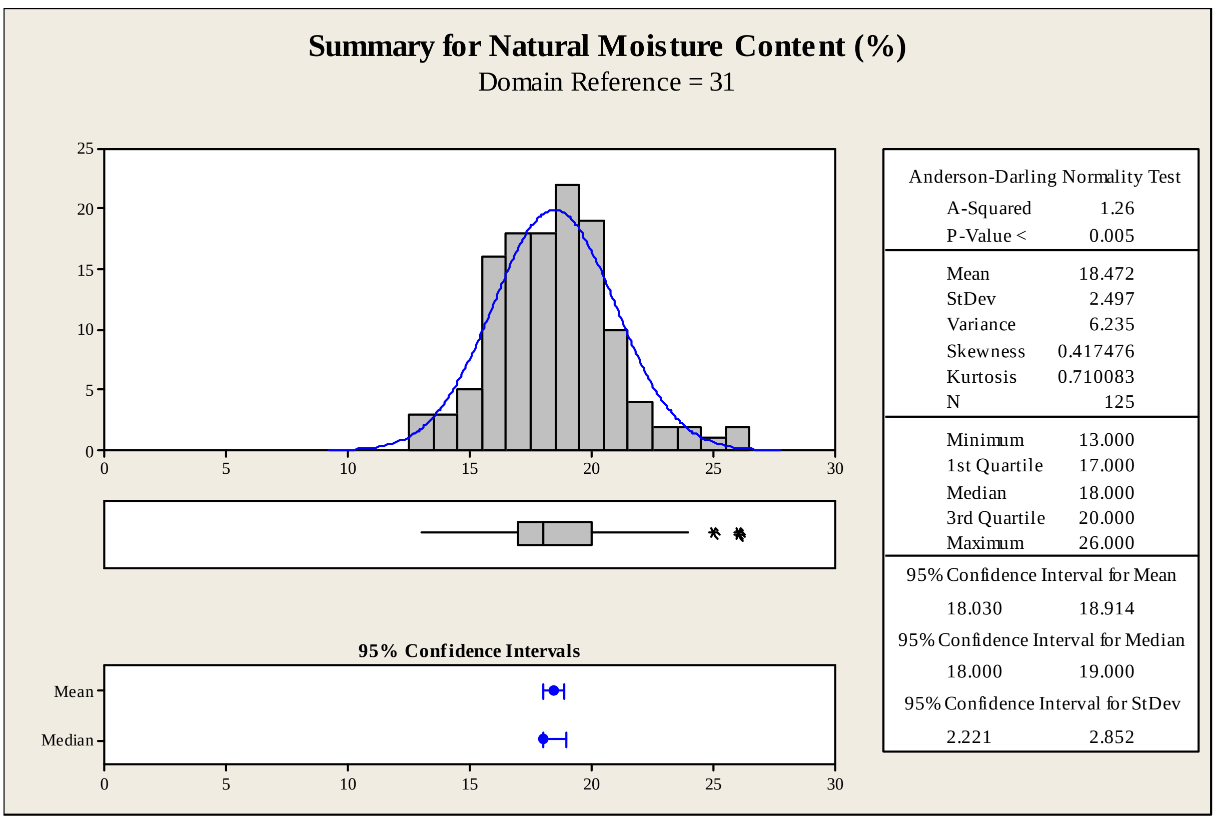


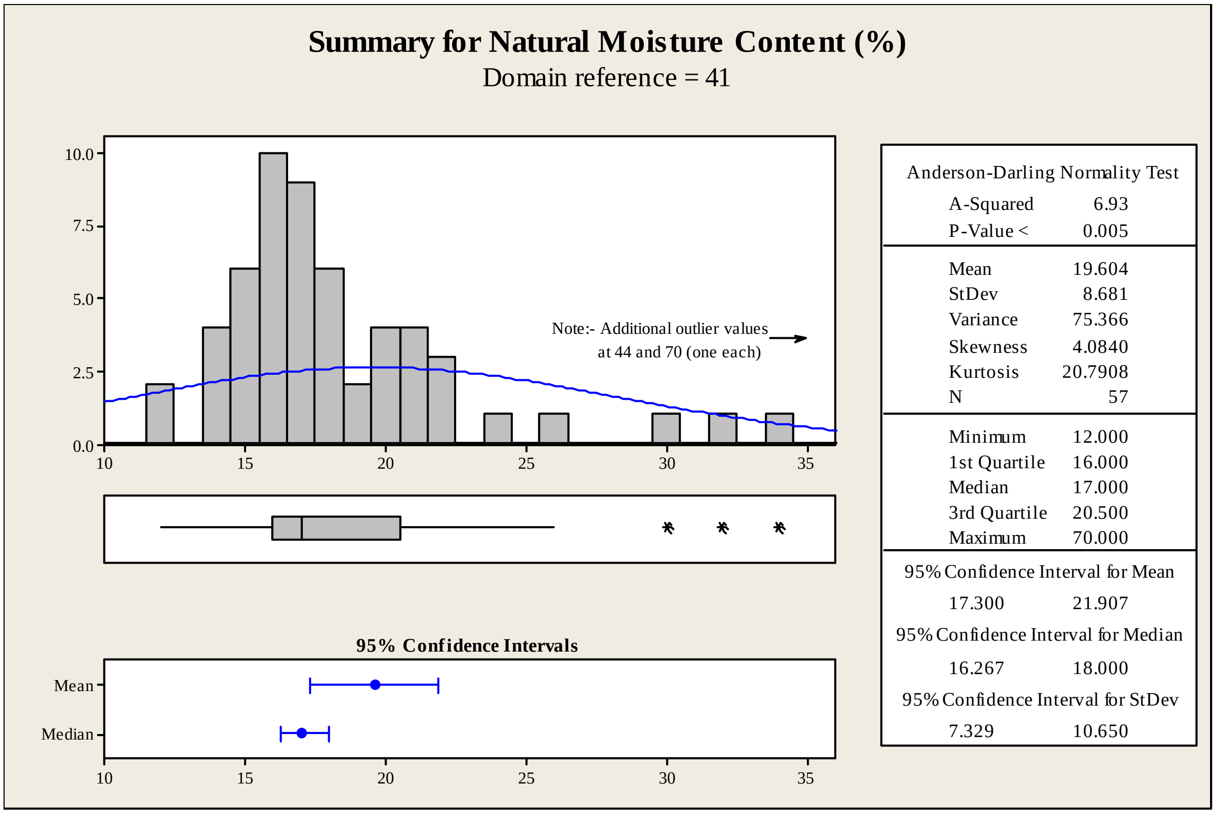


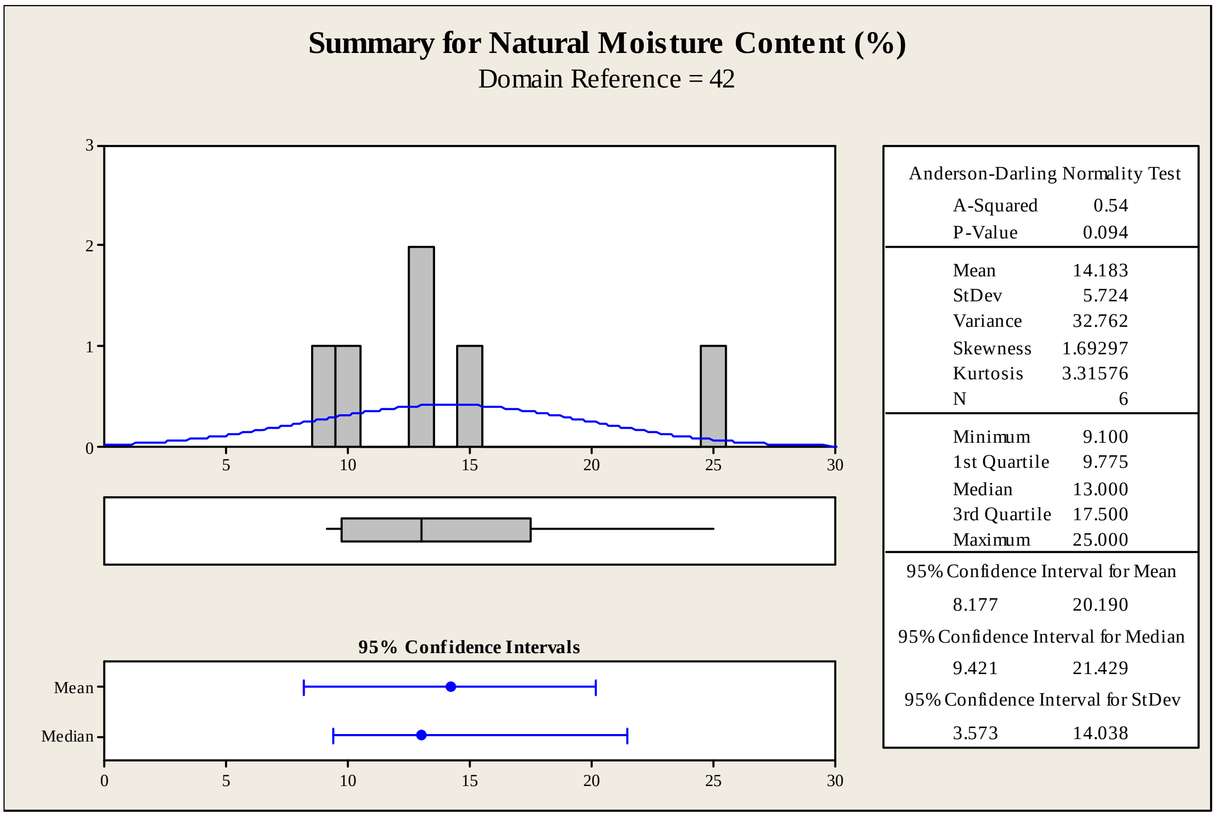

Summary for Natural Moisture Content (%)
Domain Reference = 13
Anderson-Darling Normality Test
A-Squared 0.47
P-Value 0.129
Mean 12.000
StDev 1.414
Variance 2.000
Skewness 0
Kurtosis 2
N 5
Minimum 10.000
1st Quartile 11.000
Median 12.000
3rd Quartile 13.000
Maximum 14.000
95% Confidence Interval for Mean
10.244 13.756
95% Confidence Interval for Median
10.000 14.000
95% Confidence Interval for StDev
0.847 4.064
95% Confidence Intervals
Mean
Median
0 5 10 15 20 25 30
0 1 2 3 4

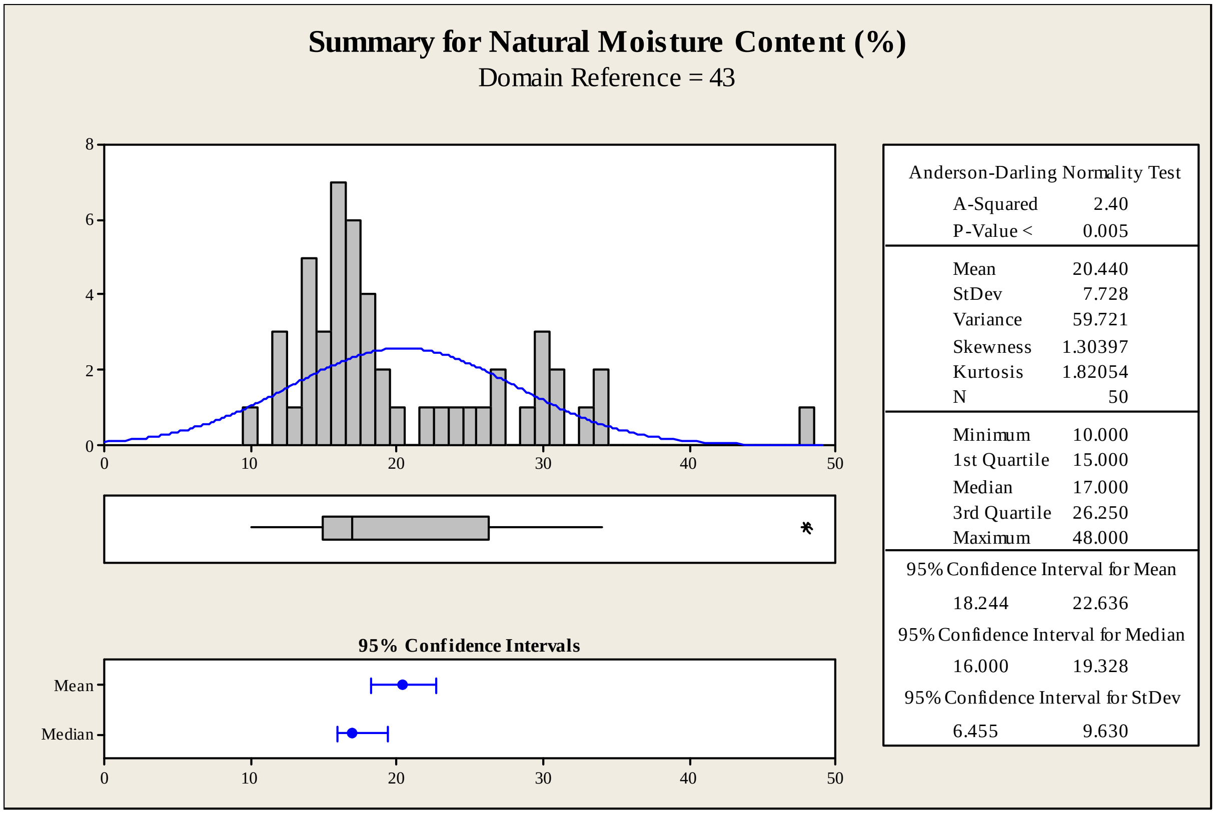

Summary for Natural Moisture Content (%)
Domain Reference = 14
Anderson-Darling Normality Test
A-Squared 3.97
P-Value < 0.005
Mean 11.892
StDev 4.134
Variance 17.094
Skewness 1.13830
Kurtosis 0.55860
N 78
Minimum 7.000
1st Quartile 8.850
Median 9.850
3rd Quartile 15.000
Maximum 24.000
95% Confidence Interval for Mean
10.960 12.824
95% Confidence Interval for Median
9.387 11.050
95% Confidence Interval for StDev
3.572 4.909
95% Confidence Intervals
Mean
Median
0 5 10 15 20 25 30
0 5 10 15 20 25

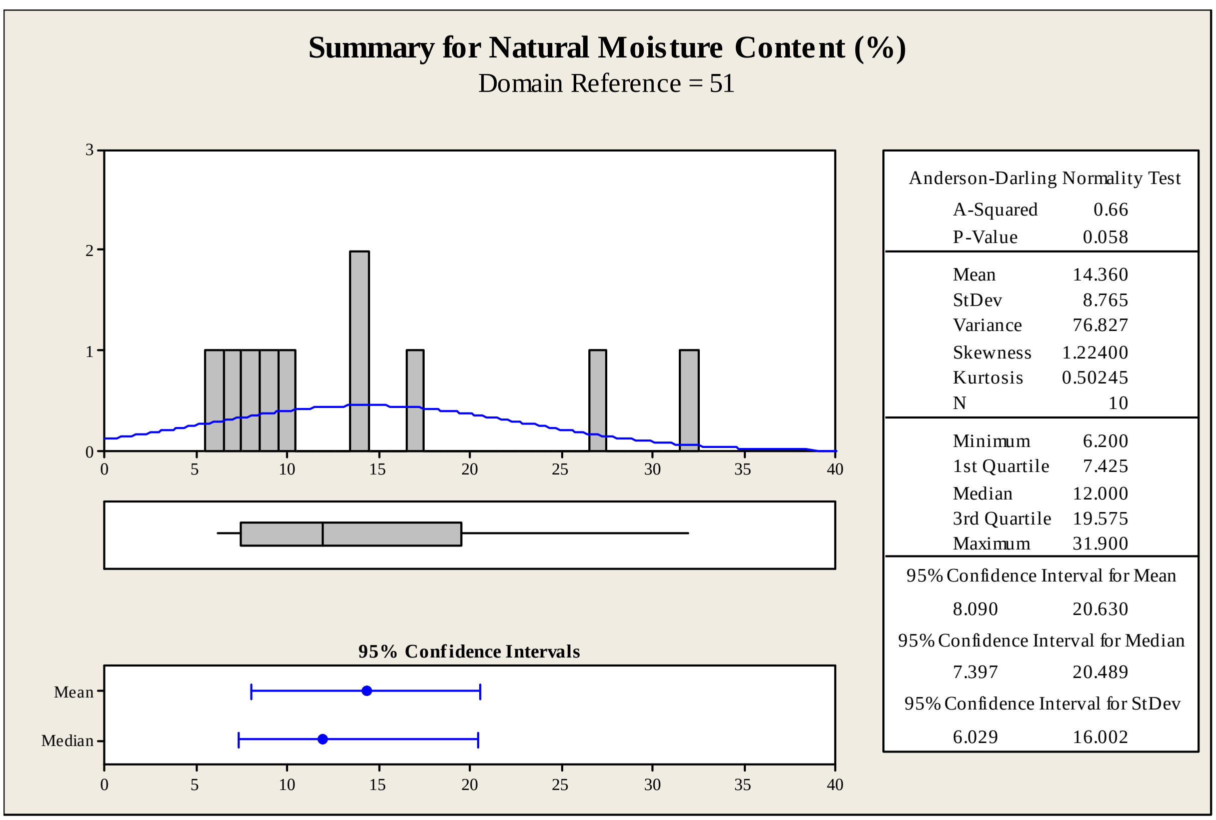

Summary for Natural Moisture Content (%)
Domain Reference = 21
Anderson-Darling Normality Test
A-Squared 5.49
P-Value < 0.005
Mean 13.723
StDev 4.308
Variance 18.562
Skewness 2.9059
Kurtosis 12.6216
N 78
Minimum 5.200
1st Quartile 11.675
Median 12.900
3rd Quartile 15.000
Maximum 37.000
95% Confidence Interval for Mean
12.752 14.694
95% Confidence Interval for Median
12.287 13.438
95% Confidence Interval for StDev
3.722 5.115
95% Confidence Intervals
Mean
Median
0
10
20
30
40
5
15

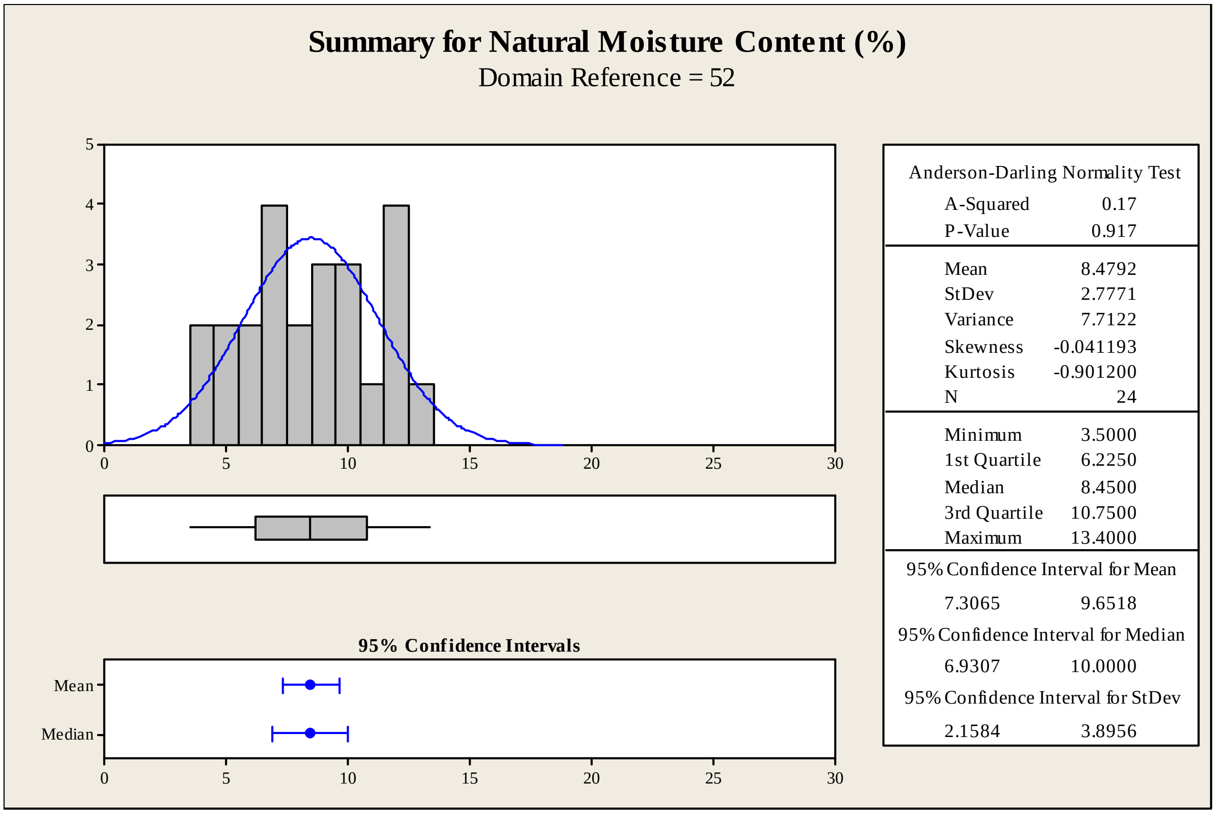

Summary for Natural Moisture Content (%)
Domain Reference = 31
Anderson-Darling Normality Test
A-Squared 1.26
P-Value < 0.005
Mean 18.472
StDev 2.497
Variance 6.235
Skewness 0.417476
Kurtosis 0.710083
N 125
Minimum 13.000
1st Quartile 17.000
Median 18.000
3rd Quartile 20.000
Maximum 26.000
95% Confidence Interval for Mean
18.030 18.914
95% Confidence Interval for Median
18.000 19.000
95% Confidence Interval for StDev
2.221 2.852
95% Confidence Intervals
Mean
Median
0
5
10
15
20
25
30


Summary for Natural Moisture Content (%)
Domain reference = 41
Note:- Additional outlier values at 44 and 70 (one each)
95% Confidence Intervals
Mean
Median
Anderson-Darling Normality Test
A-Squared 6.93
P-Value < 0.005
Mean 19.604
StDev 8.681
Variance 75.366
Skewness 4.0840
Kurtosis 20.7908
N 57
Minimum 12.000
1st Quartile 16.000
Median 17.000
3rd Quartile 20.500
Maximum 70.000
95% Confidence Interval for Mean
17.300 21.907
95% Confidence Interval for Median
16.267 18.000
95% Confidence Interval for StDev
7.329 10.650

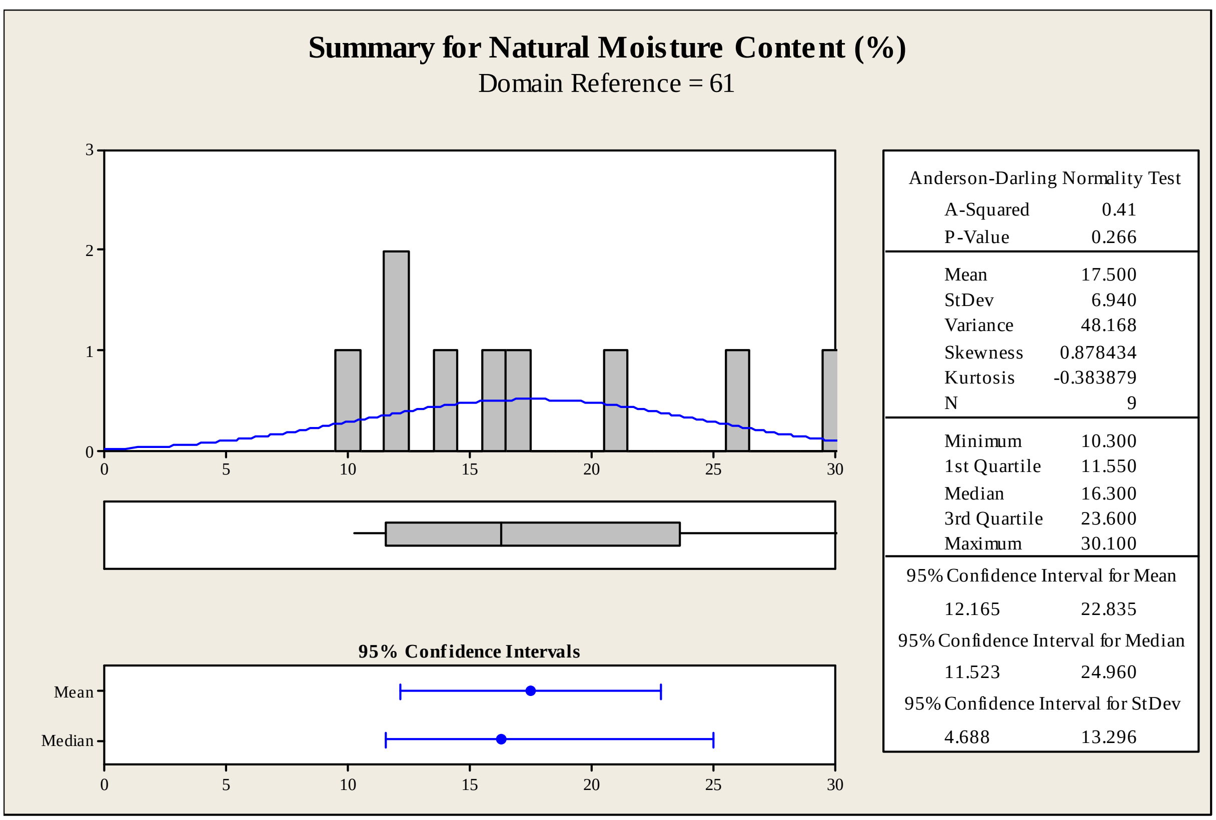

Summary for Natural Moisture Content (%)
Domain Reference = 42
95% Confidence Intervals
Mean
Median
Anderson-Darling Normality Test
A-Squared 0.54
P-Value 0.094
Mean 14.183
StDev 5.724
Variance 32.762
Skewness 1.69297
Kurtosis 3.31576
N 6
Minimum 9.100
1st Quartile 9.775
Median 13.000
3rd Quartile 17.500
Maximum 25.000
95% Confidence Interval for Mean
8.177 20.190
95% Confidence Interval for Median
9.421 21.429
95% Confidence Interval for StDev
3.573 14.038

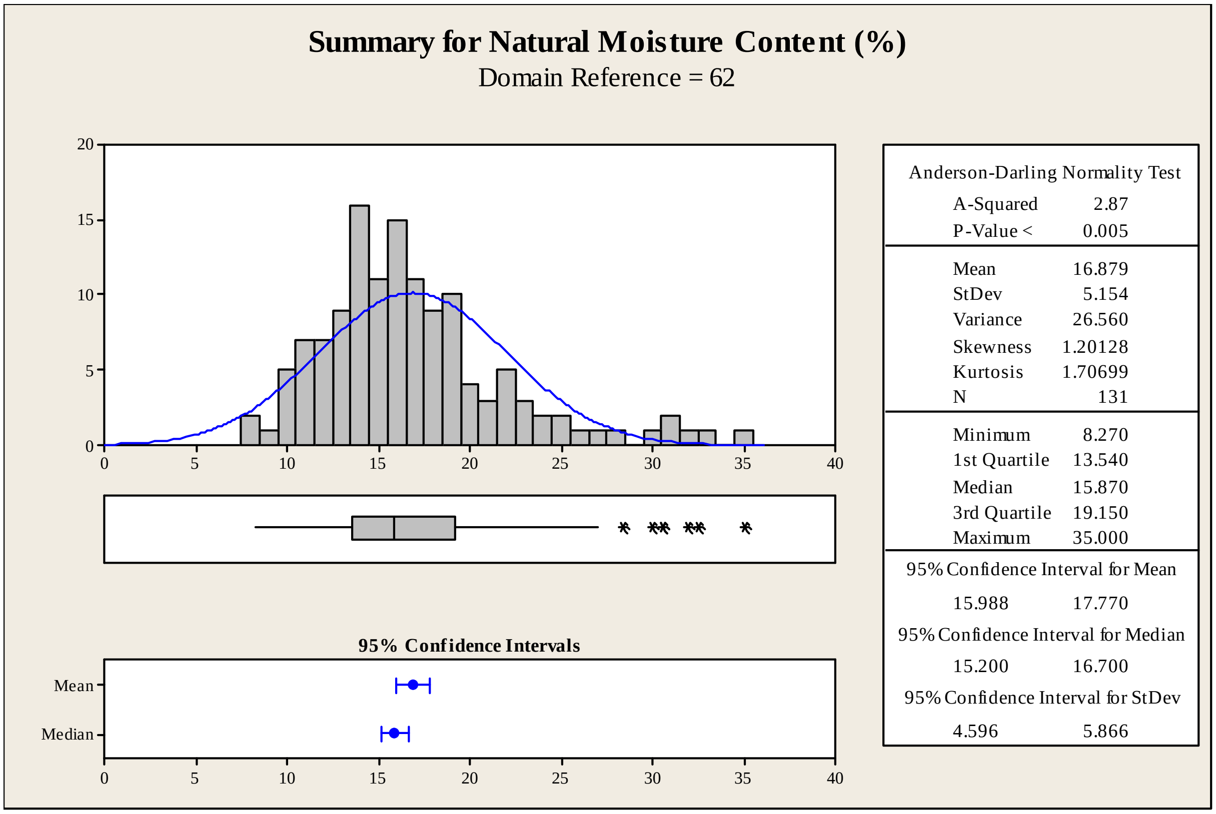

Summary for Natural Moisture Content (%)
Domain Reference = 43
Anderson-Darling Normality Test
A-Squared 2.40
P-Value < 0.005
Mean 20.440
StDev 7.728
Variance 59.721
Skewness 1.30397
Kurtosis 1.82054
N 50
Minimum 10.000
1st Quartile 15.000
Median 17.000
3rd Quartile 26.250
Maximum 48.000
95% Confidence Interval for Mean
18.244 22.636
95% Confidence Interval for Median
16.000 19.328
95% Confidence Interval for StDev
6.455 9.630
95% Confidence Intervals
Mean
Median
0 10 20 30 40 50
0 2 4 6 8

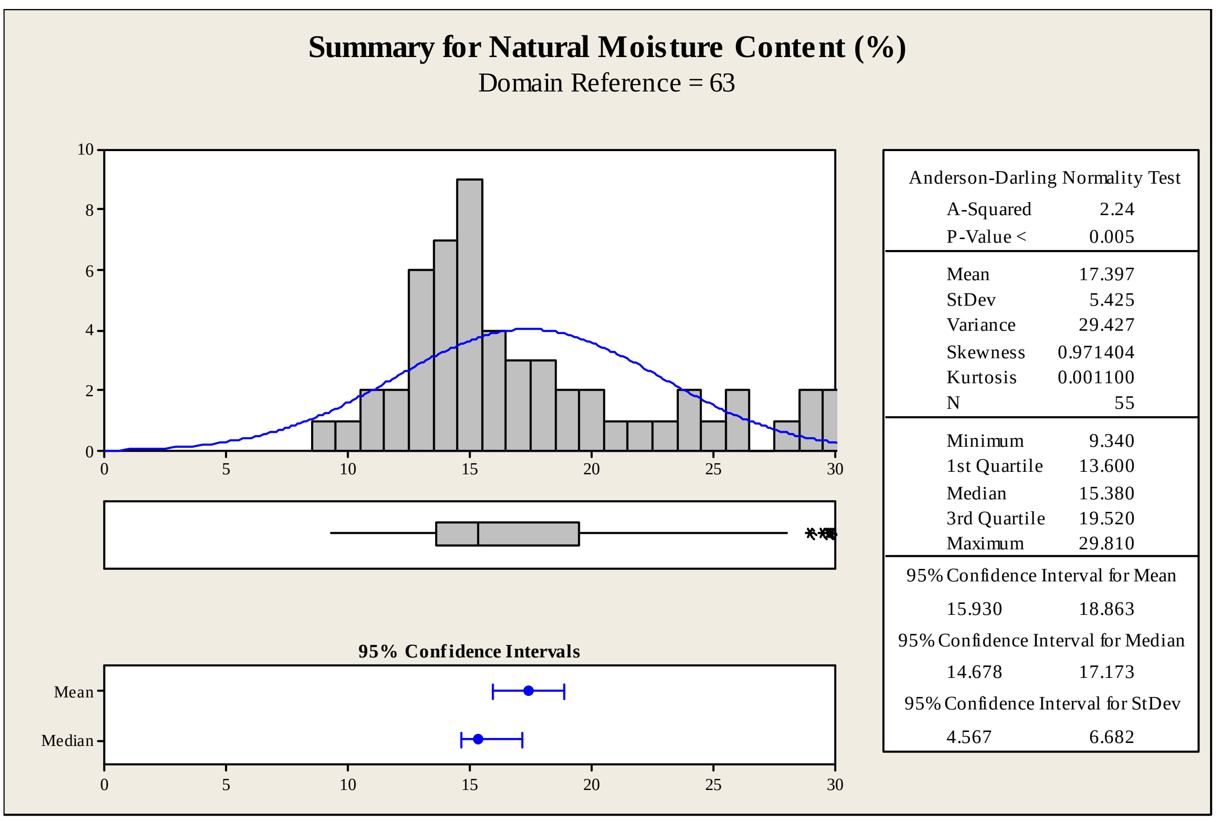

Summary for Natural Moisture Content (%)
Domain Reference = 51
Anderson-Darling Normality Test
A-Squared 0.66
P-Value 0.058
Mean 14.360
StDev 8.765
Variance 76.827
Skewness 1.22400
Kurtosis 0.50245
N 10
Minimum 6.200
1st Quartile 7.425
Median 12.000
3rd Quartile 19.575
Maximum 31.900
95% Confidence Interval for Mean
8.090 20.630
95% Confidence Interval for Median
7.397 20.489
95% Confidence Interval for StDev
6.029 16.002
95% Confidence Intervals
Mean
Median
0 5 10 15 20 25 30 35 40
0 1 2 3

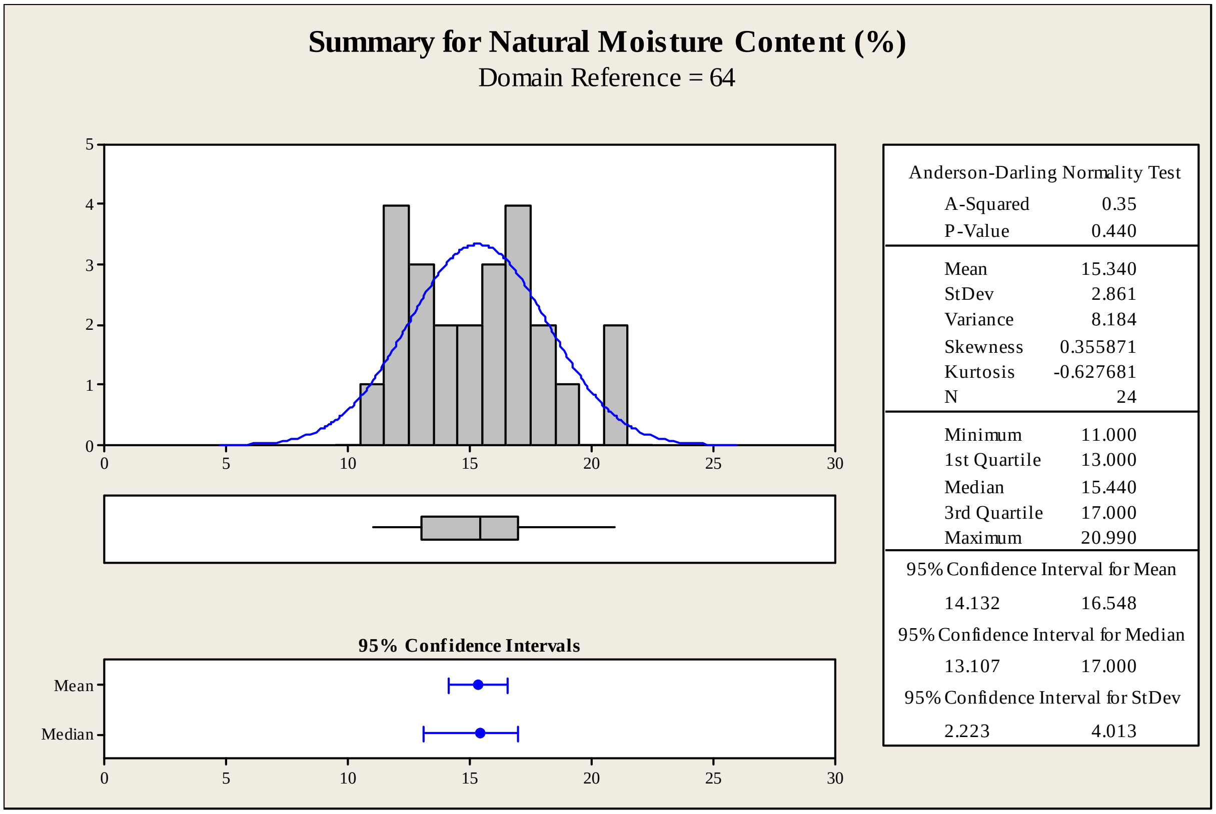


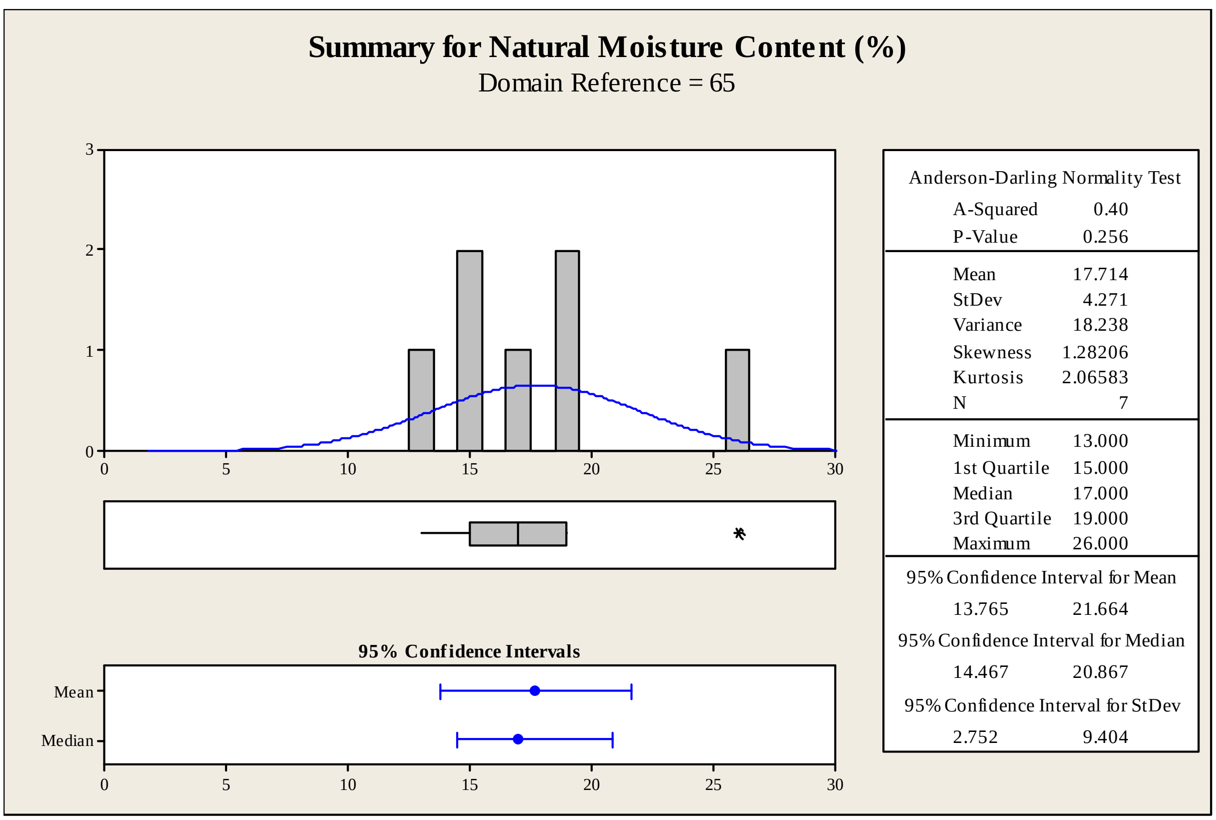
(Domain 53: insufficient data)

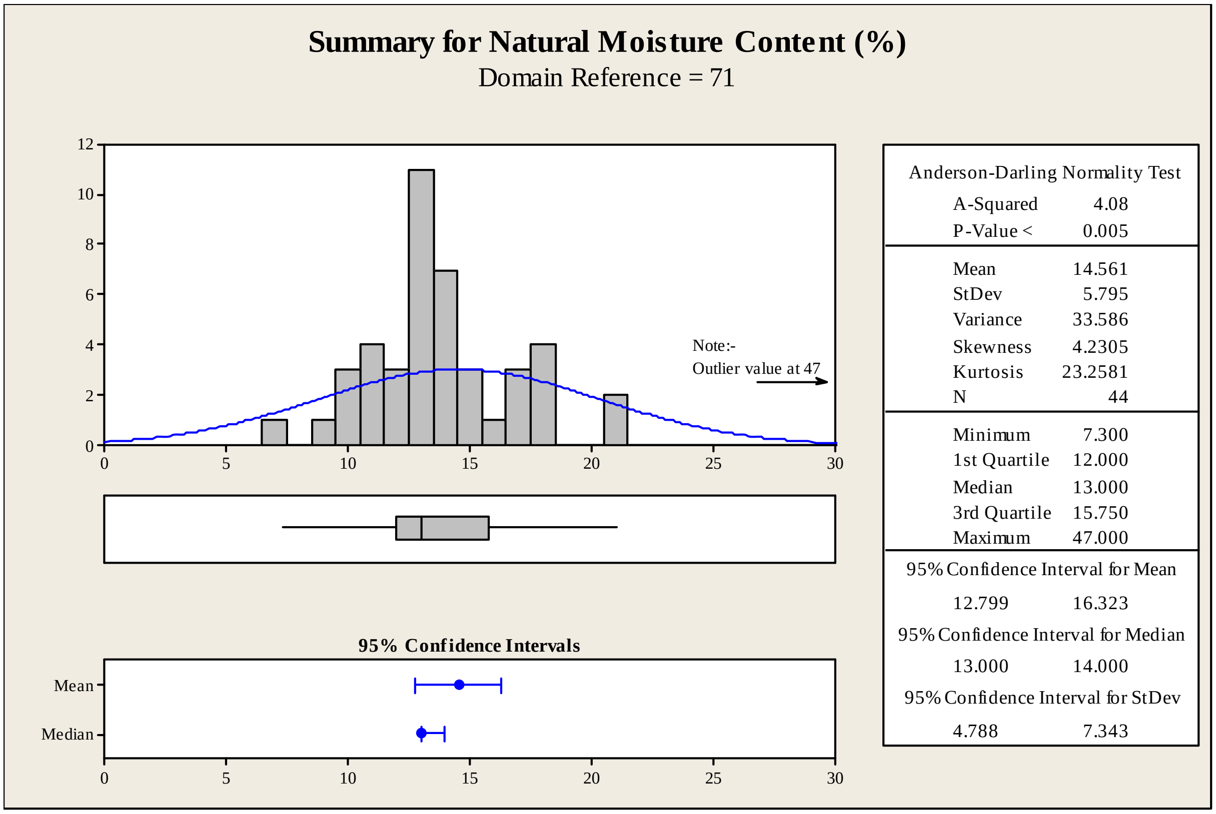


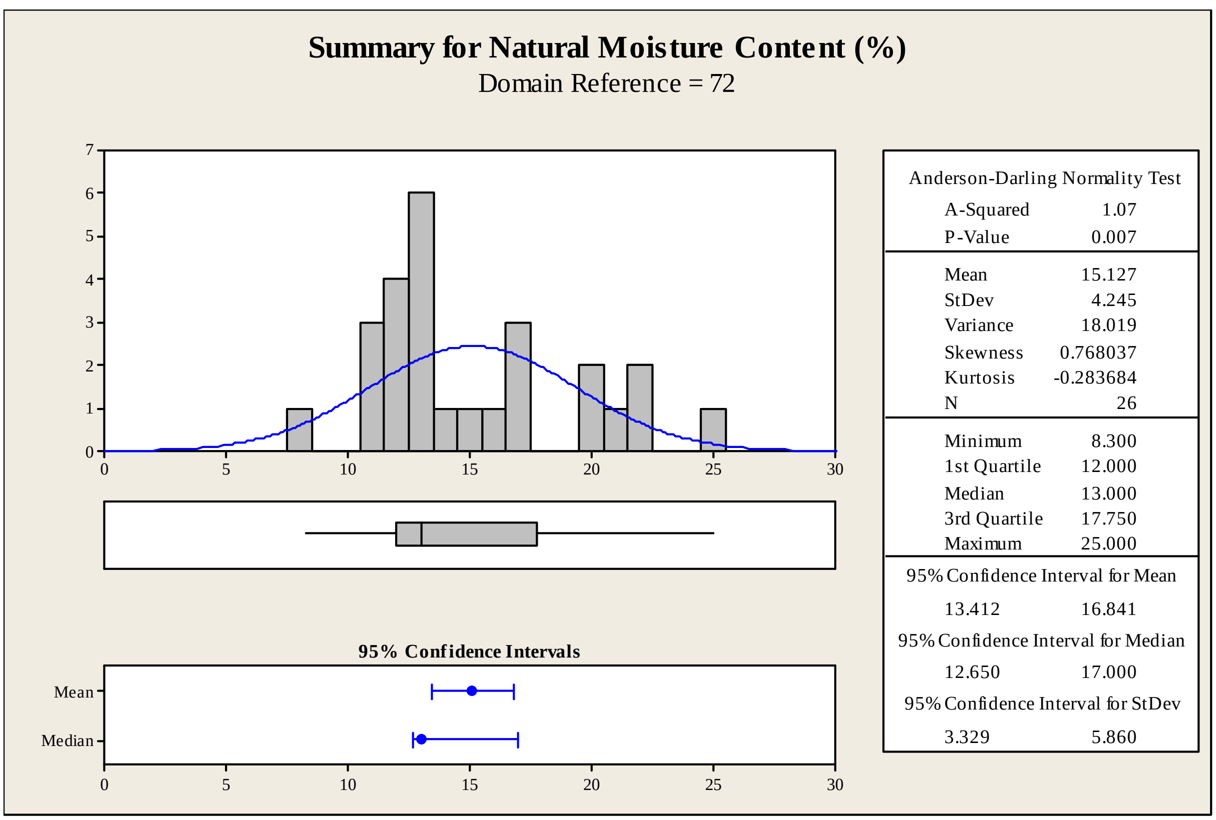

Summary for Natural Moisture Content (%)
Domain Reference = 62
Anderson-Darling Normality Test
A-Squared 2.87
P-Value < 0.005
Mean 16.879
StDev 5.154
Variance 26.560
Skewness 1.20128
Kurtosis 1.70699
N 131
Minimum 8.270
1st Quartile 13.540
Median 15.870
3rd Quartile 19.150
Maximum 35.000
95% Confidence Interval for Mean
15.988 17.770
95% Confidence Interval for Median
15.200 16.700
95% Confidence Interval for StDev
4.596 5.866
95% Confidence Intervals
Mean
Median


Summary for Natural Moisture Content (%)
Domain Reference = 63
Anderson-Darling Normality Test
A-Squared 2.24
P-Value < 0.005
Mean 17.397
StDev 5.425
Variance 29.427
Skewness 0.971404
Kurtosis 0.001100
N 55
Minimum 9.340
1st Quartile 13.600
Median 15.380
3rd Quartile 19.520
Maximum 29.810
95% Confidence Interval for Mean
15.930 18.863
95% Confidence Interval for Median
14.678 17.173
95% Confidence Interval for StDev
4.567 6.682
95% Confidence Intervals
Mean
Median

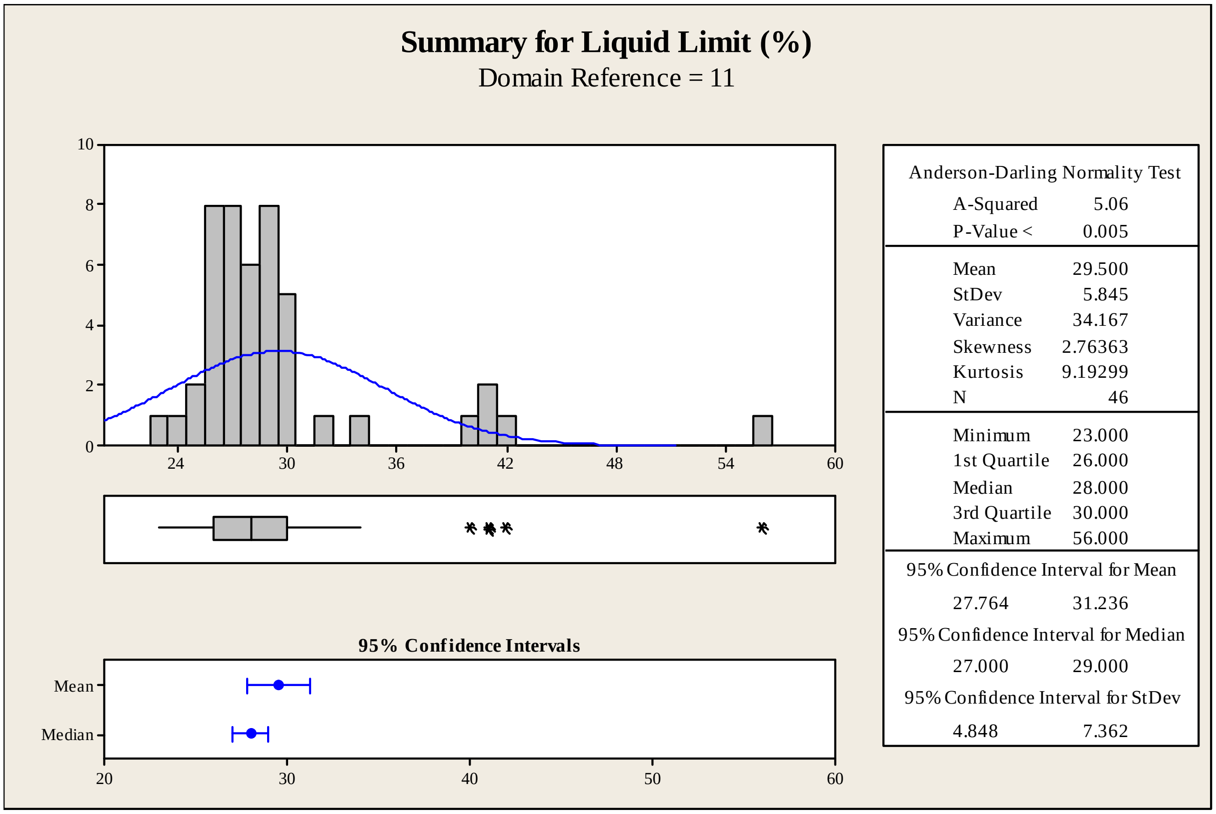

Summary for Natural Moisture Content (%)
Domain Reference = 64
Anderson-Darling Normality Test
A-Squared 0.35
P-Value 0.440
Mean 15.340
StDev 2.861
Variance 8.184
Skewness 0.355871
Kurtosis -0.627681
N 24
Minimum 11.000
1st Quartile 13.000
Median 15.440
3rd Quartile 17.000
Maximum 20.990
95% Confidence Interval for Mean
14.132 16.548
95% Confidence Interval for Median
13.107 17.000
95% Confidence Interval for StDev
2.223 4.013
95% Confidence Intervals
Mean
Median

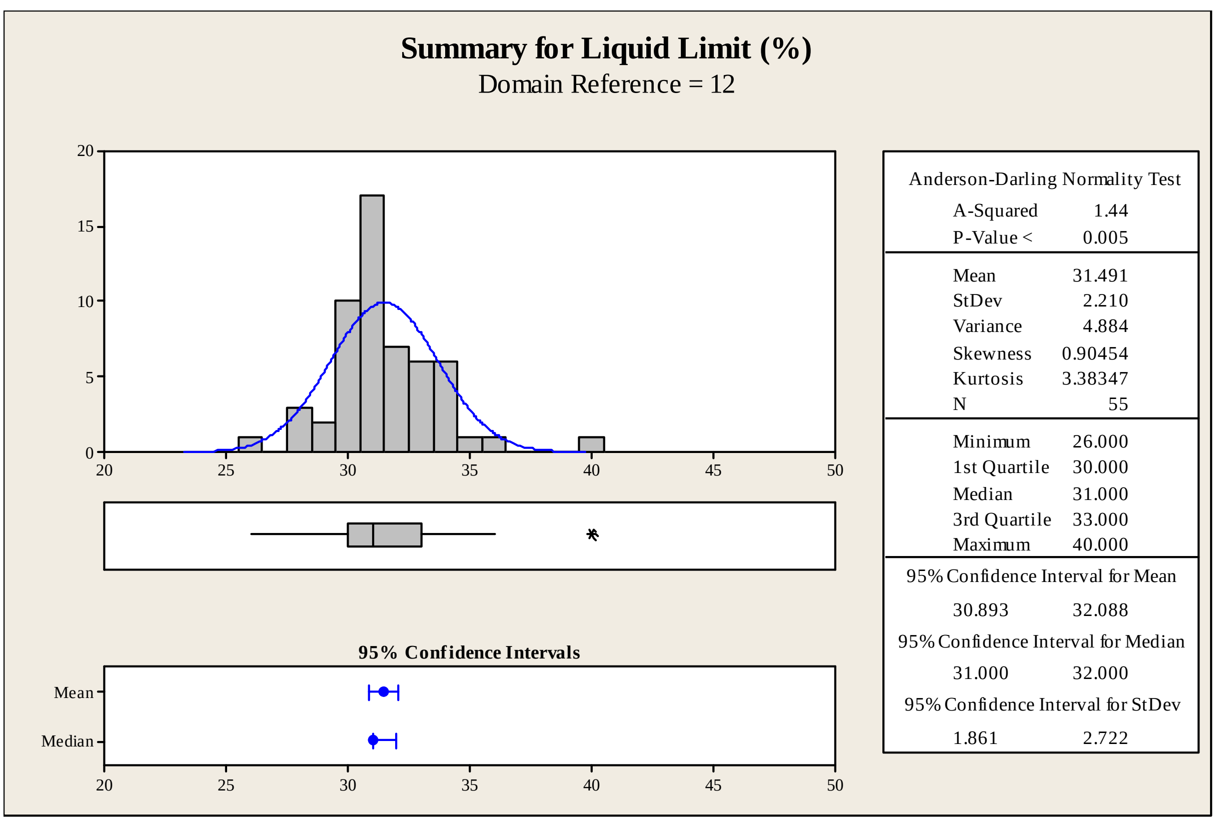

Summary for Natural Moisture Content (%)
Domain Reference = 65
Anderson-Darling Normality Test
A-Squared 0.40
P-Value 0.256
Mean 17.714
StDev 4.271
Variance 18.238
Skewness 1.28206
Kurtosis 2.06583
N 7
Minimum 13.000
1st Quartile 15.000
Median 17.000
3rd Quartile 19.000
Maximum 26.000
95% Confidence Interval for Mean
13.765 21.664
95% Confidence Interval for Median
14.467 20.867
95% Confidence Interval for StDev
2.752 9.404
95% Confidence Intervals
Mean
Median


Summary for Natural Moisture Content (%)
Domain Reference = 71
Note:-
Outlier value at 47
95% Confidence Intervals
Mean
Median
Anderson-Darling Normality Test
A-Squared 4.08
P-Value < 0.005
Mean 14.561
StDev 5.795
Variance 33.586
Skewness 4.2305
Kurtosis 23.2581
N 44
Minimum 7.300
1st Quartile 12.000
Median 13.000
3rd Quartile 15.750
Maximum 47.000
95% Confidence Interval for Mean
12.799 16.323
95% Confidence Interval for Median
13.000 14.000
95% Confidence Interval for StDev
4.788 7.343

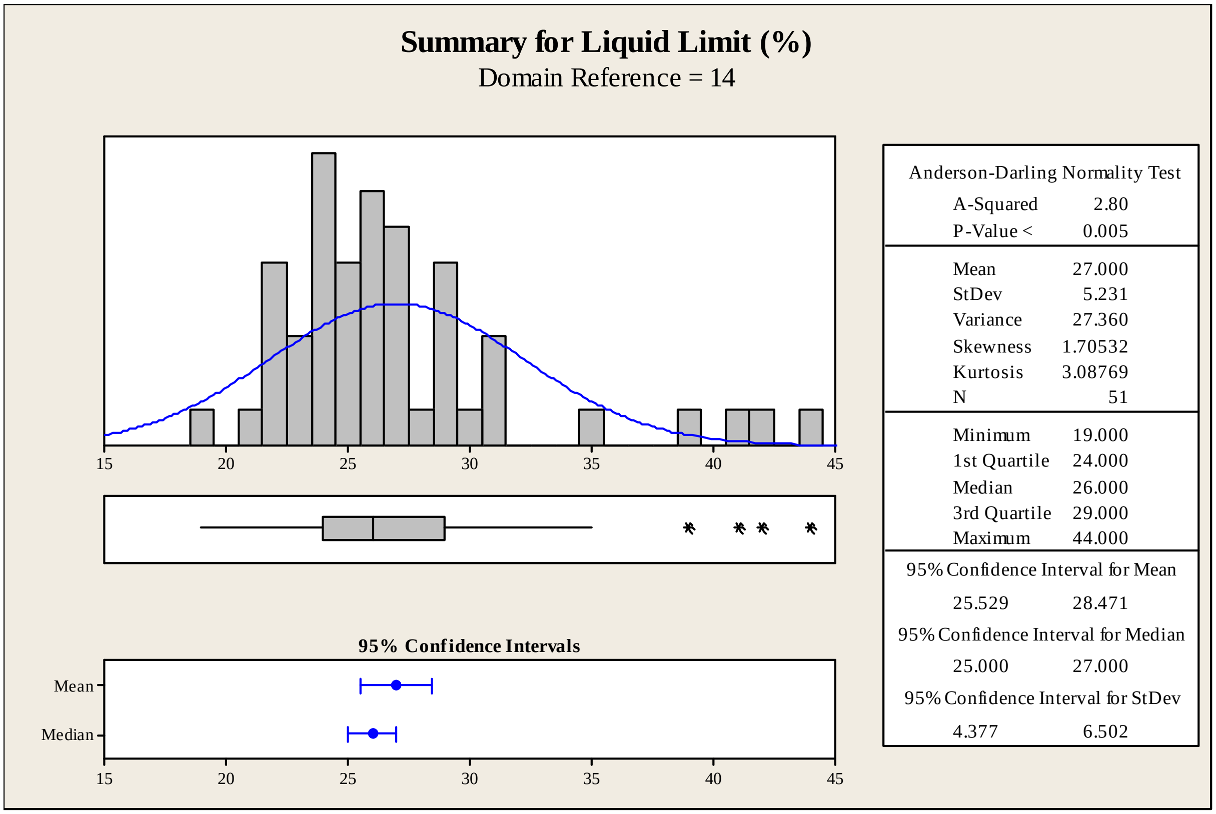

Summary for Natural Moisture Content (%)
Domain Reference = 72
95% Confidence Intervals
Mean
Median
Anderson-Darling Normality Test
A-Squared 1.07
P-Value 0.007
Mean 15.127
StDev 4.245
Variance 18.019
Skewness 0.768037
Kurtosis -0.283684
N 26
Minimum 8.300
1st Quartile 12.000
Median 13.000
3rd Quartile 17.750
Maximum 25.000
95% Confidence Interval for Mean
13.412 16.841
95% Confidence Interval for Median
12.650 17.000
95% Confidence Interval for StDev
3.329 5.860

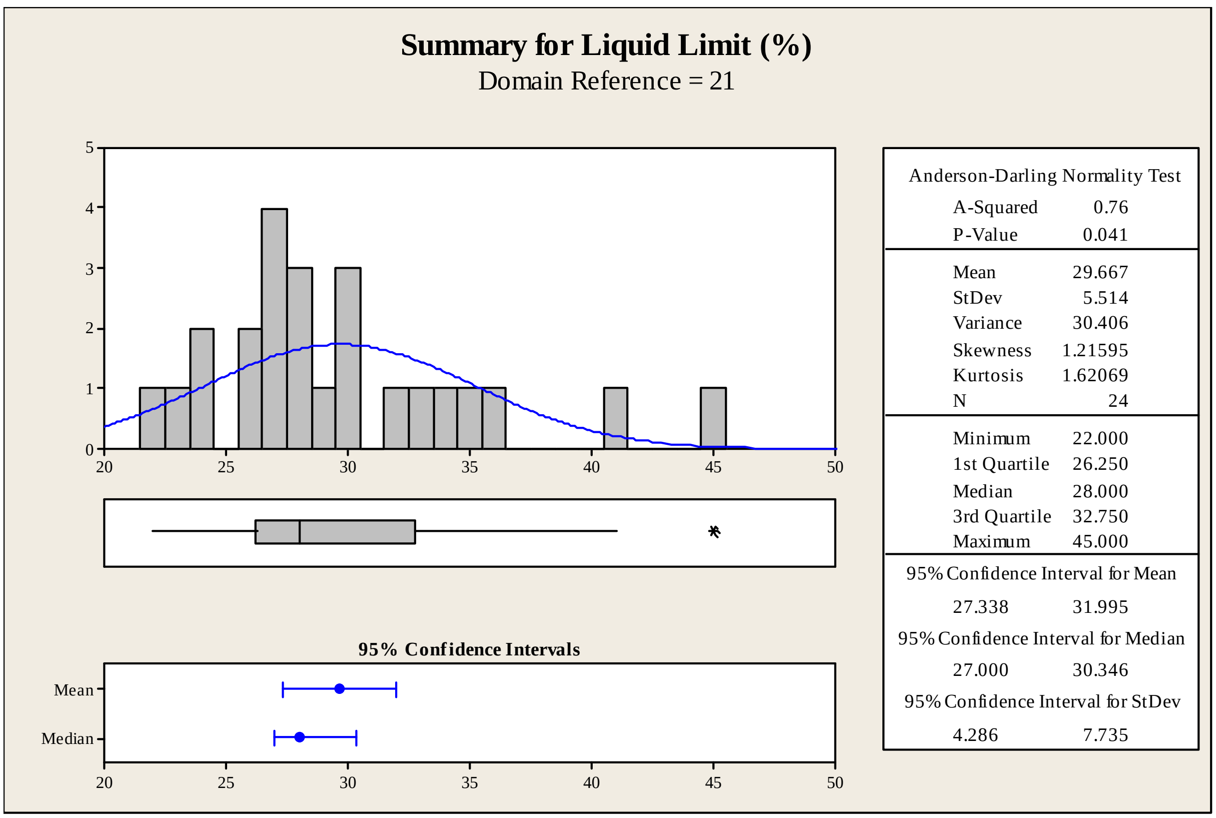
Liquid Limit

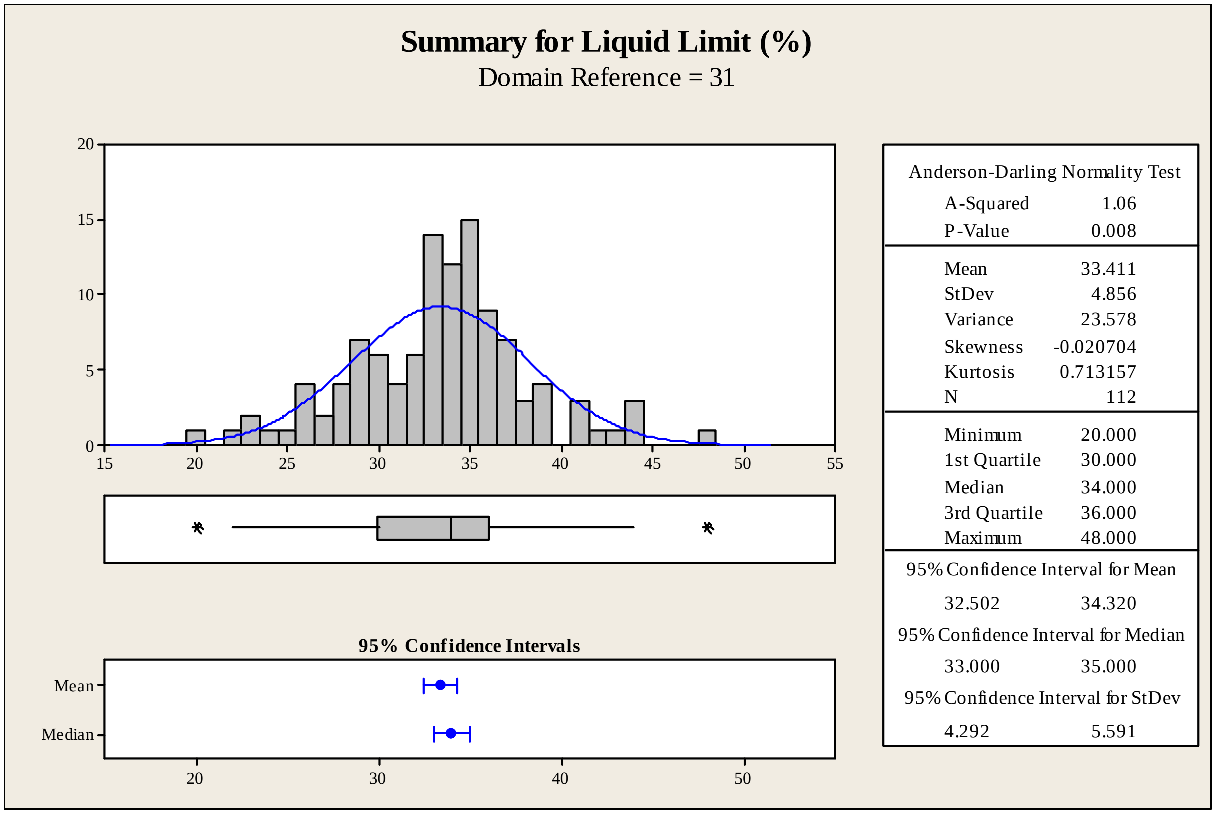


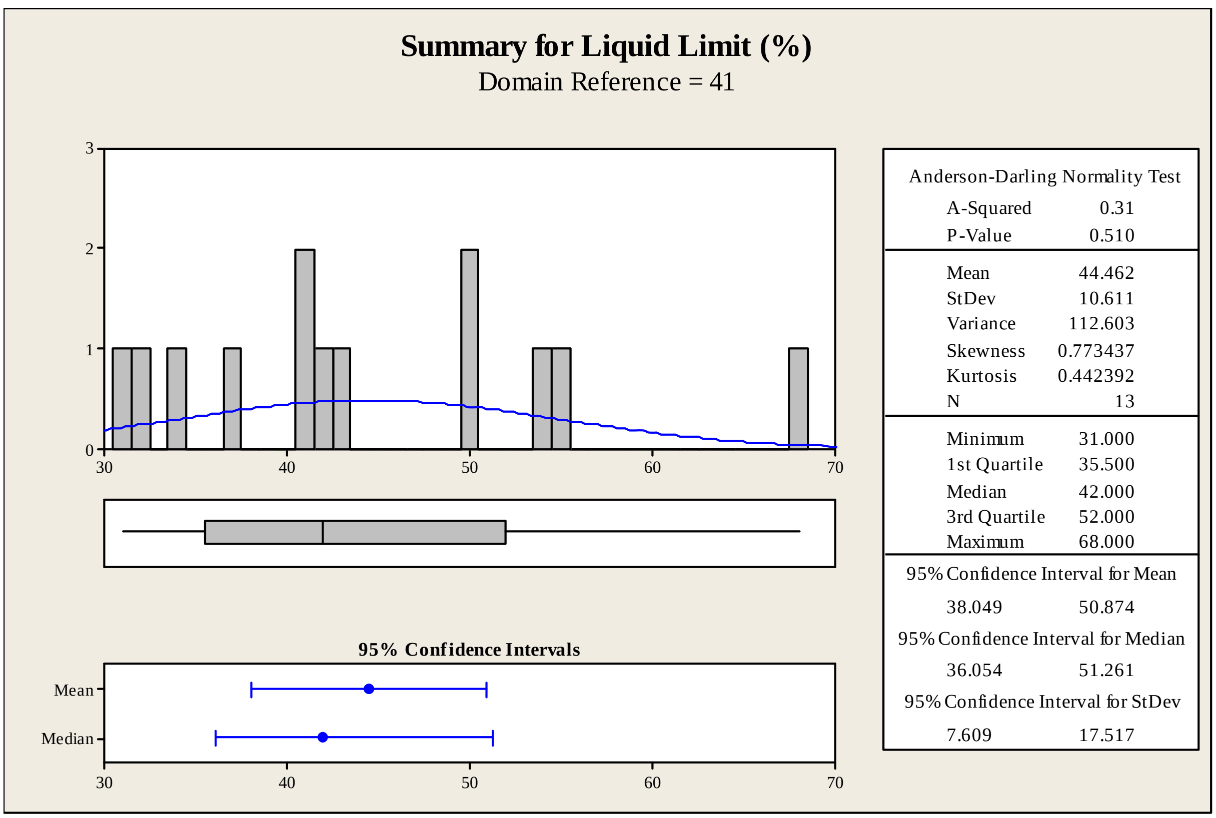


(Domain 13: insufficient data)

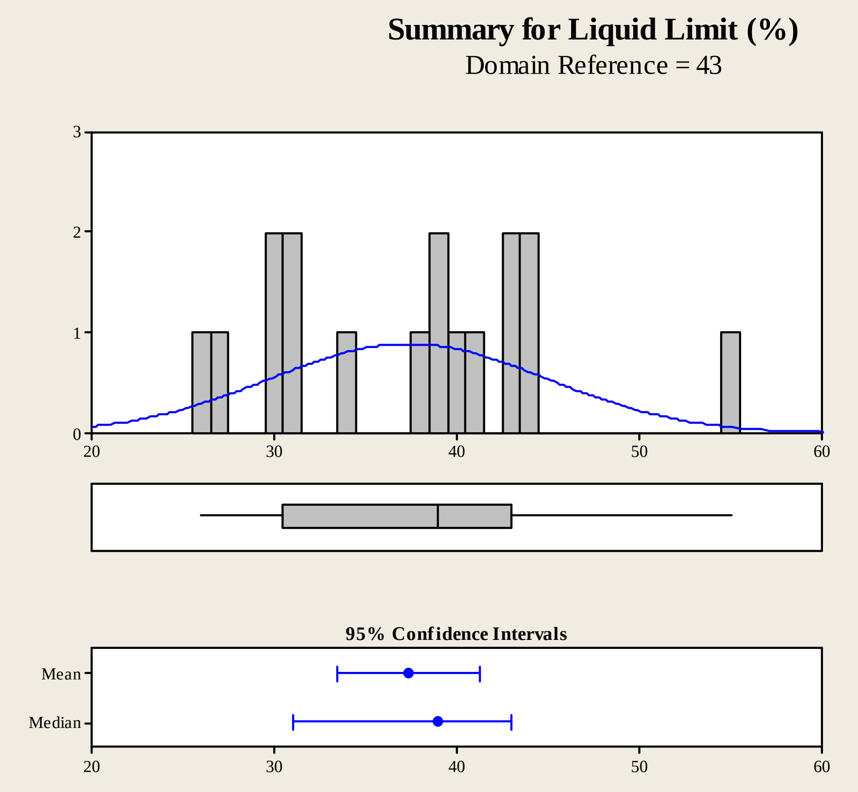




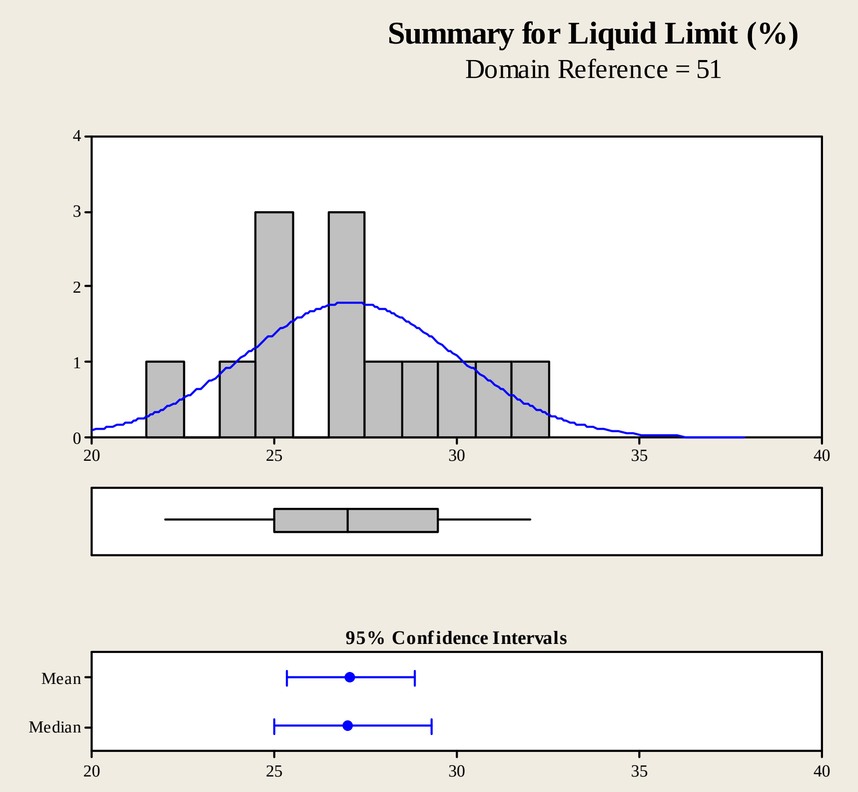

Summary for Liquid Limit (%)
Domain Reference = 31
Anderson-Darling Normality Test
A-Squared 1.06
P-Value 0.008
Mean 33.411
StDev 4.856
Variance 23.578
Skewness -0.020704
Kurtosis 0.713157
N 112
Minimum 20.000
1st Quartile 30.000
Median 34.000
3rd Quartile 36.000
Maximum 48.000
95% Confidence Interval for Mean
32.502 34.320
95% Confidence Interval for Median
33.000 35.000
95% Confidence Interval for StDev
4.292 5.591
95% Confidence Intervals
Mean
Median
0 5 10 15 20
15 20 25 30 35 40 45 50 55
20 30 40 50


Summary for Liquid Limit (%)
Domain Reference = 41
Anderson-Darling Normality Test
A-Squared 0.31
P-Value 0.510
Mean 44.462
StDev 10.611
Variance 112.603
Skewness 0.773437
Kurtosis 0.442392
N 13
Minimum 31.000
1st Quartile 35.500
Median 42.000
3rd Quartile 52.000
Maximum 68.000
95% Confidence Interval for Mean
38.049 50.874
95% Confidence Interval for Median
36.054 51.261
95% Confidence Interval for StDev
7.609 17.517
95% Confidence Intervals
Mean
Median
0 1 2 3
30 40 50 60 70
30 40 50 60 70

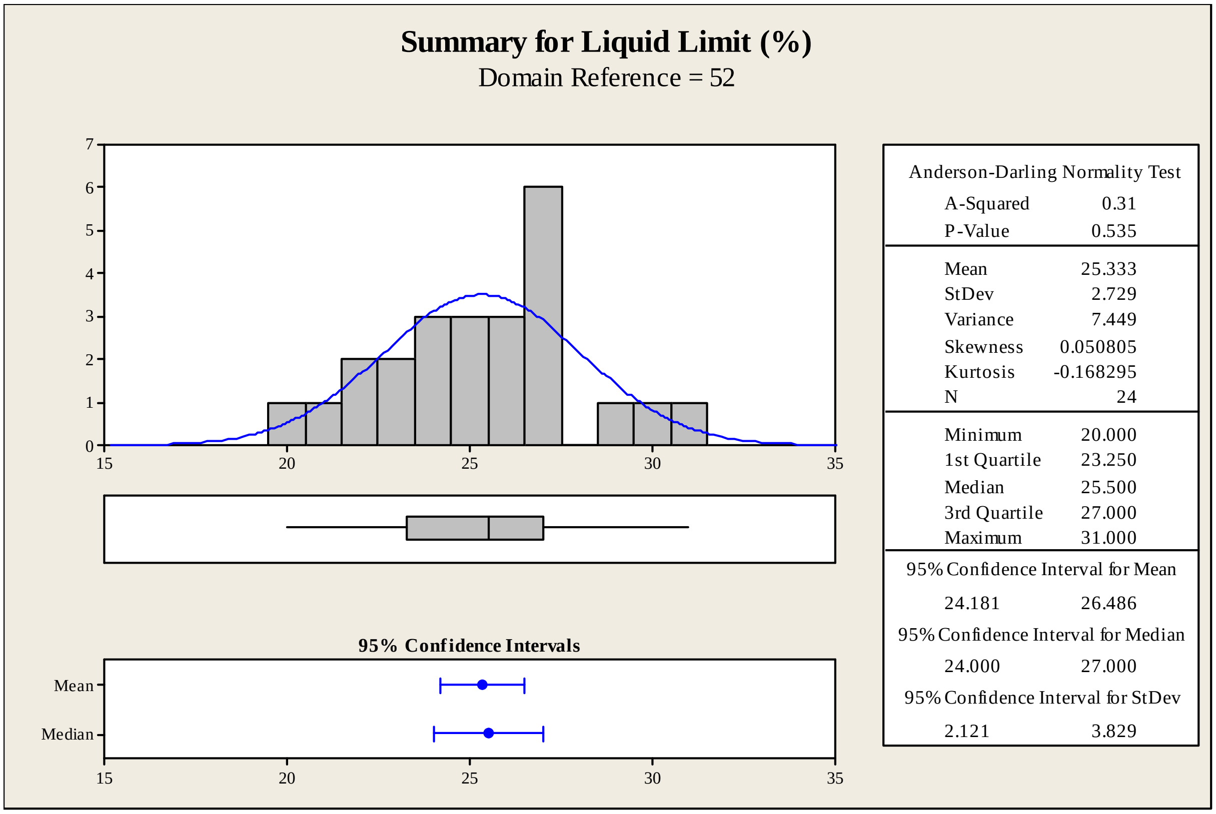
(Domain 42: insufficient data)



Anderson-Darling Normality Test	
A-Squared	0.41
P-Value	0.309
Mean	37.353
StDev	7.607
Variance	57.868
Skewness	0.418513
Kurtosis	0.163722
N	17
Minimum	26.000
1st Quartile	30.500
Median	39.000
3rd Quartile	43.000
Maximum	55.000
95% Confidence Interval for Mean	
33.442	41.264
95% Confidence Interval for Median	
31.000	42.952
95% Confidence Interval for StDev	
5.666	11.577



Anderson-Darling Normality Test	
A-Squared	0.22
P-Value	0.792
Mean	27.077
StDev	2.900
Variance	8.410
Skewness	0.103791
Kurtosis	-0.571536
N	13
Minimum	22.000
1st Quartile	25.000
Median	27.000
3rd Quartile	29.500
Maximum	32.000
95% Confidence Interval for Mean	
25.324	28.829
95% Confidence Interval for Median	
25.000	29.315
95% Confidence Interval for StDev	
2.080	4.787

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(Domain 53: insufficient data; Domain 61: no data)
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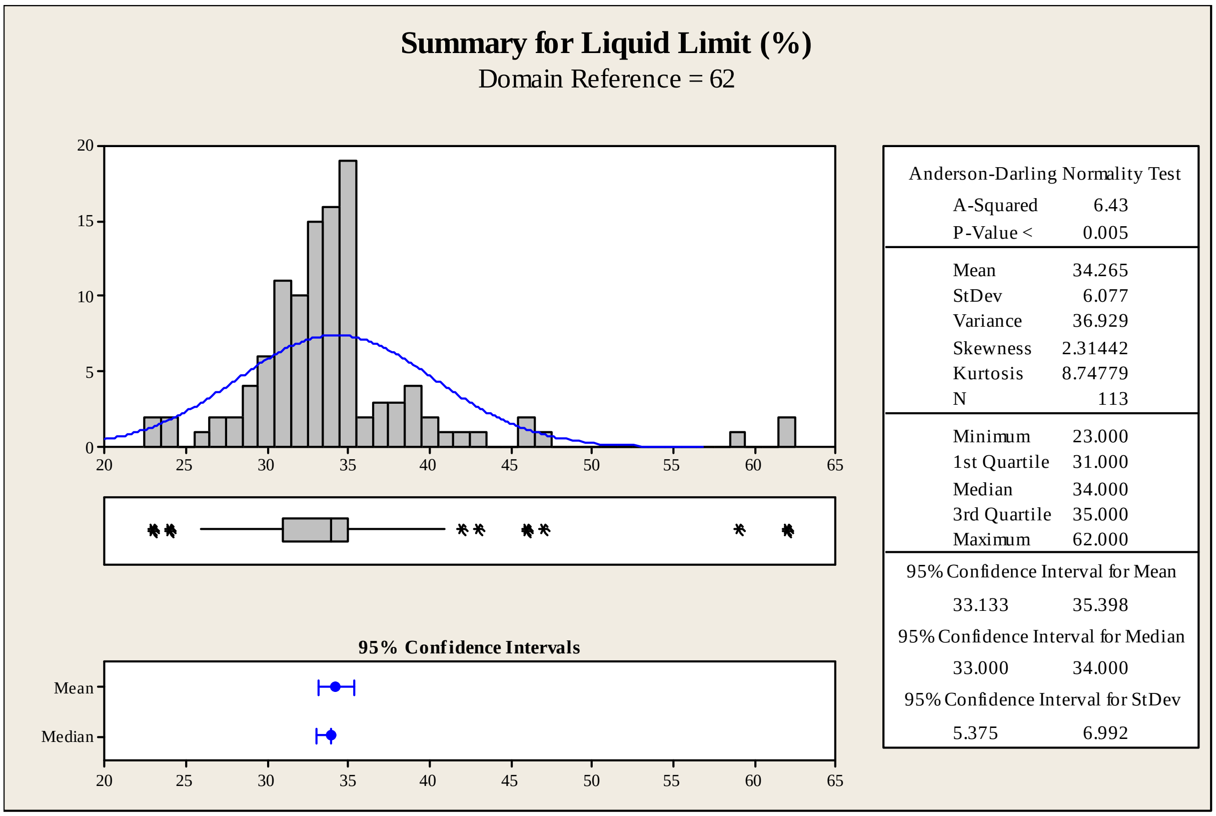
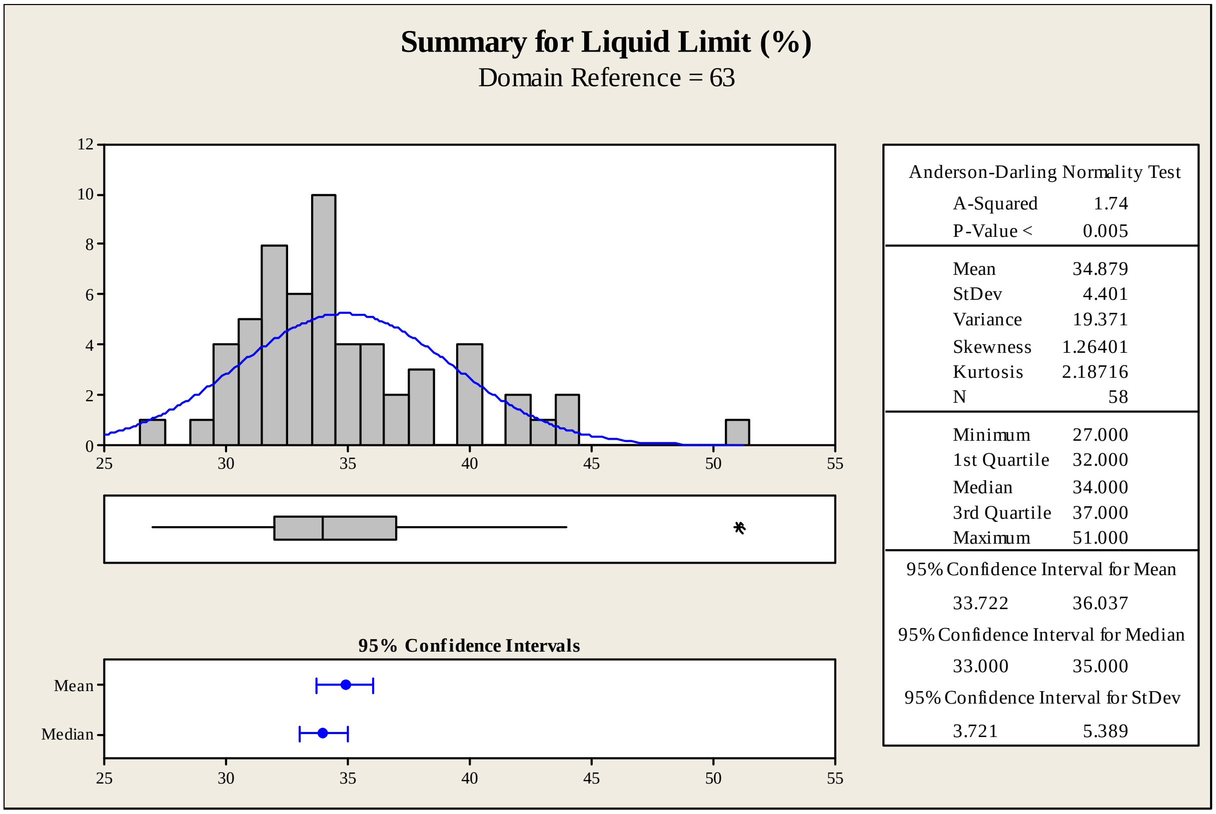
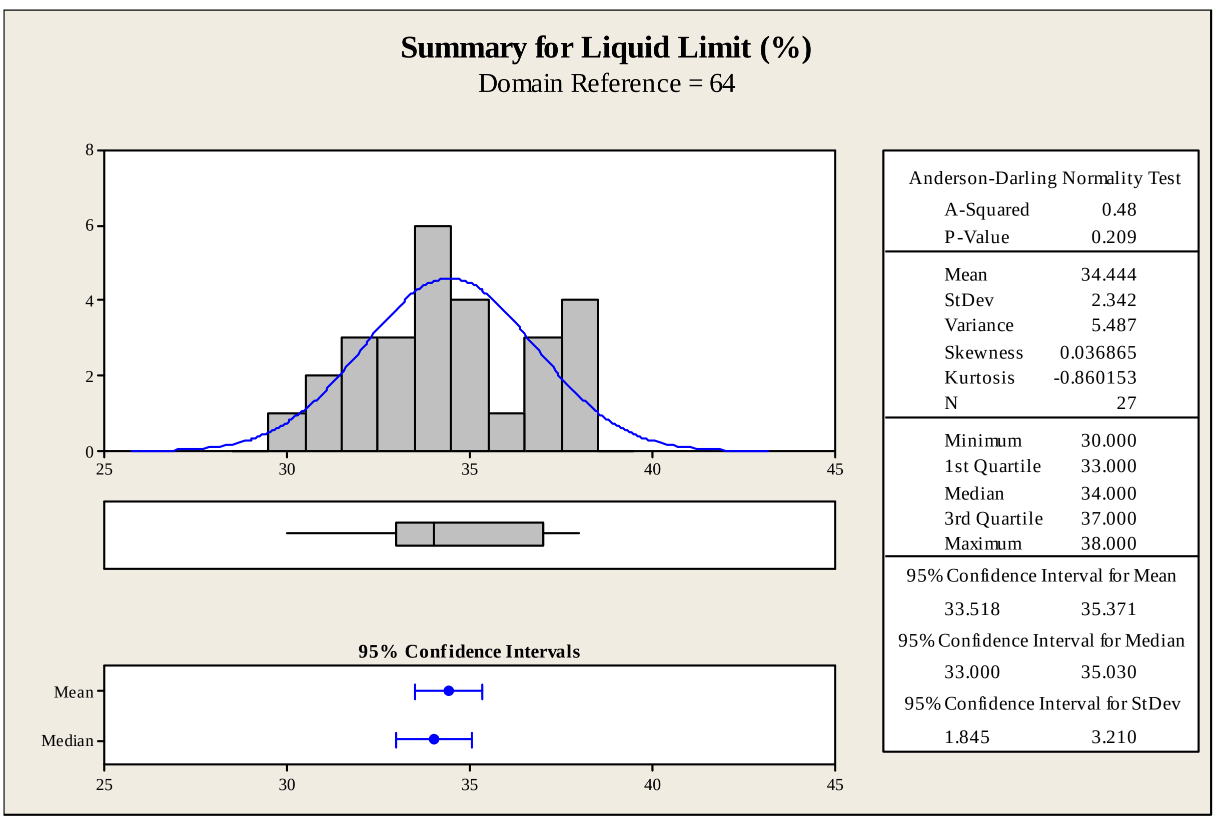
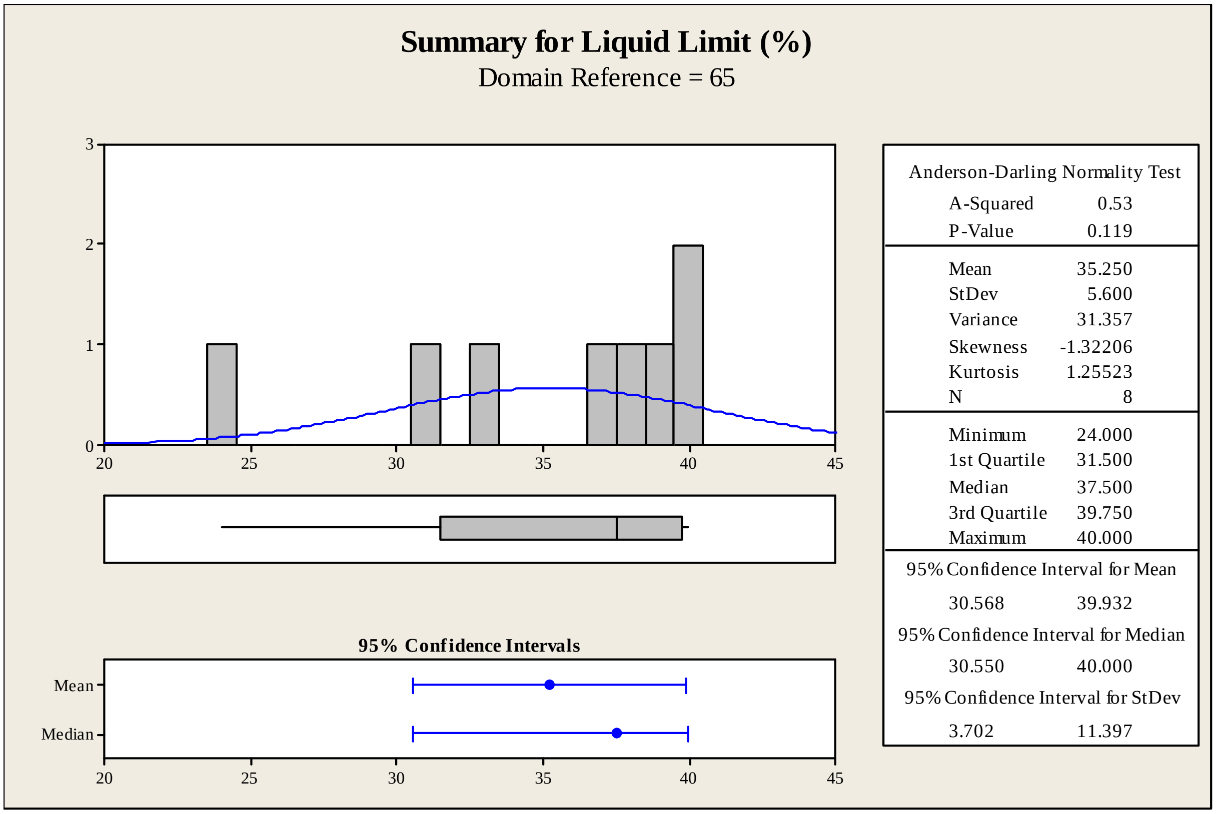



Summary for Liquid Limit (%)
Domain Reference = 63
Anderson-Darling Normality Test
A-Squared 1.74
P-Value < 0.005
Mean 34.879
StDev 4.401
Variance 19.371
Skewness 1.26401
Kurtosis 2.18716
N 58
Minimum 27.000
1st Quartile 32.000
Median 34.000
3rd Quartile 37.000
Maximum 51.000
95% Confidence Interval for Mean
33.722 36.037
95% Confidence Interval for Median
33.000 35.000
95% Confidence Interval for StDev
3.721 5.389
95% Confidence Intervals
Mean
Median
0
2
4
6
8
10
12
25
30
35
40
45
50
55


Summary for Liquid Limit (%)
Domain Reference = 64
Anderson-Darling Normality Test
A-Squared 0.48
P-Value 0.209
Mean 34.444
StDev 2.342
Variance 5.487
Skewness 0.036865
Kurtosis -0.860153
N 27
Minimum 30.000
1st Quartile 33.000
Median 34.000
3rd Quartile 37.000
Maximum 38.000
95% Confidence Interval for Mean
33.518 35.371
95% Confidence Interval for Median
33.000 35.030
95% Confidence Interval for StDev
1.845 3.210
95% Confidence Intervals
Mean
Median
0
2
4
6
8
25
30
35
40
45


Summary for Liquid Limit (%)
Domain Reference = 65
Anderson-Darling Normality Test
A-Squared 0.53
P-Value 0.119
Mean 35.250
StDev 5.600
Variance 31.357
Skewness -1.32206
Kurtosis 1.25523
N 8
Minimum 24.000
1st Quartile 31.500
Median 37.500
3rd Quartile 39.750
Maximum 40.000
95% Confidence Interval for Mean
30.568 39.932
95% Confidence Interval for Median
30.550 40.000
95% Confidence Interval for StDev
3.702 11.397
95% Confidence Intervals
Mean
Median
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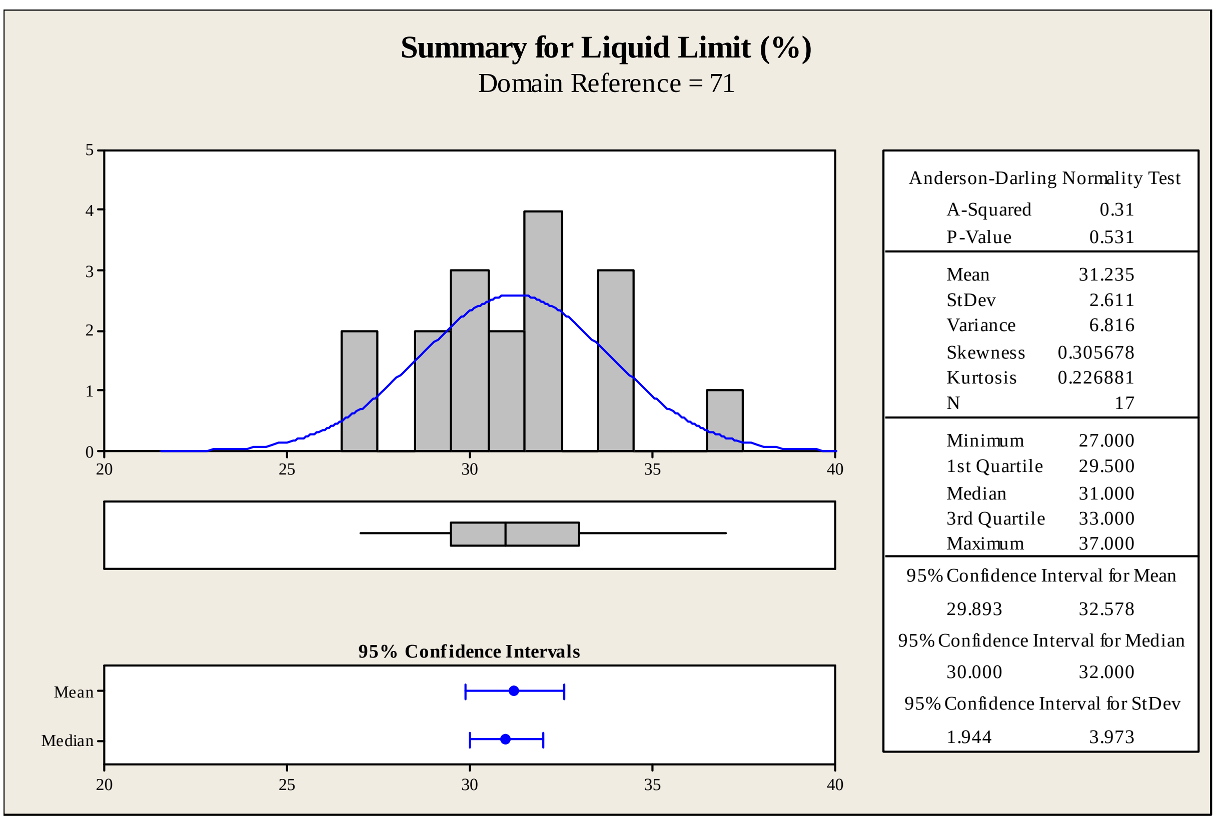
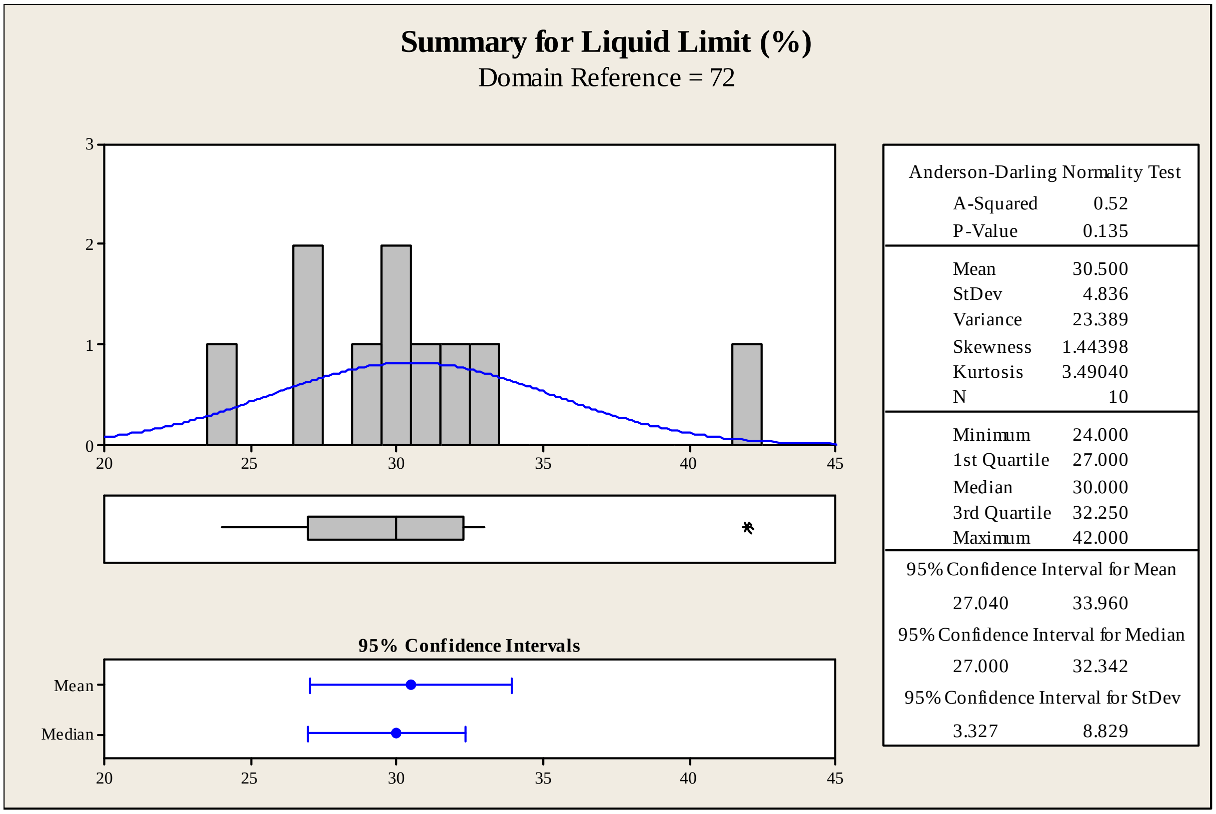
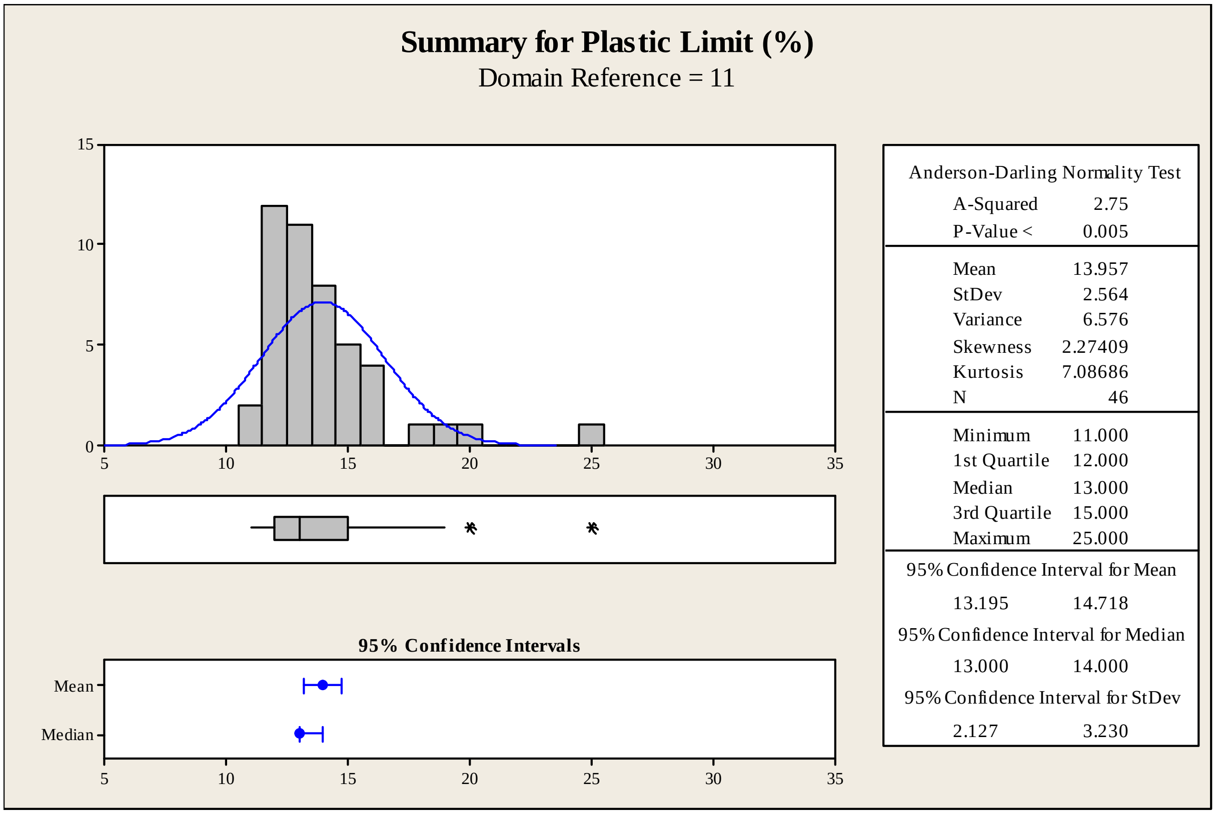
25
30
35
40
45

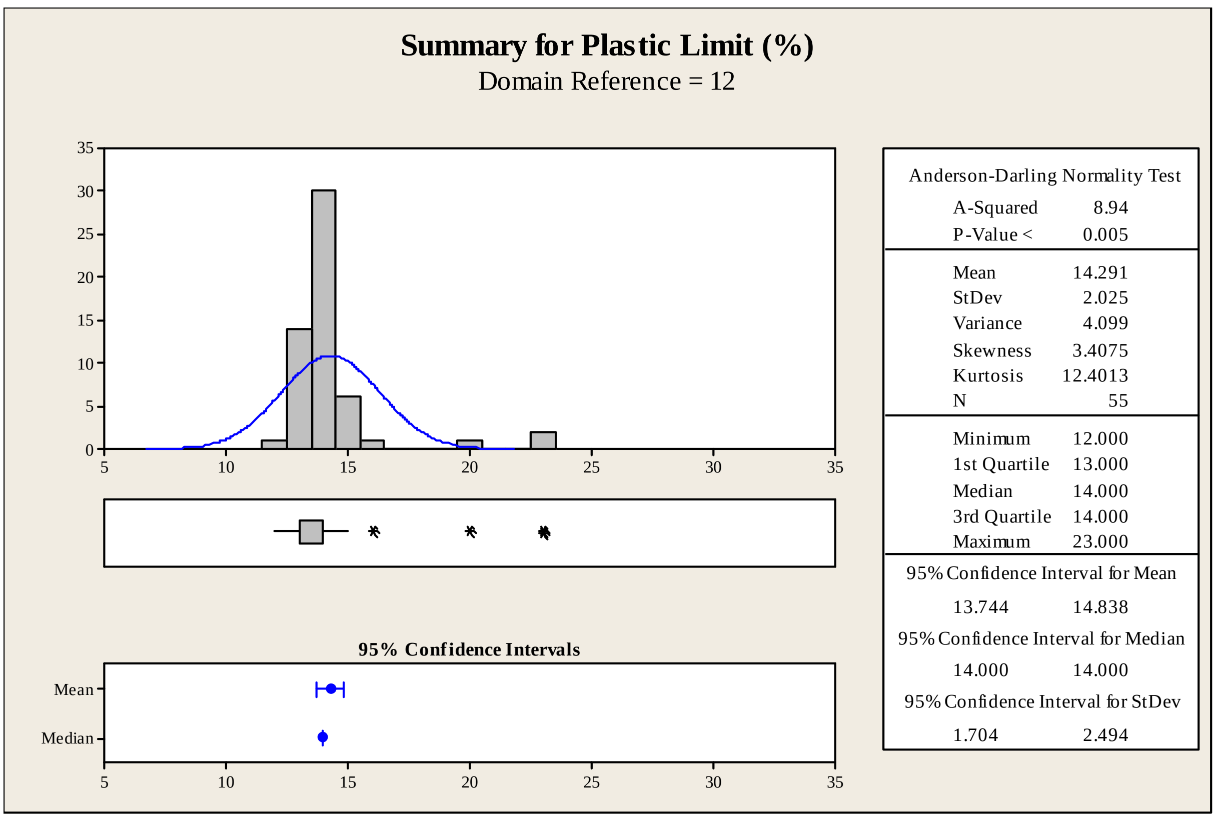

Summary for Liquid Limit (%)
Domain Reference = 71
Anderson-Darling Normality Test
A-Squared 0.31
P-Value 0.531
Mean 31.235
StDev 2.611
Variance 6.816
Skewness 0.305678
Kurtosis 0.226881
N 17
Minimum 27.000
1st Quartile 29.500
Median 31.000
3rd Quartile 33.000
Maximum 37.000
95% Confidence Interval for Mean
29.893 32.578
95% Confidence Interval for Median
30.000 32.000
95% Confidence Interval for StDev
1.944 3.973
95% Confidence Intervals
Mean
Median
0
1
2
3
4
5
20
25
30
35
40



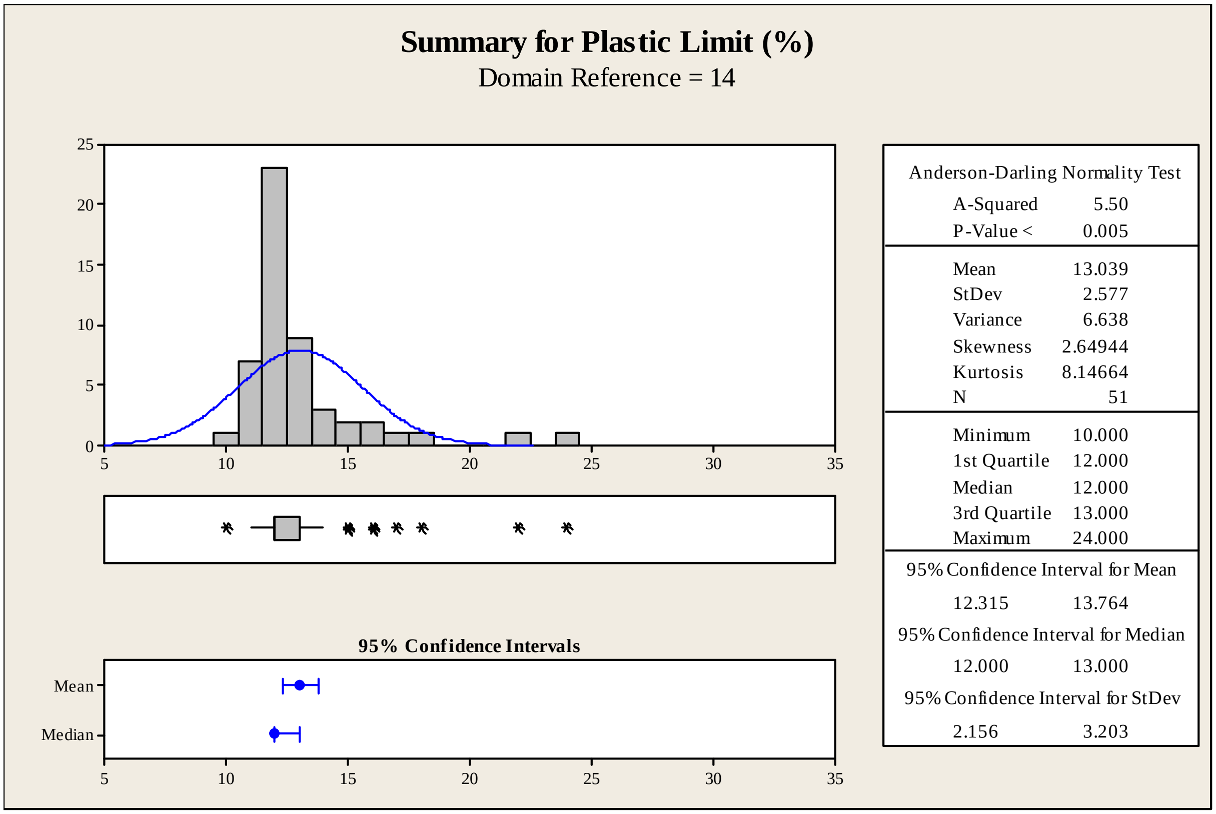
Summary for Liquid Limit (%)
Domain Reference = 72
Anderson-Darling Normality Test
A-Squared 0.52
P-Value 0.135
Mean 30.500
StDev 4.836
Variance 23.389
Skewness 1.44398
Kurtosis 3.49040
N 10
Minimum 24.000
1st Quartile 27.000
Median 30.000
3rd Quartile 32.250
Maximum 42.000
95% Confidence Interval for Mean
27.040 33.960
95% Confidence Interval for Median
27.000 32.342
95% Confidence Interval for StDev
3.327 8.829
95% Confidence Intervals
Mean
Median
20 25 30 35 40 45

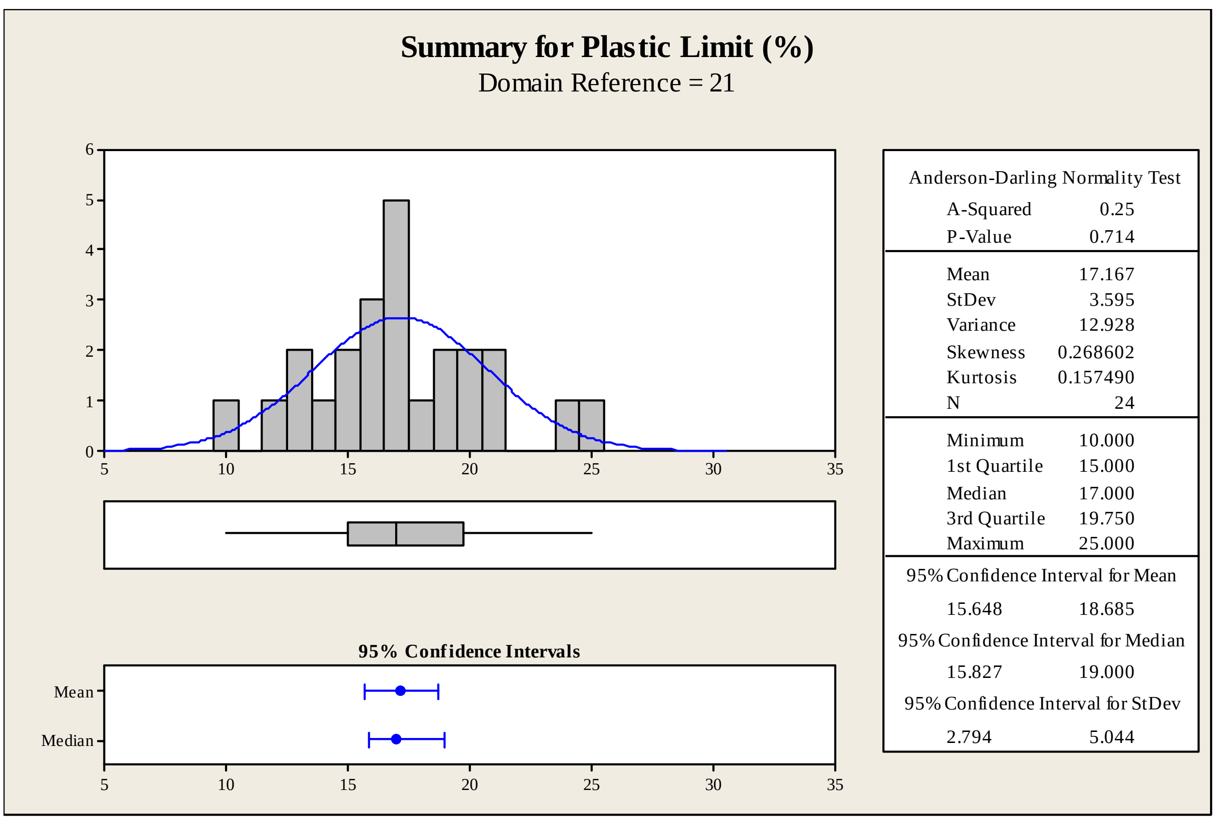
Plastic Limit

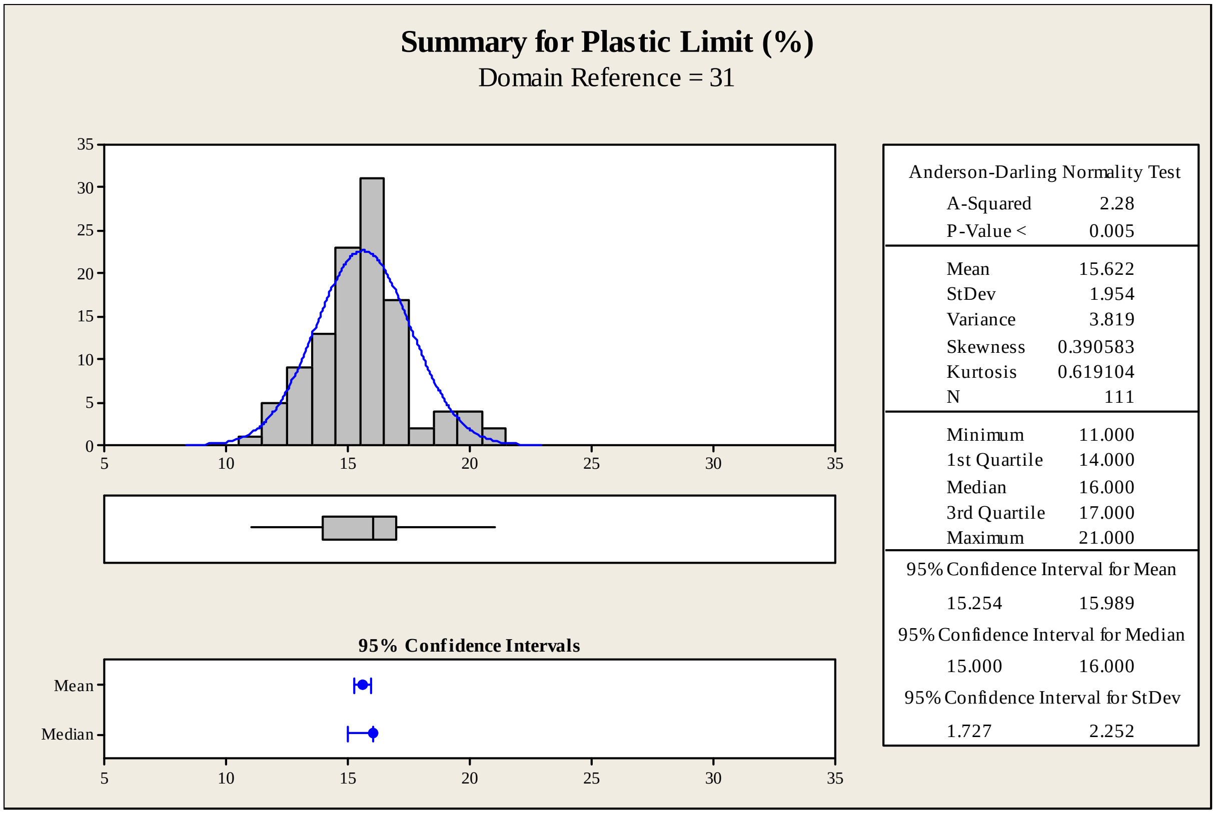


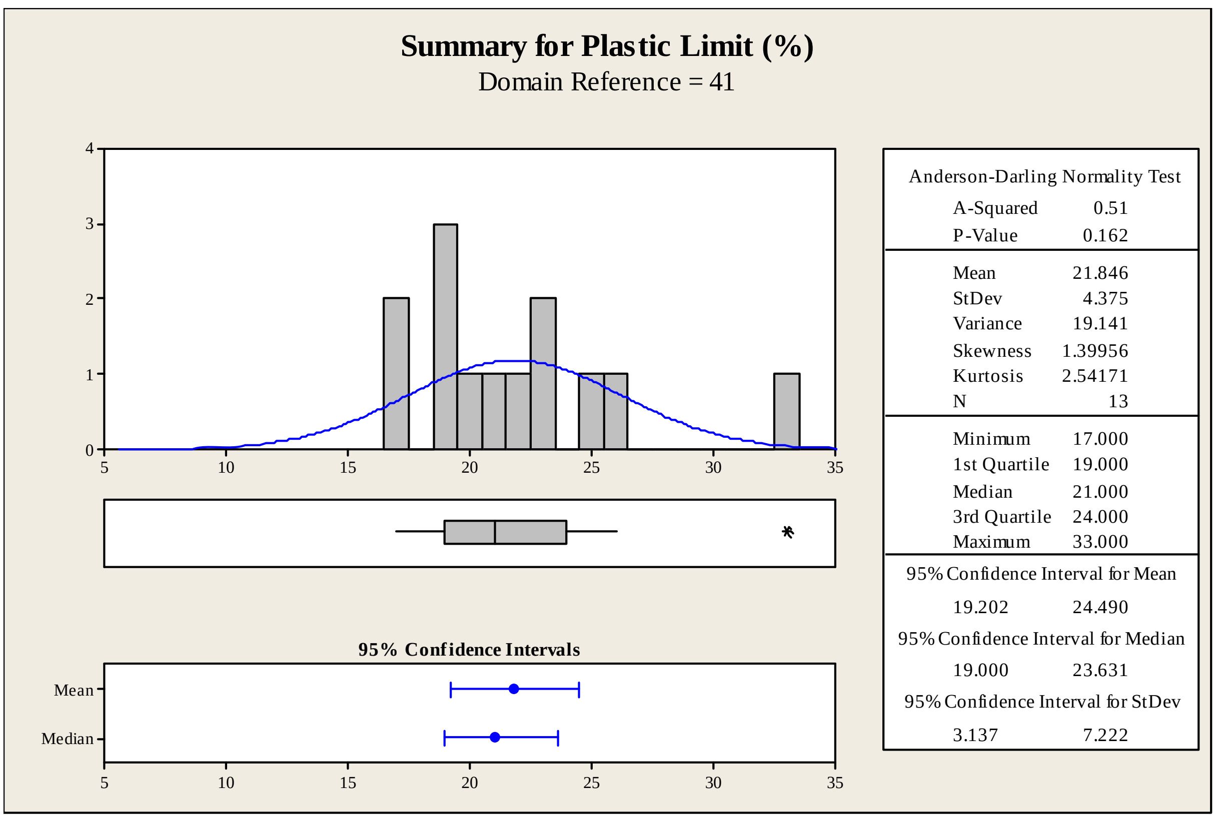


(Domain 13: insufficient data)

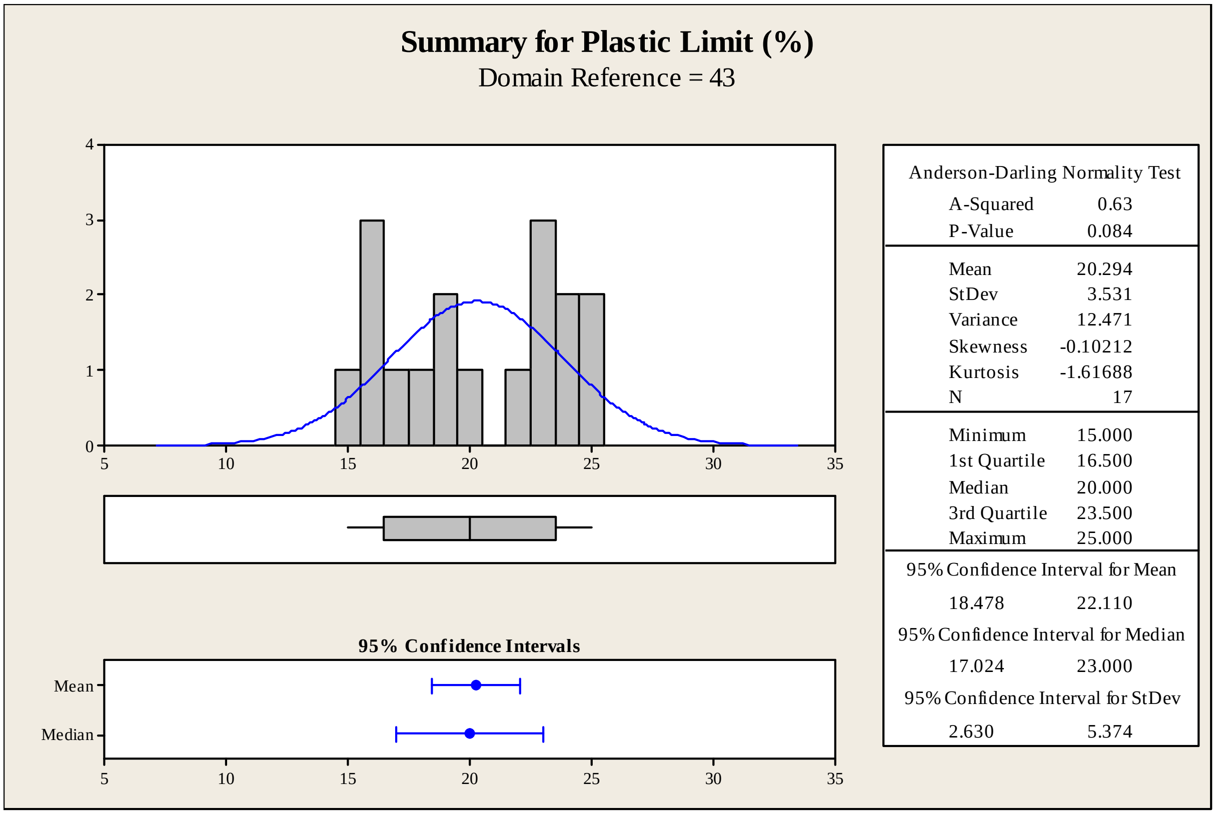


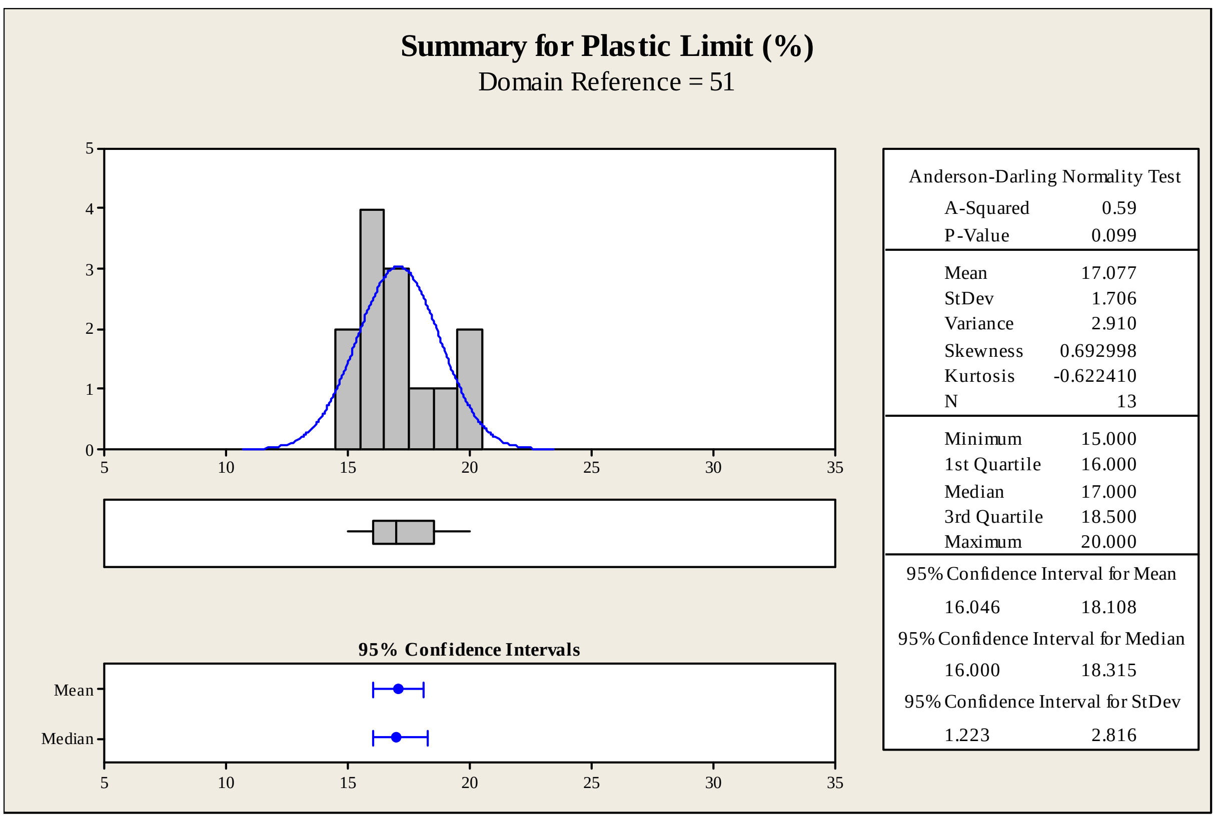


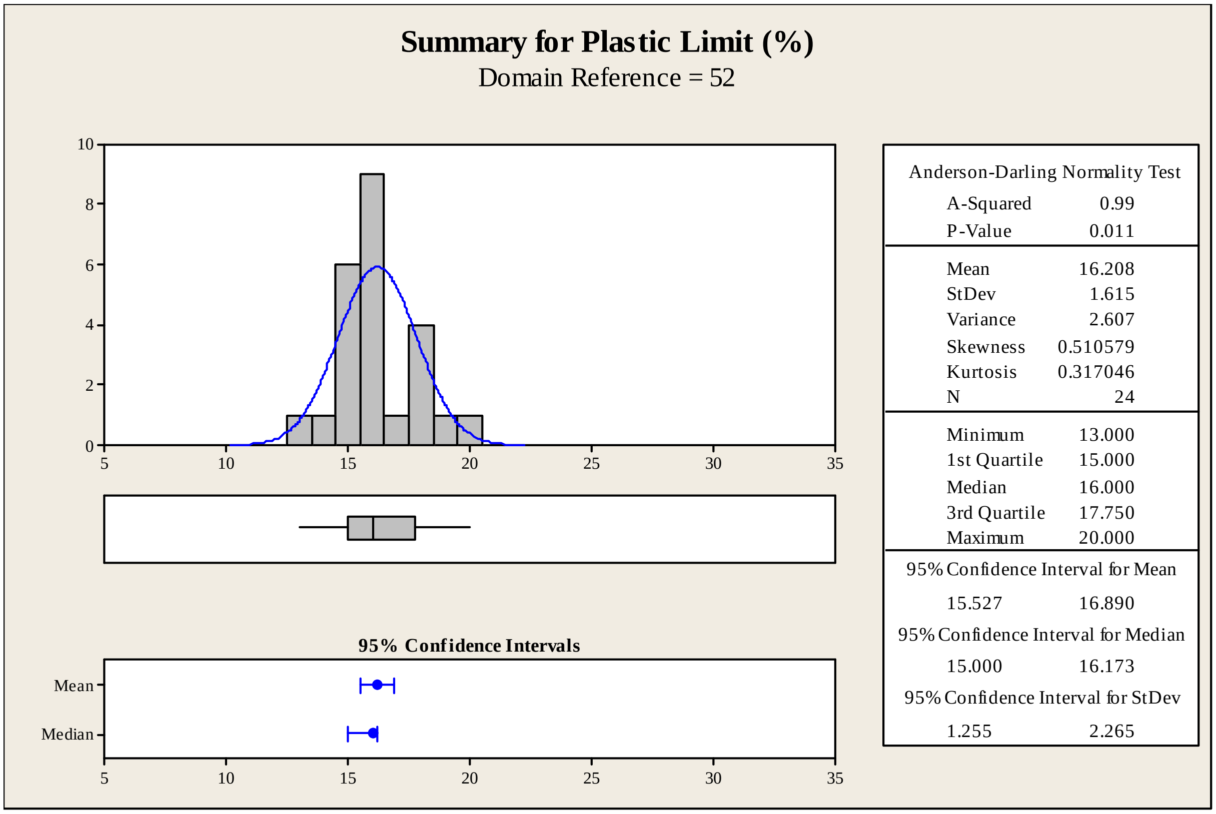

Summary for Plastic Limit (%)
Domain Reference = 31
Anderson-Darling Normality Test
A-Squared 2.28
P-Value < 0.005
Mean 15.622
StDev 1.954
Variance 3.819
Skewness 0.390583
Kurtosis 0.619104
N 111
Minimum 11.000
1st Quartile 14.000
Median 16.000
3rd Quartile 17.000
Maximum 21.000
95% Confidence Interval for Mean
15.254 15.989
95% Confidence Interval for Median
15.000 16.000
95% Confidence Interval for StDev
1.727 2.252
95% Confidence Intervals
Mean
Median


Summary for Plastic Limit (%)
Domain Reference = 41
Anderson-Darling Normality Test
A-Squared 0.51
P-Value 0.162
Mean 21.846
StDev 4.375
Variance 19.141
Skewness 1.39956
Kurtosis 2.54171
N 13
Minimum 17.000
1st Quartile 19.000
Median 21.000
3rd Quartile 24.000
Maximum 33.000
95% Confidence Interval for Mean
19.202 24.490
95% Confidence Interval for Median
19.000 23.631
95% Confidence Interval for StDev
3.137 7.222
95% Confidence Intervals
Mean
Median

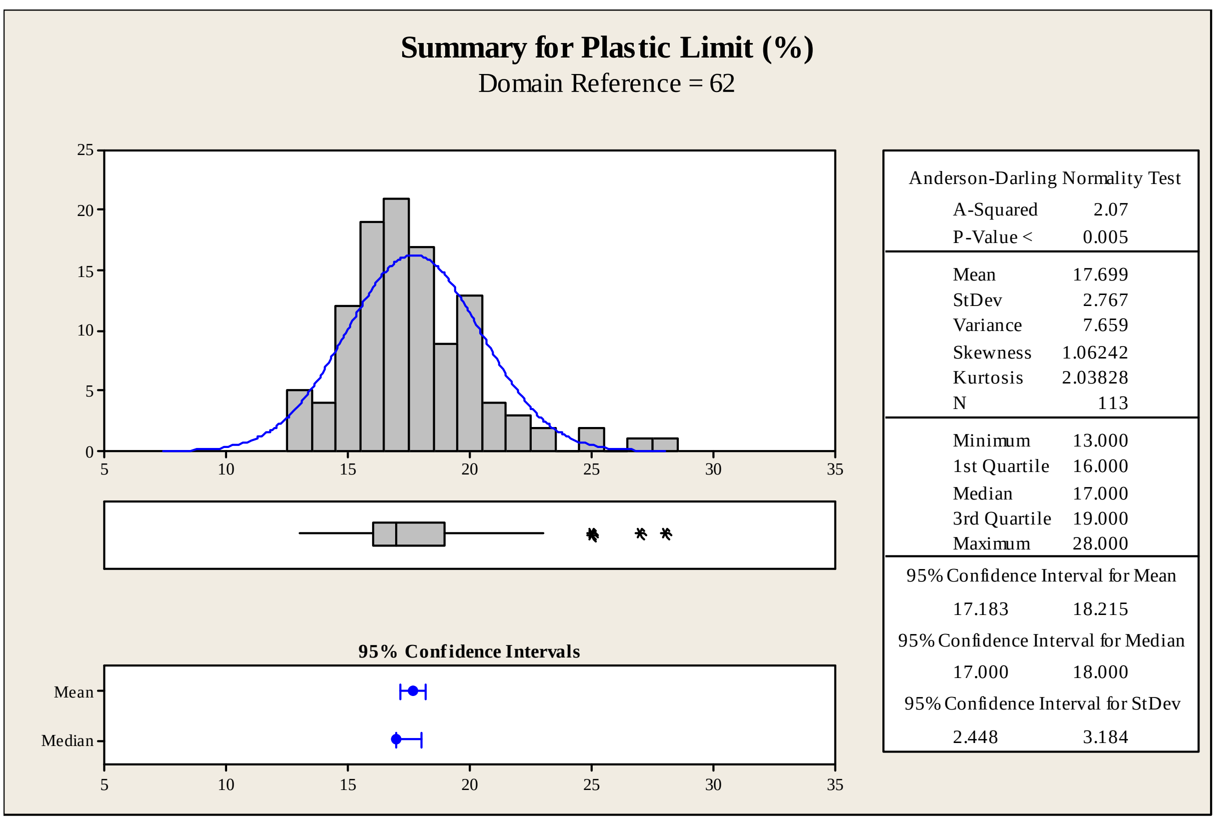
(Domain 42: insufficient data)

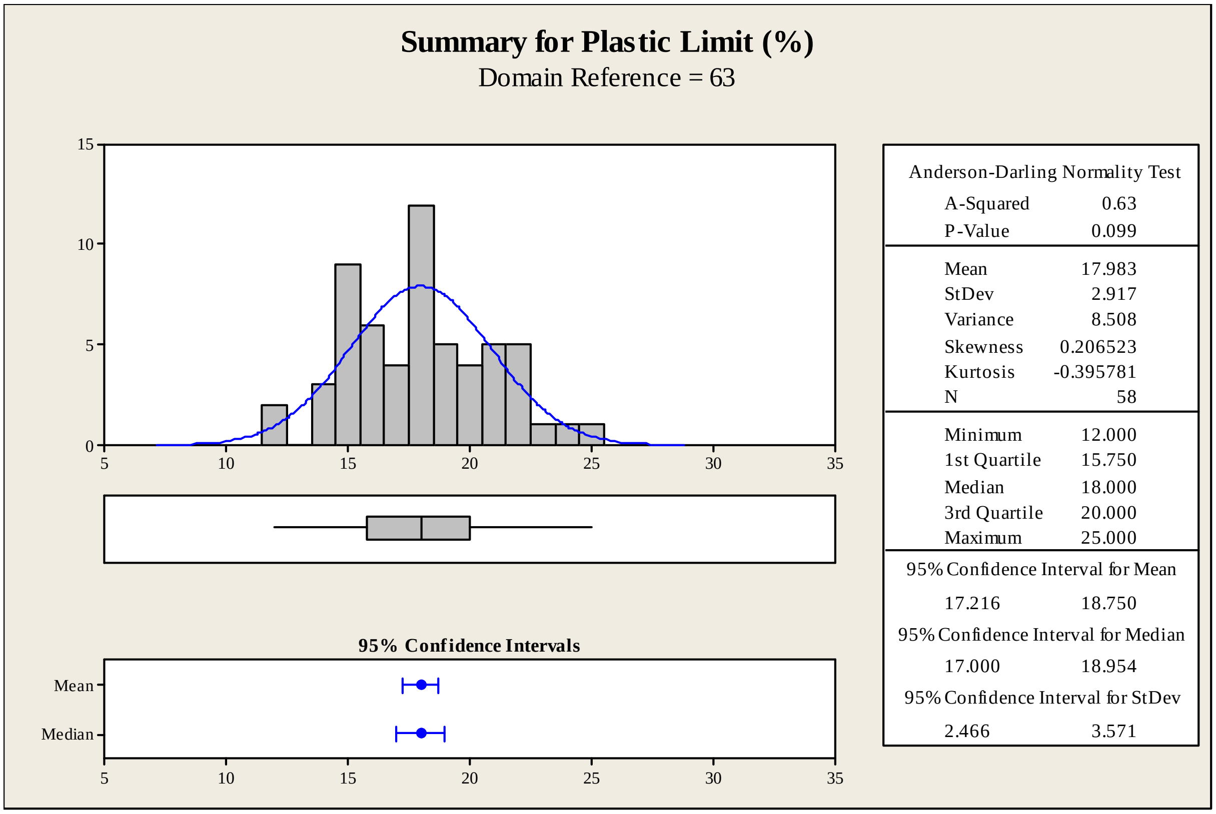


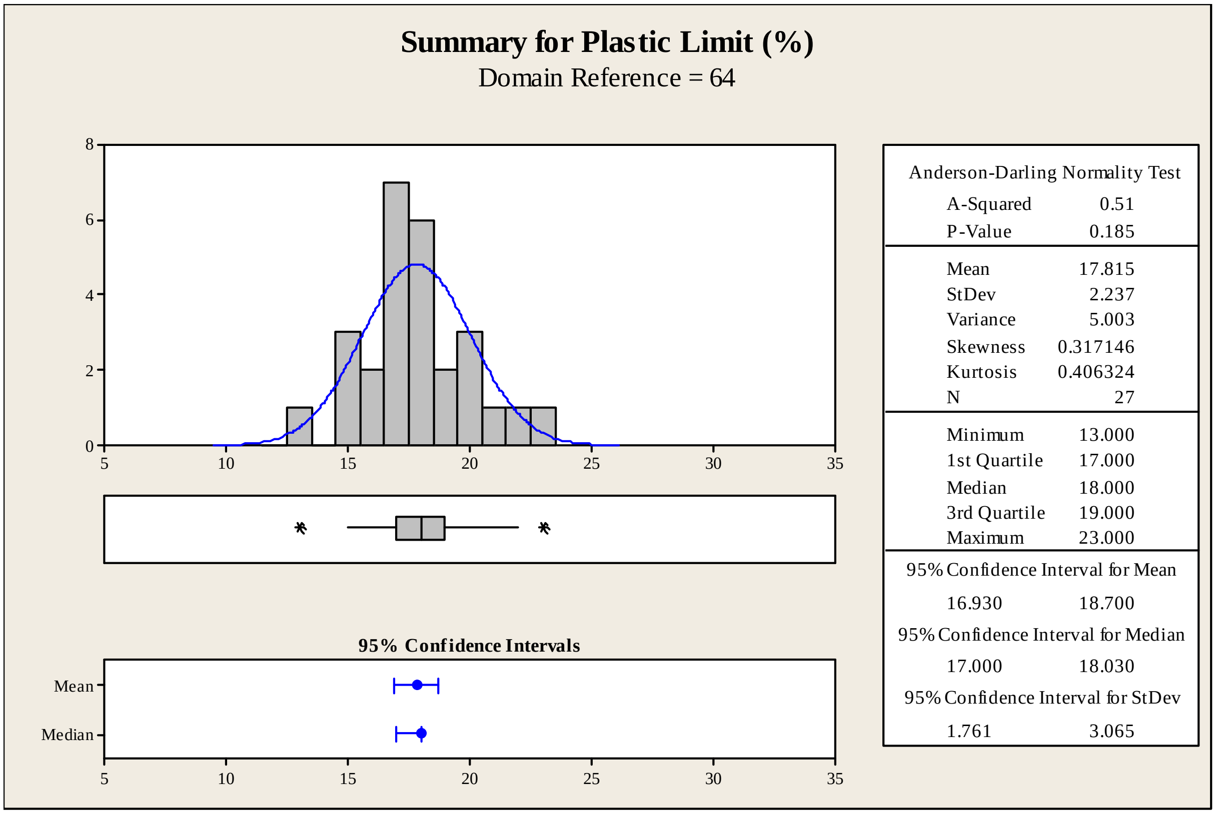


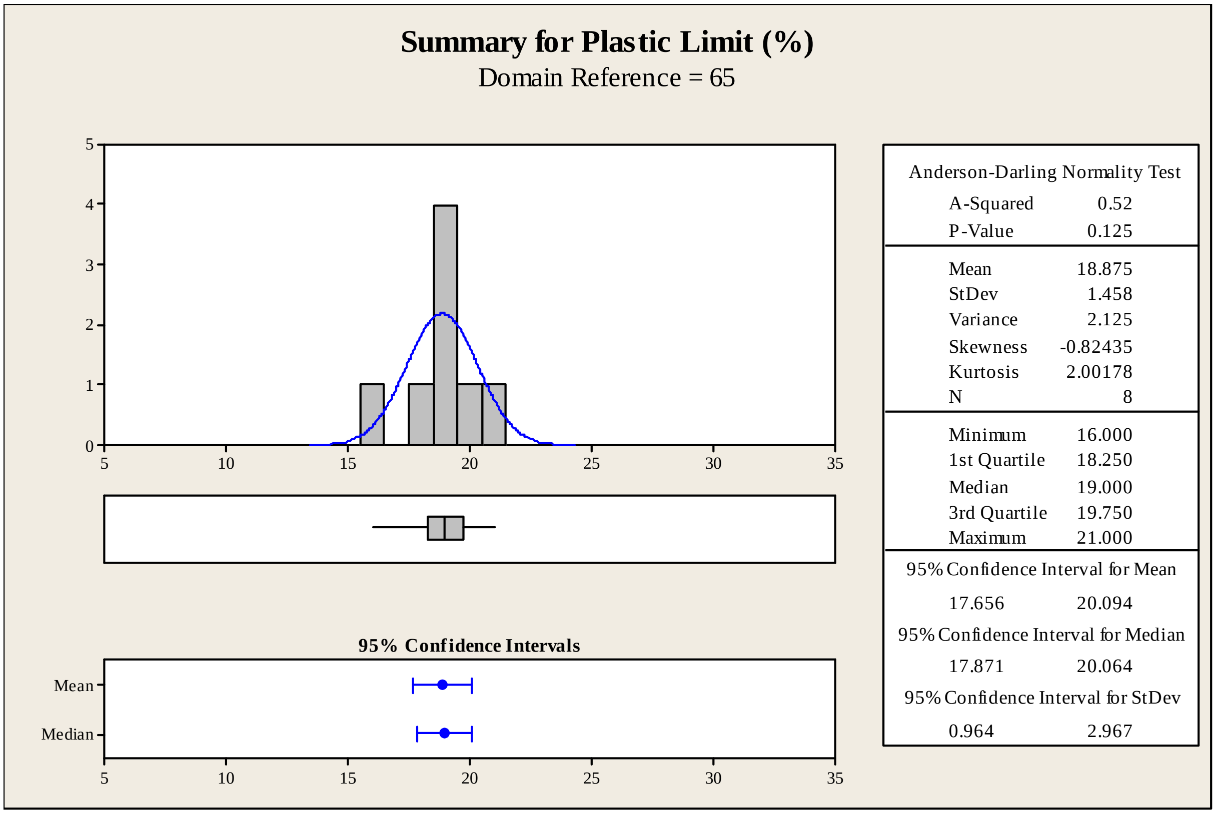


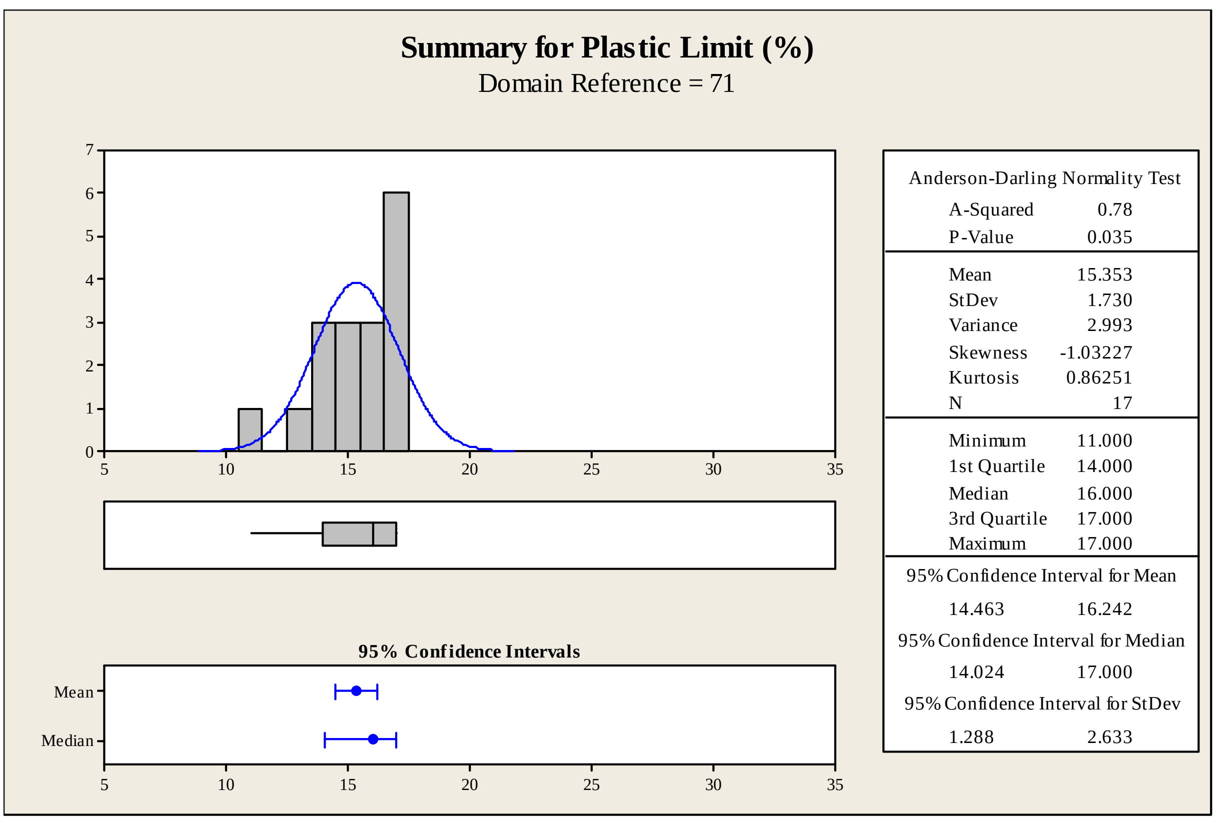
(Domain 53: insufficient data; Domain 61: no data)

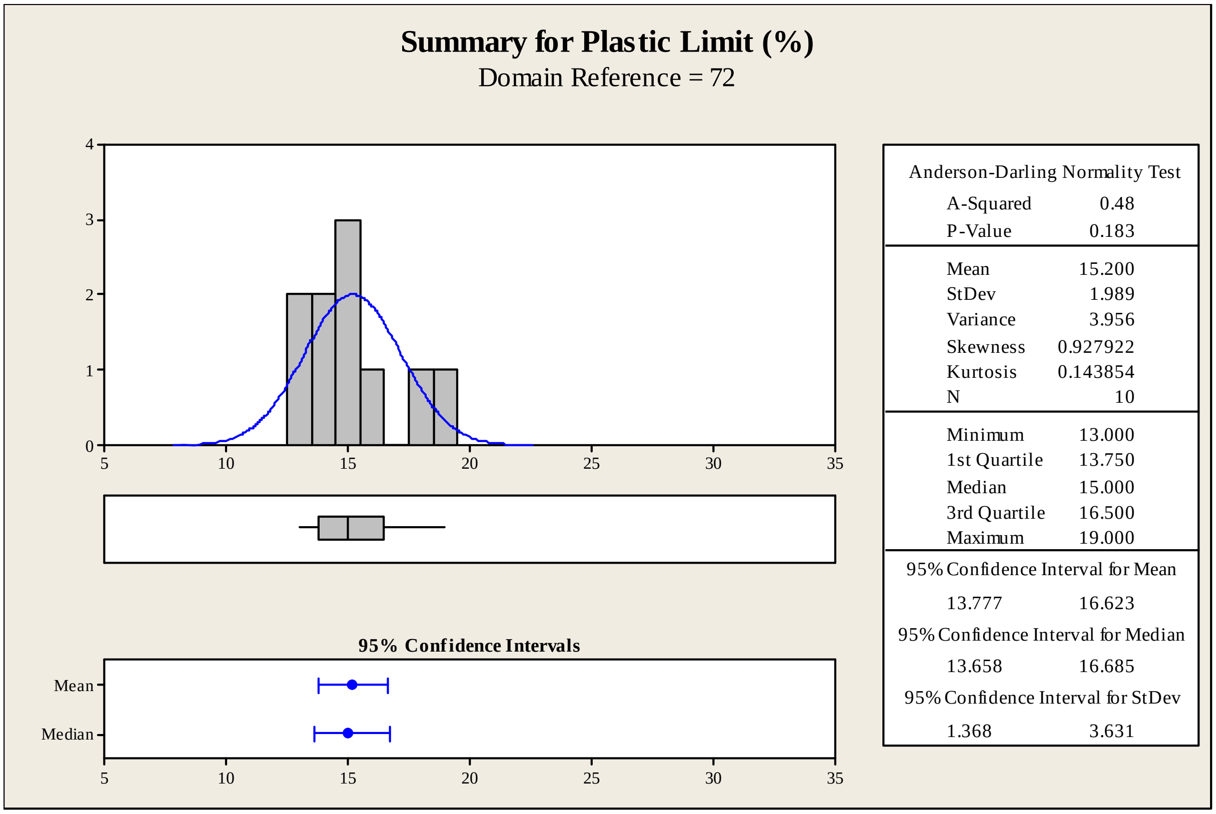



Summary for Plastic Limit (%)
Domain Reference = 63
15
10
5
0
5
10
15
20
25
30
35
95% Confidence Intervals
Mean
Median
Anderson-Darling Normality Test
A-Squared 0.63
P-Value 0.099
Mean 17.983
StDev 2.917
Variance 8.508
Skewness 0.206523
Kurtosis -0.395781
N 58
Minimum 12.000
1st Quartile 15.750
Median 18.000
3rd Quartile 20.000
Maximum 25.000
95% Confidence Interval for Mean
17.216 18.750
95% Confidence Interval for Median
17.000 18.954
95% Confidence Interval for StDev
2.466 3.571

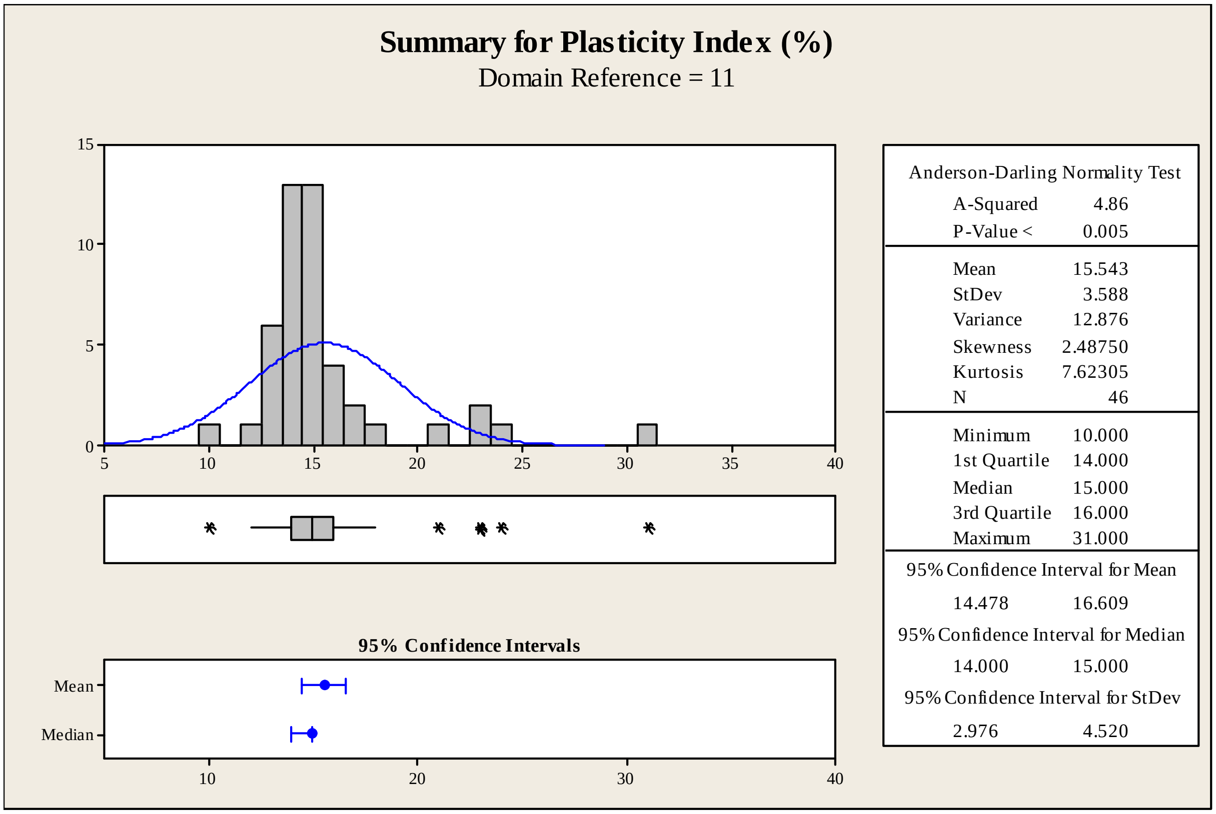

Summary for Plastic Limit (%)
Domain Reference = 64
8
6
4
2
0
5
10
15
20
25
30
35
95% Confidence Intervals
Mean
Median
Anderson-Darling Normality Test
A-Squared 0.51
P-Value 0.185
Mean 17.815
StDev 2.237
Variance 5.003
Skewness 0.317146
Kurtosis 0.406324
N 27
Minimum 13.000
1st Quartile 17.000
Median 18.000
3rd Quartile 19.000
Maximum 23.000
95% Confidence Interval for Mean
16.930 18.700
95% Confidence Interval for Median
17.000 18.030
95% Confidence Interval for StDev
1.761 3.065

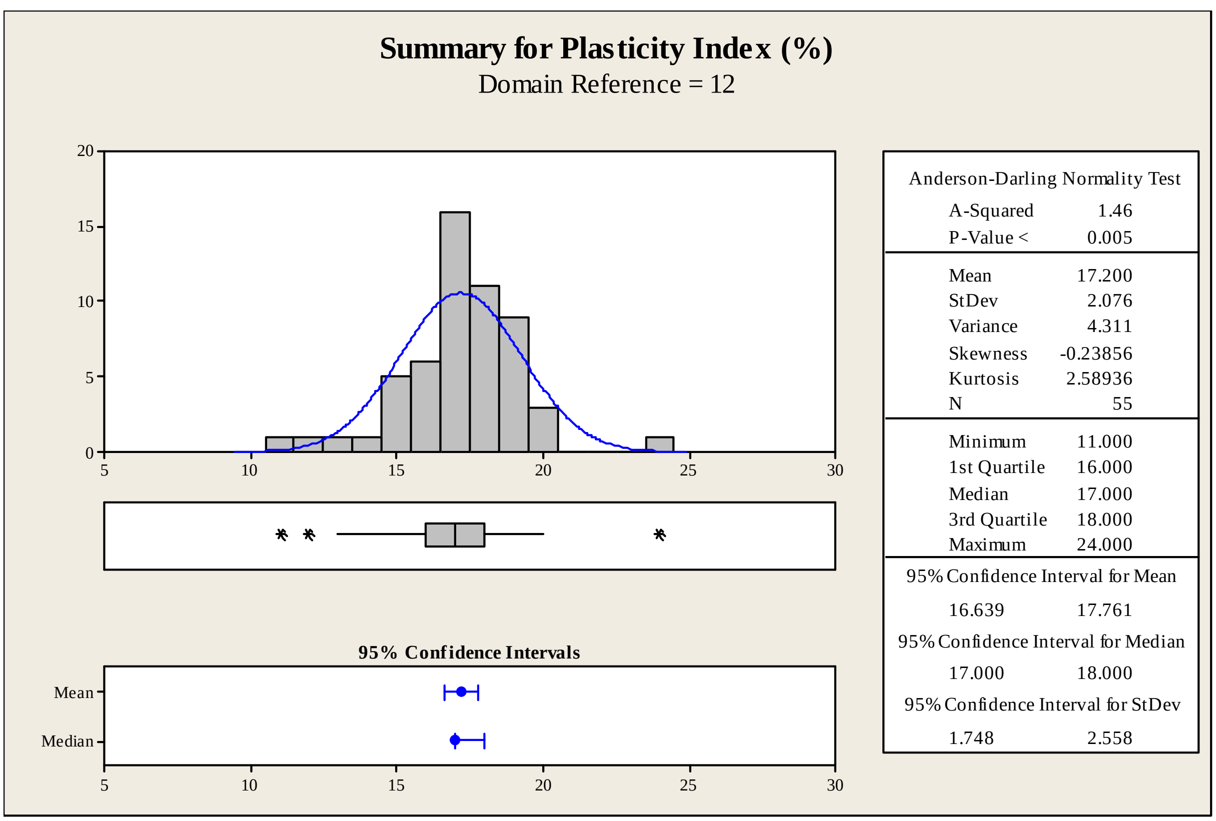

Summary for Plastic Limit (%)
Domain Reference = 65
Anderson-Darling Normality Test
A-Squared 0.52
P-Value 0.125
Mean 18.875
StDev 1.458
Variance 2.125
Skewness -0.82435
Kurtosis 2.00178
N 8
Minimum 16.000
1st Quartile 18.250
Median 19.000
3rd Quartile 19.750
Maximum 21.000
95% Confidence Interval for Mean
17.656 20.094
95% Confidence Interval for Median
17.871 20.064
95% Confidence Interval for StDev
0.964 2.967
95% Confidence Intervals
Mean
Median


Summary for Plastic Limit (%)
Domain Reference = 71
Anderson-Darling Normality Test
A-Squared 0.78
P-Value 0.035
Mean 15.353
StDev 1.730
Variance 2.993
Skewness -1.03227
Kurtosis 0.86251
N 17
Minimum 11.000
1st Quartile 14.000
Median 16.000
3rd Quartile 17.000
Maximum 17.000
95% Confidence Interval for Mean
14.463 16.242
95% Confidence Interval for Median
14.024 17.000
95% Confidence Interval for StDev
1.288 2.633
95% Confidence Intervals
Mean
Median

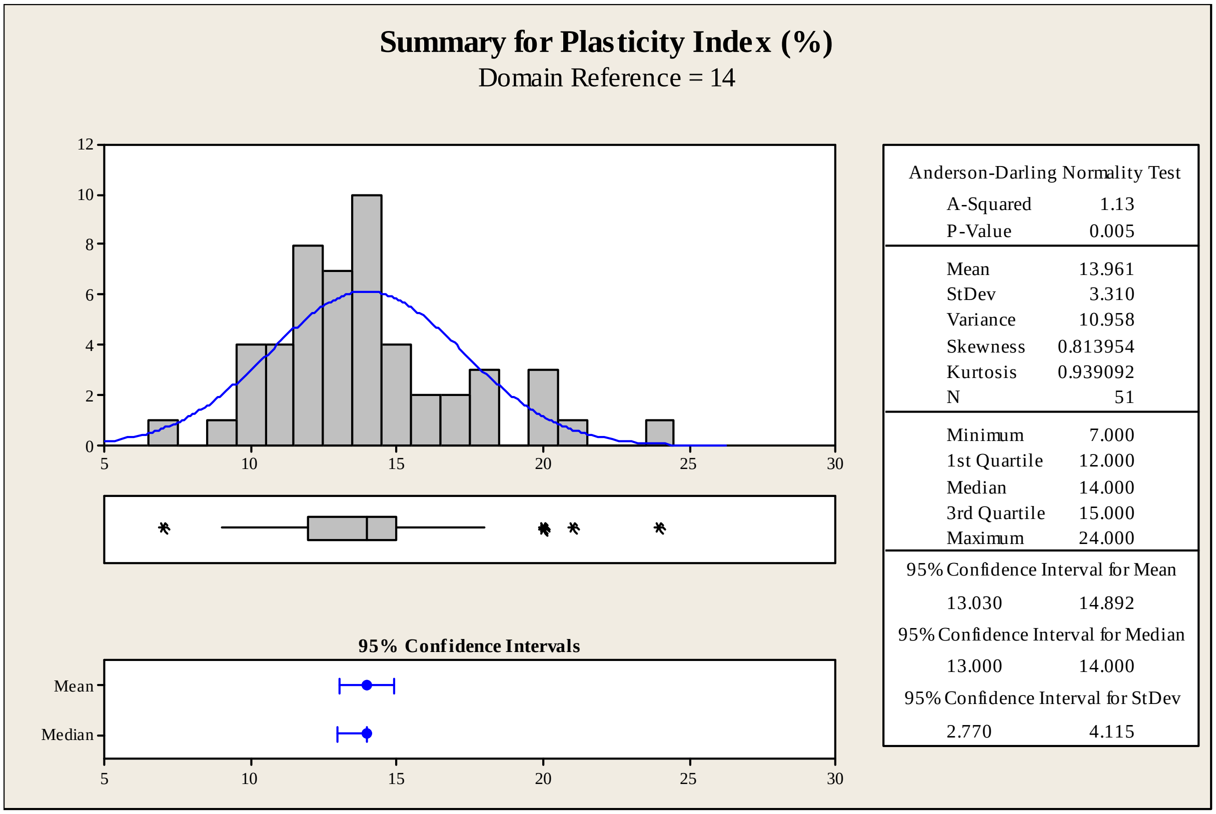

Summary for Plastic Limit (%)
Domain Reference = 72
Anderson-Darling Normality Test
A-Squared 0.48
P-Value 0.183
Mean 15.200
StDev 1.989
Variance 3.956
Skewness 0.927922
Kurtosis 0.143854
N 10
Minimum 13.000
1st Quartile 13.750
Median 15.000
3rd Quartile 16.500
Maximum 19.000
95% Confidence Interval for Mean
13.777 16.623
95% Confidence Interval for Median
13.658 16.685
95% Confidence Interval for StDev
1.368 3.631
95% Confidence Intervals
Mean
Median
5 10 15 20 25 30 35

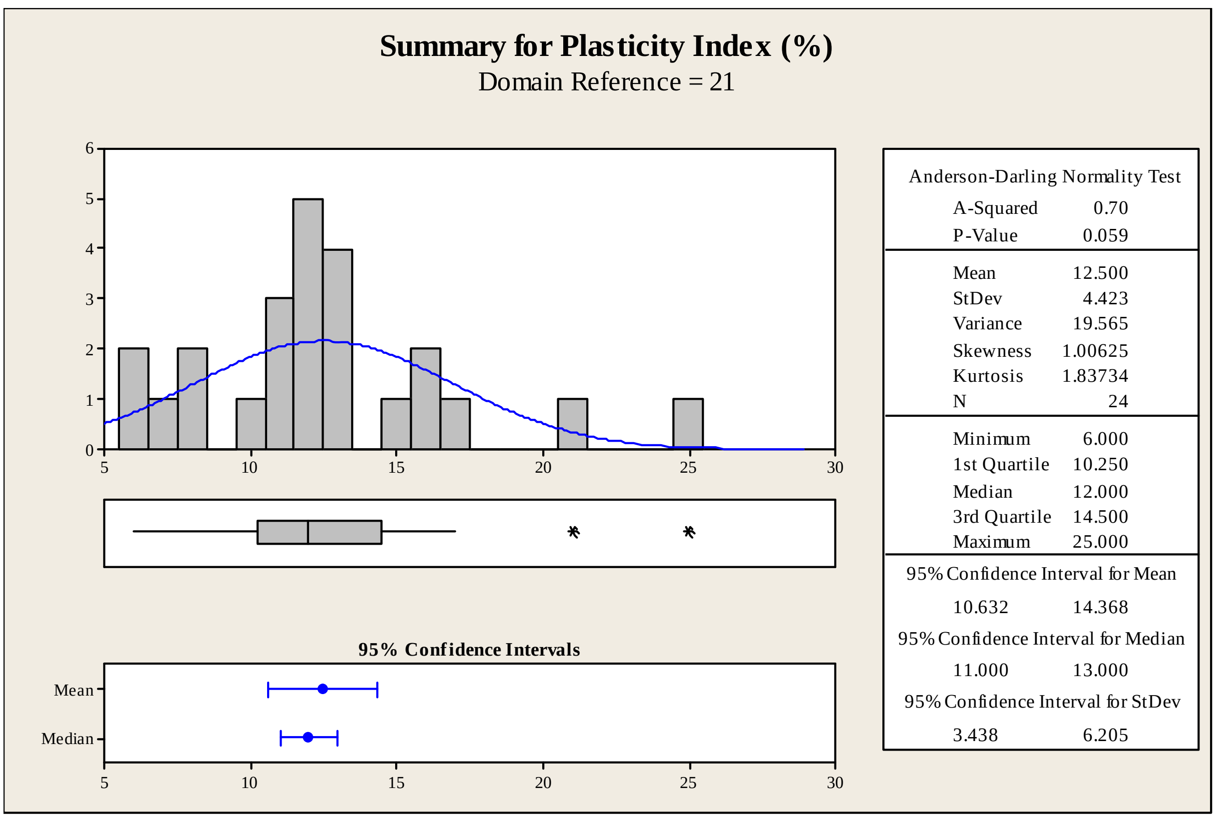
Plasticity Index

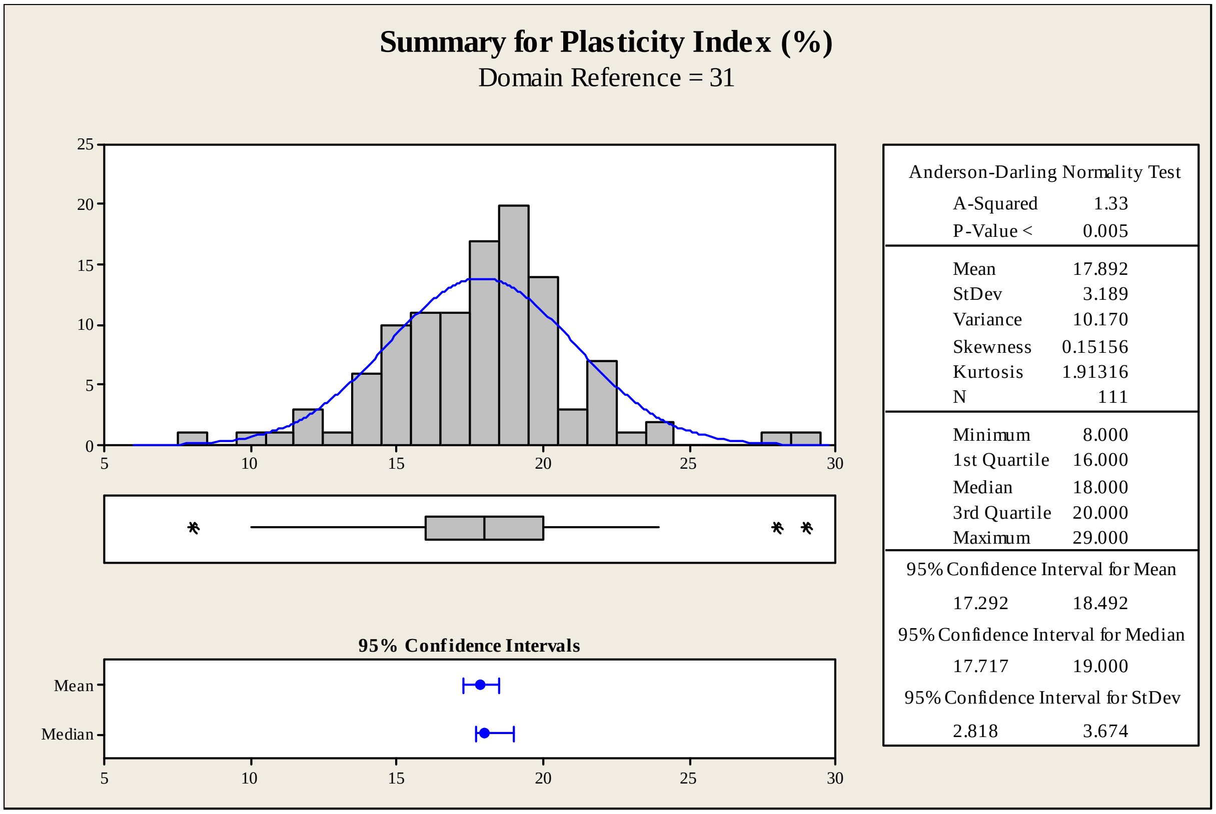


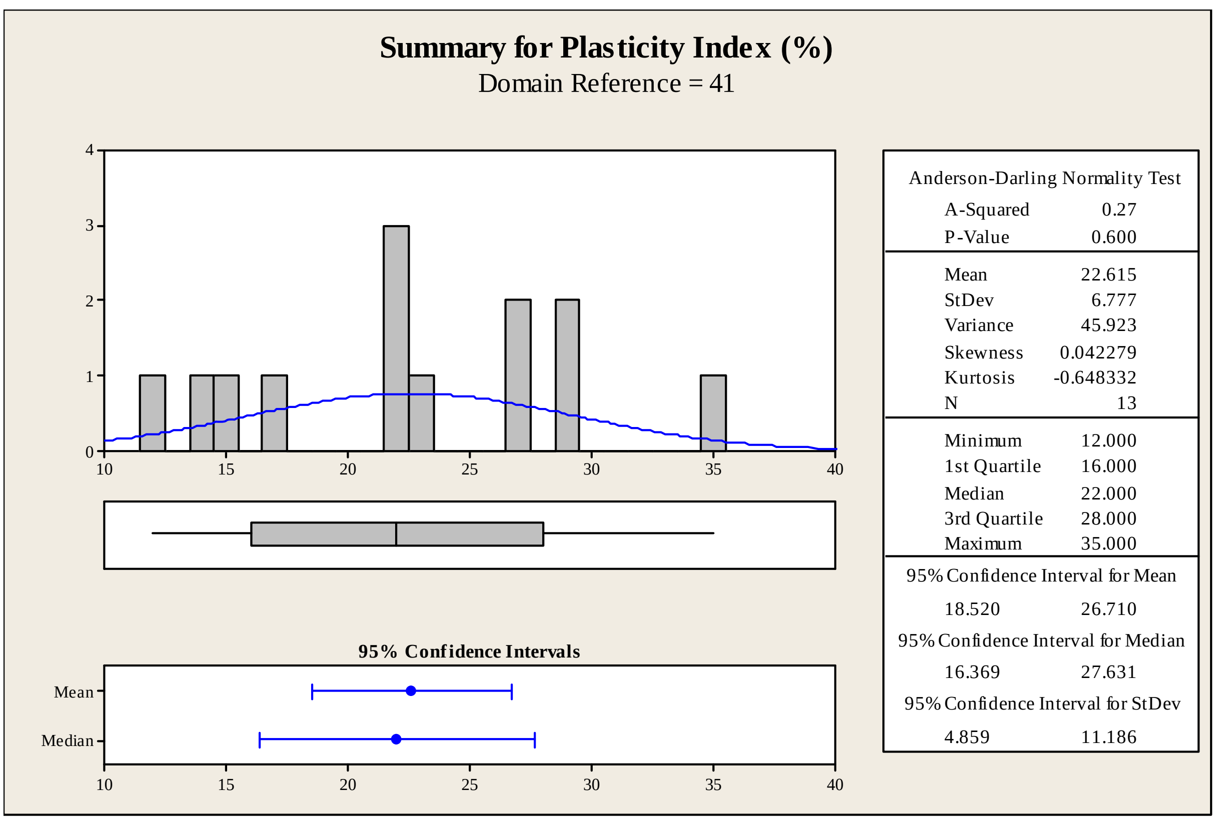


(Domain 13: insufficient data)

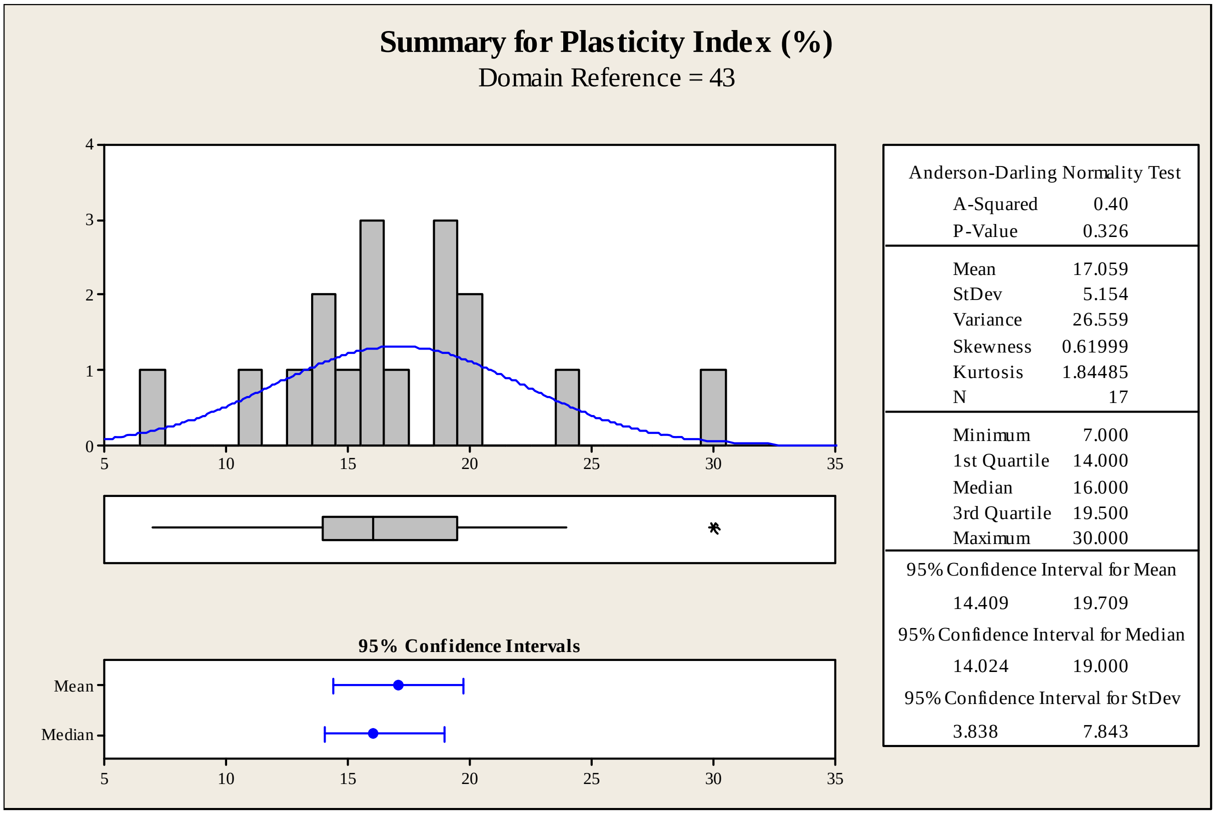


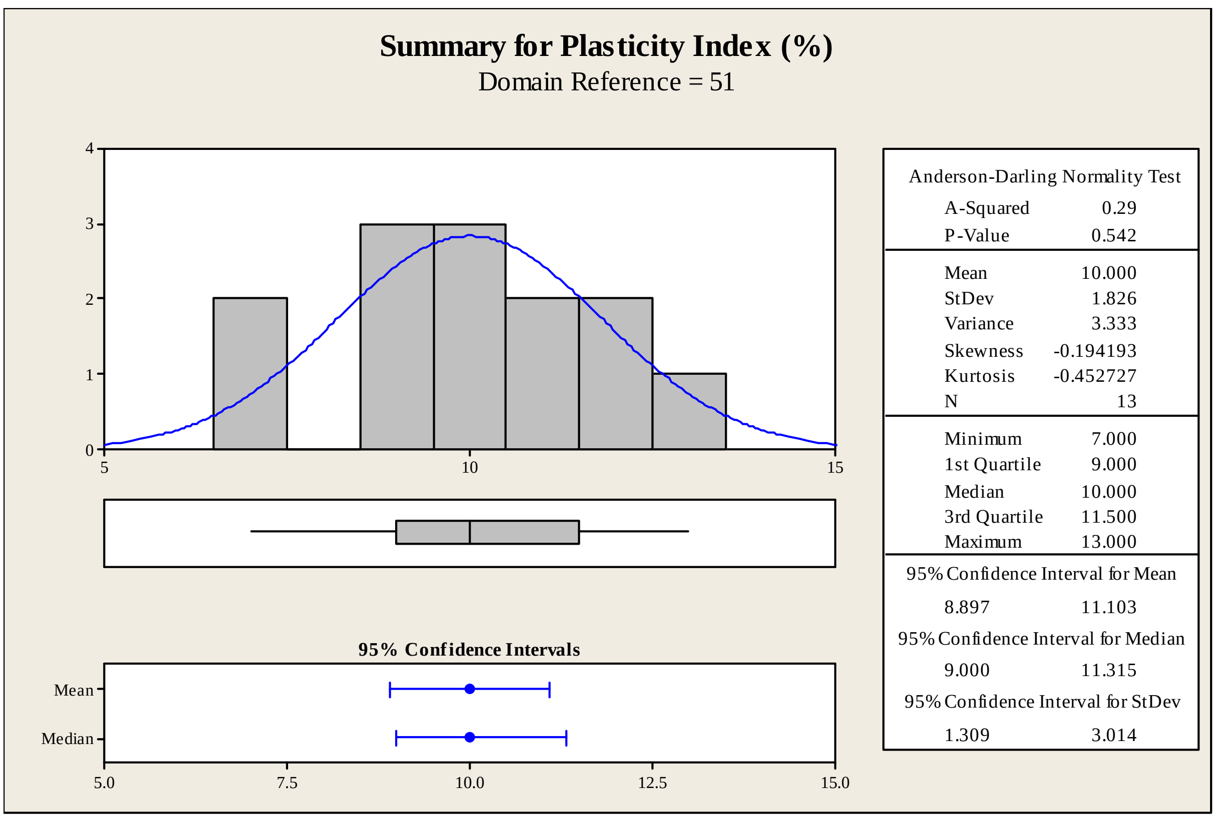


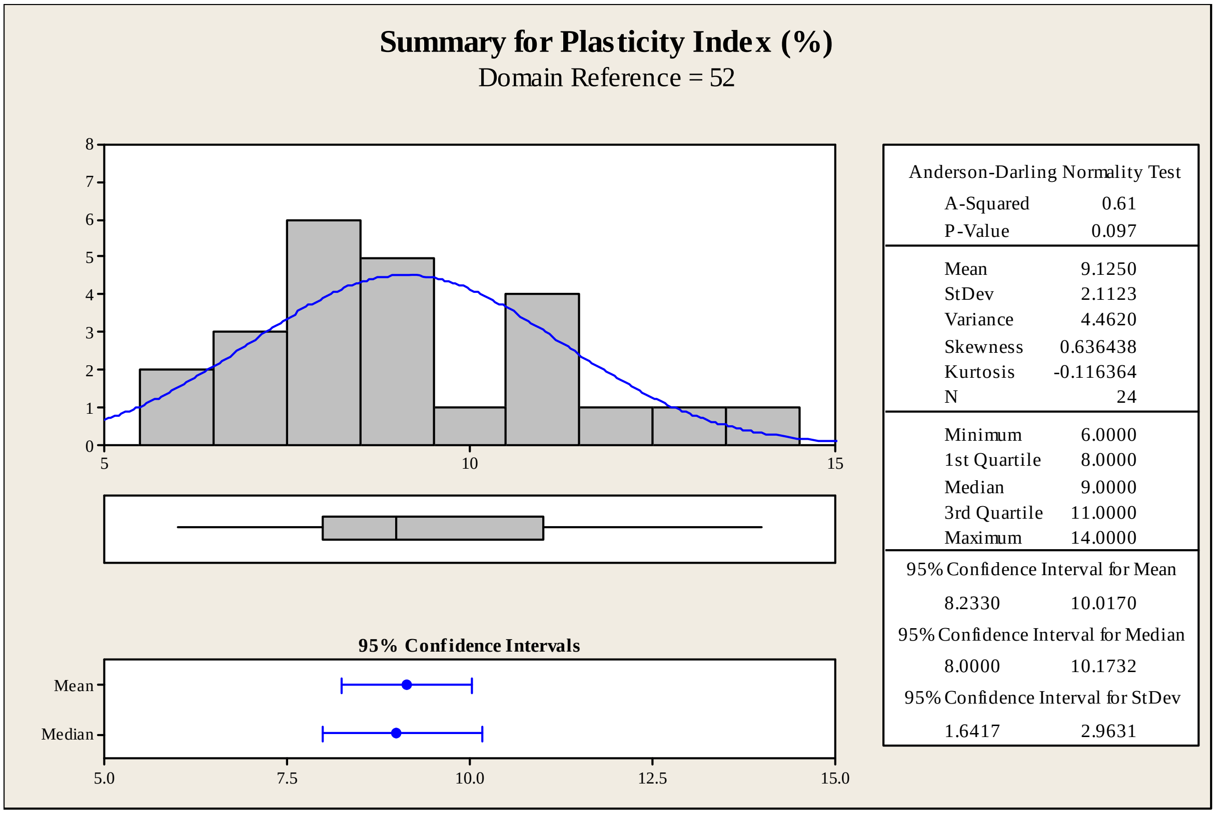

Summary for Plasticity Index (%)
Domain Reference = 31
Anderson-Darling Normality Test
A-Squared 1.33
P-Value < 0.005
Mean 17.892
StDev 3.189
Variance 10.170
Skewness 0.15156
Kurtosis 1.91316
N 111
Minimum 8.000
1st Quartile 16.000
Median 18.000
3rd Quartile 20.000
Maximum 29.000
95% Confidence Interval for Mean
17.292 18.492
95% Confidence Interval for Median
17.717 19.000
95% Confidence Interval for StDev
2.818 3.674
95% Confidence Intervals
Mean
Median


Summary for Plasticity Index (%)
Domain Reference = 41
Anderson-Darling Normality Test
A-Squared 0.27
P-Value 0.600
Mean 22.615
StDev 6.777
Variance 45.923
Skewness 0.042279
Kurtosis -0.648332
N 13
Minimum 12.000
1st Quartile 16.000
Median 22.000
3rd Quartile 28.000
Maximum 35.000
95% Confidence Interval for Mean
18.520 26.710
95% Confidence Interval for Median
16.369 27.631
95% Confidence Interval for StDev
4.859 11.186
95% Confidence Intervals
Mean
Median

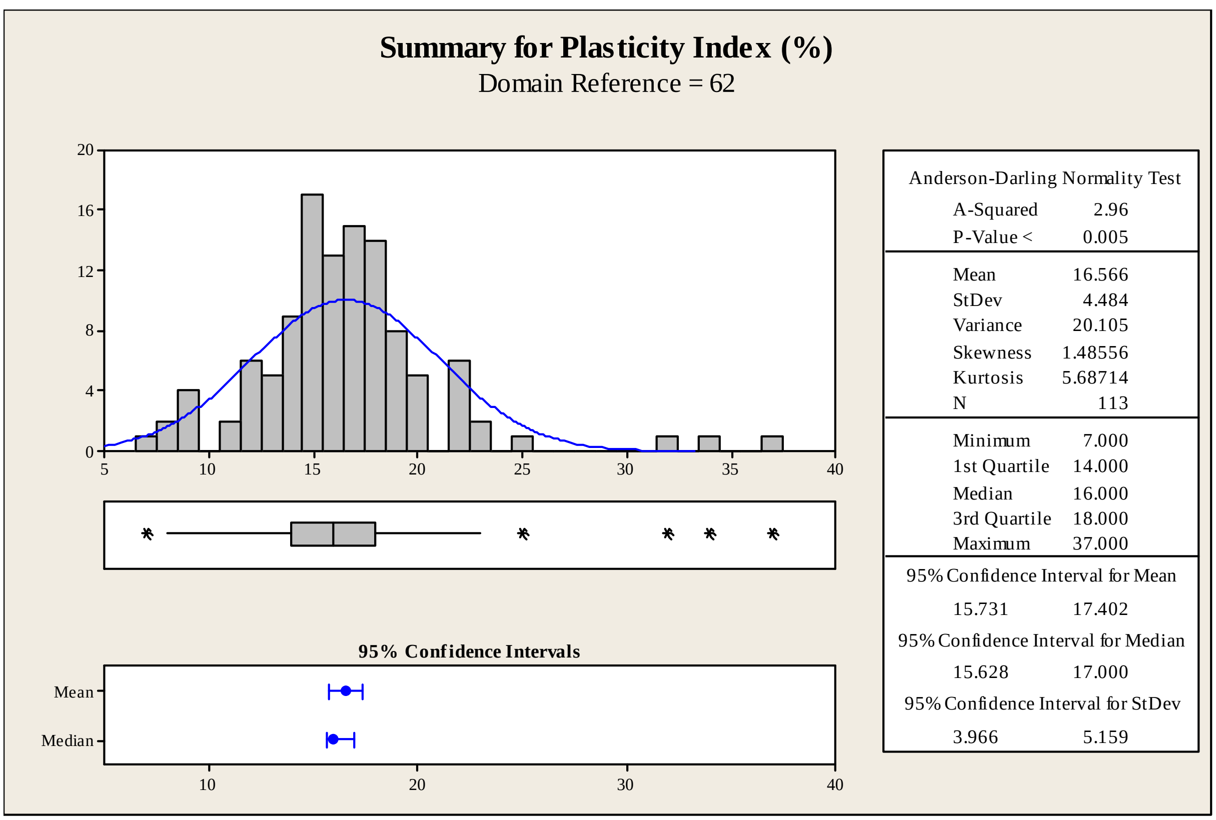
(Domain 42: insufficient data)

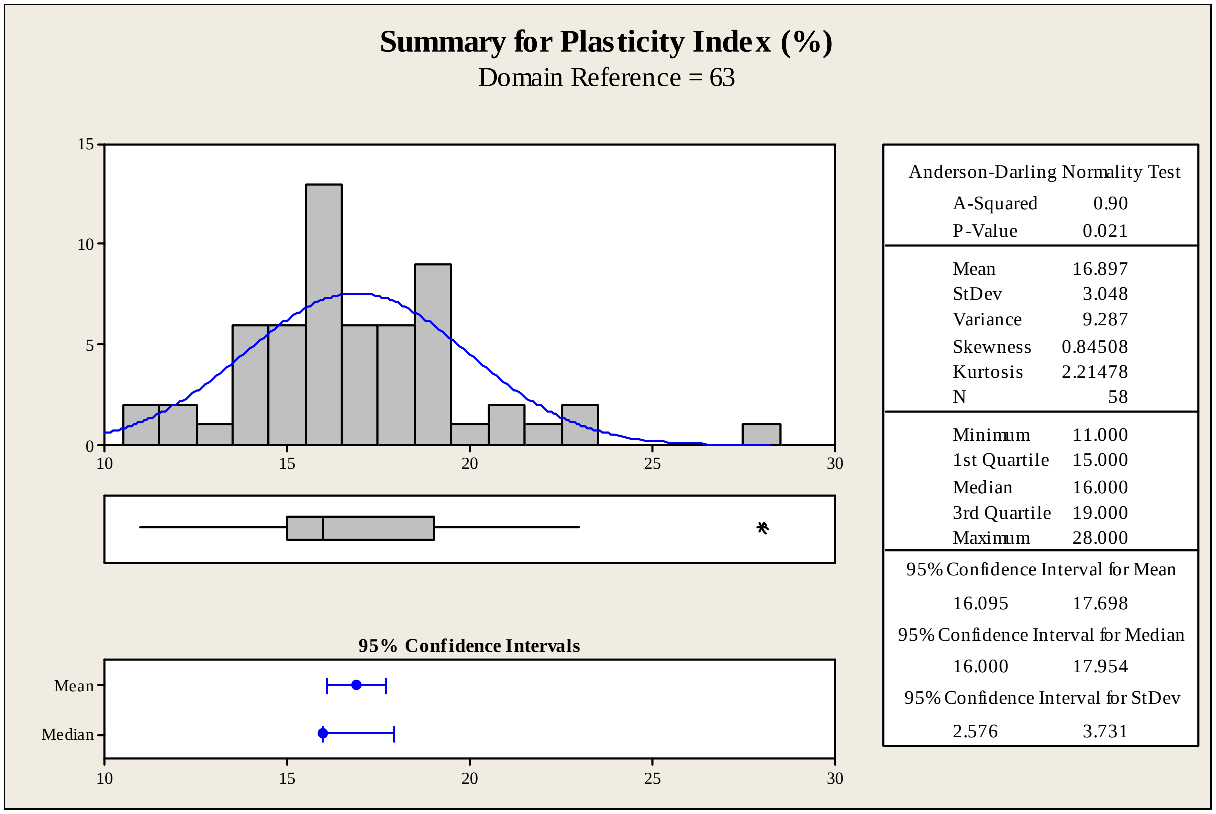


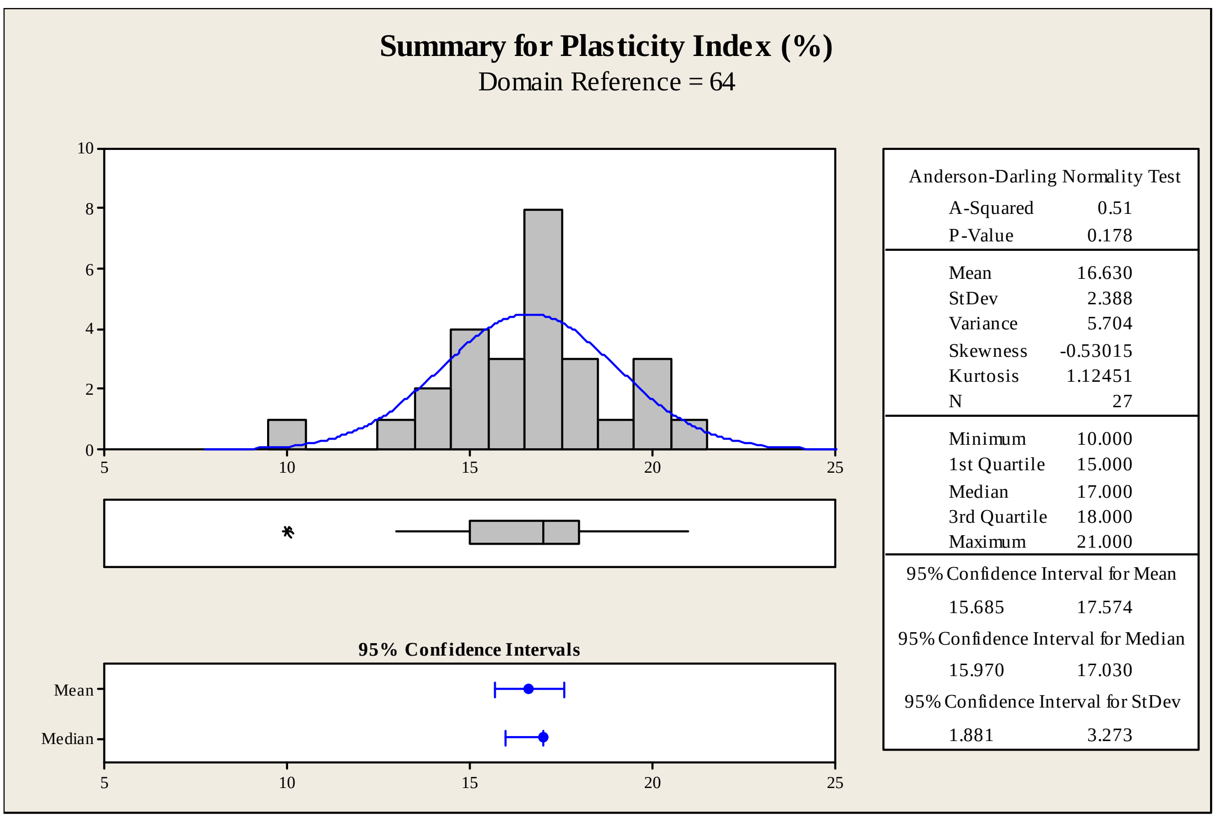


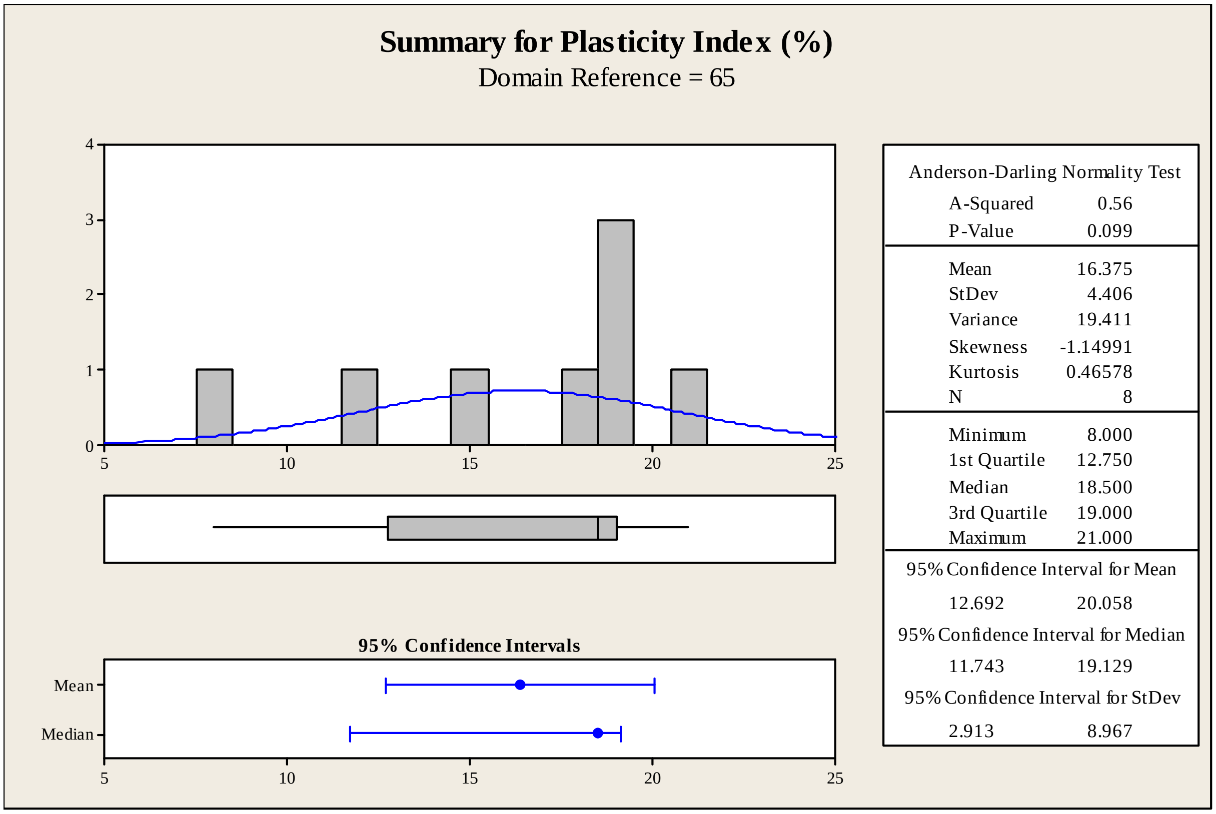


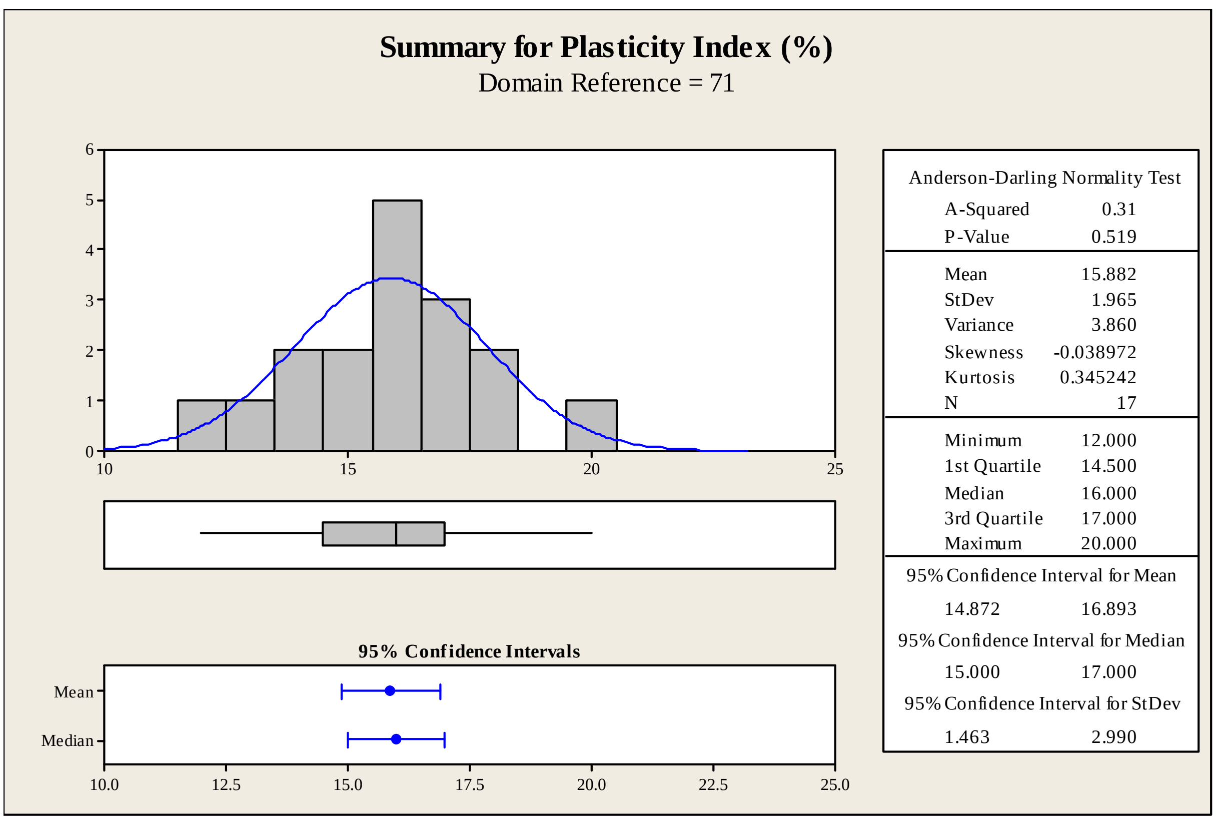
(Domain 53: insufficient data; Domain 61: no data)

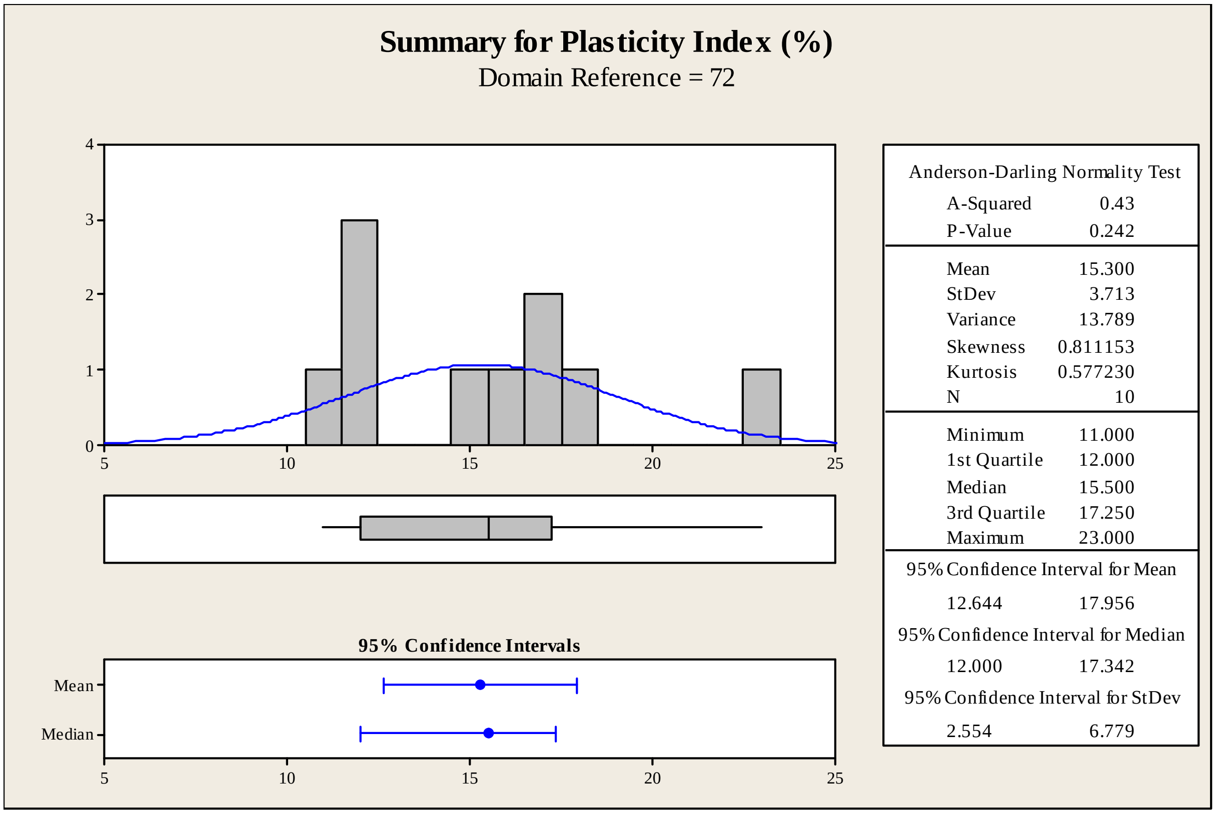



Summary for Plasticity Index (%)
Domain Reference = 63
Anderson-Darling Normality Test
A-Squared 0.90
P-Value 0.021
Mean 16.897
StDev 3.048
Variance 9.287
Skewness 0.84508
Kurtosis 2.21478
N 58
Minimum 11.000
1st Quartile 15.000
Median 16.000
3rd Quartile 19.000
Maximum 28.000
95% Confidence Interval for Mean
16.095 17.698
95% Confidence Interval for Median
16.000 17.954
95% Confidence Interval for StDev
2.576 3.731
95% Confidence Intervals
Mean
Median

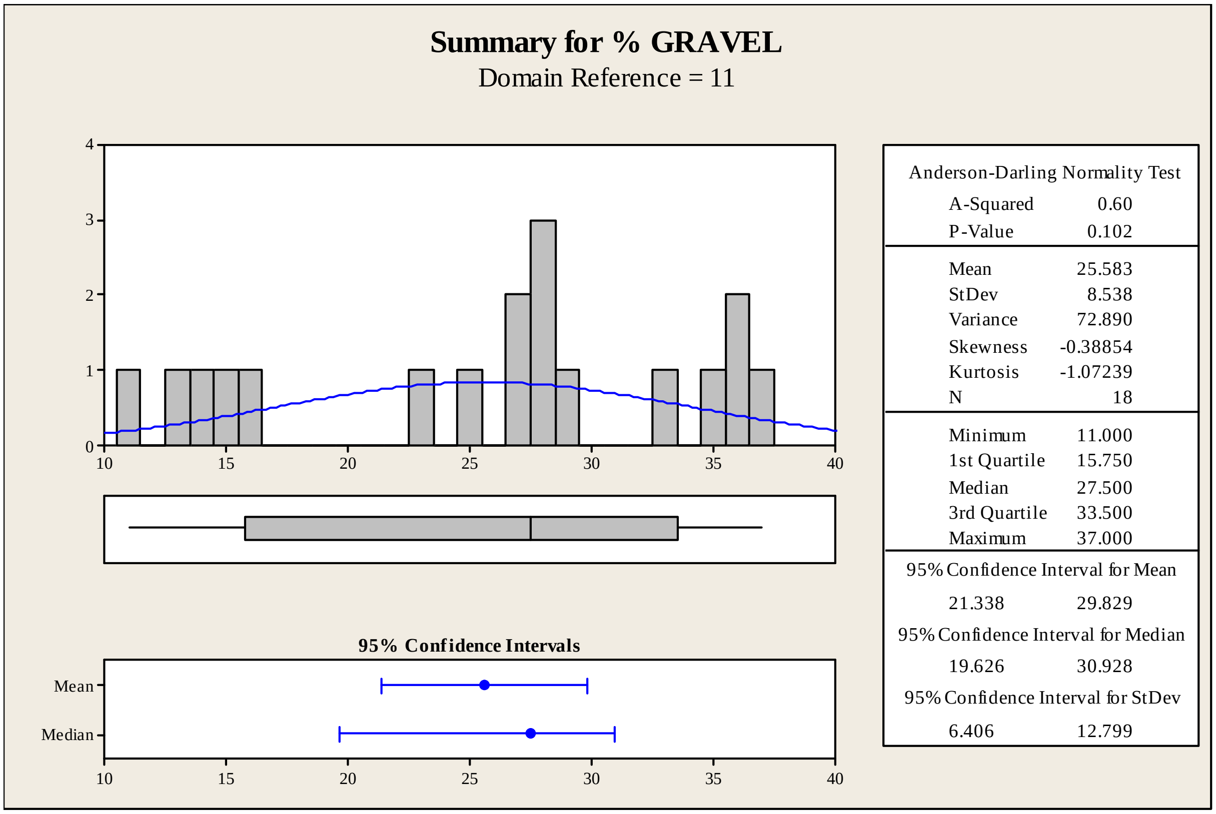

Summary for Plasticity Index (%)
Domain Reference = 64
Anderson-Darling Normality Test
A-Squared 0.51
P-Value 0.178
Mean 16.630
StDev 2.388
Variance 5.704
Skewness -0.53015
Kurtosis 1.12451
N 27
Minimum 10.000
1st Quartile 15.000
Median 17.000
3rd Quartile 18.000
Maximum 21.000
95% Confidence Interval for Mean
15.685 17.574
95% Confidence Interval for Median
15.970 17.030
95% Confidence Interval for StDev
1.881 3.273
95% Confidence Intervals
Mean
Median

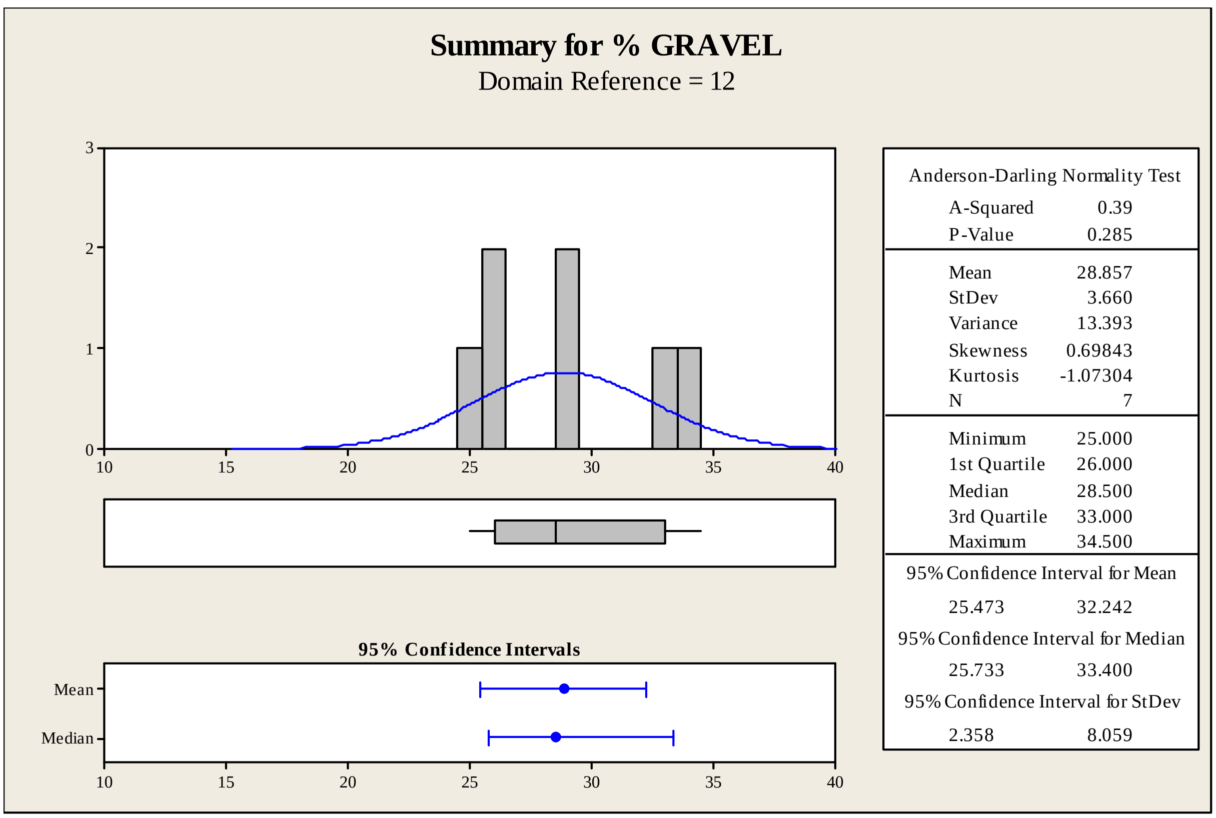

Summary for Plasticity Index (%)
Domain Reference = 65
Anderson-Darling Normality Test
A-Squared 0.56
P-Value 0.099
Mean 16.375
StDev 4.406
Variance 19.411
Skewness -1.14991
Kurtosis 0.46578
N 8
Minimum 8.000
1st Quartile 12.750
Median 18.500
3rd Quartile 19.000
Maximum 21.000
95% Confidence Interval for Mean
12.692 20.058
95% Confidence Interval for Median
11.743 19.129
95% Confidence Interval for StDev
2.913 8.967
95% Confidence Intervals
Mean
Median
0
1
2
3
4
5
10
15
20
25


Summary for Plasticity Index (%)
Domain Reference = 71
Anderson-Darling Normality Test
A-Squared 0.31
P-Value 0.519
Mean 15.882
StDev 1.965
Variance 3.860
Skewness -0.038972
Kurtosis 0.345242
N 17
Minimum 12.000
1st Quartile 14.500
Median 16.000
3rd Quartile 17.000
Maximum 20.000
95% Confidence Interval for Mean
14.872 16.893
95% Confidence Interval for Median
15.000 17.000
95% Confidence Interval for StDev
1.463 2.990
95% Confidence Intervals
Mean
Median
0
1
2
3
4
5
6
10
15
20
25
10.0
12.5
15.0
17.5
20.0
22.5
25.0

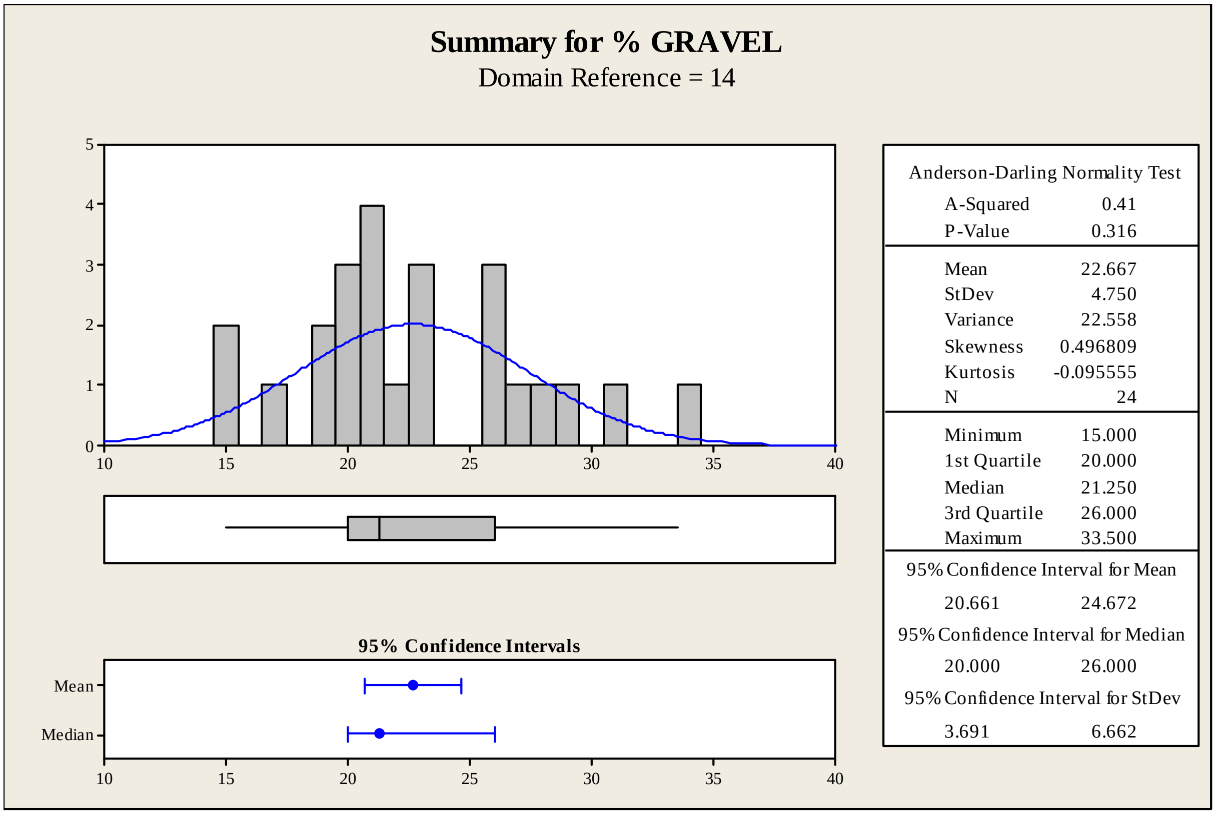

Summary for Plasticity Index (%)
Domain Reference = 72
Anderson-Darling Normality Test
A-Squared 0.43
P-Value 0.242
Mean 15.300
StDev 3.713
Variance 13.789
Skewness 0.811153
Kurtosis 0.577230
N 10
Minimum 11.000
1st Quartile 12.000
Median 15.500
3rd Quartile 17.250
Maximum 23.000
95% Confidence Interval for Mean
12.644 17.956
95% Confidence Interval for Median
12.000 17.342
95% Confidence Interval for StDev
2.554 6.779
95% Confidence Intervals
Mean
Median
0
1
2
3
4
5
10
15
20
25

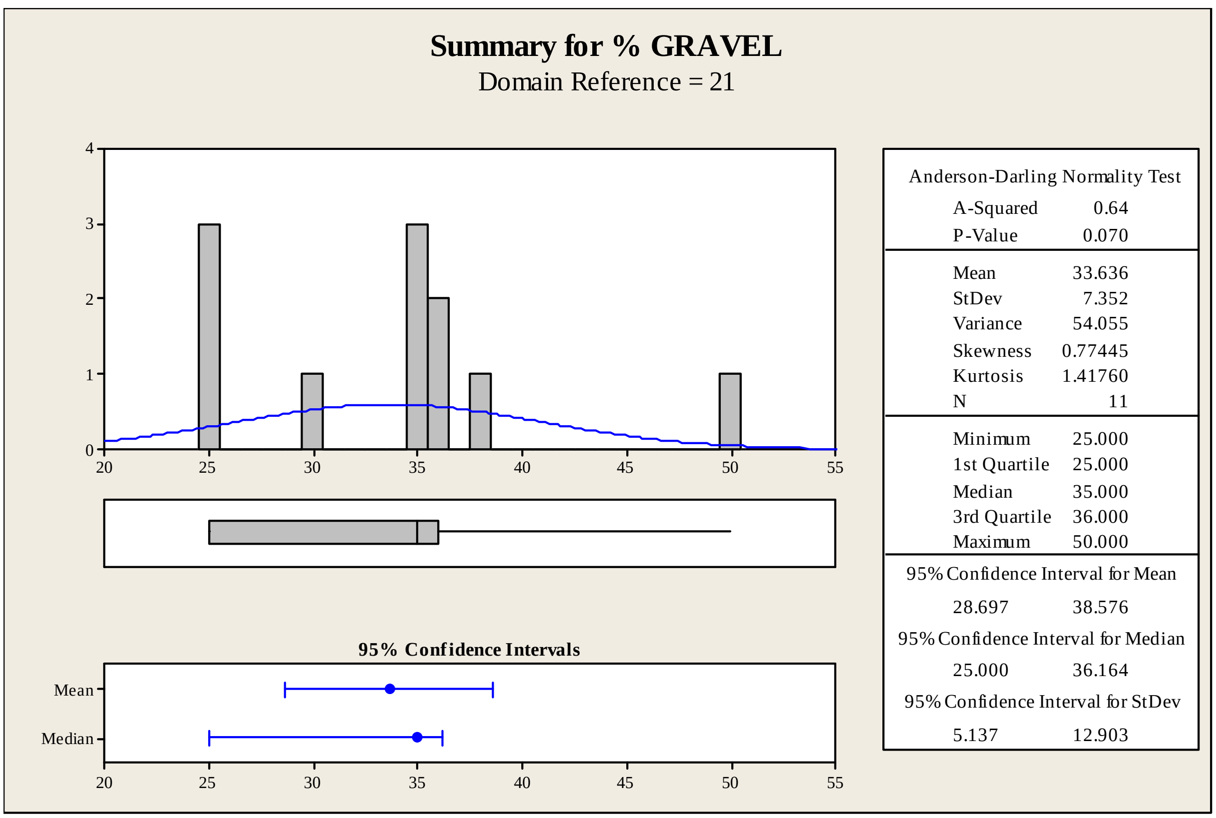
Grading Fraction: Gravel

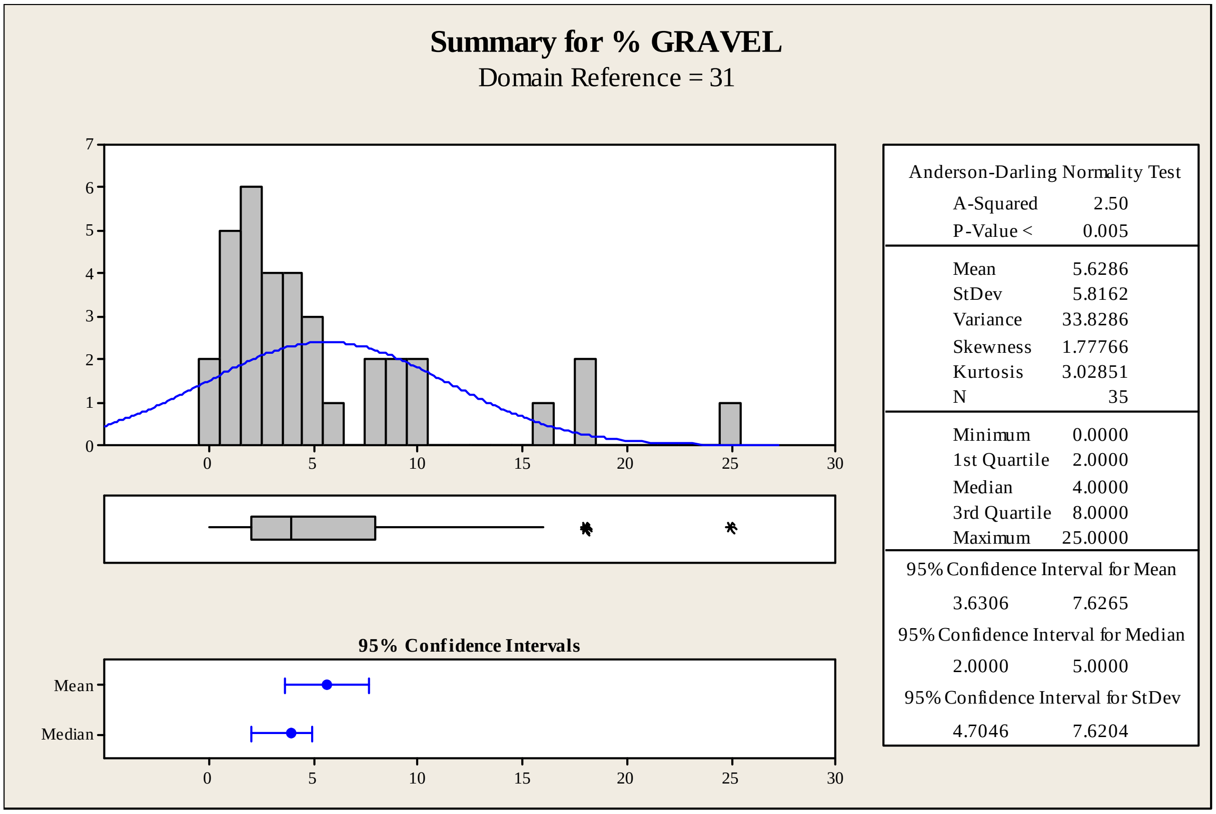


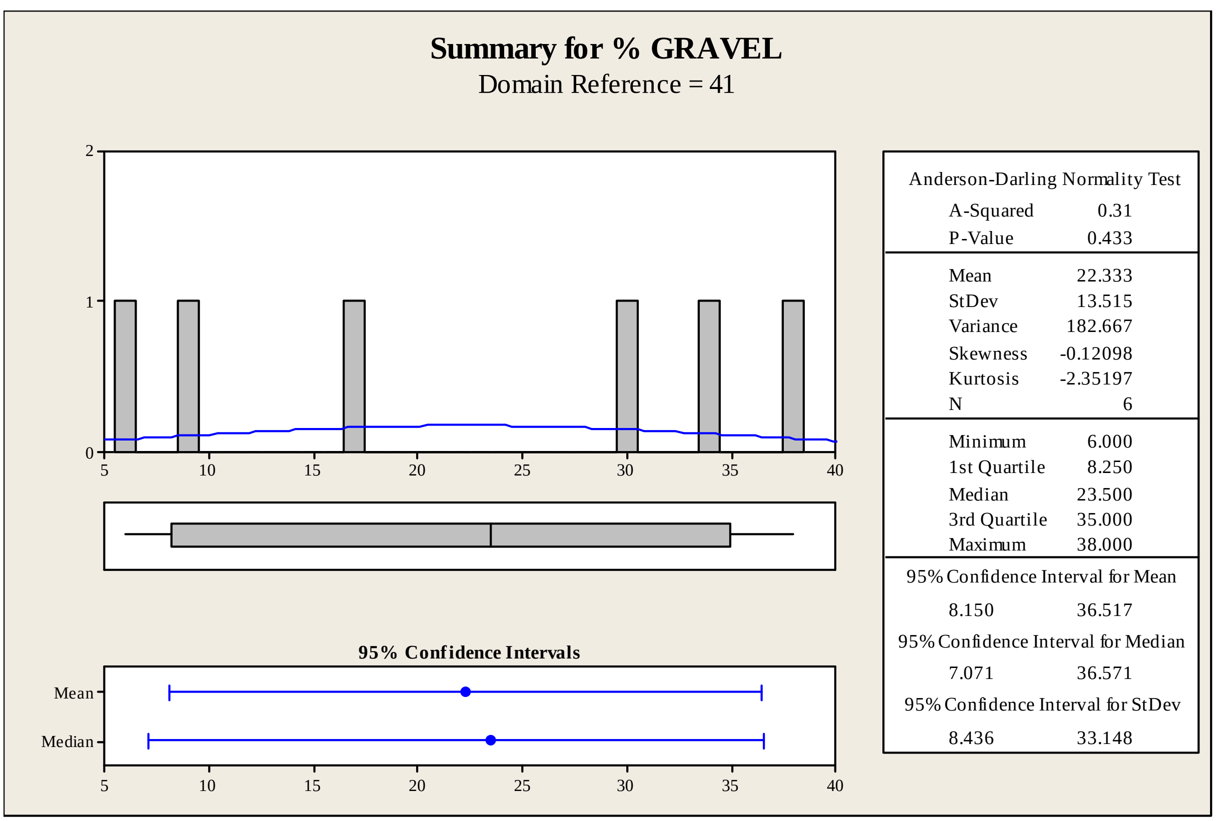


(Domain 13: insufficient data)

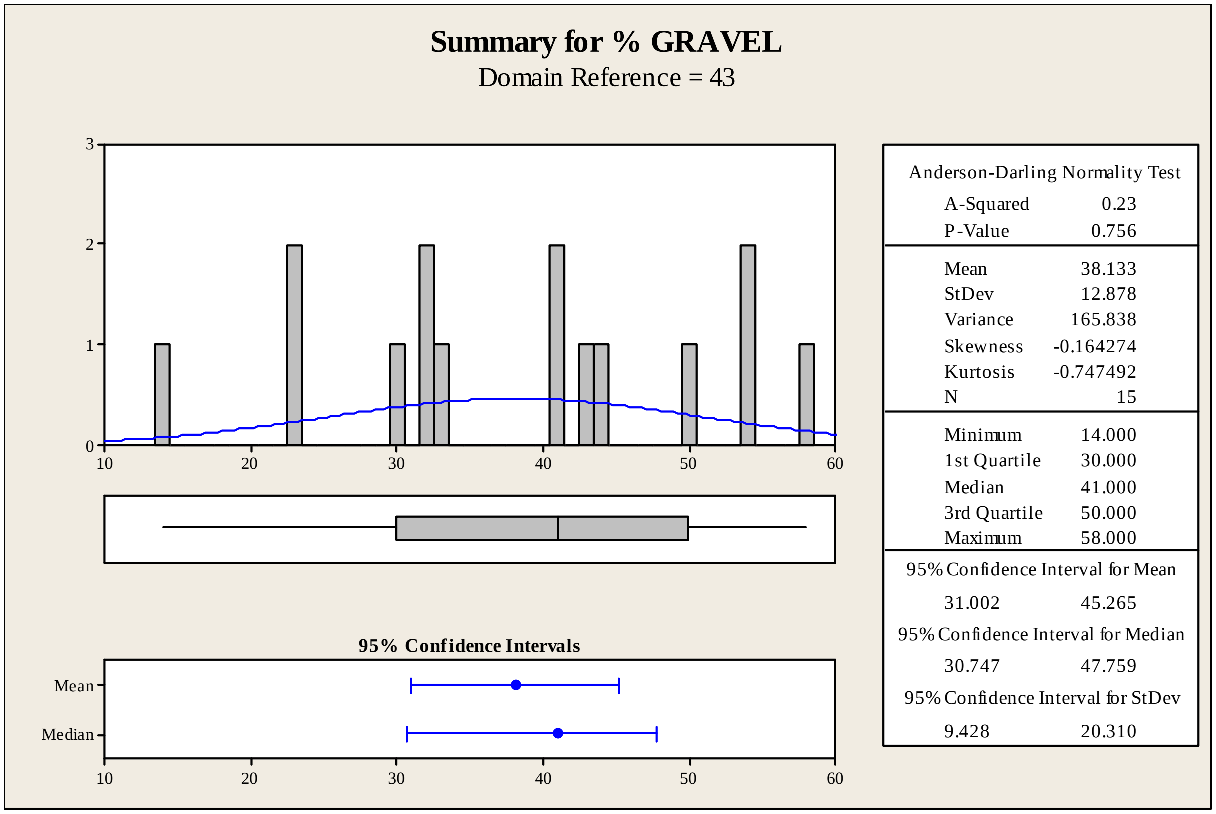


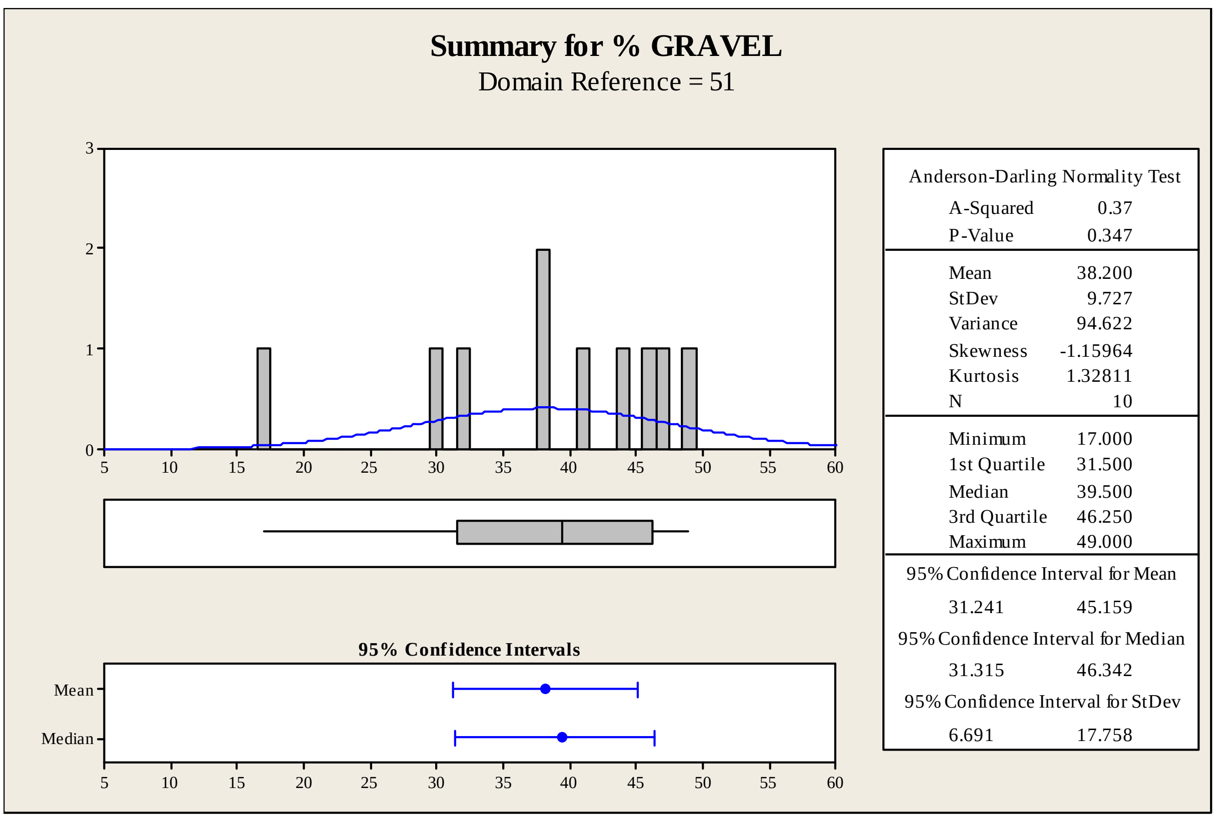


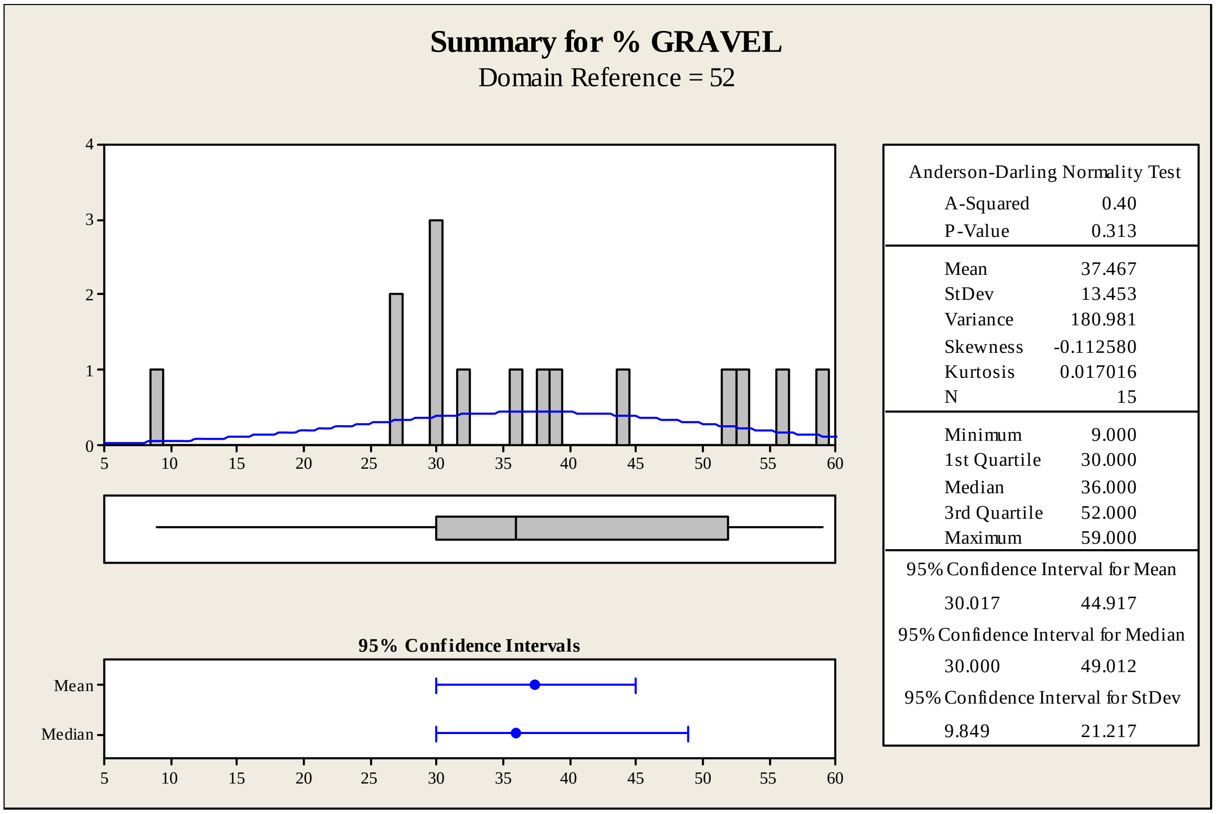

Summary for % GRAVEL
Domain Reference = 31
Anderson-Darling Normality Test
A-Squared 2.50
P-Value < 0.005
Mean 5.6286
StDev 5.8162
Variance 33.8286
Skewness 1.77766
Kurtosis 3.02851
N 35
Minimum 0.0000
1st Quartile 2.0000
Median 4.0000
3rd Quartile 8.0000
Maximum 25.0000
95% Confidence Interval for Mean
3.6306 7.6265
95% Confidence Interval for Median
2.0000 5.0000
95% Confidence Interval for StDev
4.7046 7.6204
95% Confidence Intervals
Mean
Median


Summary for % GRAVEL
Domain Reference = 41
Anderson-Darling Normality Test
A-Squared 0.31
P-Value 0.433
Mean 22.333
StDev 13.515
Variance 182.667
Skewness -0.12098
Kurtosis -2.35197
N 6
Minimum 6.000
1st Quartile 8.250
Median 23.500
3rd Quartile 35.000
Maximum 38.000
95% Confidence Interval for Mean
8.150 36.517
95% Confidence Interval for Median
7.071 36.571
95% Confidence Interval for StDev
8.436 33.148
95% Confidence Intervals
Mean
Median

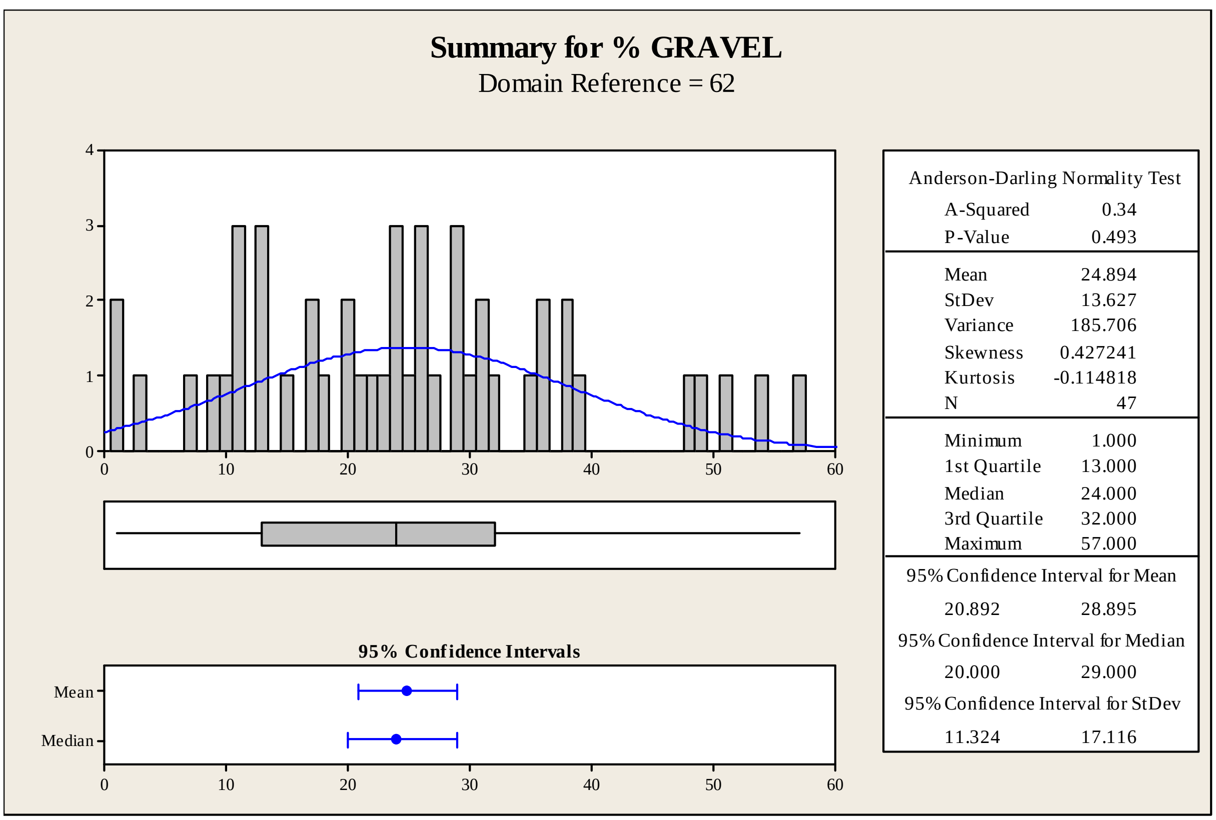
(Domain 42: insufficient data)

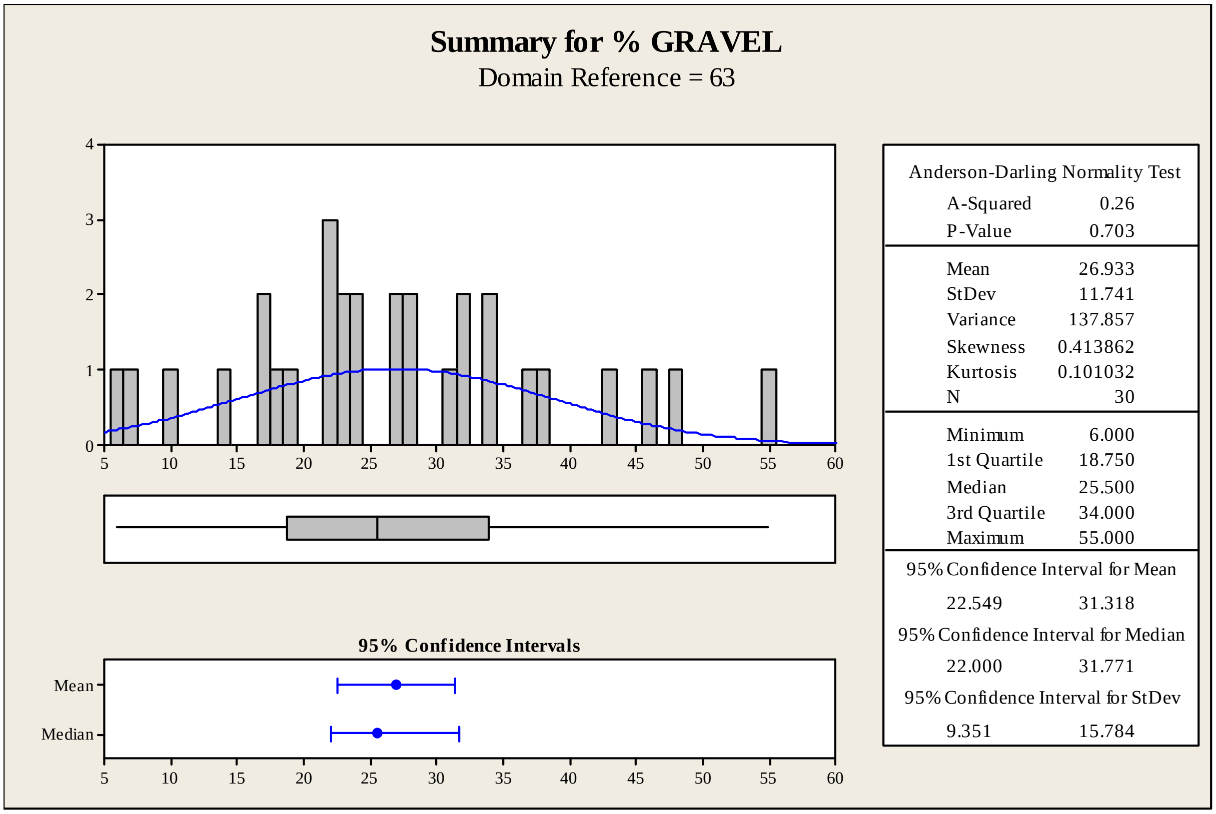




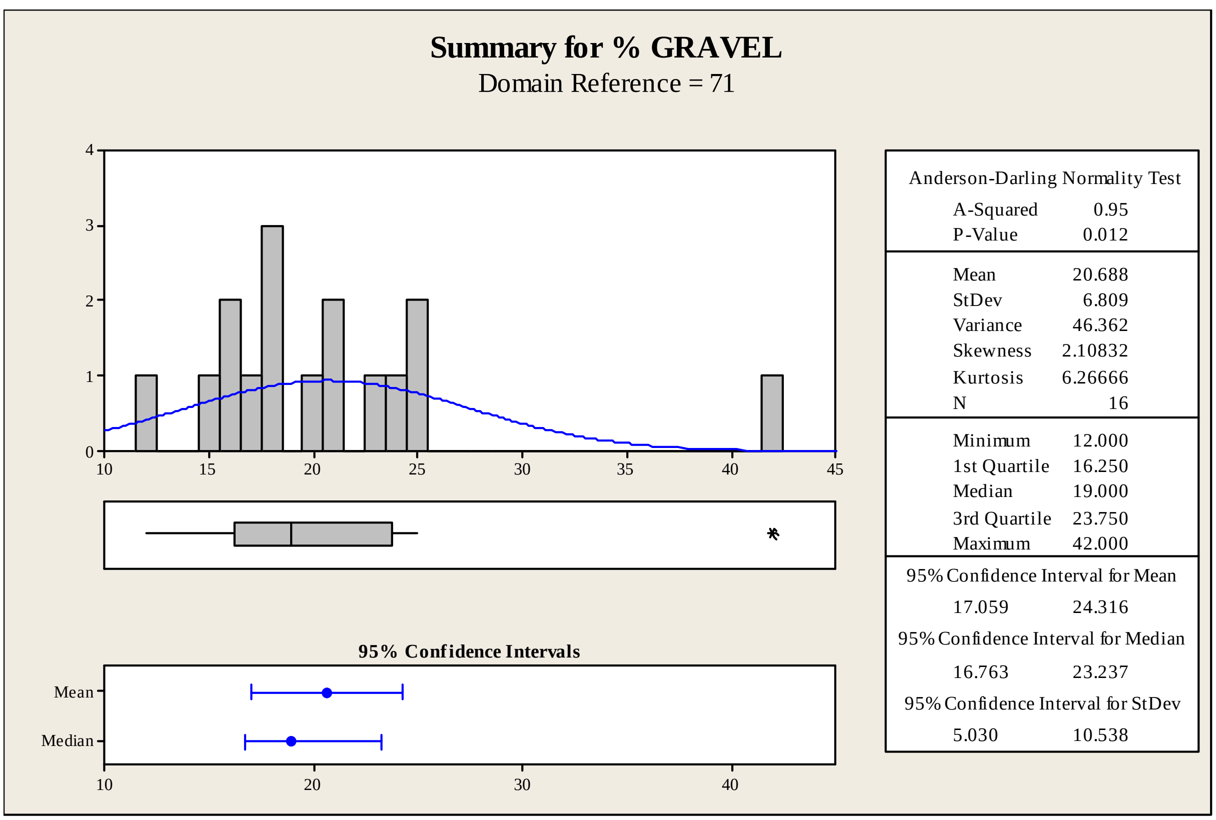


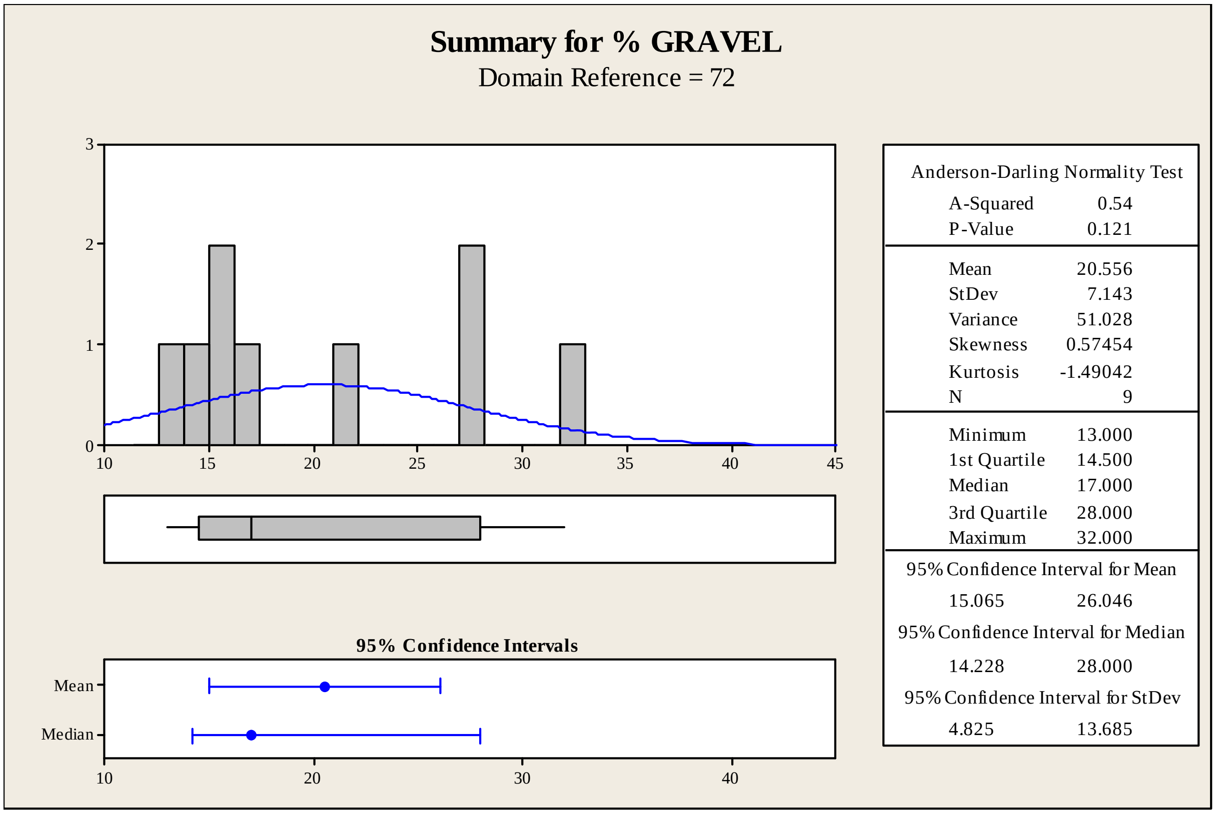
(Domain 53: insufficient data; Domain 61: no data)





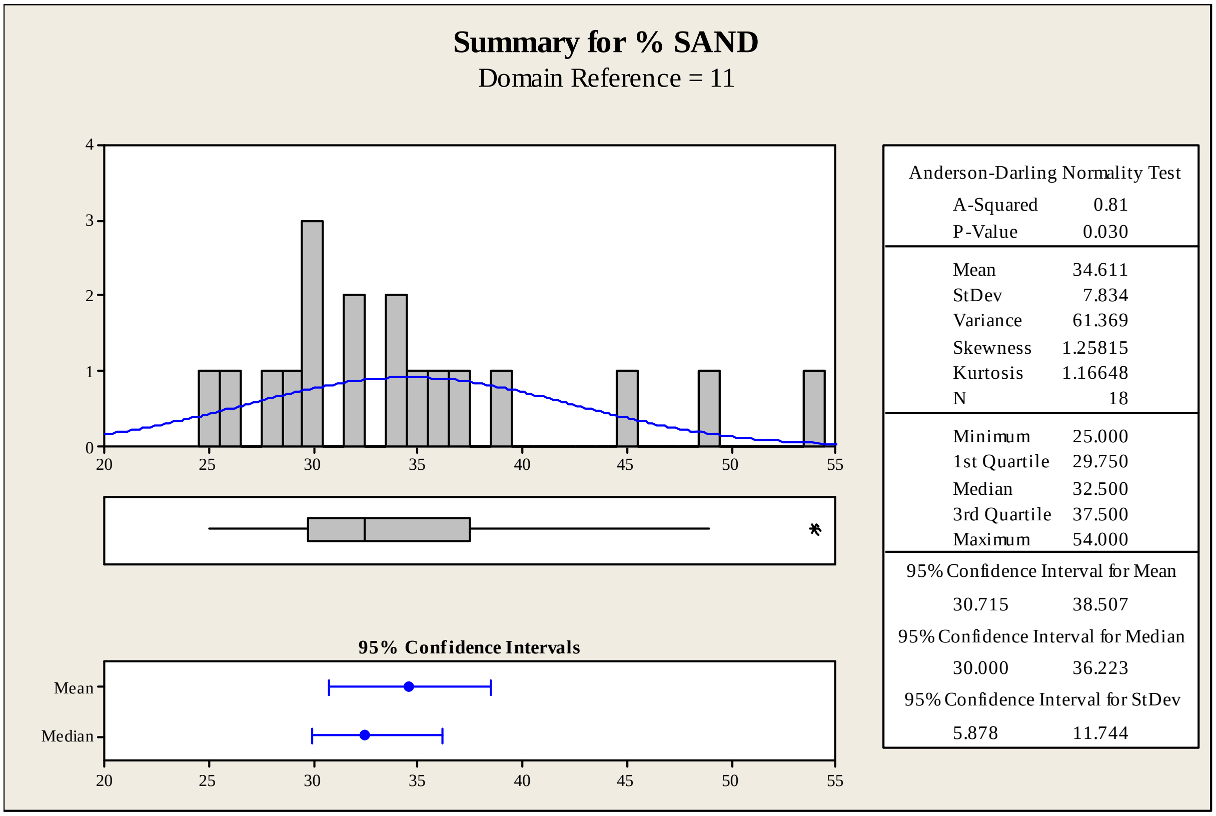
(Domains 64 and 65: insufficient data)

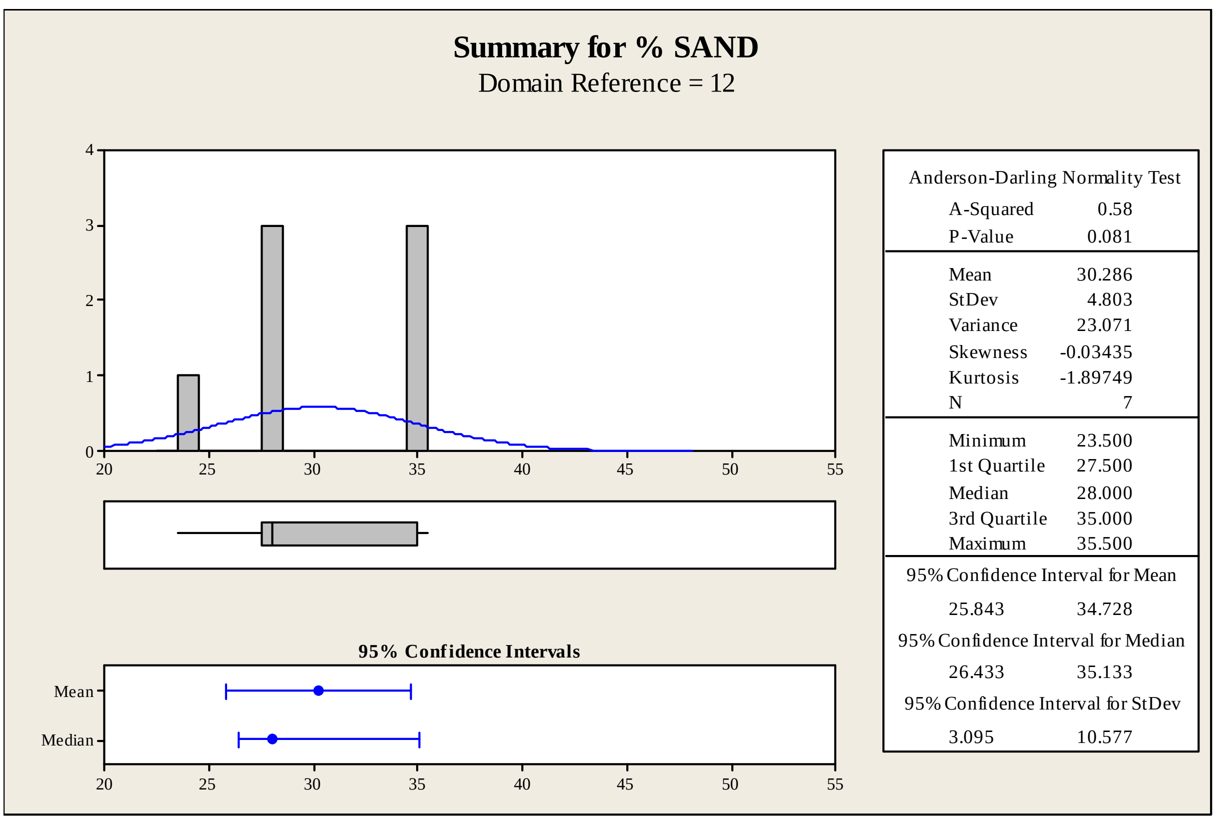




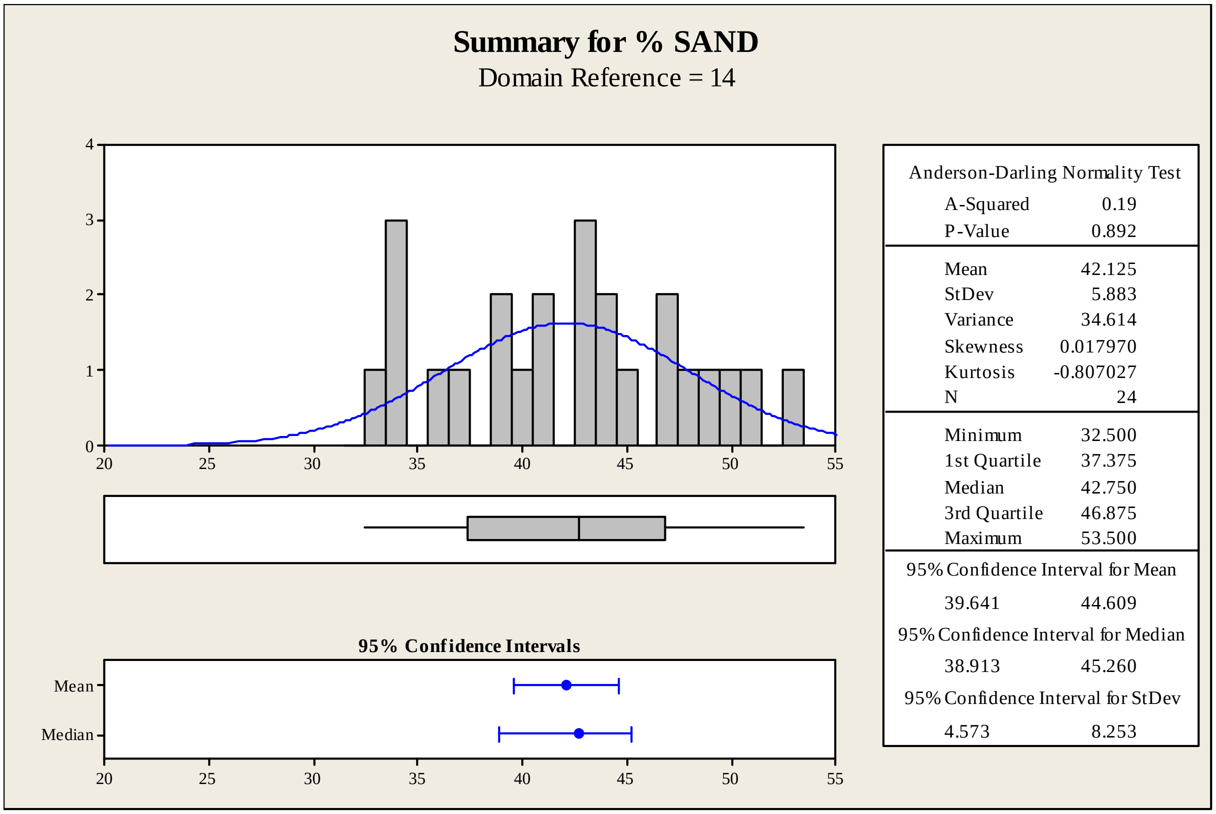
Summary for % GRAVEL
Domain Reference = 72
Anderson-Darling Normality Test
A-Squared 0.54
P-Value 0.121
Mean 20.556
StDev 7.143
Variance 51.028
Skewness 0.57454
Kurtosis -1.49042
N 9
Minimum 13.000
1st Quartile 14.500
Median 17.000
3rd Quartile 28.000
Maximum 32.000
95% Confidence Interval for Mean
15.065 26.046
95% Confidence Interval for Median
14.228 28.000
95% Confidence Interval for StDev
4.825 13.685
95% Confidence Intervals
Mean
Median

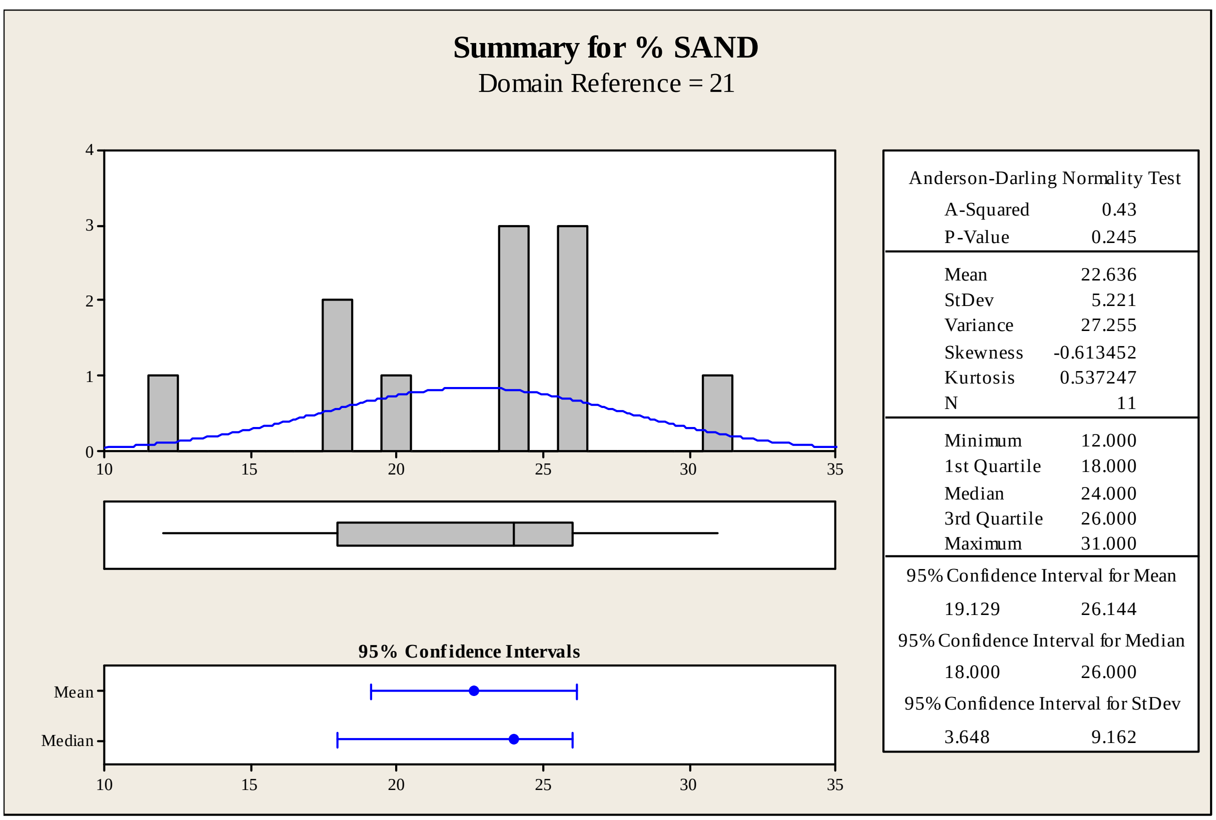
Grading Fraction: Sand

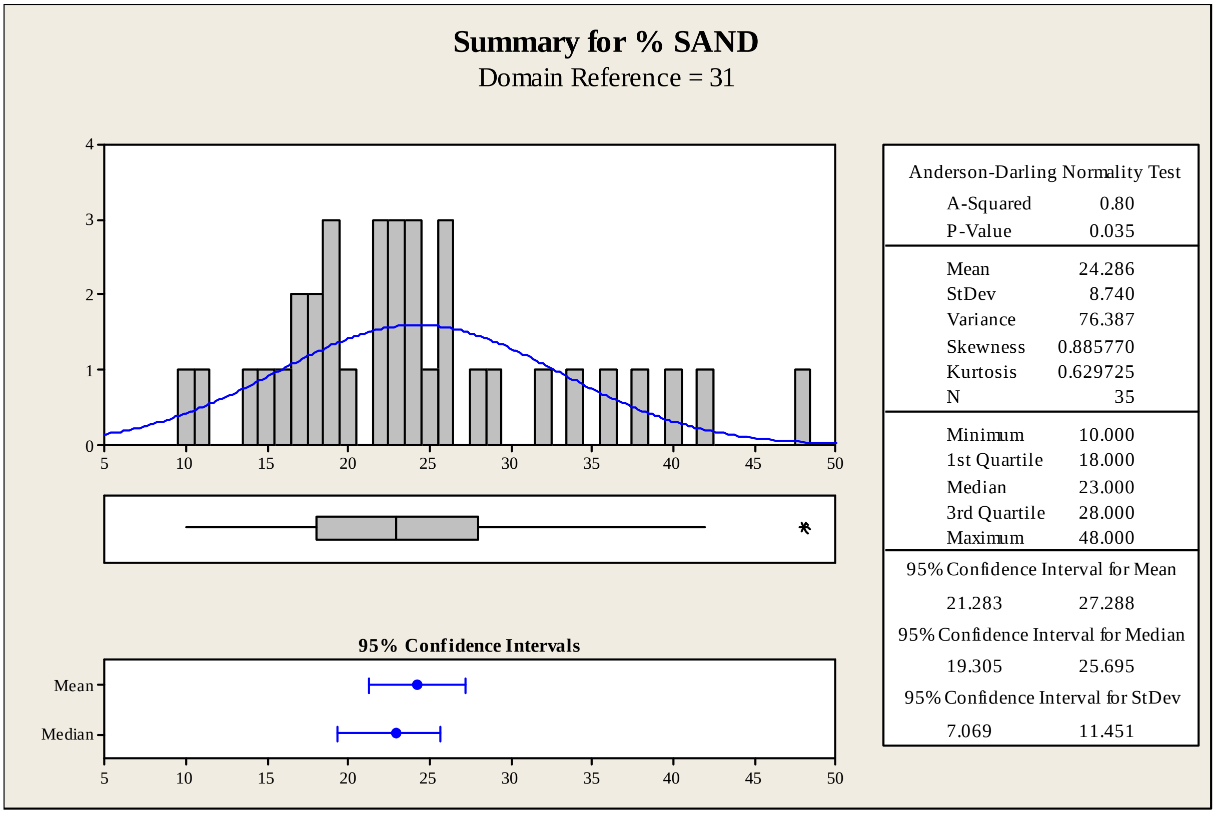


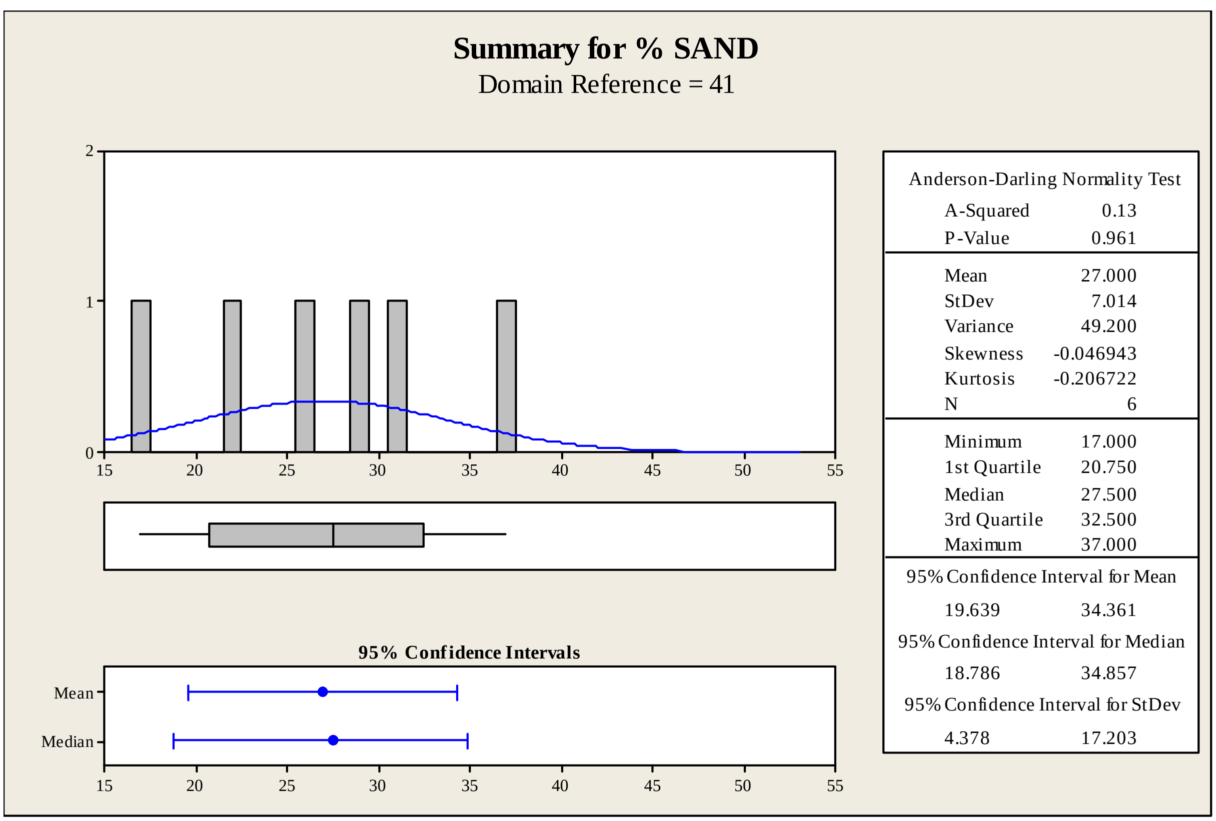


(Domain 13: insufficient data)

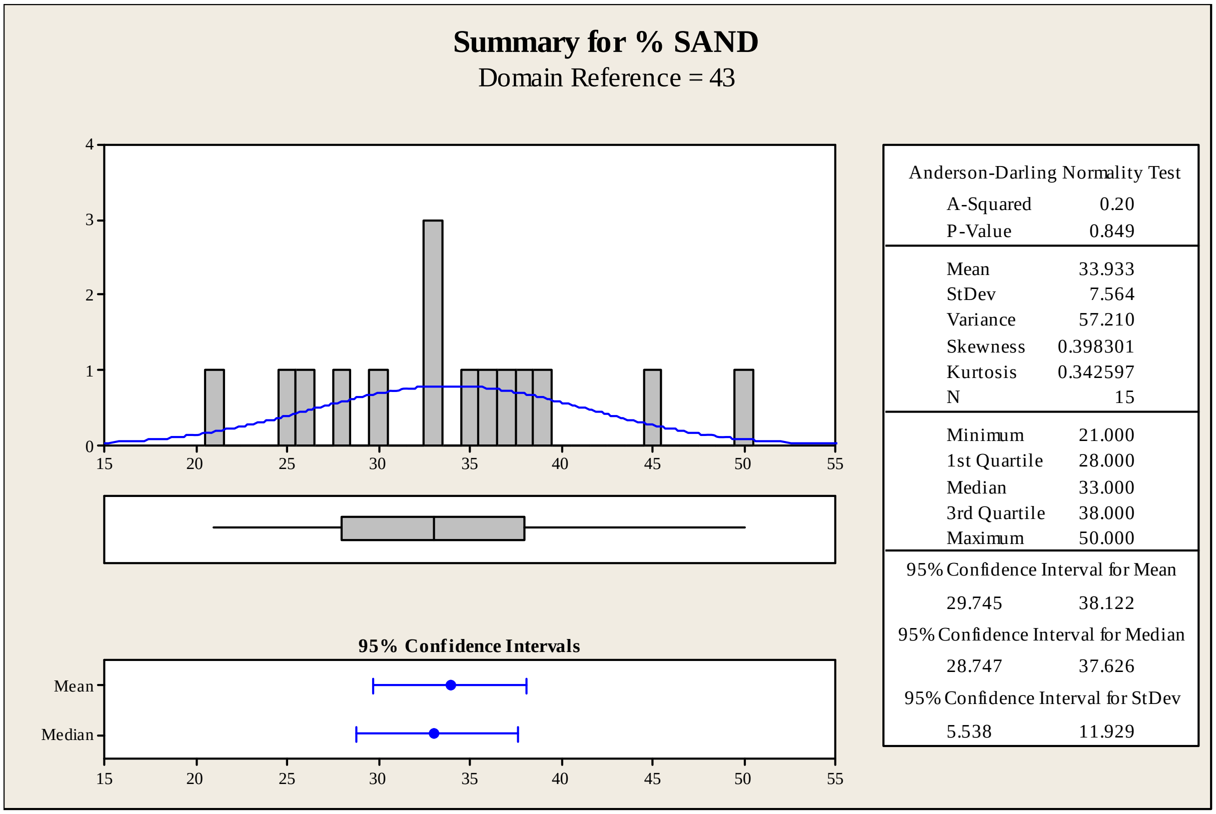


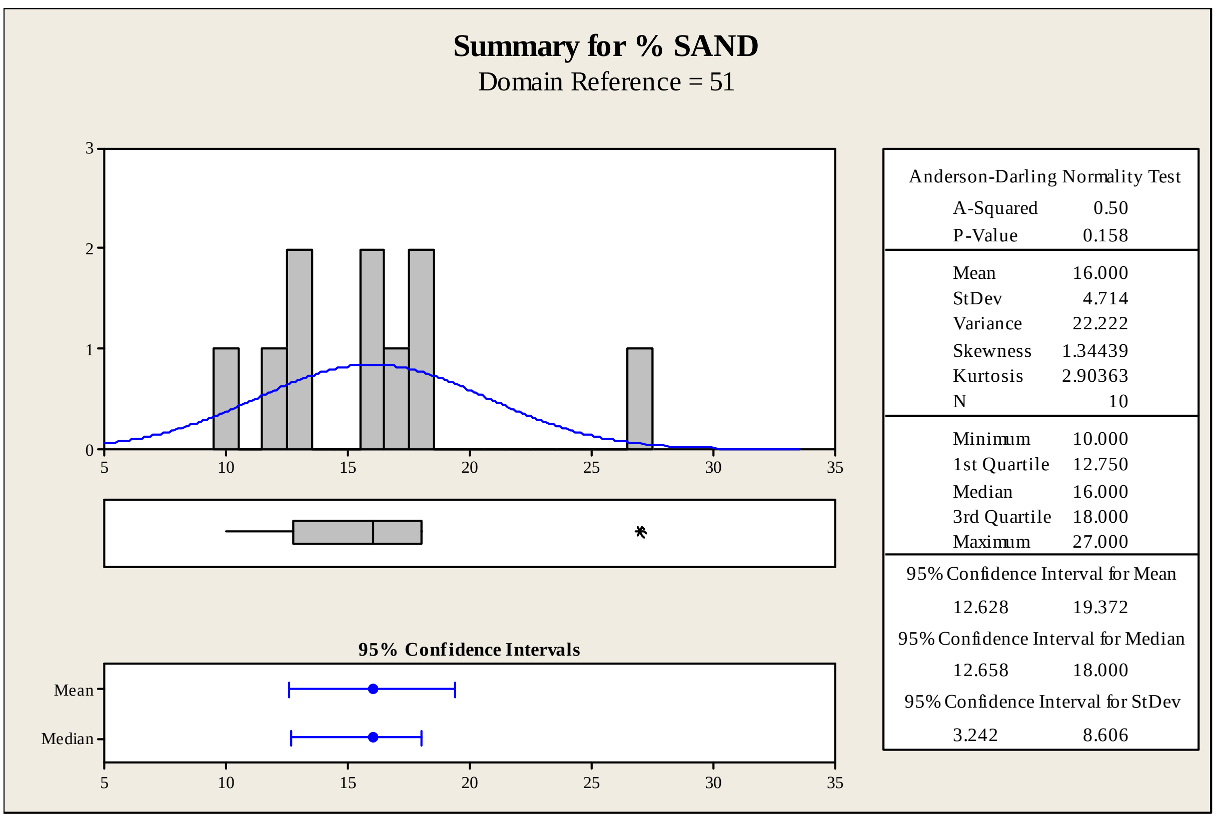


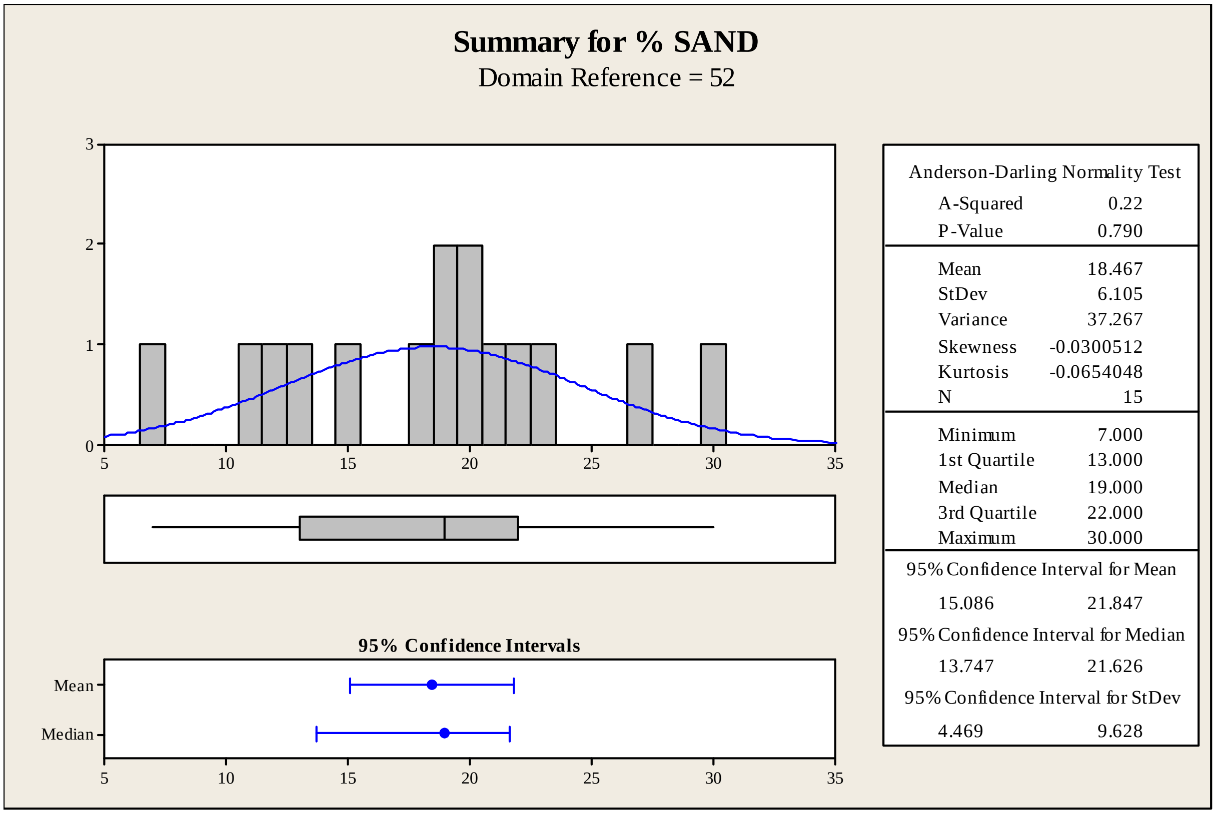

Summary for % SAND
Domain Reference = 31
Anderson-Darling Normality Test
A-Squared 0.80
P-Value 0.035
Mean 24.286
StDev 8.740
Variance 76.387
Skewness 0.885770
Kurtosis 0.629725
N 35
Minimum 10.000
1st Quartile 18.000
Median 23.000
3rd Quartile 28.000
Maximum 48.000
95% Confidence Interval for Mean
21.283 27.288
95% Confidence Interval for Median
19.305 25.695
95% Confidence Interval for StDev
7.069 11.451
95% Confidence Intervals
Mean
Median
5 10 15 20 25 30 35 40 45 50


Summary for % SAND
Domain Reference = 41
Anderson-Darling Normality Test
A-Squared 0.13
P-Value 0.961
Mean 27.000
StDev 7.014
Variance 49.200
Skewness -0.046943
Kurtosis -0.206722
N 6
Minimum 17.000
1st Quartile 20.750
Median 27.500
3rd Quartile 32.500
Maximum 37.000
95% Confidence Interval for Mean
19.639 34.361
95% Confidence Interval for Median
18.786 34.857
95% Confidence Interval for StDev
4.378 17.203
95% Confidence Intervals
Mean
Median
15 20 25 30 35 40 45 50 55

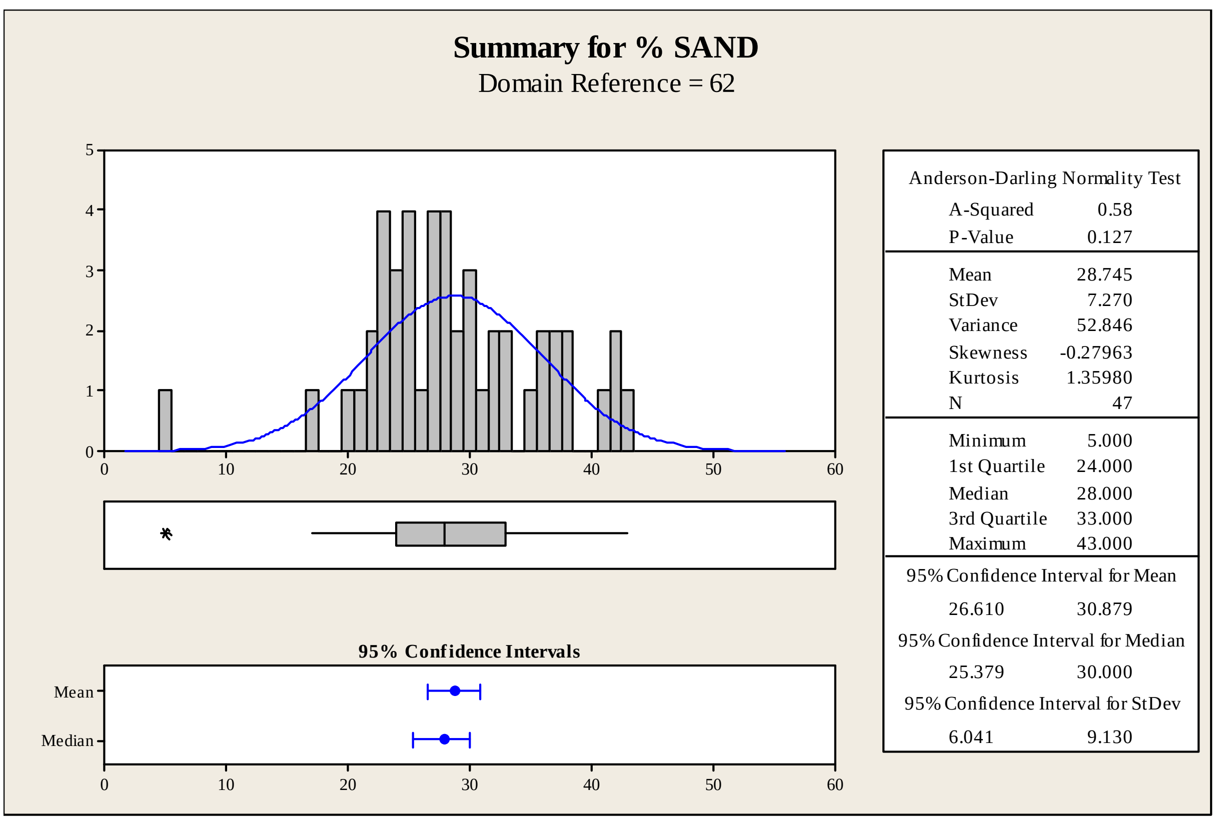
(Domain 42: insufficient data)

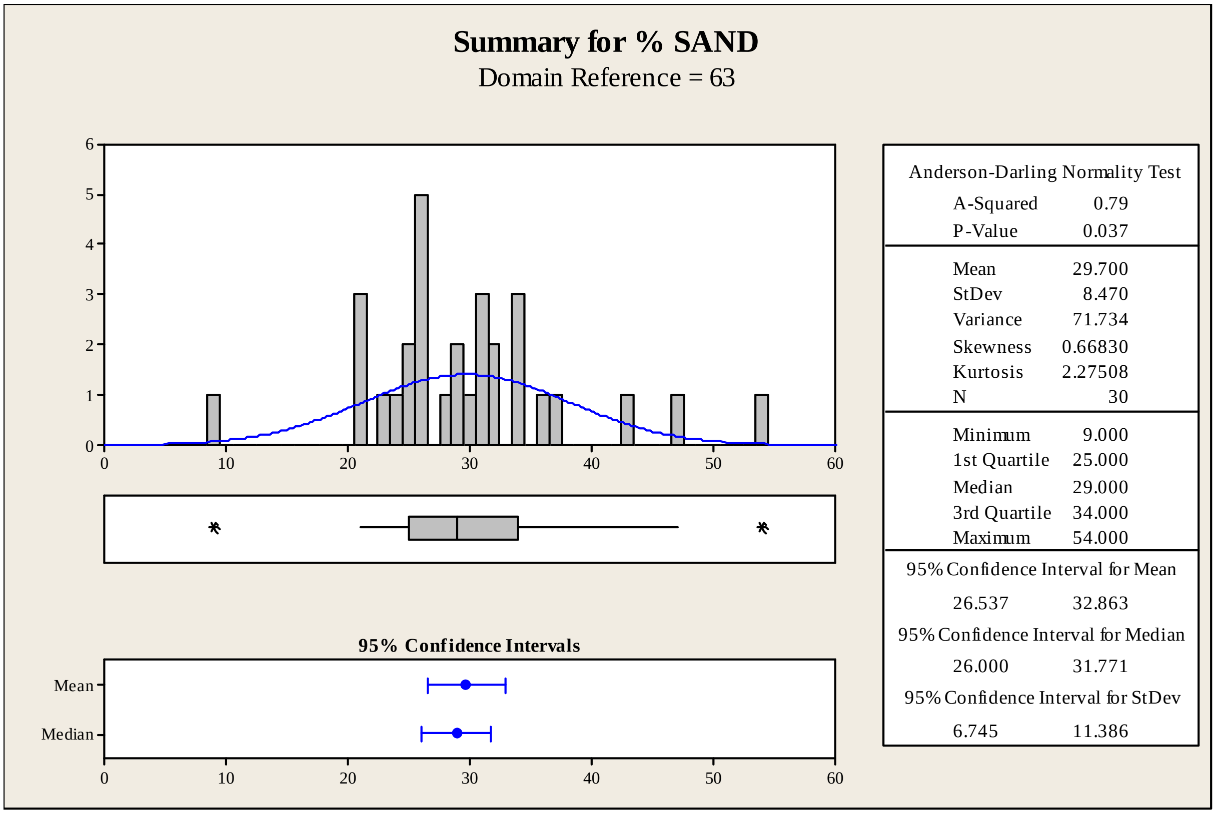




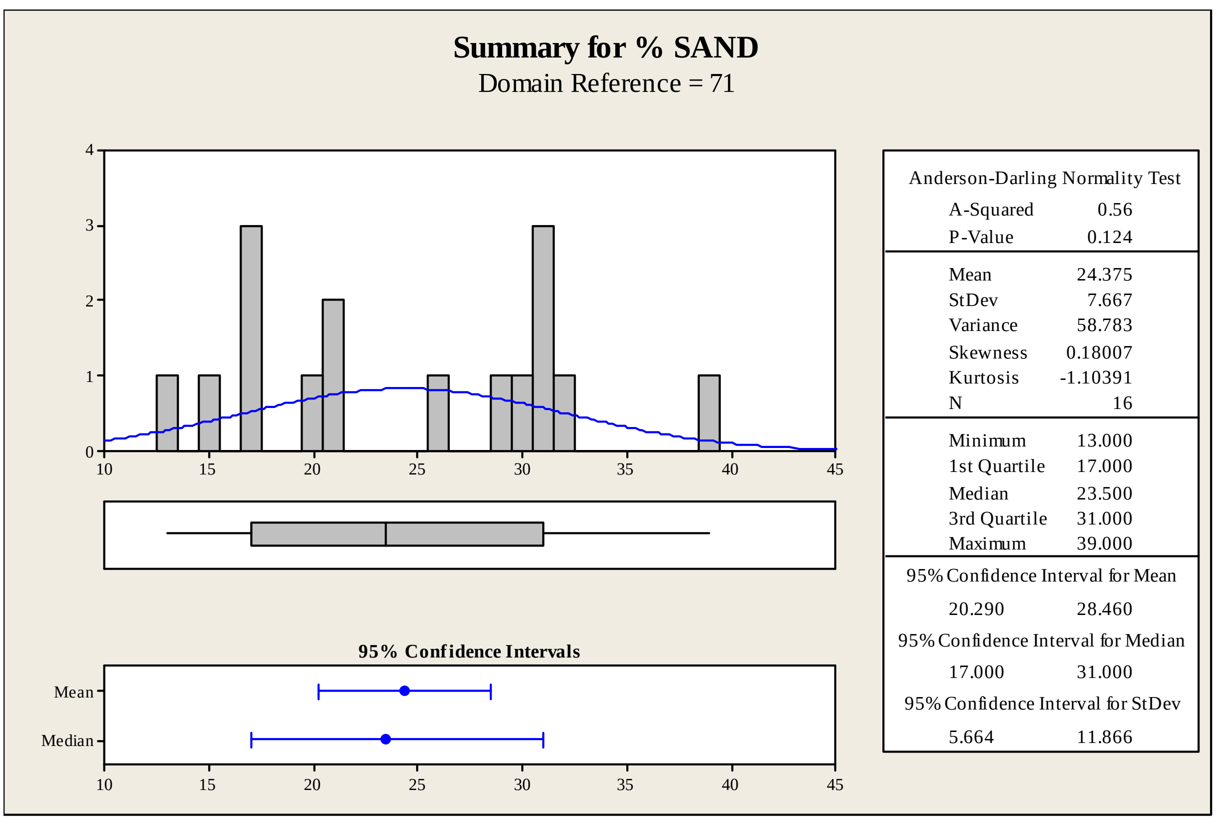


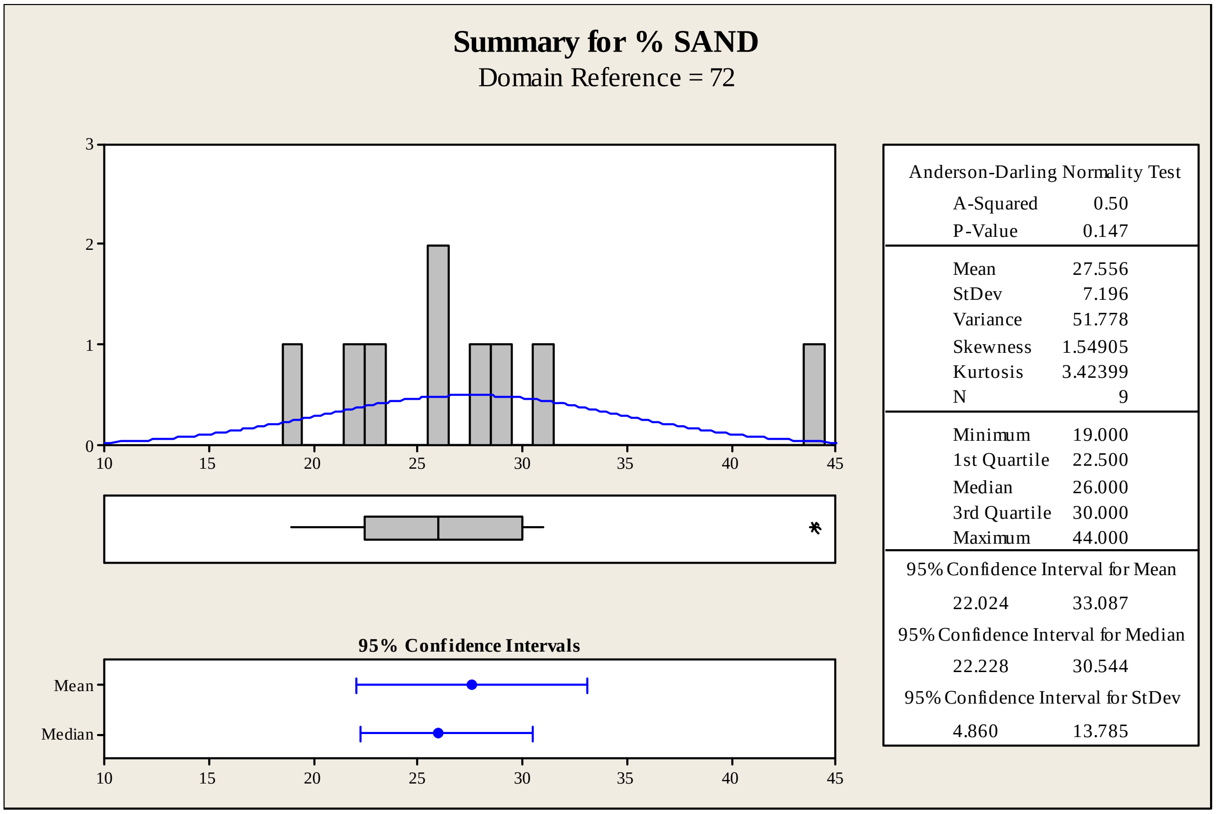
(Domain 53: insufficient data; Domain 61: no data)



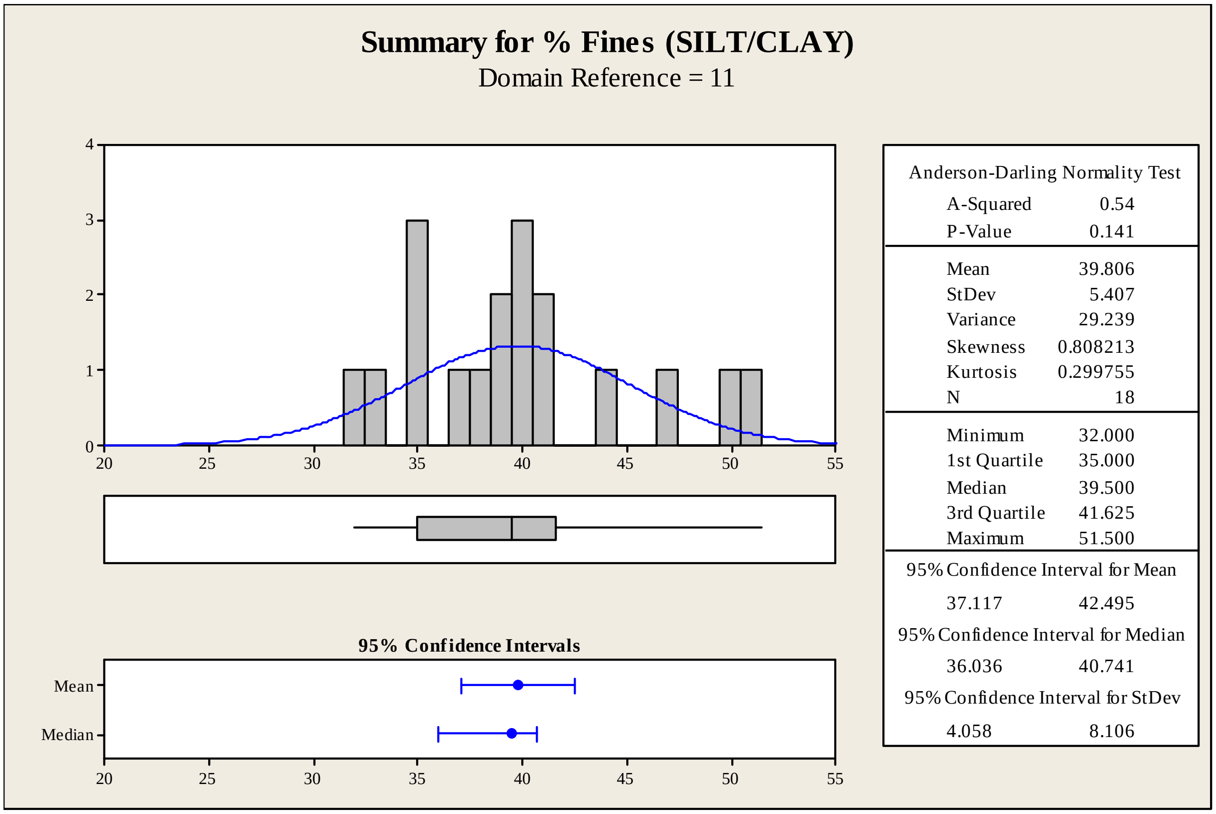


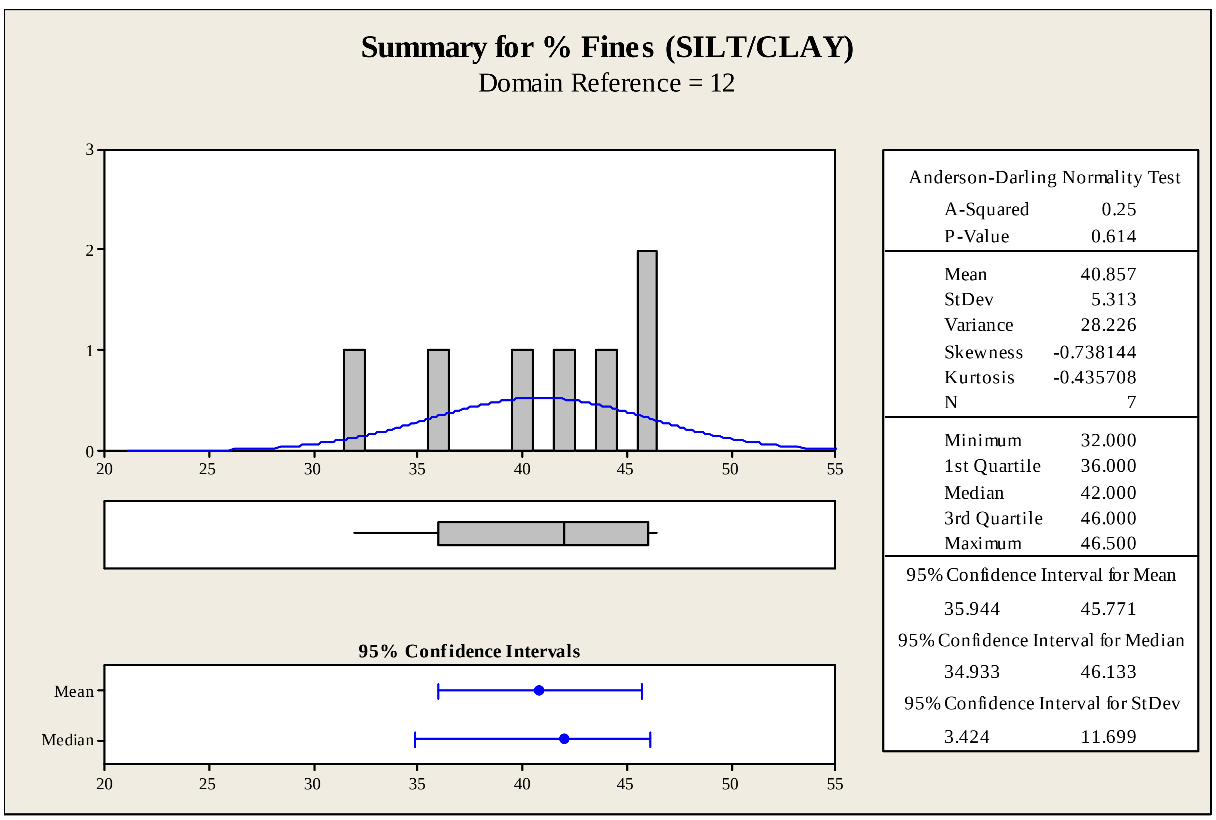
(Domains 64 and 65: insufficient data)



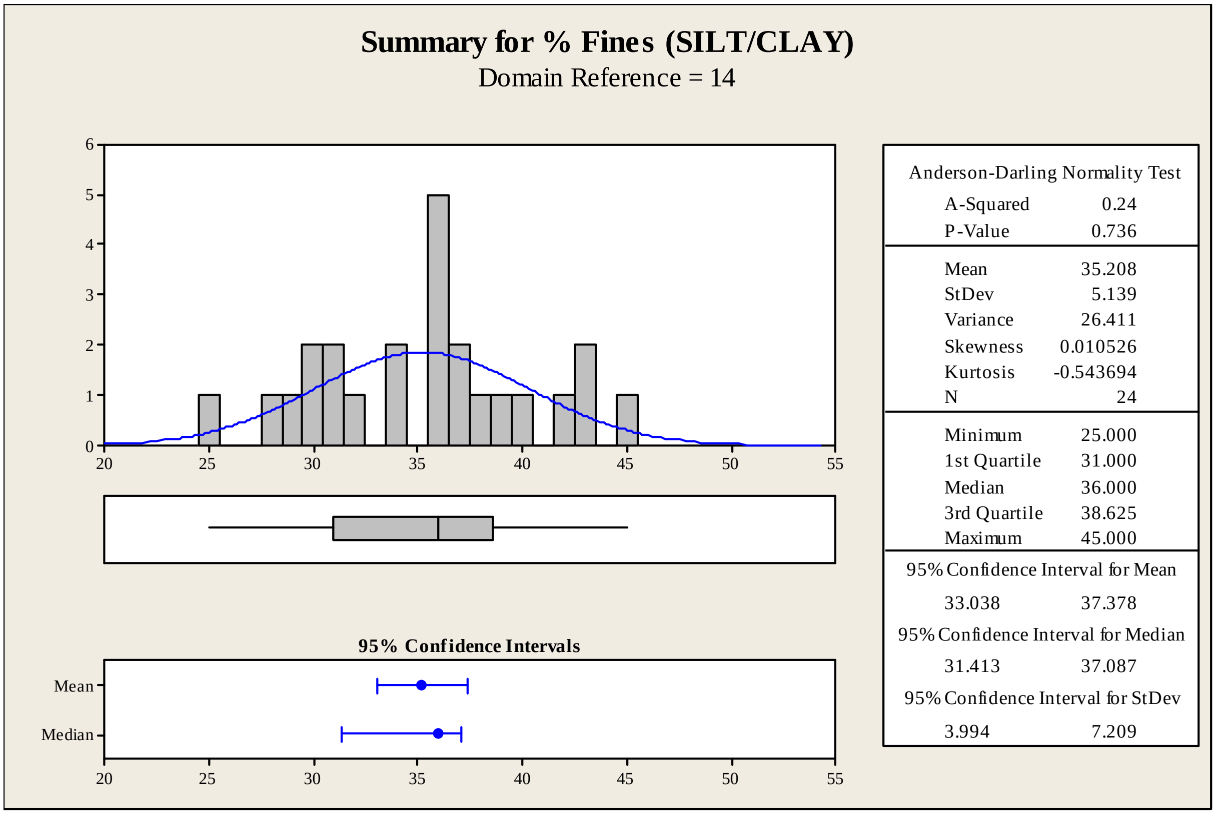

Summary for % SAND
Domain Reference = 72
Anderson-Darling Normality Test
A-Squared 0.50
P-Value 0.147
Mean 27.556
StDev 7.196
Variance 51.778
Skewness 1.54905
Kurtosis 3.42399
N 9
Minimum 19.000
1st Quartile 22.500
Median 26.000
3rd Quartile 30.000
Maximum 44.000
95% Confidence Interval for Mean
22.024 33.087
95% Confidence Interval for Median
22.228 30.544
95% Confidence Interval for StDev
4.860 13.785
95% Confidence Intervals
Mean
Median
0
1
2
3
10
15
20
25
30
35
40
45

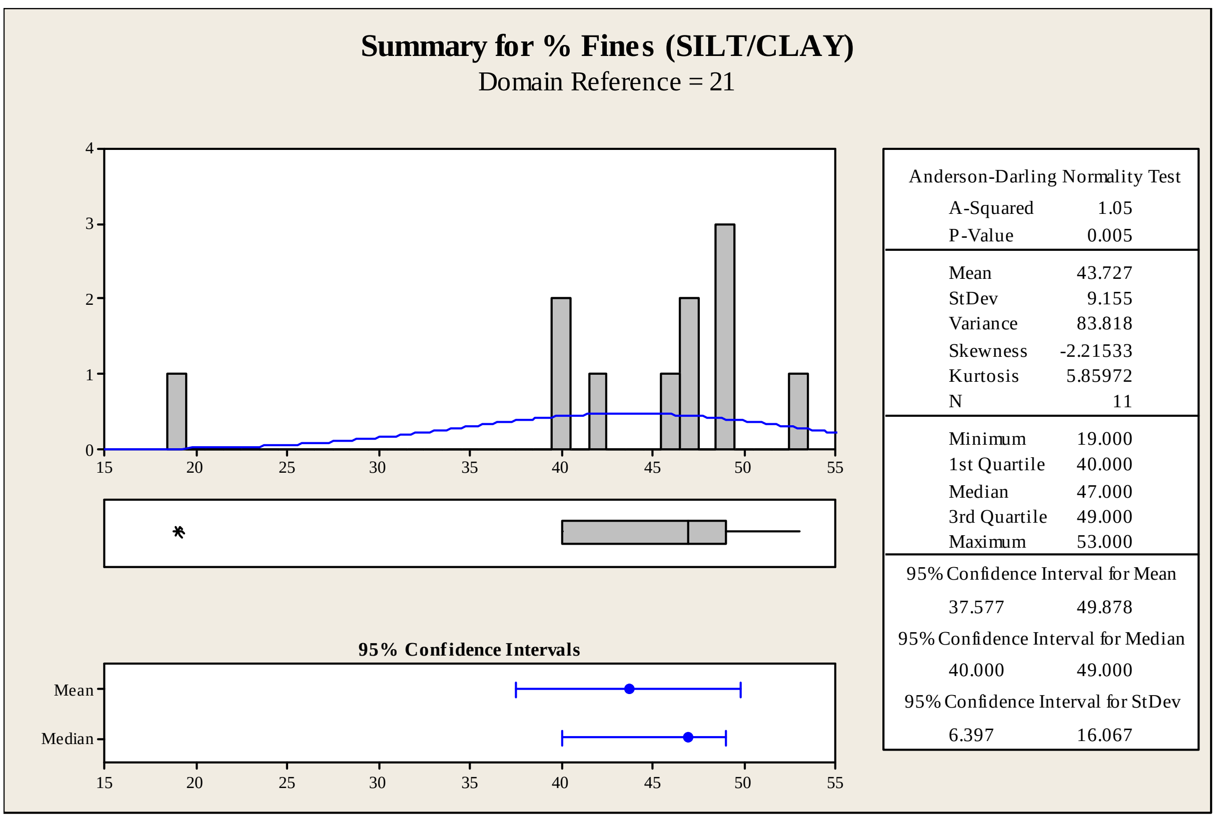
Grading Fraction: (Fines)

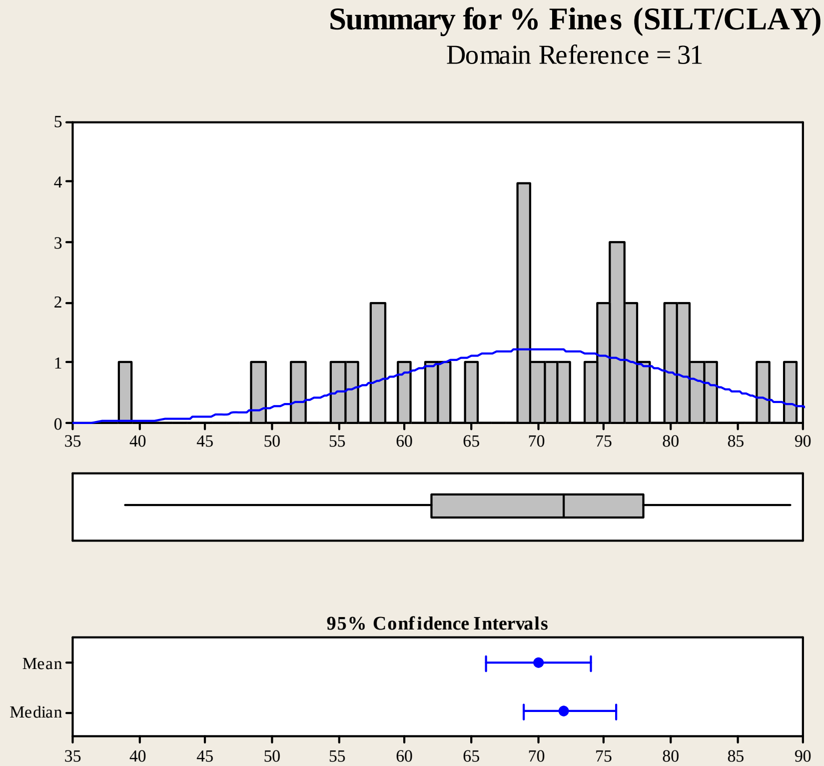




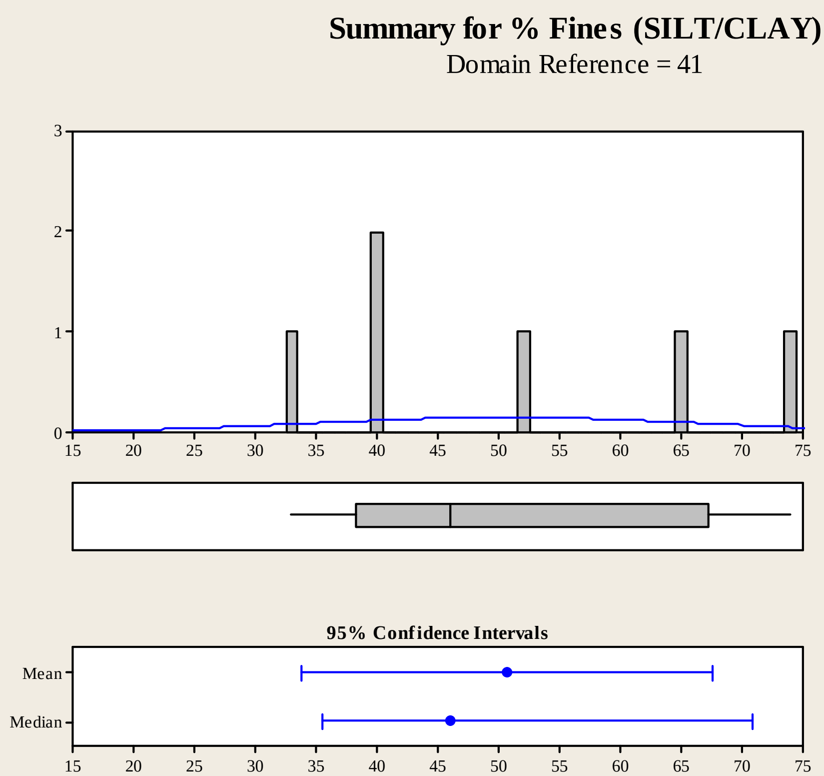
(Domain 13: insufficient data)





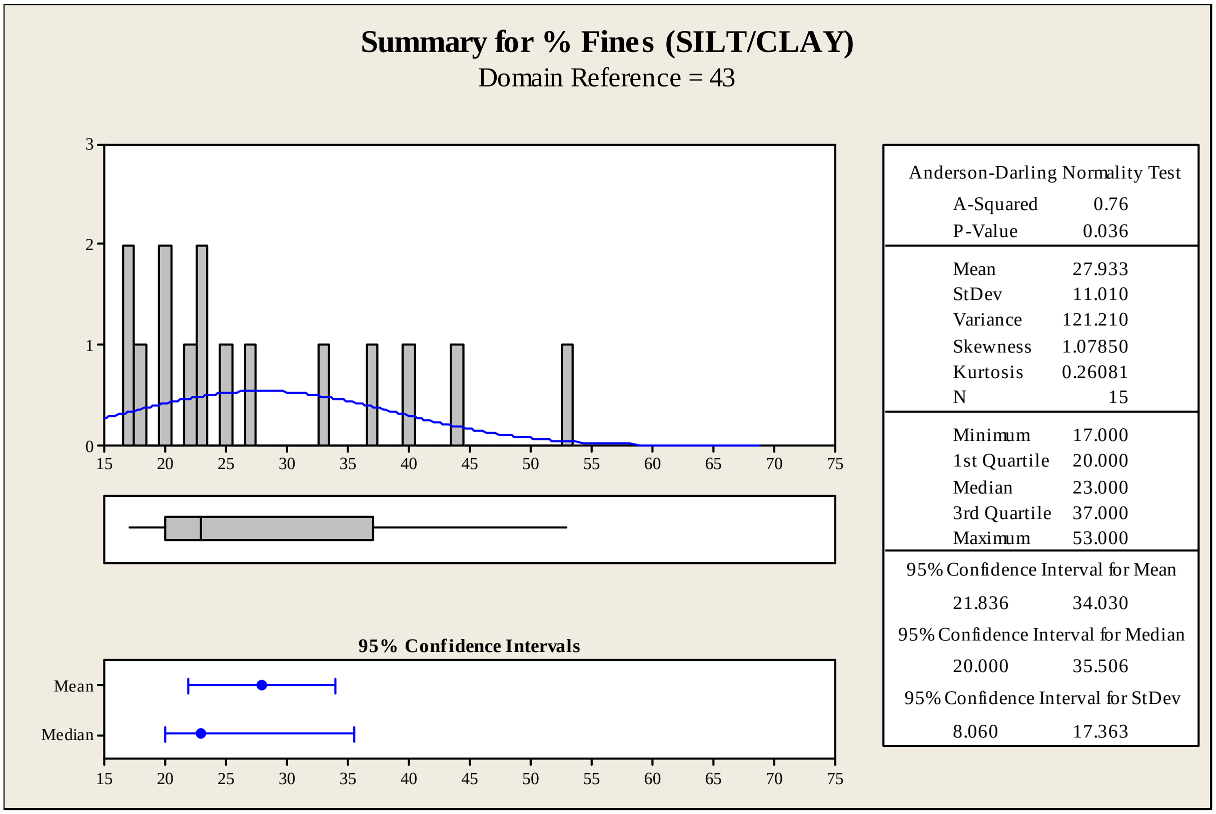


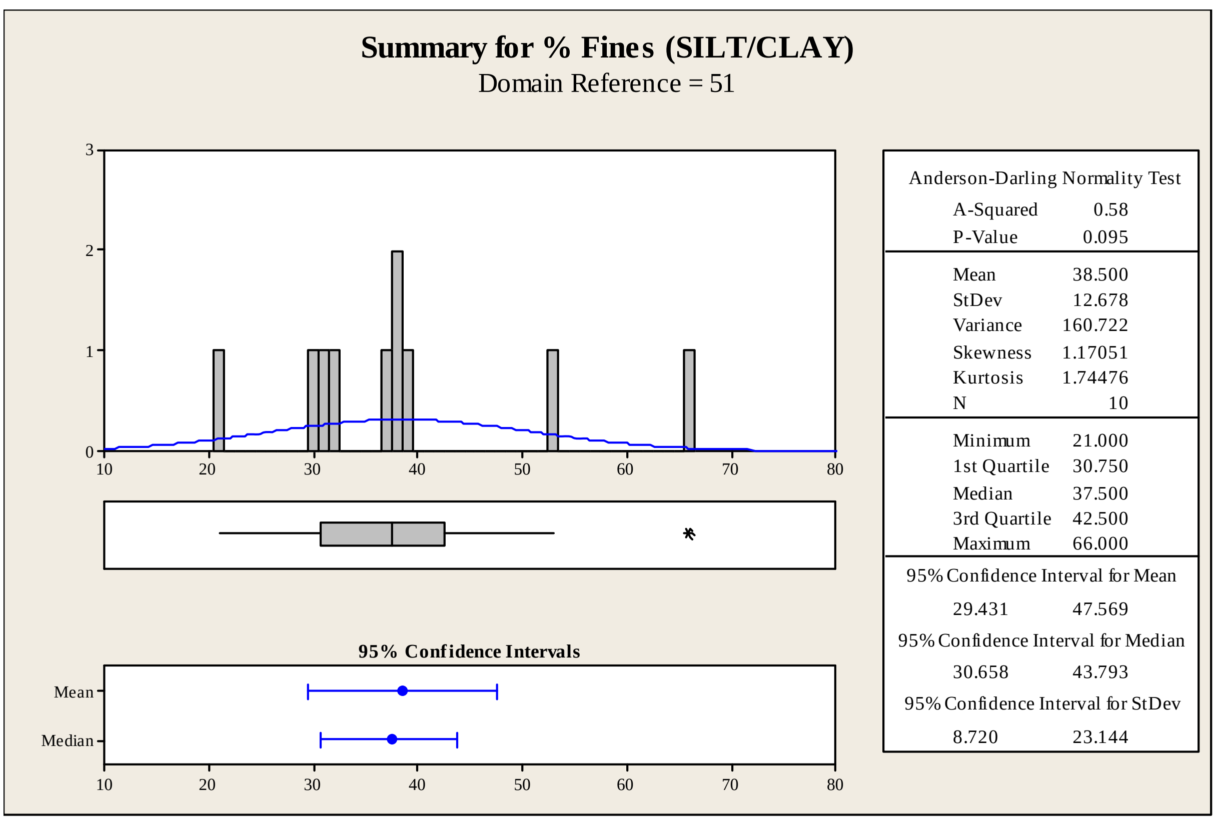
Anderson-Darling Normality Test	
A-Squared	0.58
P-Value	0.124
Mean	70.086
StDev	11.405
Variance	130.081
Skewness	-0.737009
Kurtosis	0.260674
N	35
Minimum	39.000
1st Quartile	62.000
Median	72.000
3rd Quartile	78.000
Maximum	89.000
95% Confidence Interval for Mean	
66.168	74.004
95% Confidence Interval for Median	
69.000	76.000
95% Confidence Interval for StDev	
9.225	14.943

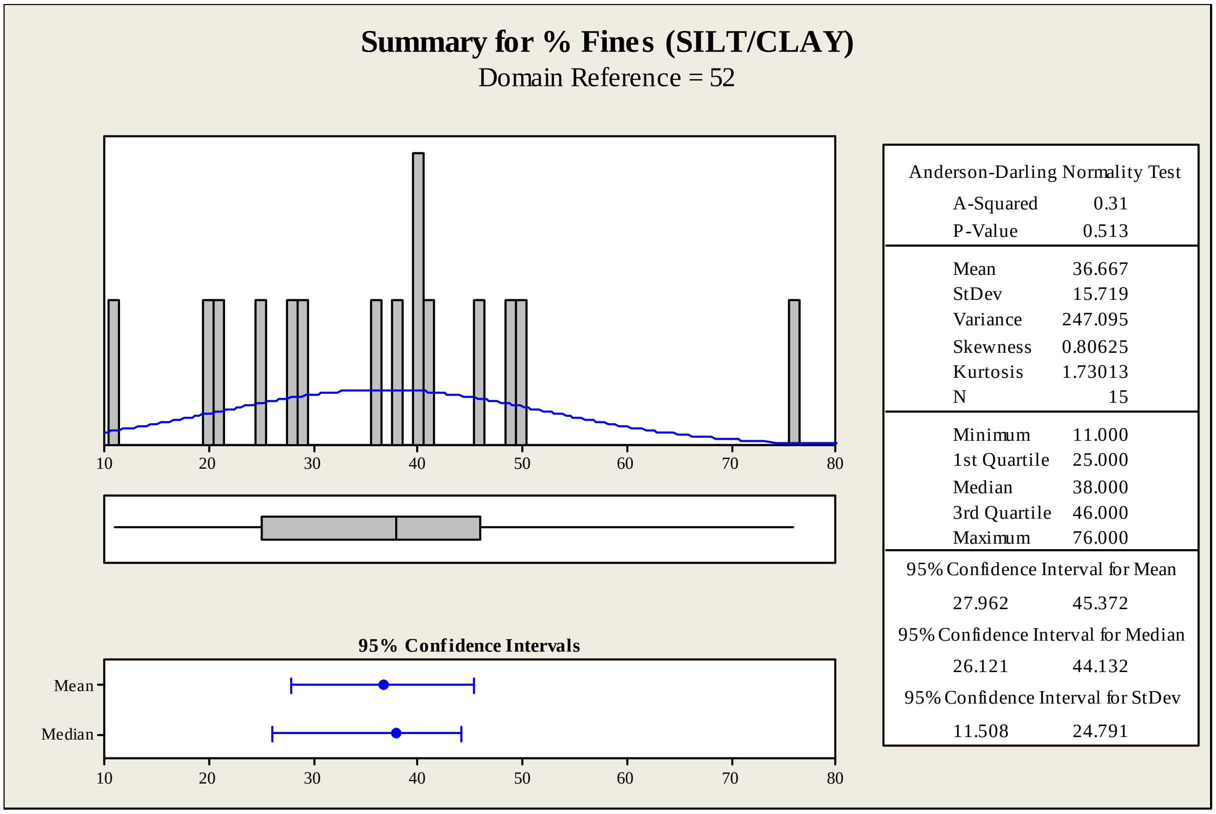


Anderson-Darling Normality Test	
A-Squared	0.30
P-Value	0.449
Mean	50.667
StDev	16.071
Variance	258.267
Skewness	0.55725
Kurtosis	-1.40223
N	6
Minimum	33.000
1st Quartile	38.250
Median	46.000
3rd Quartile	67.250
Maximum	74.000
95% Confidence Interval for Mean	
33.802	67.532
95% Confidence Interval for Median	
35.500	70.786
95% Confidence Interval for StDev	
10.031	39.415

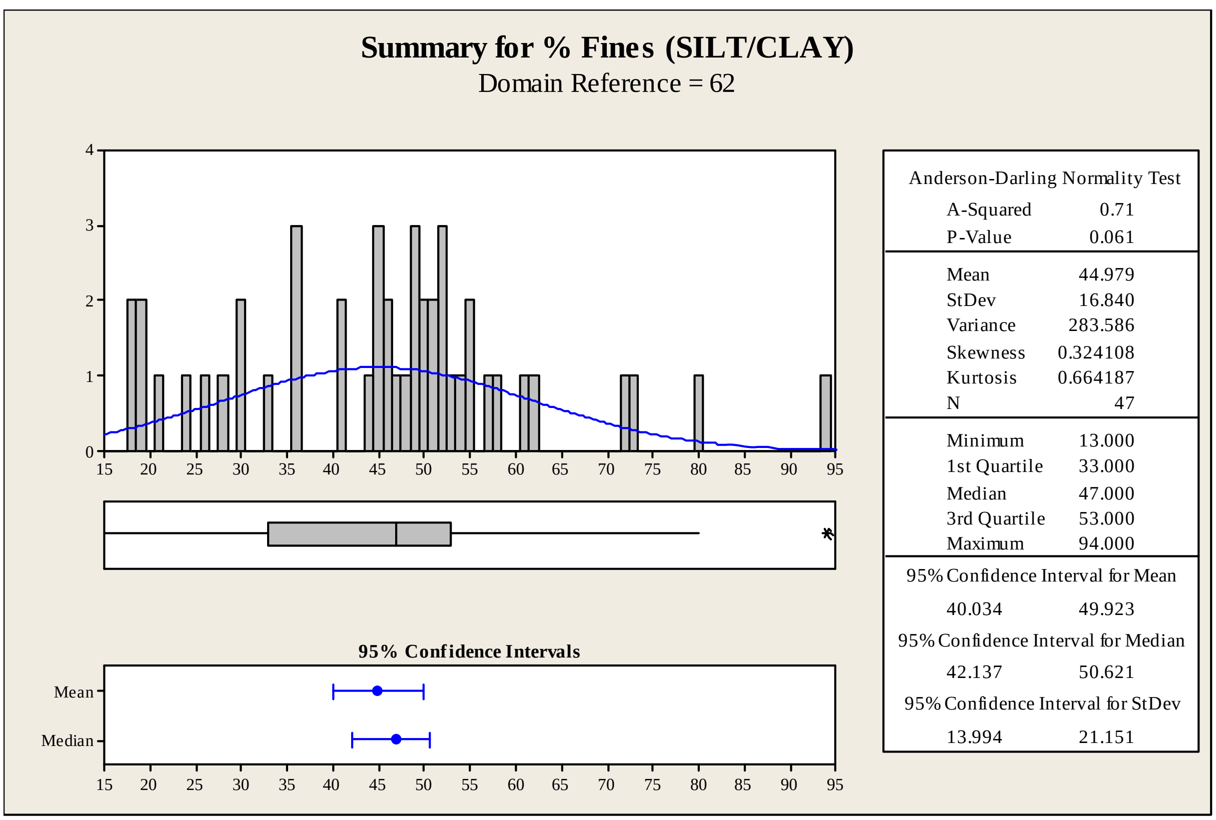
(Domain 42: insufficient data)

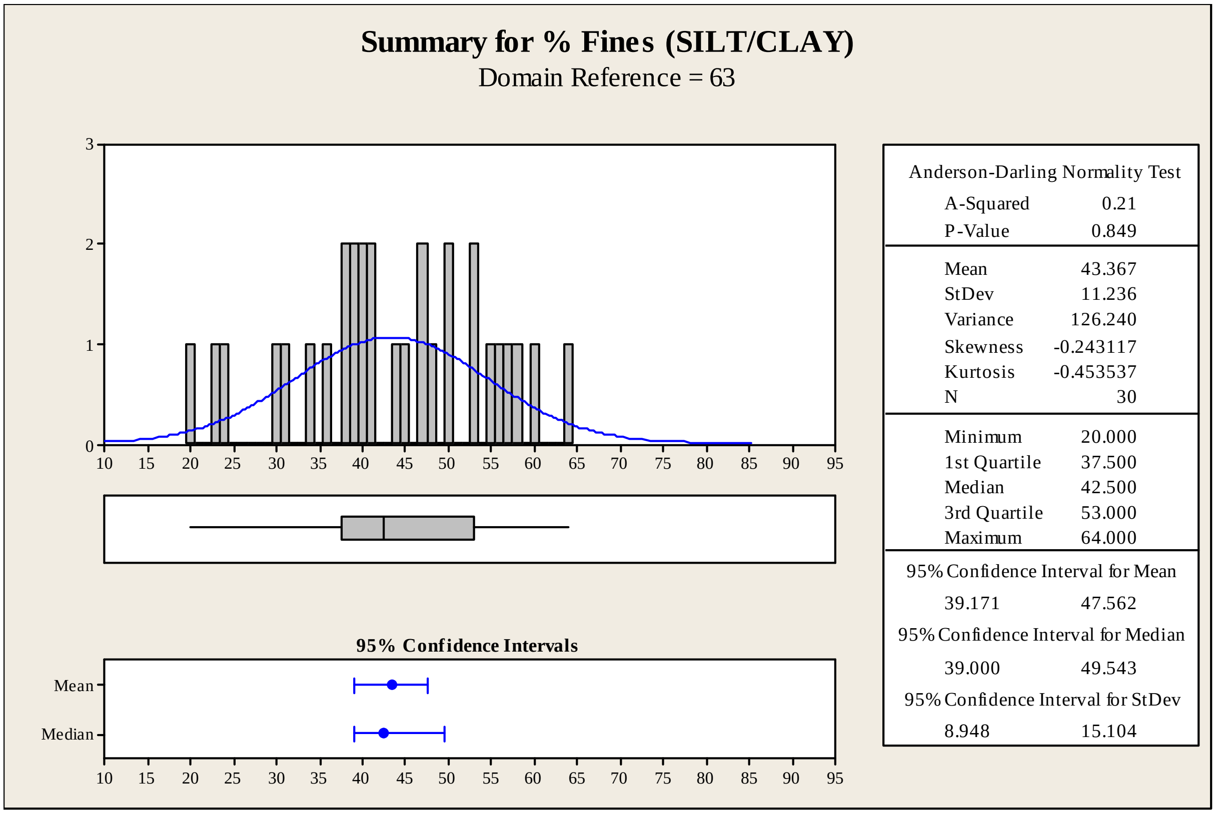




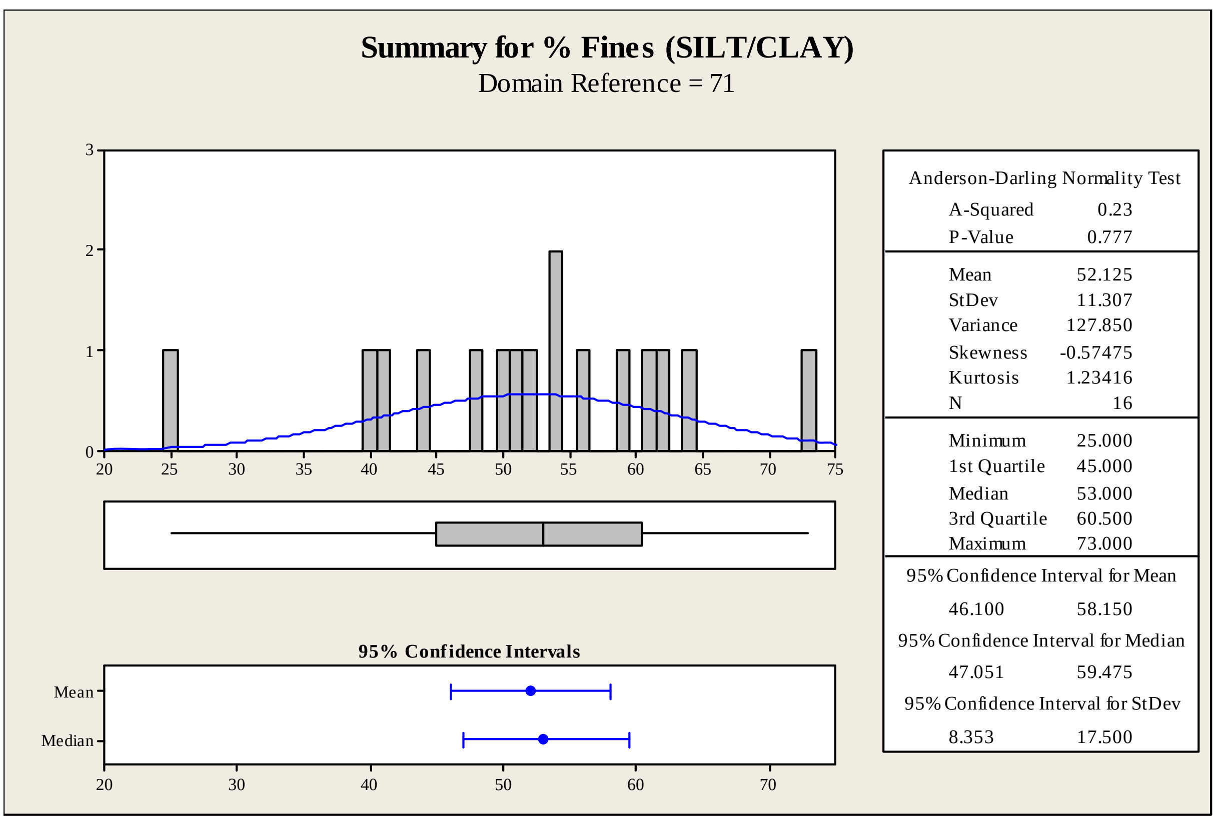


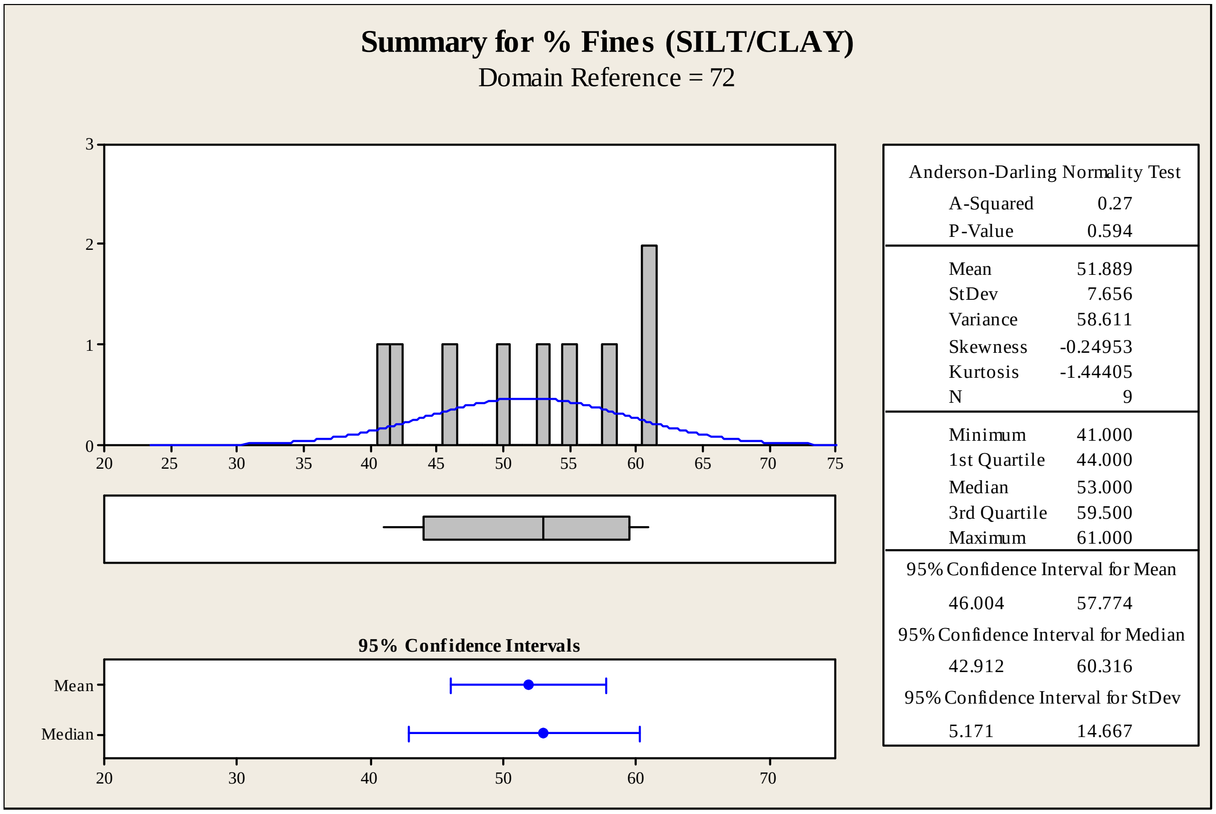
(Domain 53: insufficient data; Domain 61: no data)



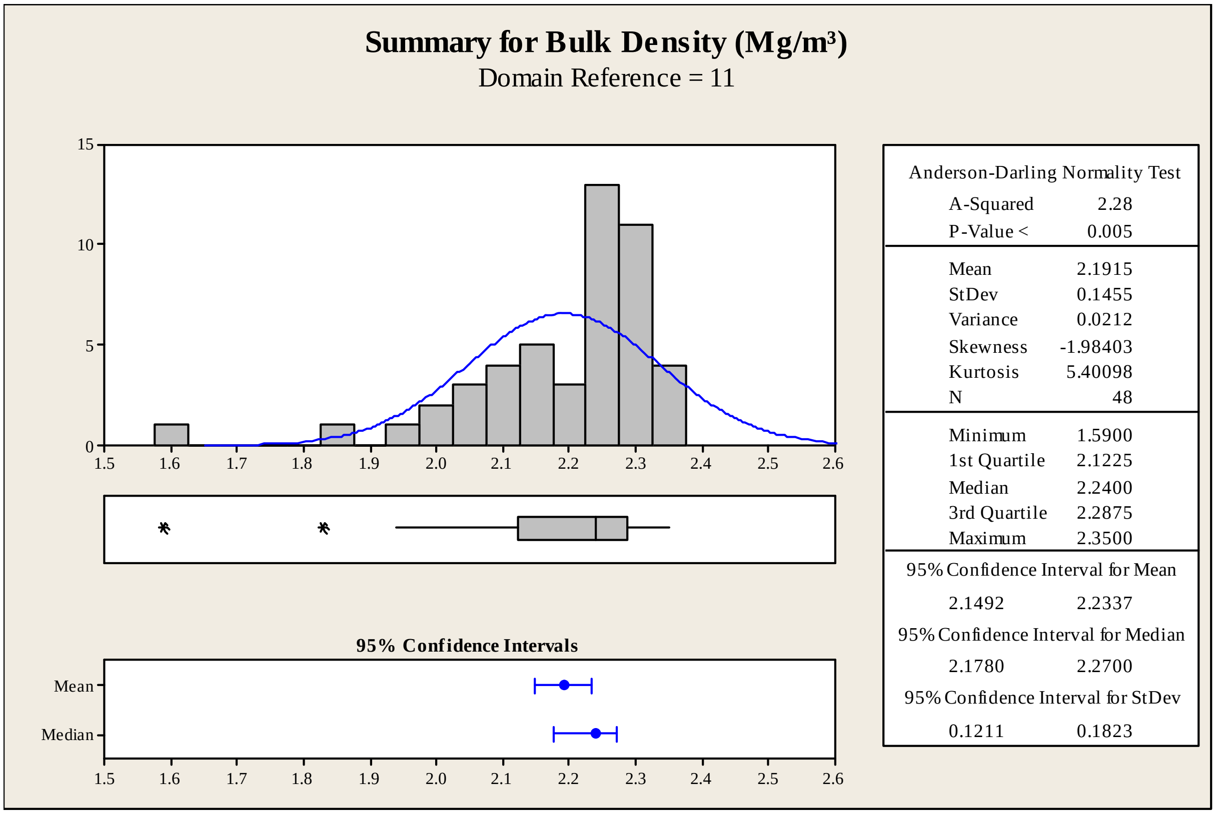


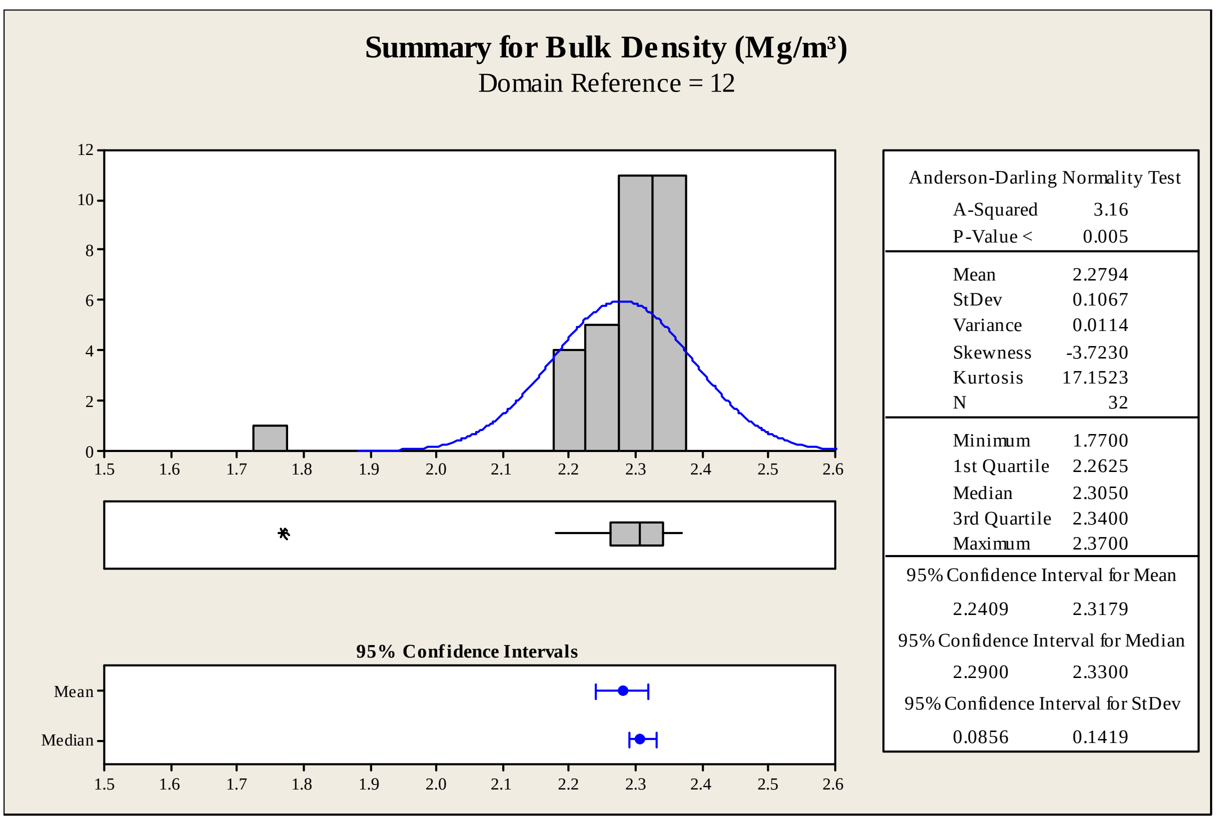
(Domains 64 and 65: insufficient data)



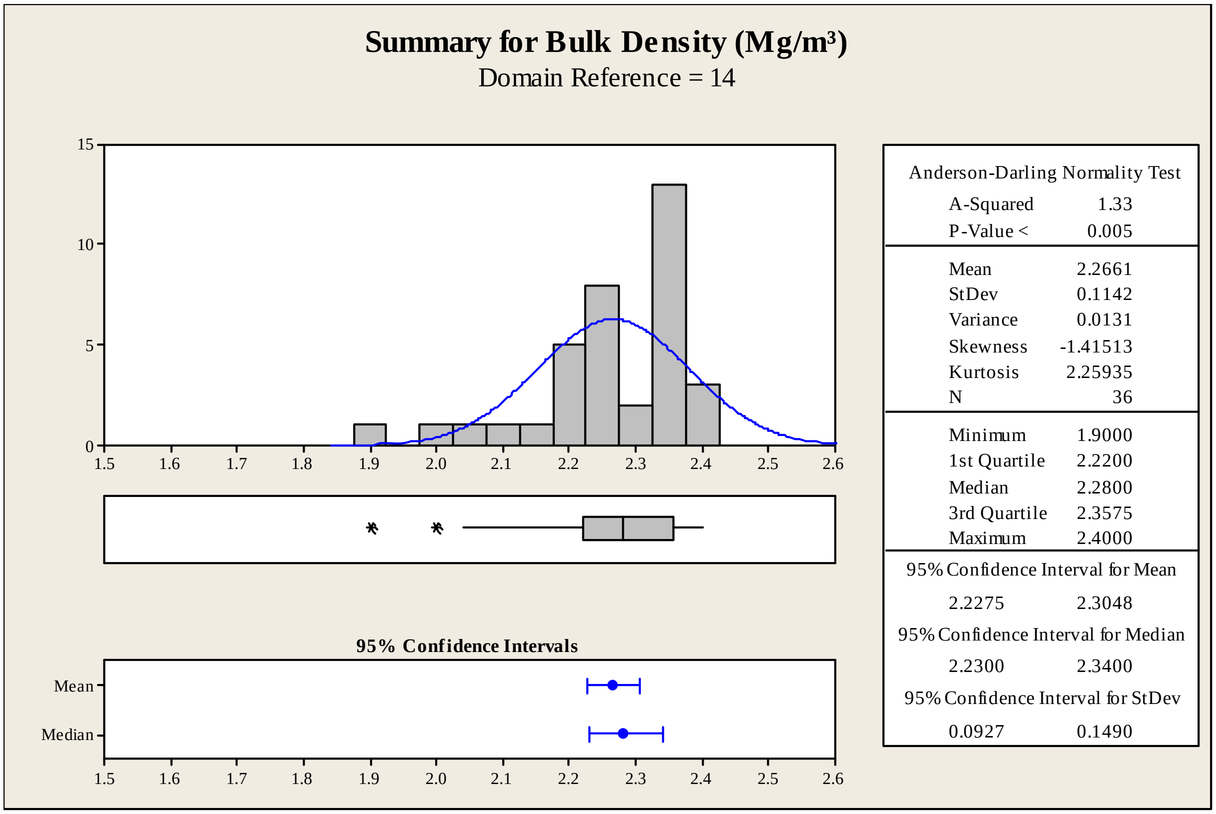

Summary for % Fines (SILT/CLAY)
Domain Reference = 72
Anderson-Darling Normality Test
A-Squared 0.27
P-Value 0.594
Mean 51.889
StDev 7.656
Variance 58.611
Skewness -0.24953
Kurtosis -1.44405
N 9
Minimum 41.000
1st Quartile 44.000
Median 53.000
3rd Quartile 59.500
Maximum 61.000
95% Confidence Interval for Mean
46.004 57.774
95% Confidence Interval for Median
42.912 60.316
95% Confidence Interval for StDev
5.171 14.667
95% Confidence Intervals
Mean
Median

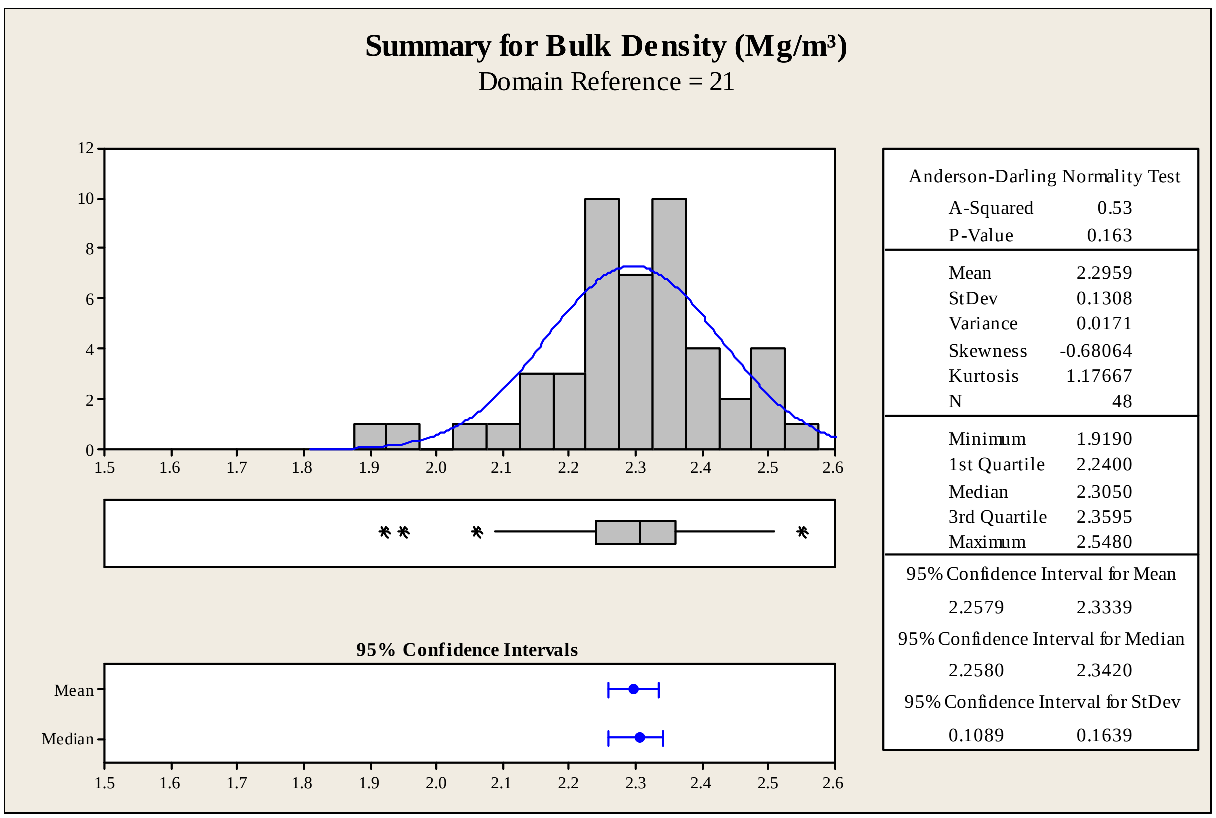
Bulk Density

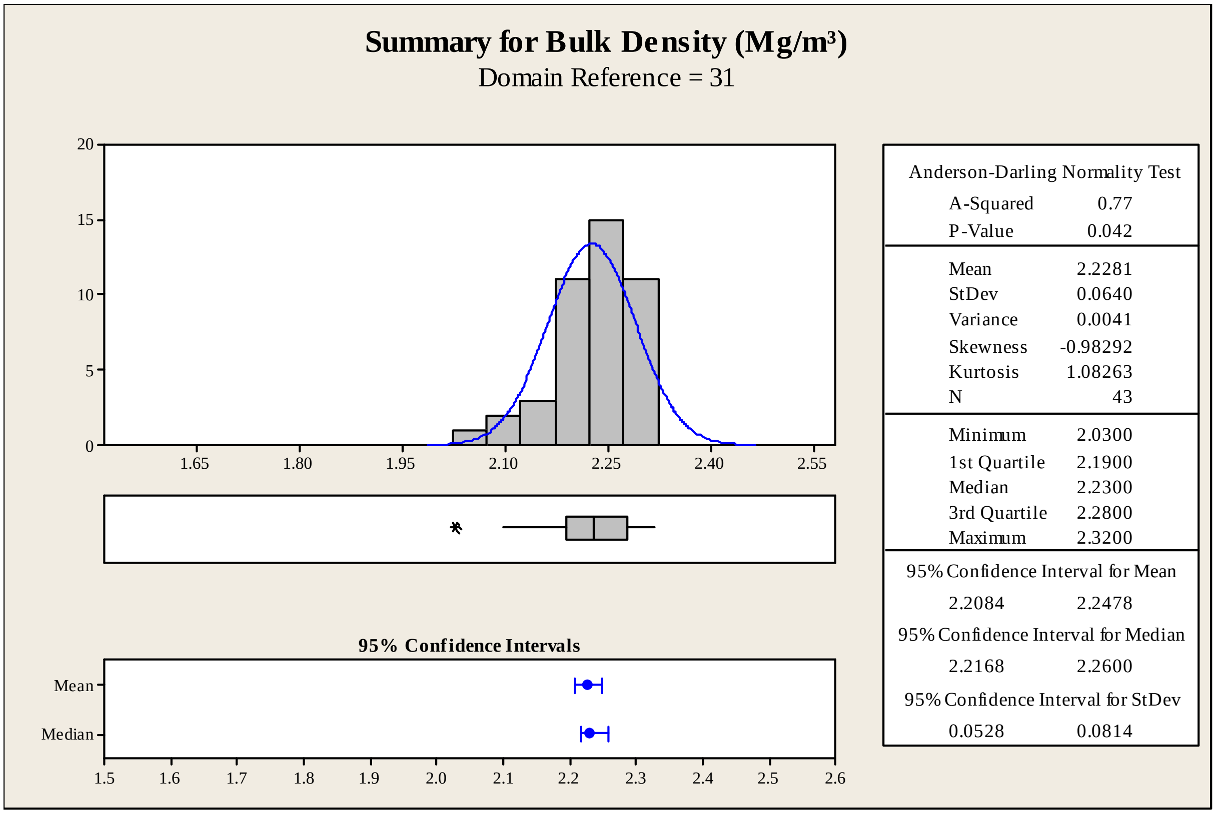


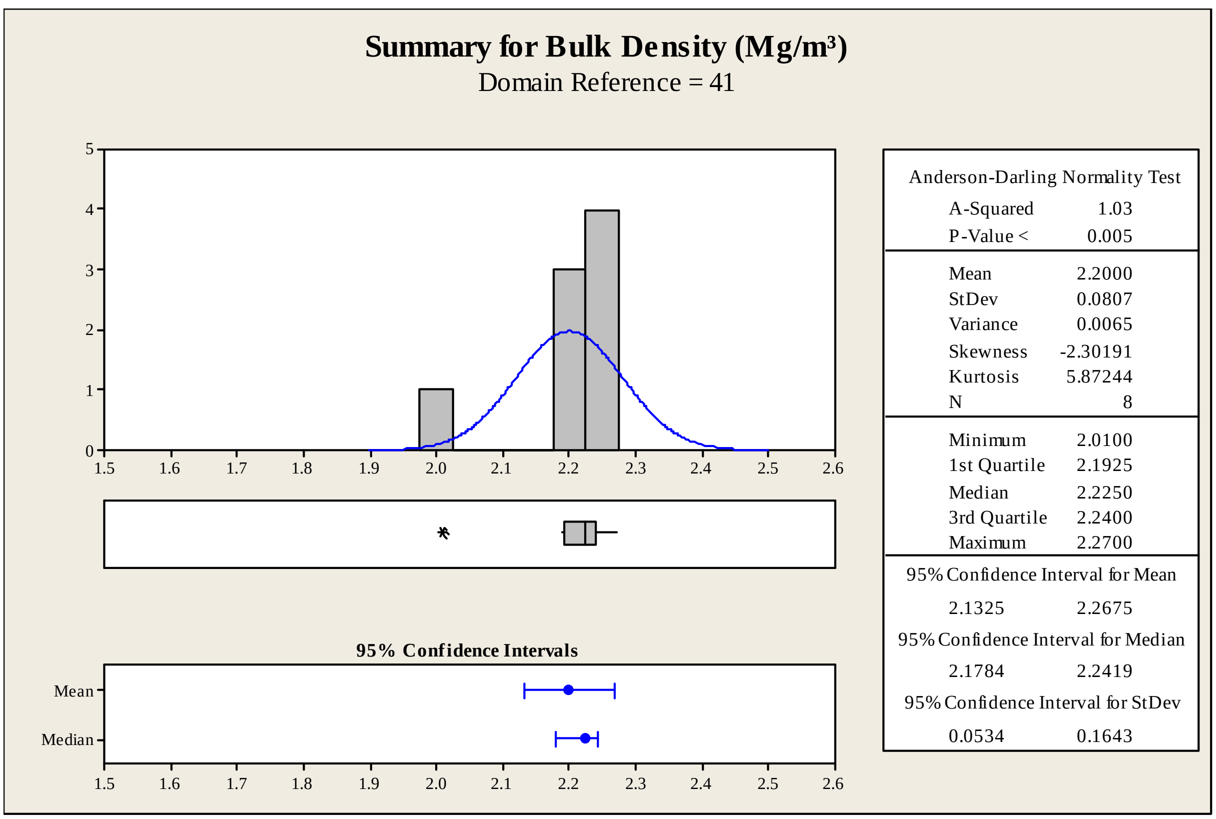


(Domain 13: insufficient data)

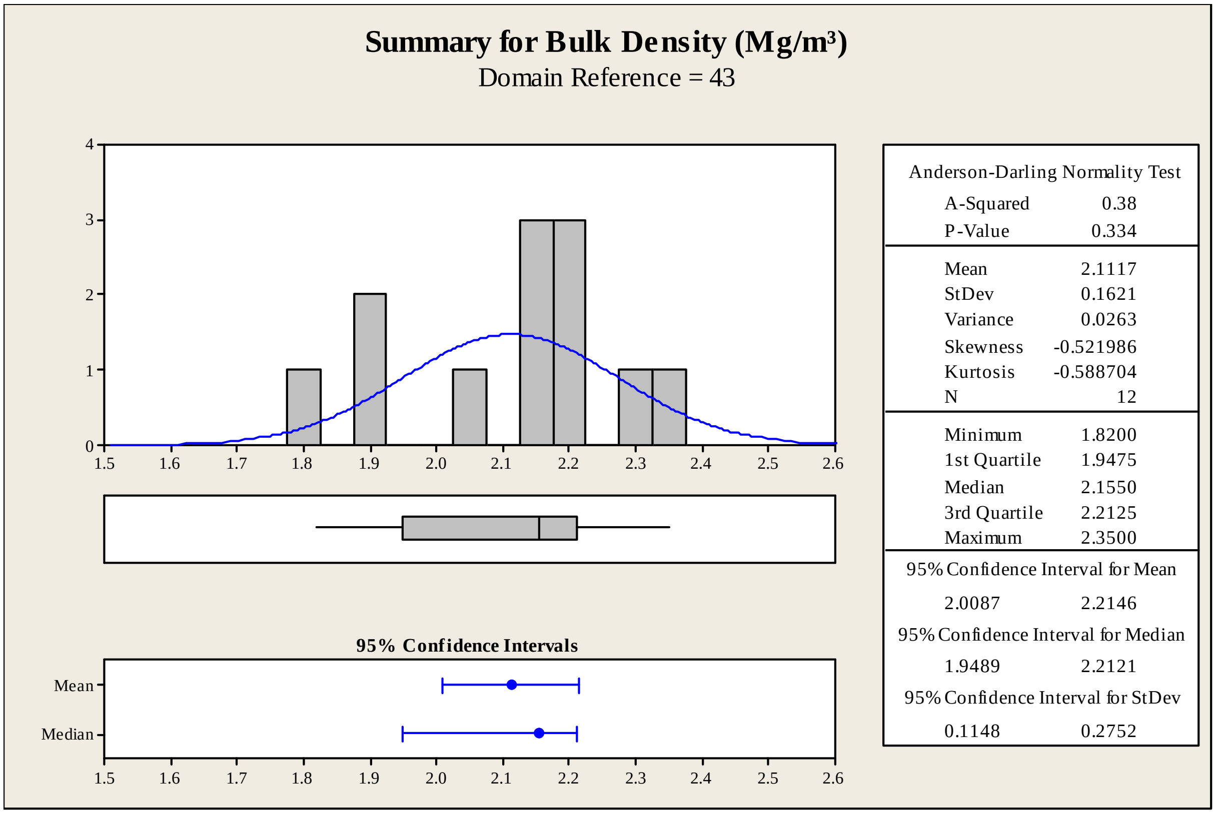




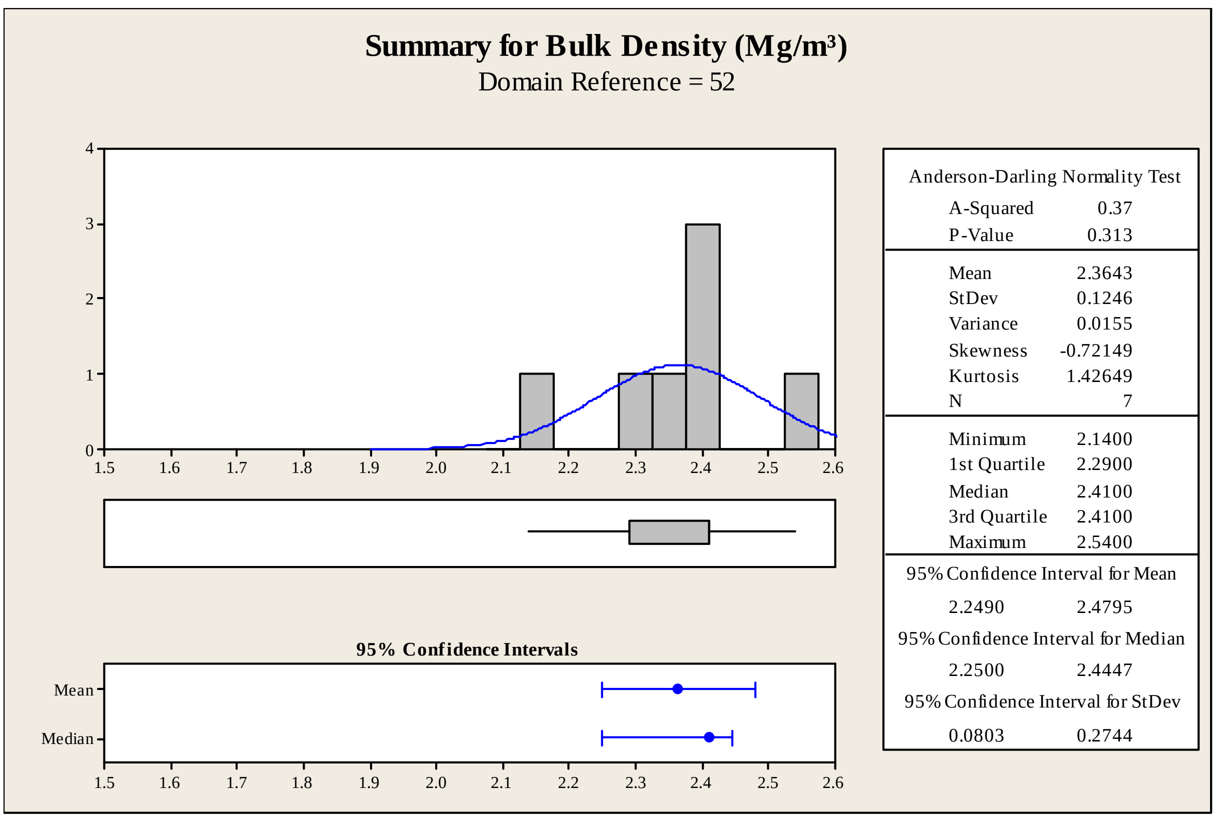




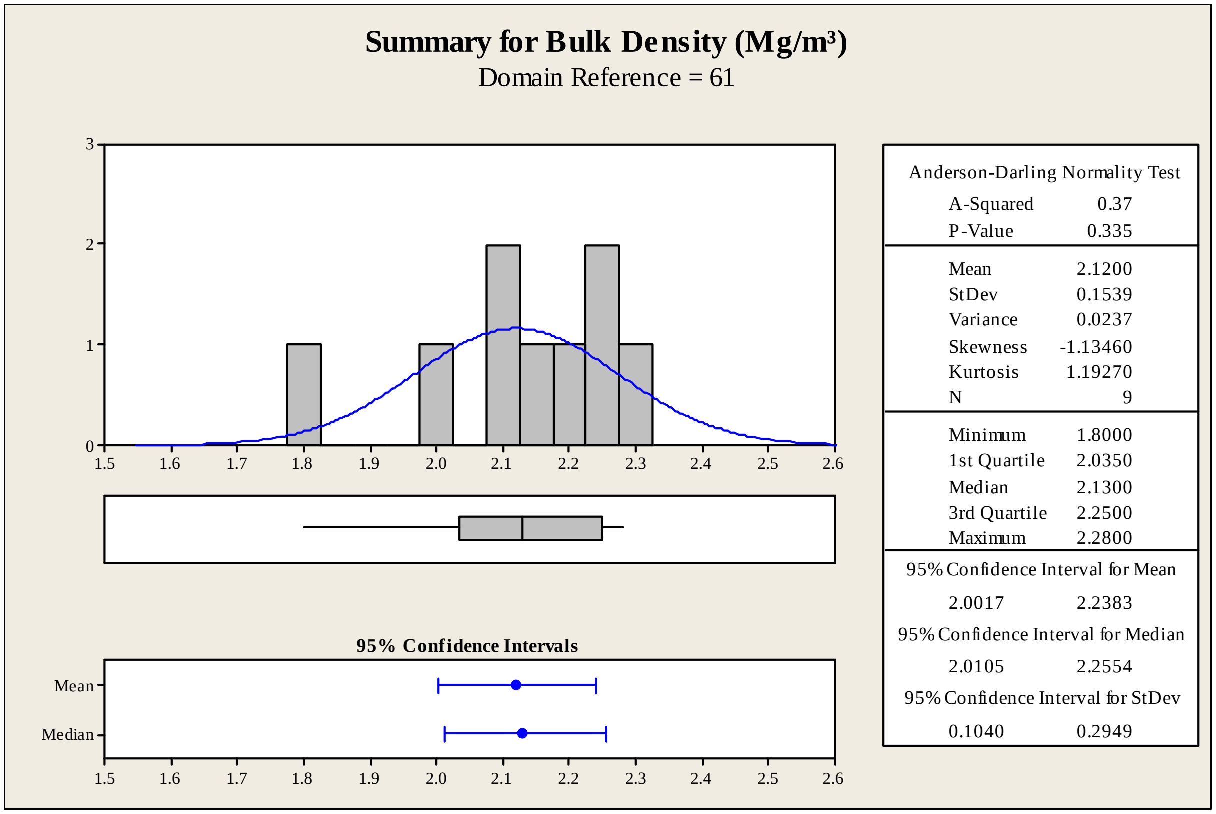
(Domain 42: no data)

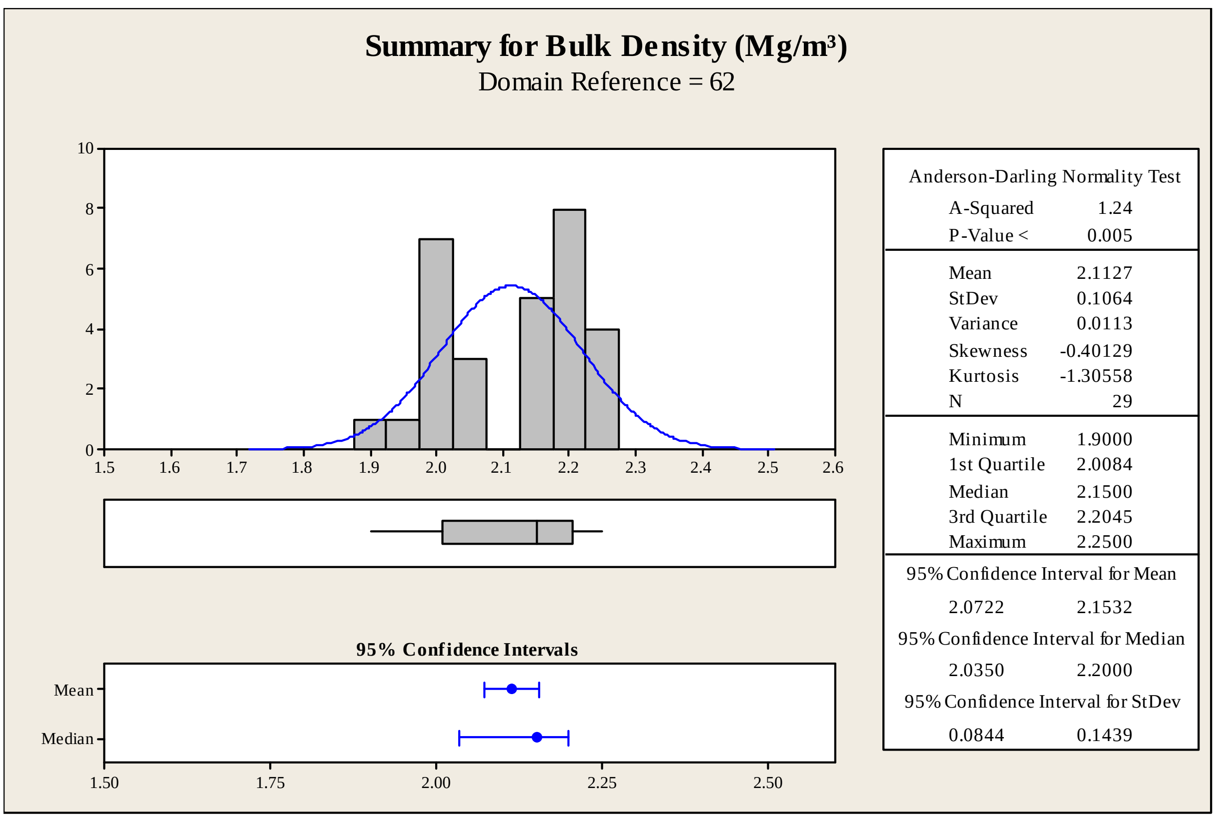


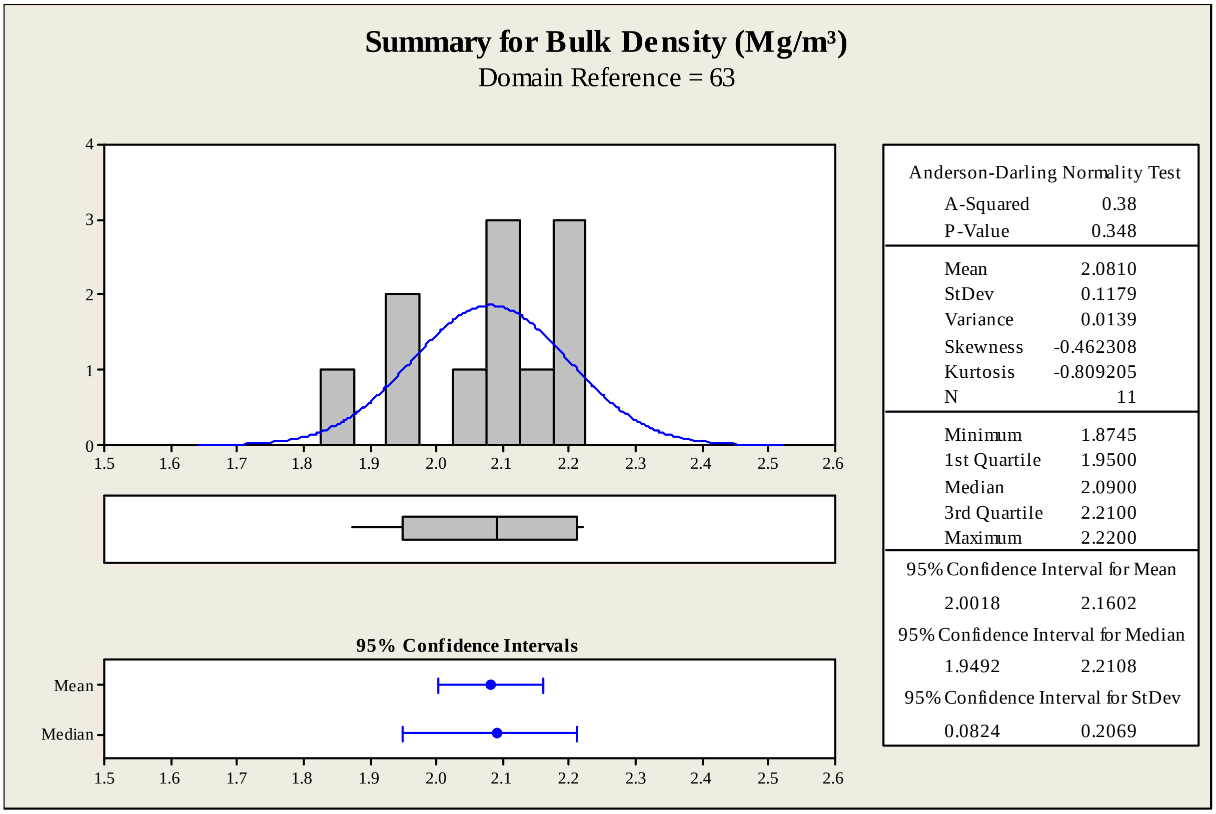
(Domain 51: insufficient data)

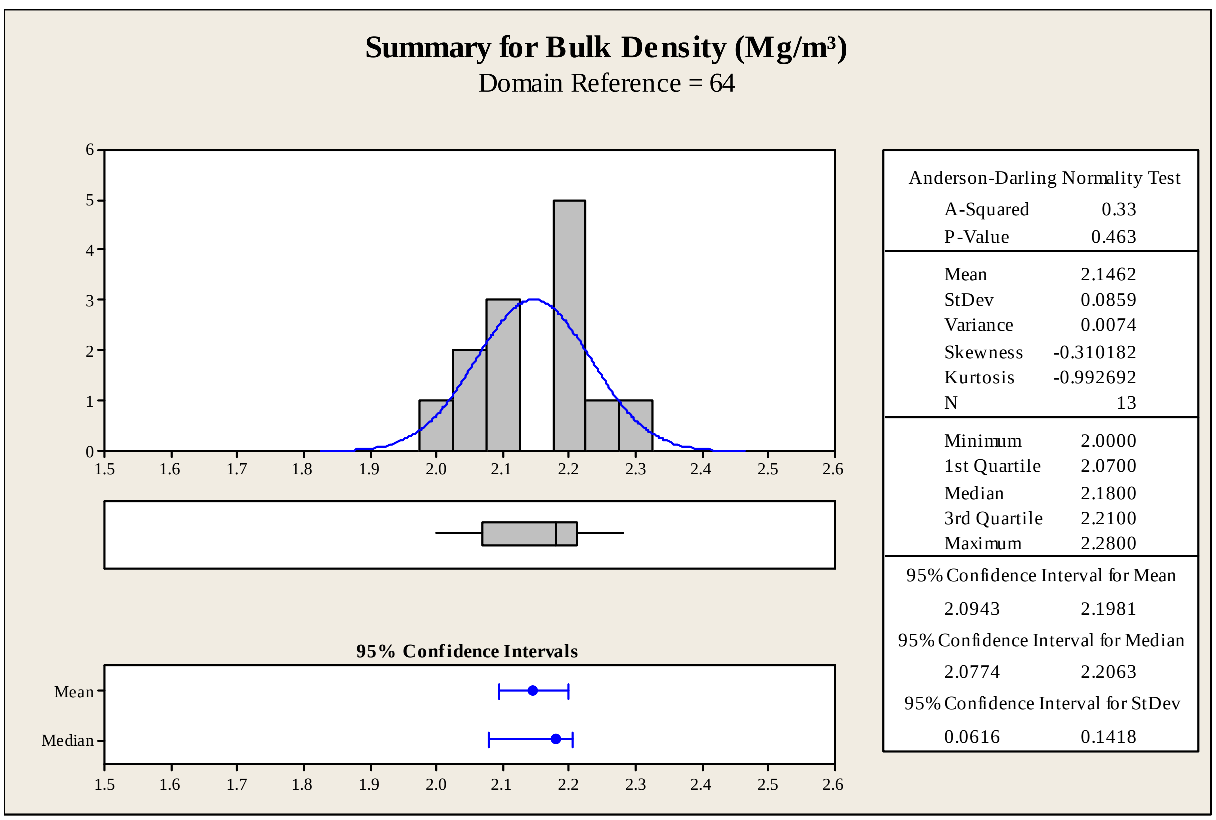


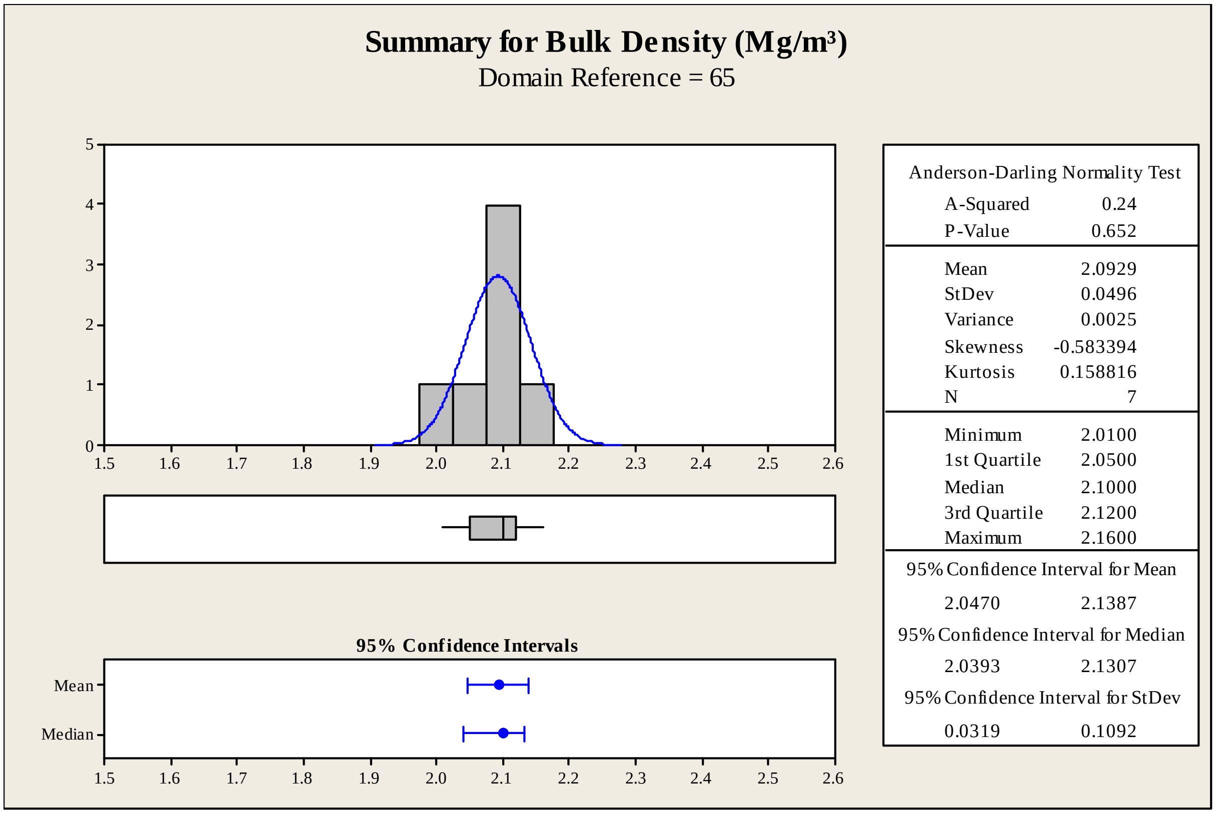
(Domain 53: insufficient data)

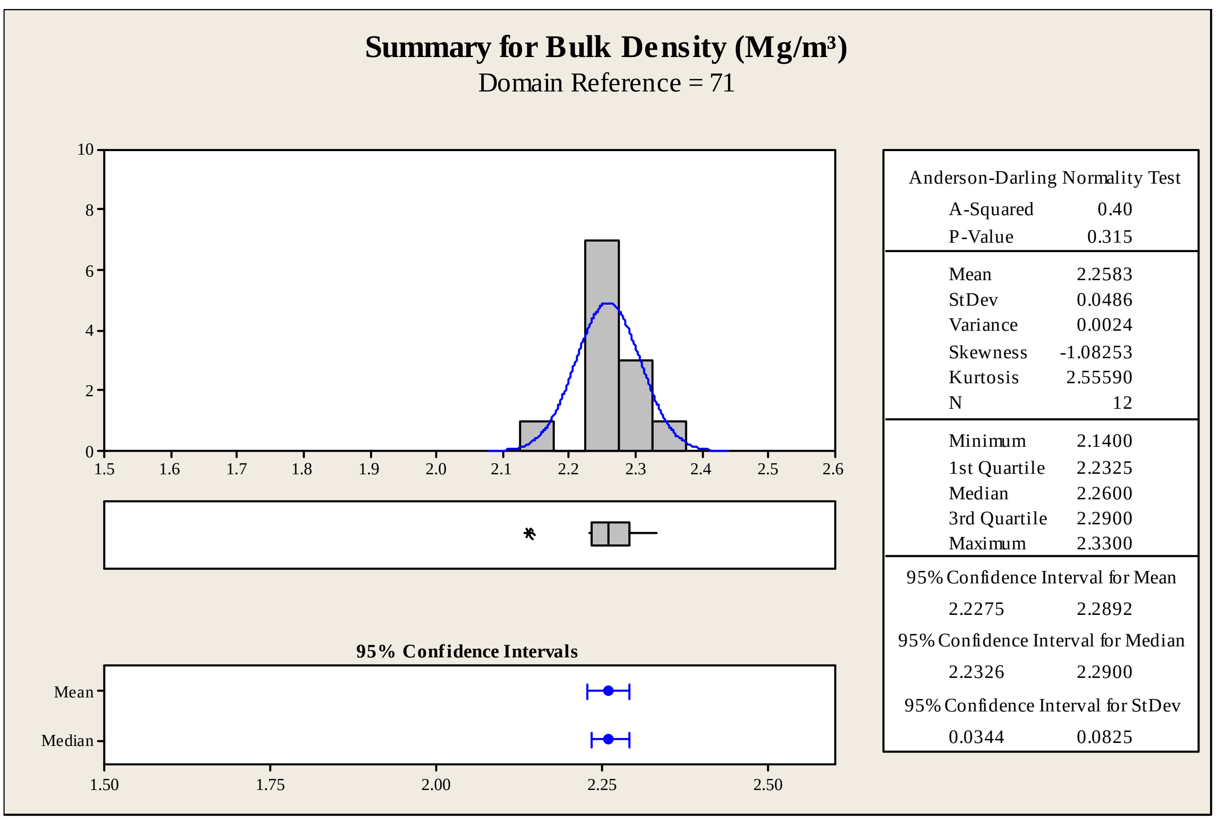


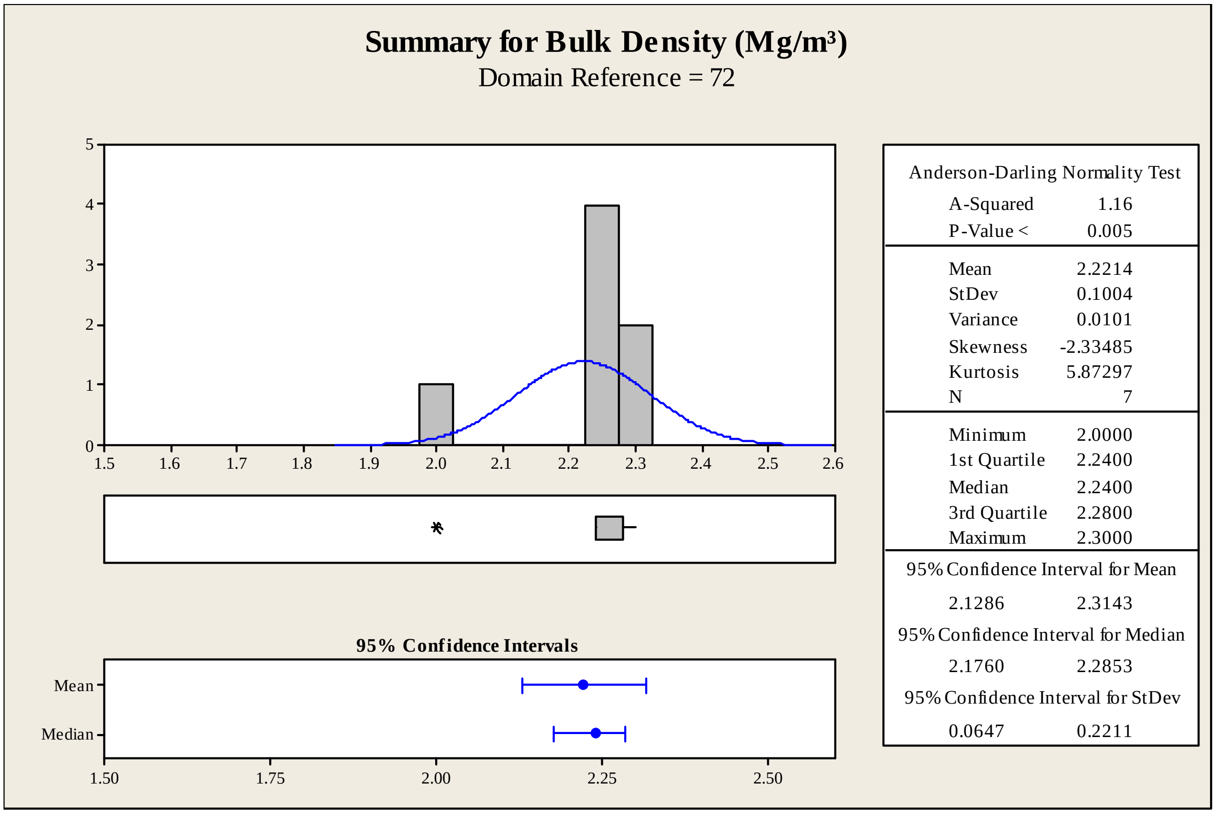



Summary for Bulk Density (Mg/m³)
Domain Reference = 63
Anderson-Darling Normality Test
A-Squared 0.38
P-Value 0.348
Mean 2.0810
StDev 0.1179
Variance 0.0139
Skewness -0.462308
Kurtosis -0.809205
N 11
Minimum 1.8745
1st Quartile 1.9500
Median 2.0900
3rd Quartile 2.2100
Maximum 2.2200
95% Confidence Interval for Mean
2.0018 2.1602
95% Confidence Interval for Median
1.9492 2.2108
95% Confidence Interval for StDev
0.0824 0.2069
95% Confidence Intervals
Mean
Median
1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6

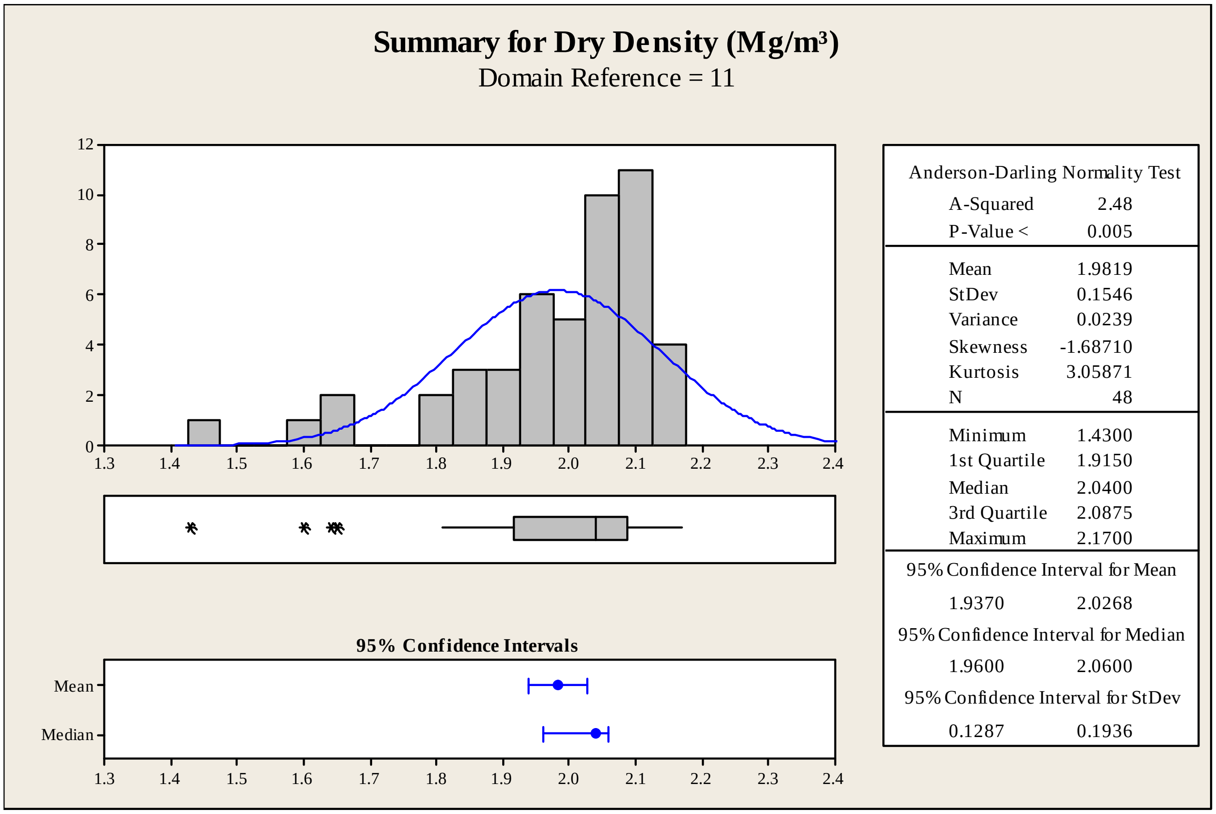

Summary for Bulk Density (Mg/m³)
Domain Reference = 64
Anderson-Darling Normality Test
A-Squared 0.33
P-Value 0.463
Mean 2.1462
StDev 0.0859
Variance 0.0074
Skewness -0.310182
Kurtosis -0.992692
N 13
Minimum 2.0000
1st Quartile 2.0700
Median 2.1800
3rd Quartile 2.2100
Maximum 2.2800
95% Confidence Interval for Mean
2.0943 2.1981
95% Confidence Interval for Median
2.0774 2.2063
95% Confidence Interval for StDev
0.0616 0.1418
95% Confidence Intervals
Mean
Median
1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6

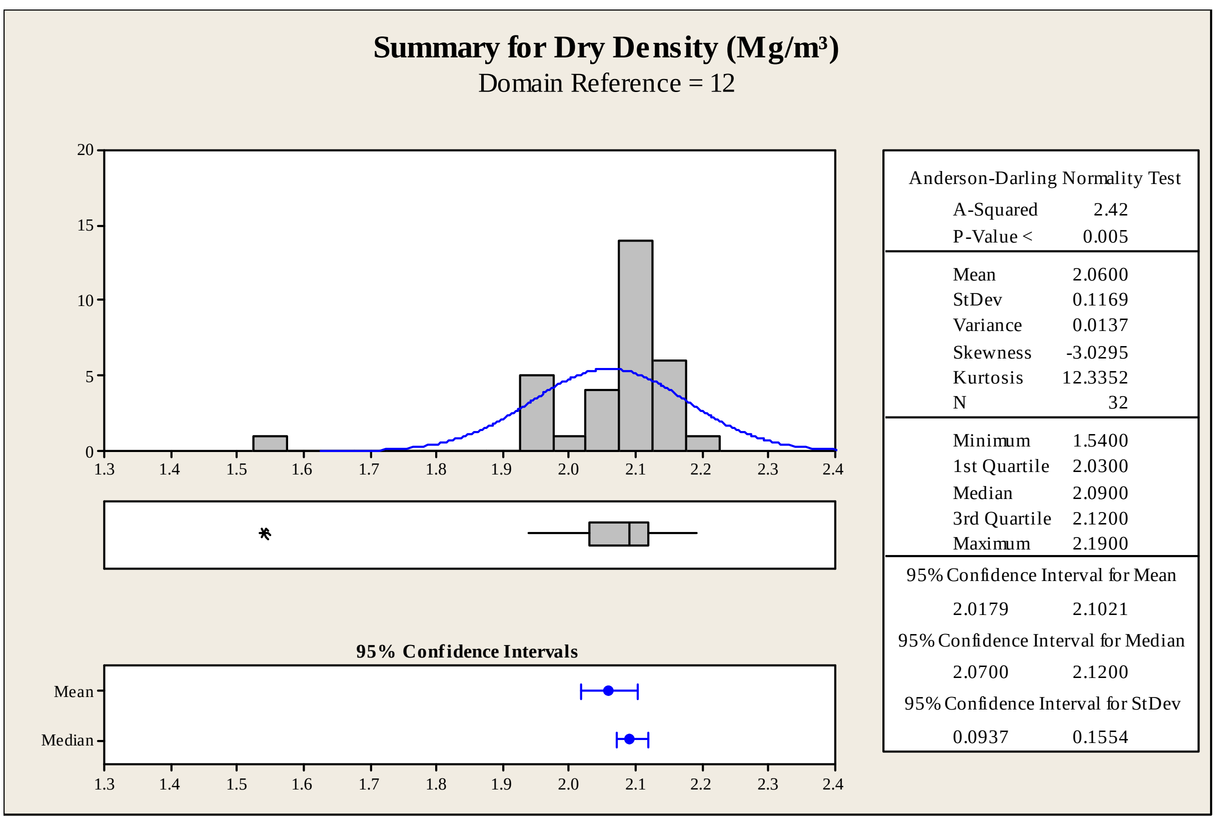

Summary for Bulk Density (Mg/m³)
Domain Reference = 65
Anderson-Darling Normality Test
A-Squared 0.24
P-Value 0.652
Mean 2.0929
StDev 0.0496
Variance 0.0025
Skewness -0.583394
Kurtosis 0.158816
N 7
Minimum 2.0100
1st Quartile 2.0500
Median 2.1000
3rd Quartile 2.1200
Maximum 2.1600
95% Confidence Interval for Mean
2.0470 2.1387
95% Confidence Interval for Median
2.0393 2.1307
95% Confidence Interval for StDev
0.0319 0.1092
95% Confidence Intervals
Mean
Median


Summary for Bulk Density (Mg/m³)
Domain Reference = 71
Anderson-Darling Normality Test
A-Squared 0.40
P-Value 0.315
Mean 2.2583
StDev 0.0486
Variance 0.0024
Skewness -1.08253
Kurtosis 2.55590
N 12
Minimum 2.1400
1st Quartile 2.2325
Median 2.2600
3rd Quartile 2.2900
Maximum 2.3300
95% Confidence Interval for Mean
2.2275 2.2892
95% Confidence Interval for Median
2.2326 2.2900
95% Confidence Interval for StDev
0.0344 0.0825
95% Confidence Intervals
Mean
Median

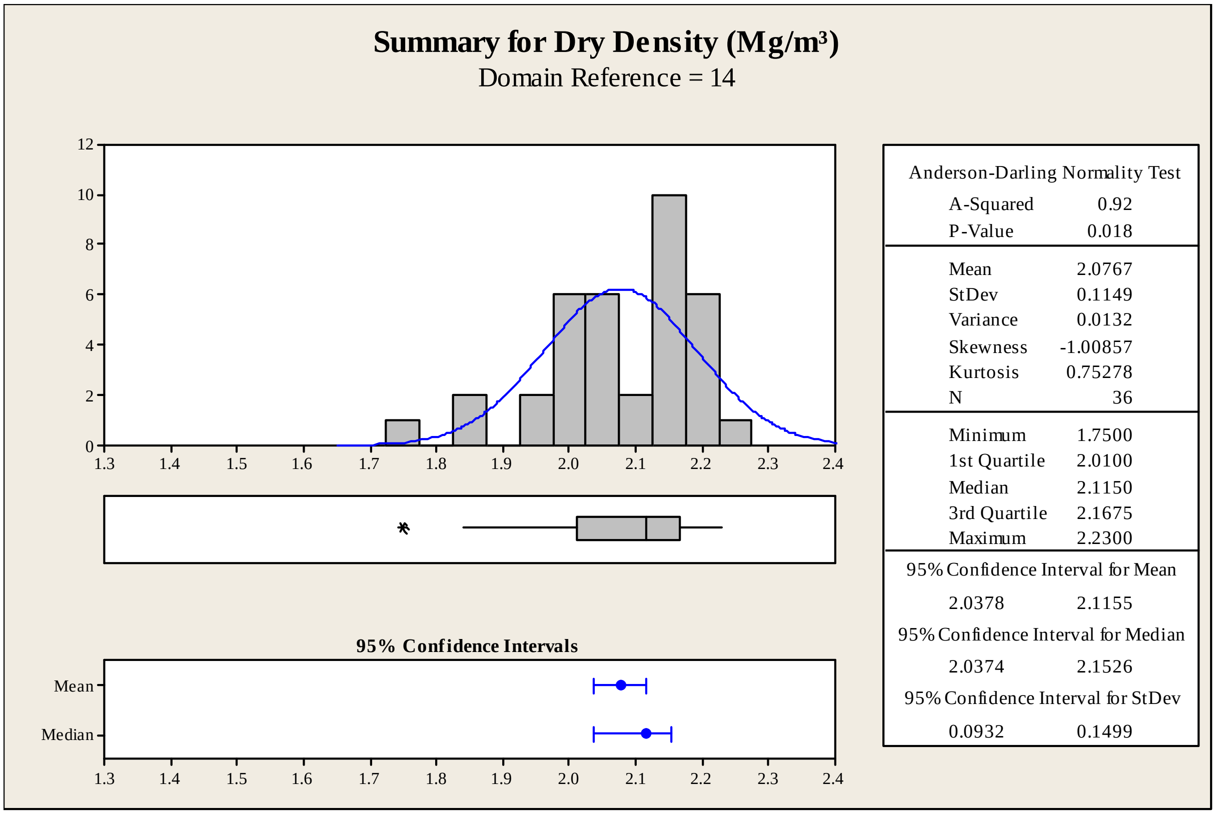

Summary for Bulk Density (Mg/m³)
Domain Reference = 72
Anderson-Darling Normality Test
A-Squared 1.16
P-Value < 0.005
Mean 2.2214
StDev 0.1004
Variance 0.0101
Skewness -2.33485
Kurtosis 5.87297
N 7
Minimum 2.0000
1st Quartile 2.2400
Median 2.2400
3rd Quartile 2.2800
Maximum 2.3000
95% Confidence Interval for Mean
2.1286 2.3143
95% Confidence Interval for Median
2.1760 2.2853
95% Confidence Interval for StDev
0.0647 0.2211
95% Confidence Intervals
Mean
Median
1.50
1.75
2.00
2.25
2.50

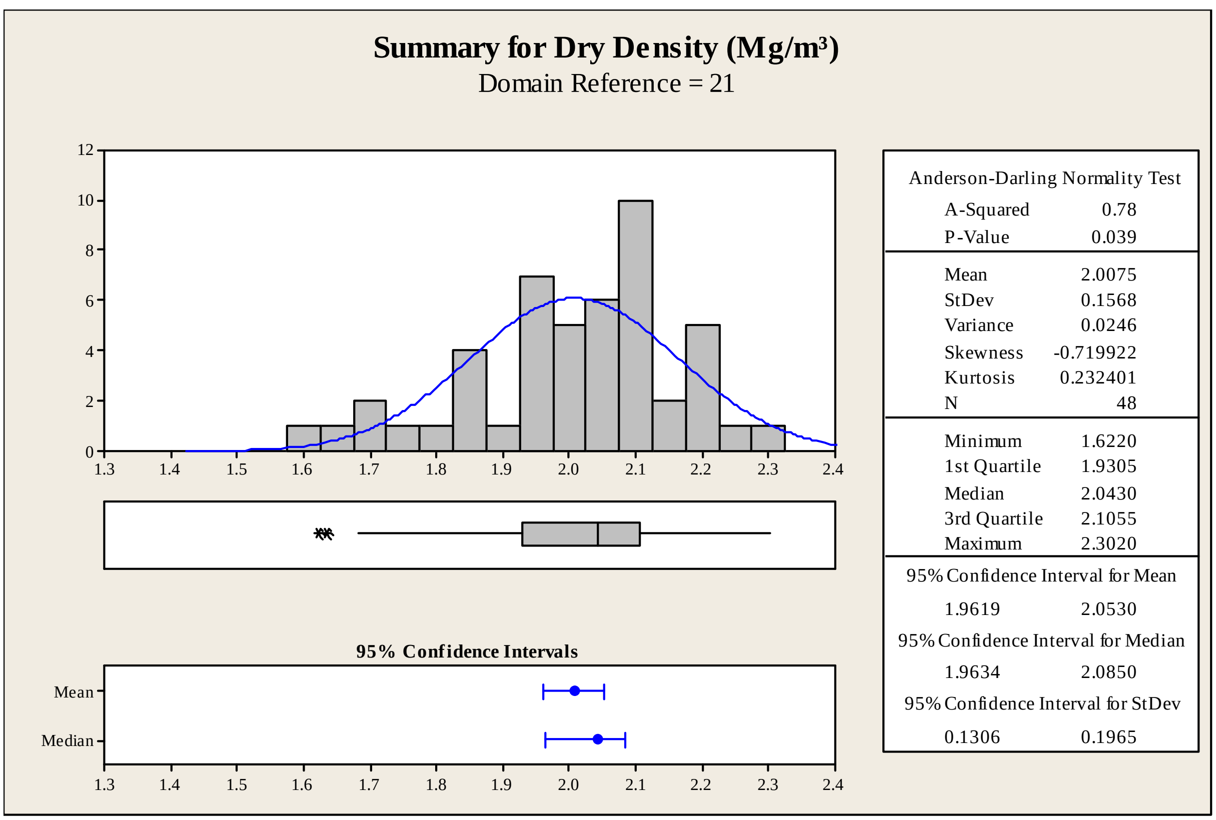
Dry Density

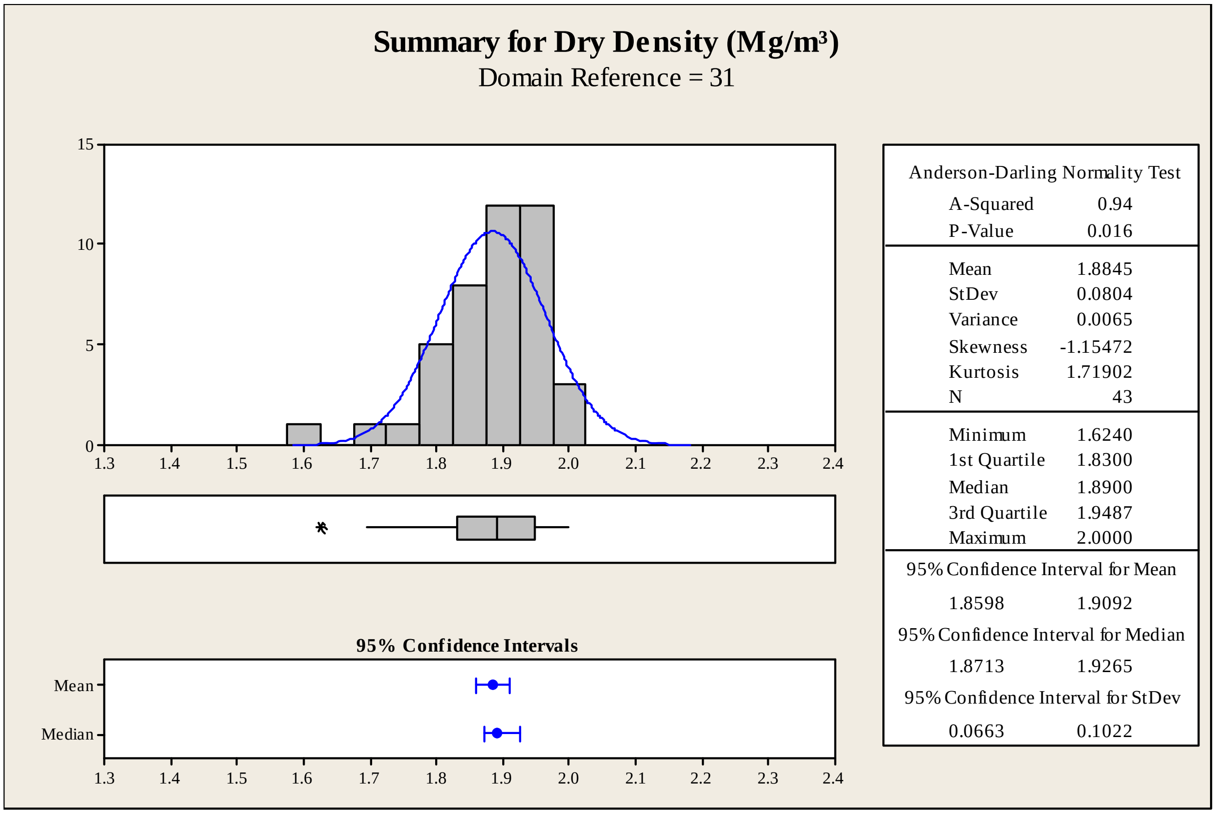

Summary for Dry Density (Mg/m³)
Domain Reference = 11
Anderson-Darling Normality Test
A-Squared 2.48
P-Value < 0.005
Mean 1.9819
StDev 0.1546
Variance 0.0239
Skewness -1.68710
Kurtosis 3.05871
N 48
Minimum 1.4300
1st Quartile 1.9150
Median 2.0400
3rd Quartile 2.0875
Maximum 2.1700
95% Confidence Interval for Mean
1.9370 2.0268
95% Confidence Interval for Median
1.9600 2.0600
95% Confidence Interval for StDev
0.1287 0.1936
95% Confidence Intervals
Mean
Median
1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4
0 2 4 6 8 10 12

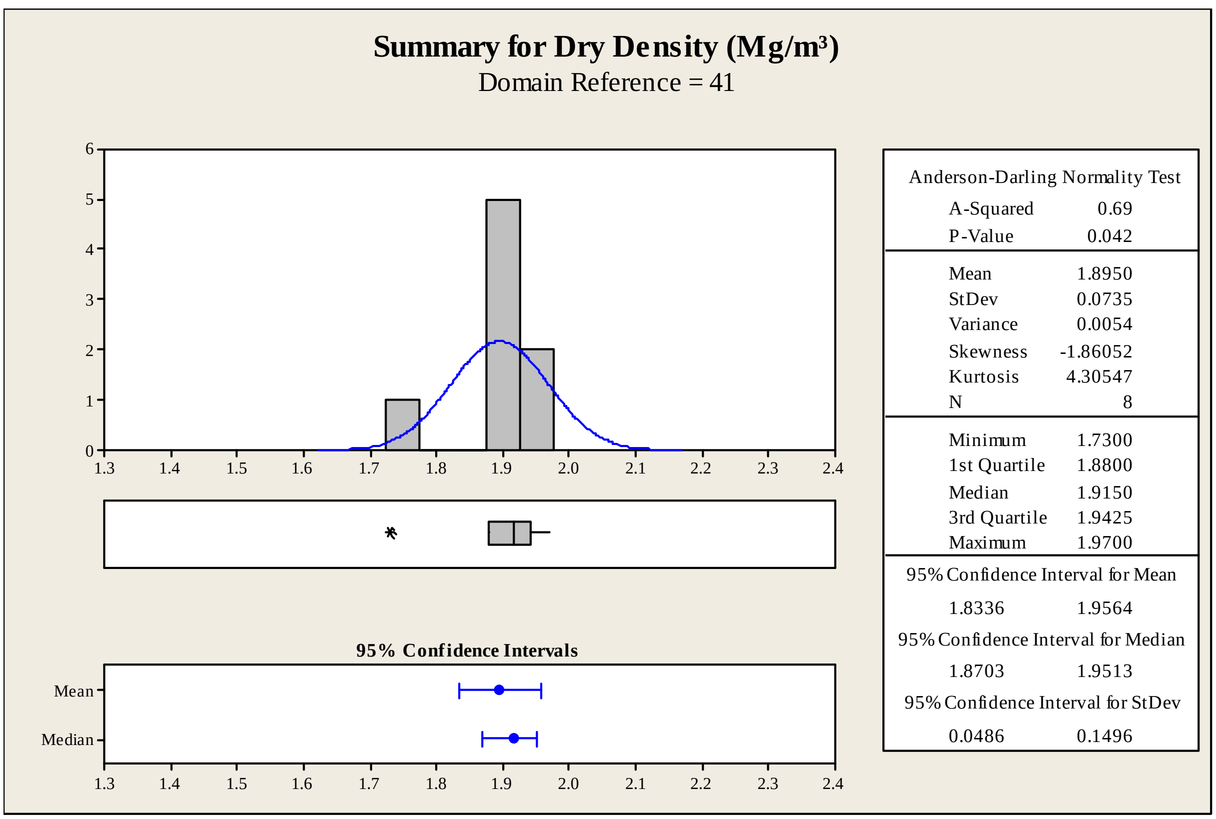

Summary for Dry Density (Mg/m³)
Domain Reference = 12
Anderson-Darling Normality Test
A-Squared 2.42
P-Value < 0.005
Mean 2.0600
StDev 0.1169
Variance 0.0137
Skewness -3.0295
Kurtosis 12.3352
N 32
Minimum 1.5400
1st Quartile 2.0300
Median 2.0900
3rd Quartile 2.1200
Maximum 2.1900
95% Confidence Interval for Mean
2.0179 2.1021
95% Confidence Interval for Median
2.0700 2.1200
95% Confidence Interval for StDev
0.0937 0.1554
95% Confidence Intervals
Mean
Median
1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4
0 5 10 15 20

(Domain 13: insufficient data)

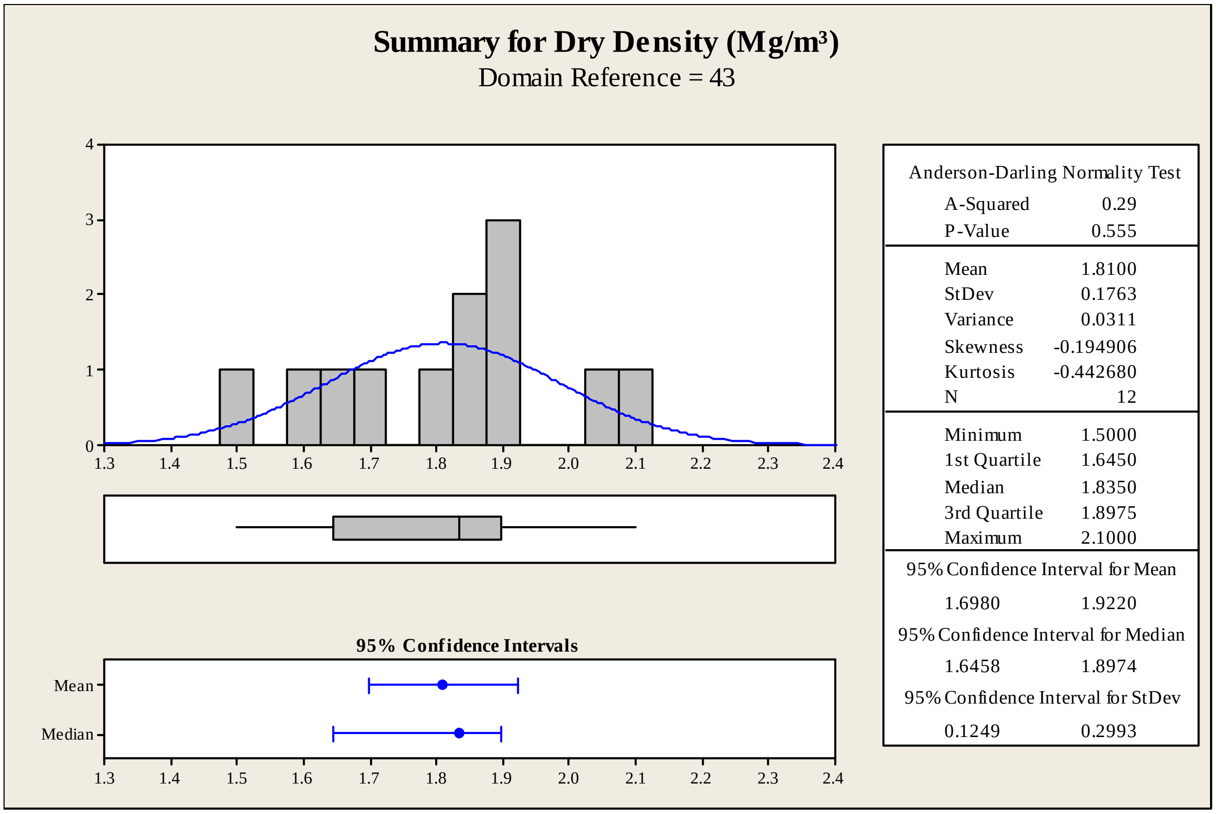




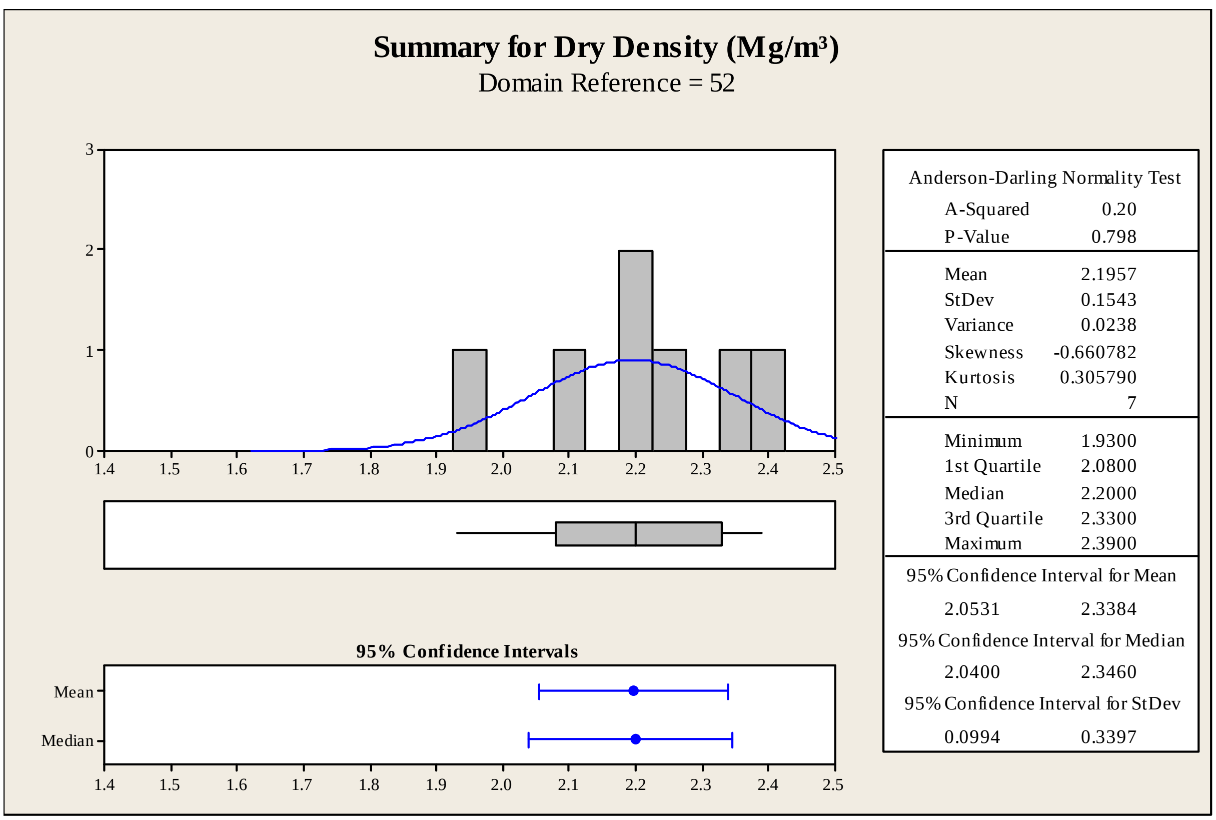




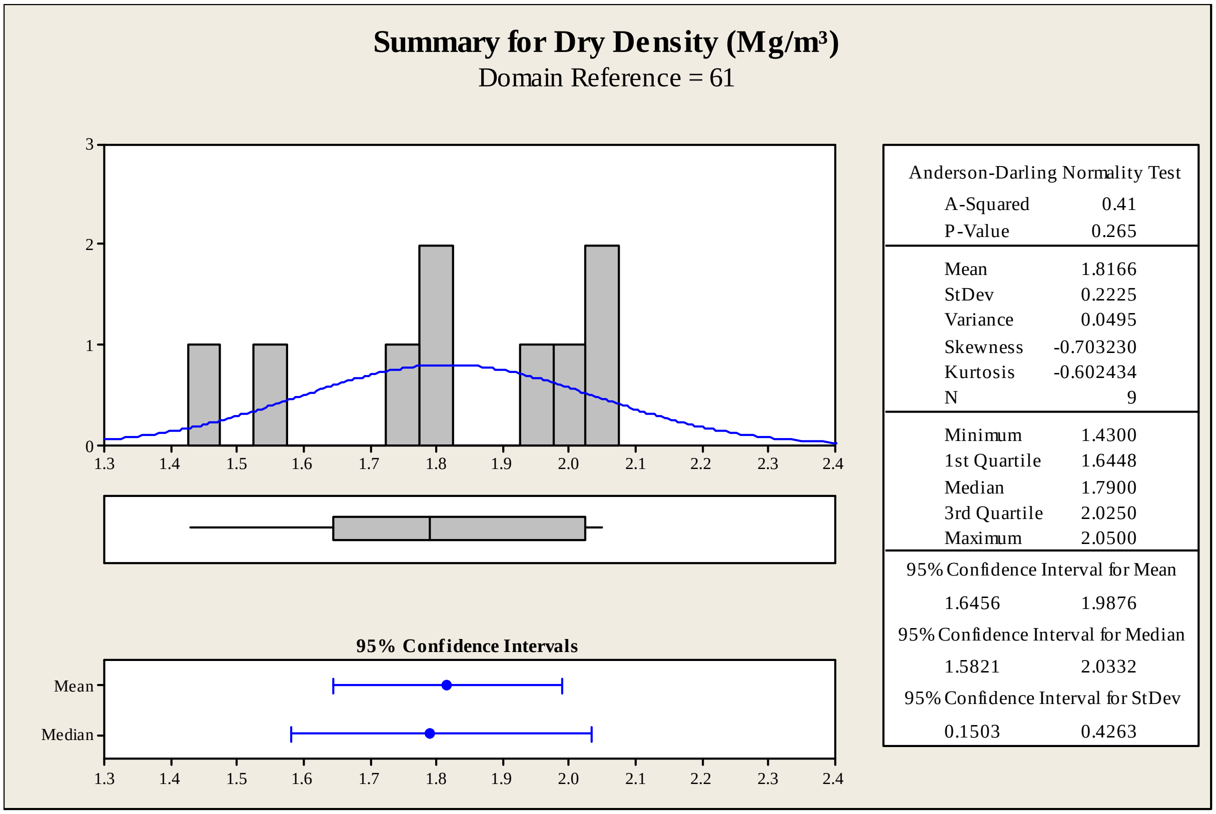
(Domain 42: no data)

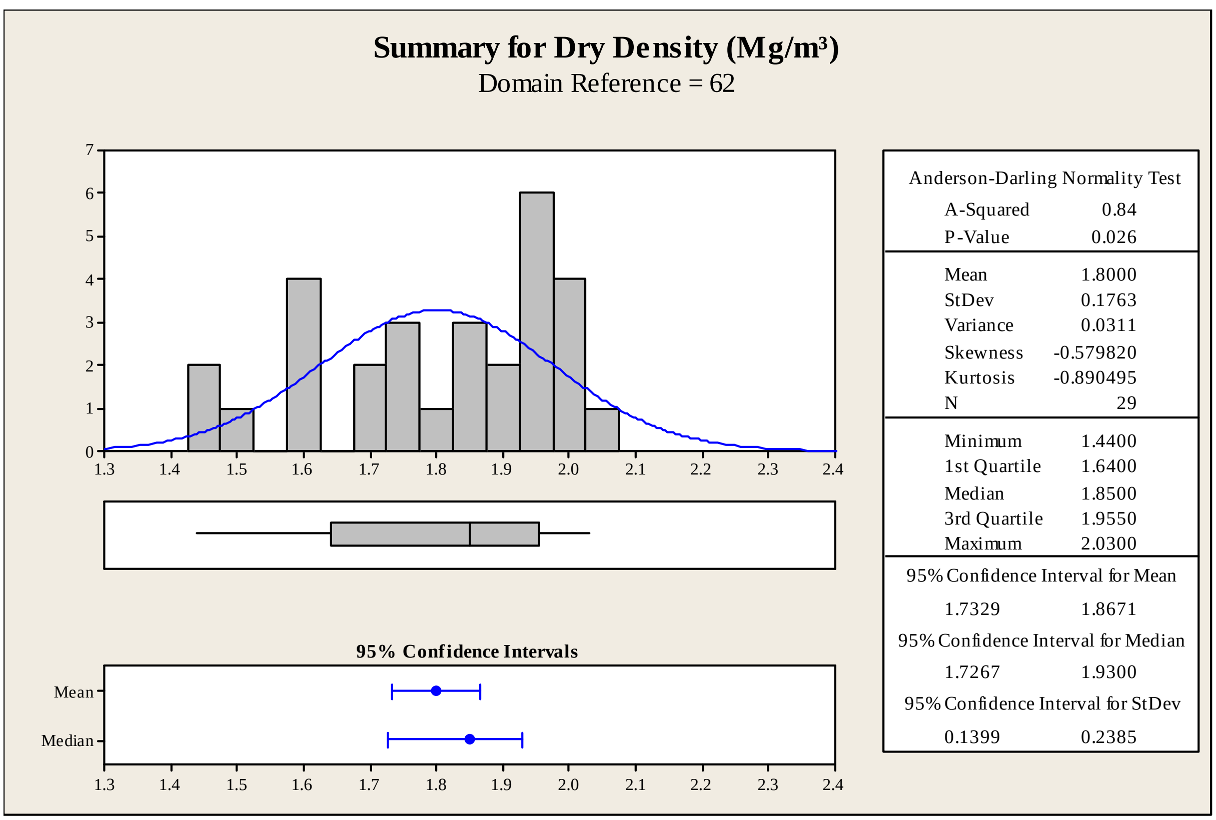


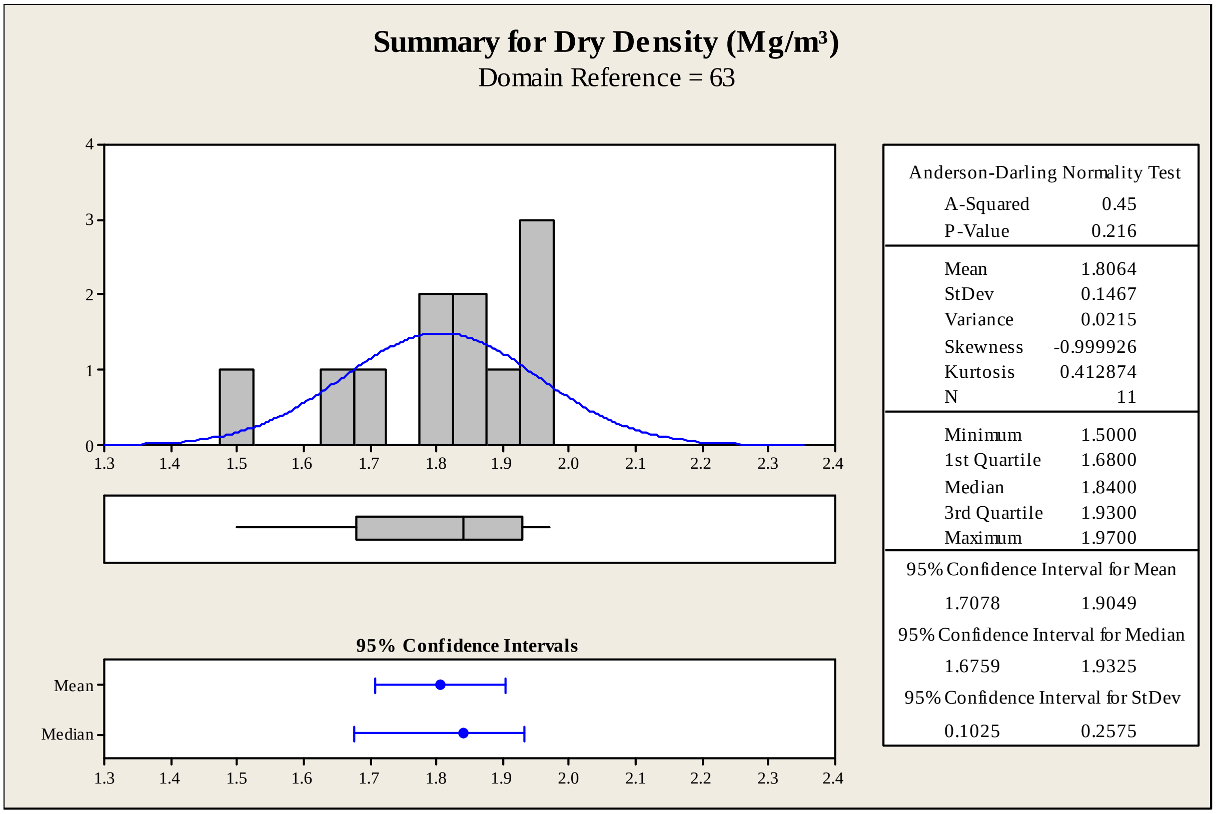
(Domain 51: insufficient data)

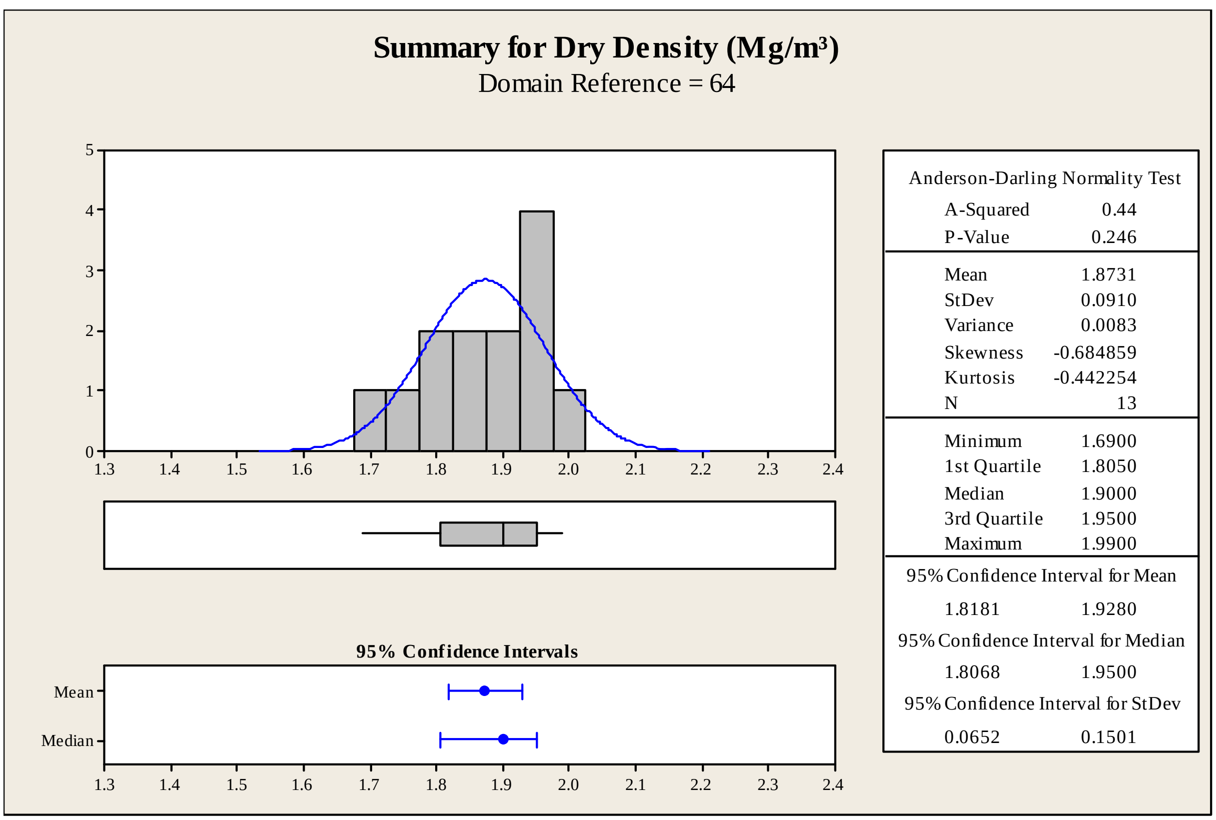


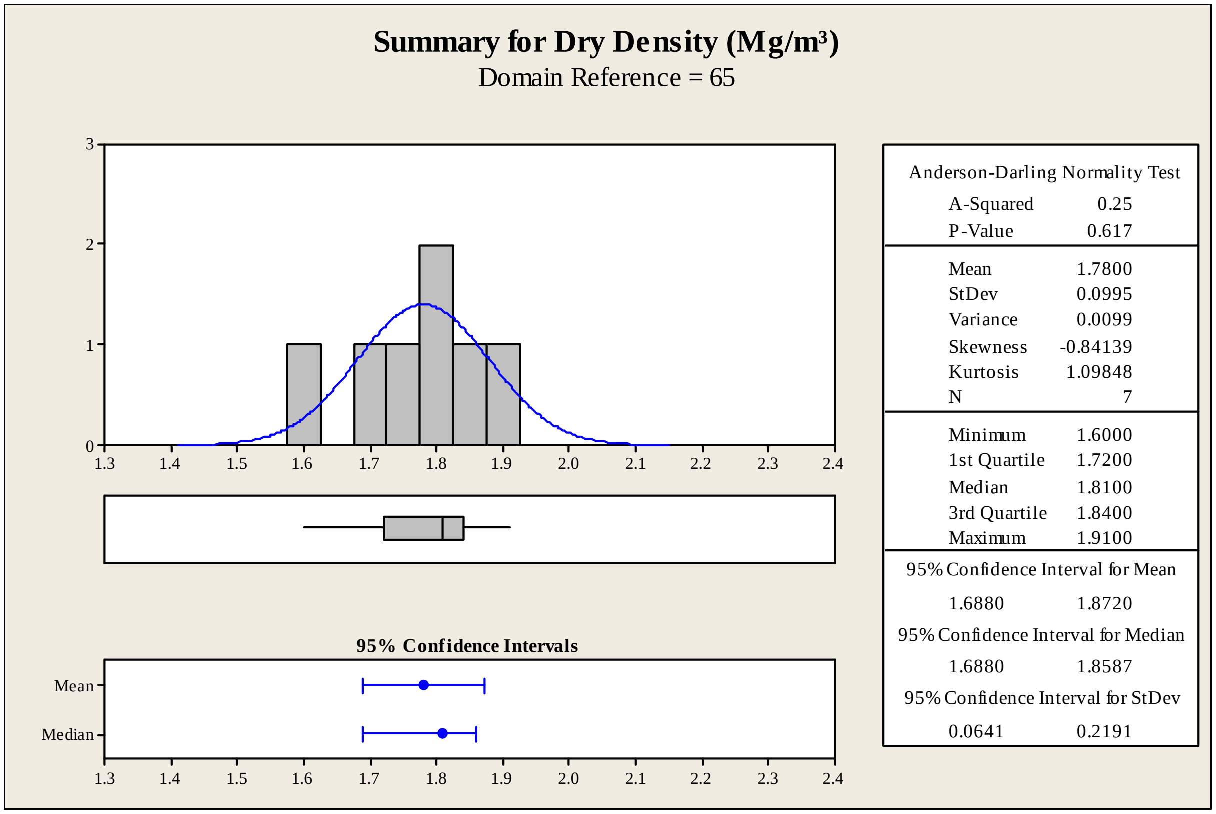
(Domain 53: insufficient data)

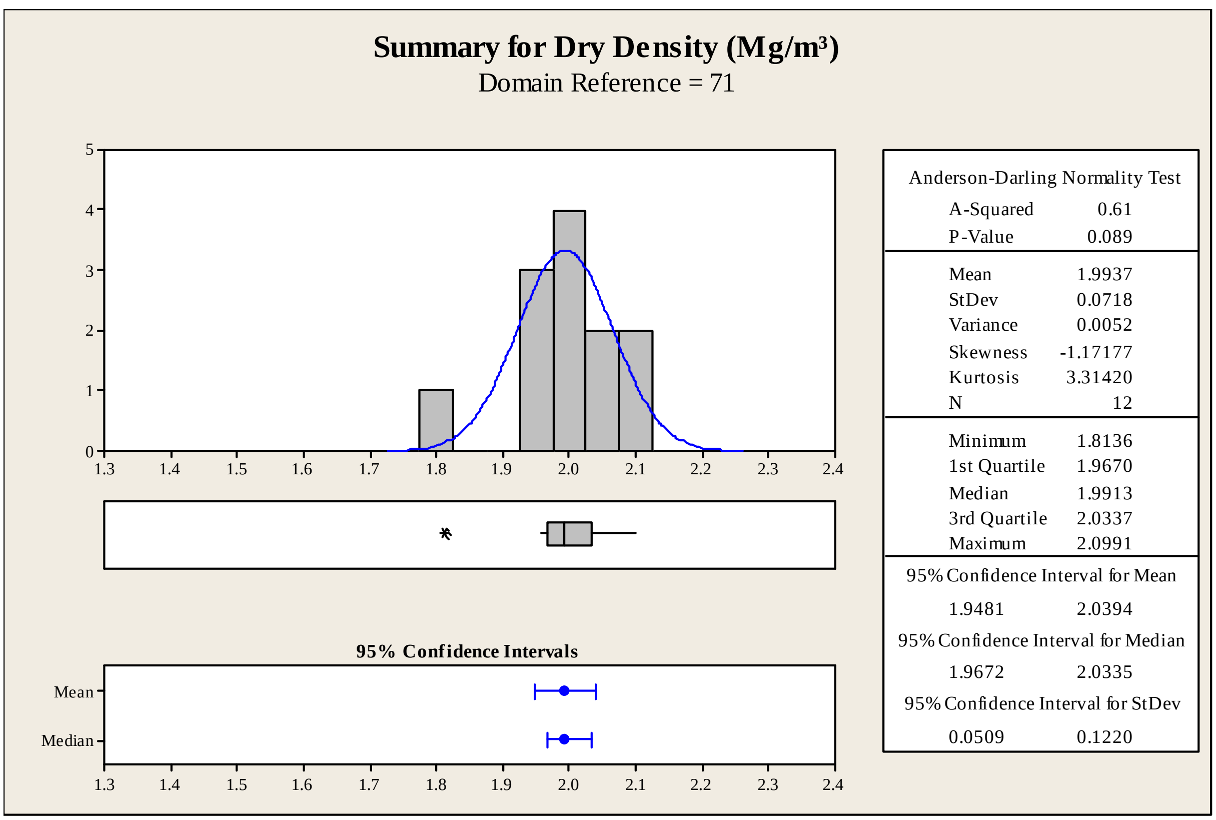


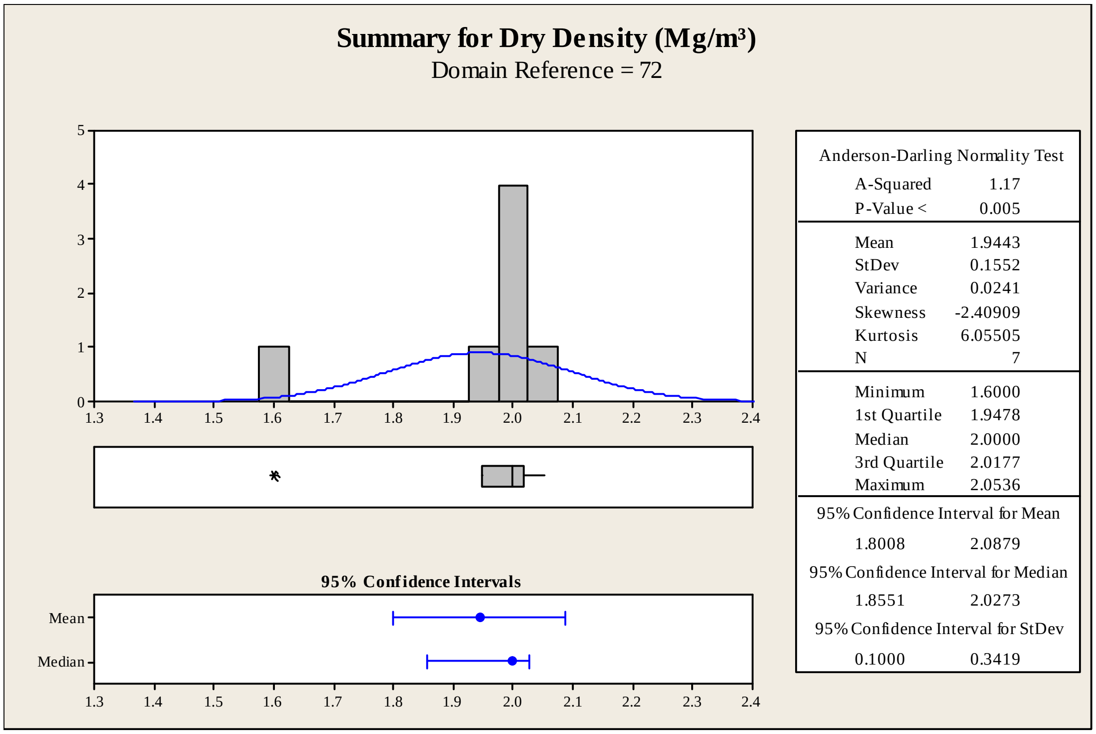



Summary for Dry Density (Mg/m³)
Domain Reference = 63
Anderson-Darling Normality Test
A-Squared 0.45
P-Value 0.216
Mean 1.8064
StDev 0.1467
Variance 0.0215
Skewness -0.999926
Kurtosis 0.412874
N 11
Minimum 1.5000
1st Quartile 1.6800
Median 1.8400
3rd Quartile 1.9300
Maximum 1.9700
95% Confidence Interval for Mean
1.7078 1.9049
95% Confidence Interval for Median
1.6759 1.9325
95% Confidence Interval for StDev
0.1025 0.2575
95% Confidence Intervals
Mean
Median
1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4


Summary for Dry Density (Mg/m³)
Domain Reference = 64
Anderson-Darling Normality Test
A-Squared 0.44
P-Value 0.246
Mean 1.8731
StDev 0.0910
Variance 0.0083
Skewness -0.684859
Kurtosis -0.442254
N 13
Minimum 1.6900
1st Quartile 1.8050
Median 1.9000
3rd Quartile 1.9500
Maximum 1.9900
95% Confidence Interval for Mean
1.8181 1.9280
95% Confidence Interval for Median
1.8068 1.9500
95% Confidence Interval for StDev
0.0652 0.1501
95% Confidence Intervals
Mean
Median
1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4


Summary for Dry Density (Mg/m³)
Domain Reference = 65
Anderson-Darling Normality Test
A-Squared 0.25
P-Value 0.617
Mean 1.7800
StDev 0.0995
Variance 0.0099
Skewness -0.84139
Kurtosis 1.09848
N 7
Minimum 1.6000
1st Quartile 1.7200
Median 1.8100
3rd Quartile 1.8400
Maximum 1.9100
95% Confidence Interval for Mean
1.6880 1.8720
95% Confidence Interval for Median
1.6880 1.8587
95% Confidence Interval for StDev
0.0641 0.2191
95% Confidence Intervals
Mean
Median
1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4


Summary for Dry Density (Mg/m³)
Domain Reference = 71
Anderson-Darling Normality Test
A-Squared 0.61
P-Value 0.089
Mean 1.9937
StDev 0.0718
Variance 0.0052
Skewness -1.17177
Kurtosis 3.31420
N 12
Minimum 1.8136
1st Quartile 1.9670
Median 1.9913
3rd Quartile 2.0337
Maximum 2.0991
95% Confidence Interval for Mean
1.9481 2.0394
95% Confidence Interval for Median
1.9672 2.0335
95% Confidence Interval for StDev
0.0509 0.1220
95% Confidence Intervals
Mean
Median
1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4


Summary for Dry Density (Mg/m³)
Domain Reference = 72
Anderson-Darling Normality Test
A-Squared 1.17
P-Value < 0.005
Mean 1.9443
StDev 0.1552
Variance 0.0241
Skewness -2.40909
Kurtosis 6.05505
N 7
Minimum 1.6000
1st Quartile 1.9478
Median 2.0000
3rd Quartile 2.0177
Maximum 2.0536
95% Confidence Interval for Mean
1.8008 2.0879
95% Confidence Interval for Median
1.8551 2.0273
95% Confidence Interval for StDev
0.1000 0.3419
95% Confidence Intervals
Mean
Median
1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4

Appendix C.3: Probability functions by domain

Appendix C.3 Probability Distributions by Domain

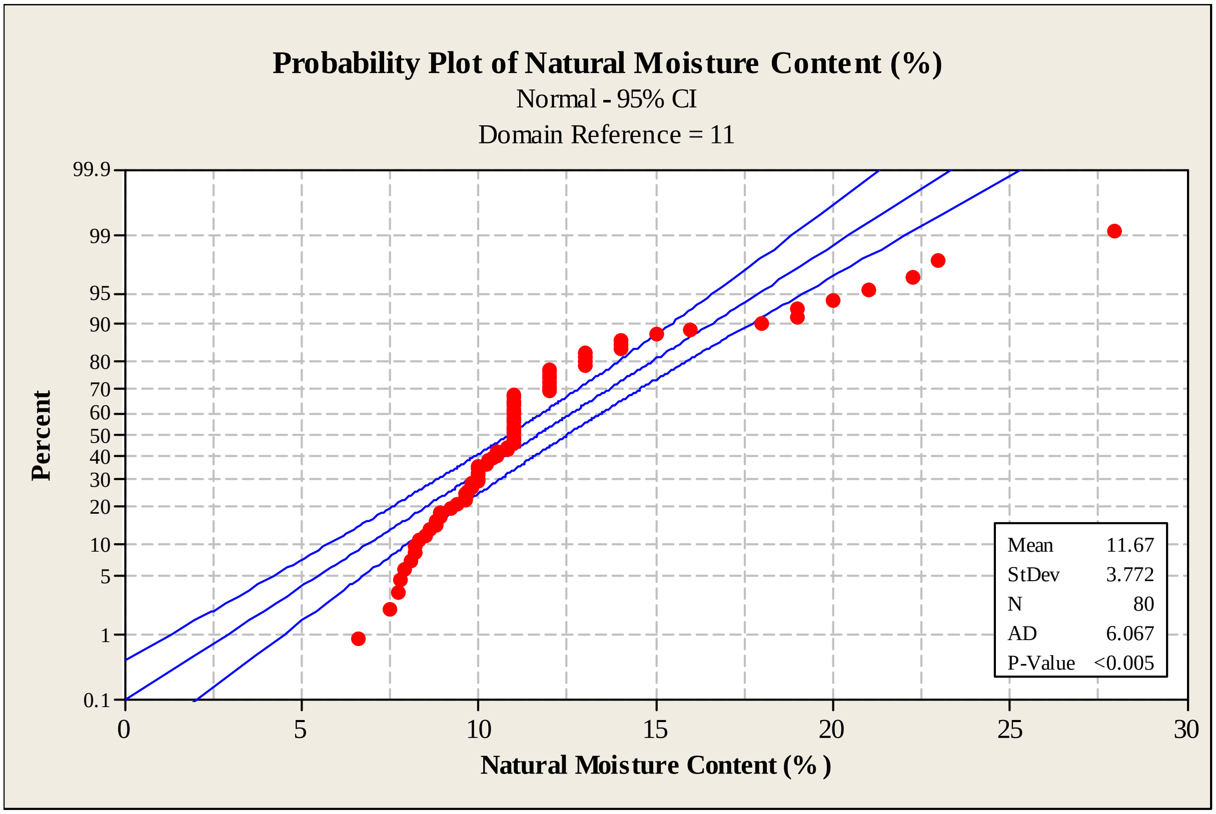
In the following diagrams the data points for each parameter are plotted as red markers on a percentage probability scale, with a Gaussian (Normal) distribution and 95% confidence interval superimposed as blue lines. Points lying along or close to the central straight line are indicative of a Gaussian distribution; curved patterns of data or points lying outwith the curved 95% confidence envelope are indicative of a non-Gaussian distribution, the qualitative difference indicated by the lack of fit.

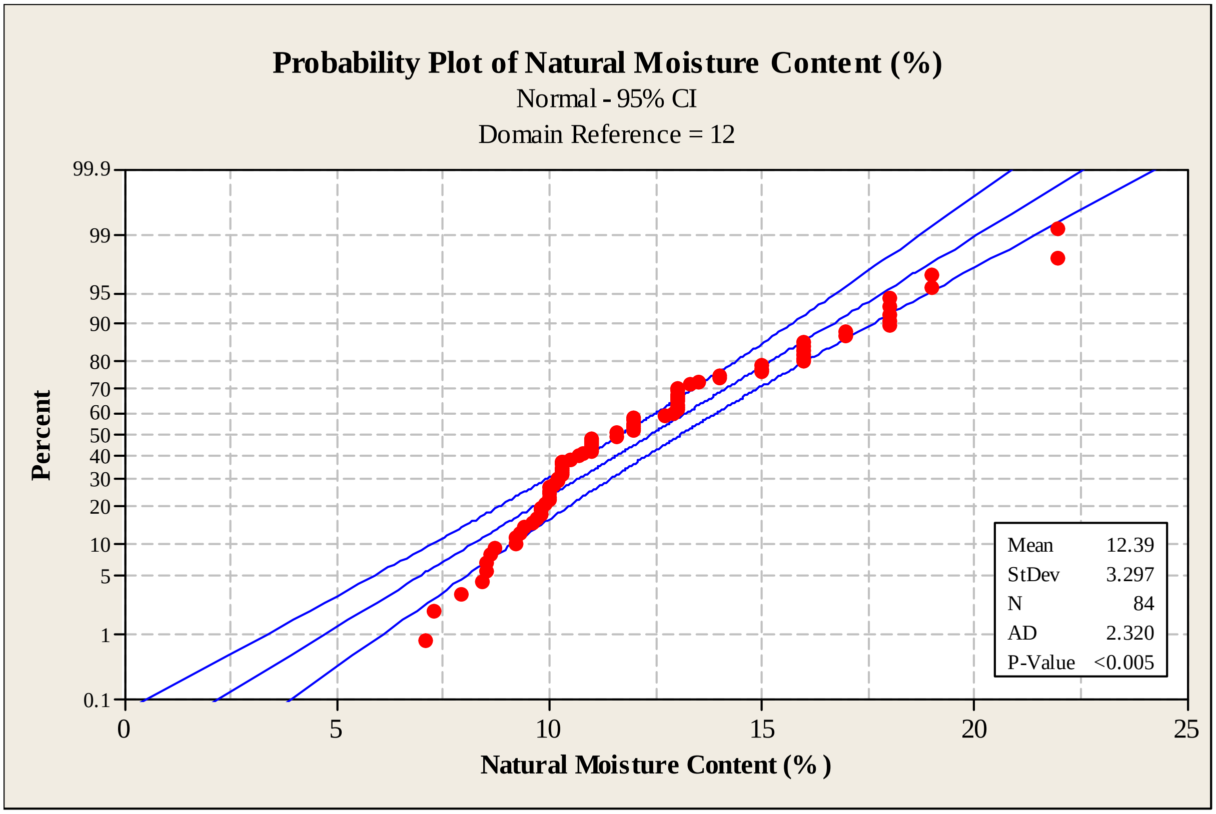
The table on each chart gives the data mean, standard deviation and data count. Also included is the Anderson-Darling test statistic, and the calculated p-value: this is compared against a conventional α-value of 0.05. If $p < \alpha$ the data is non-Gaussian to a statistically significant degree.

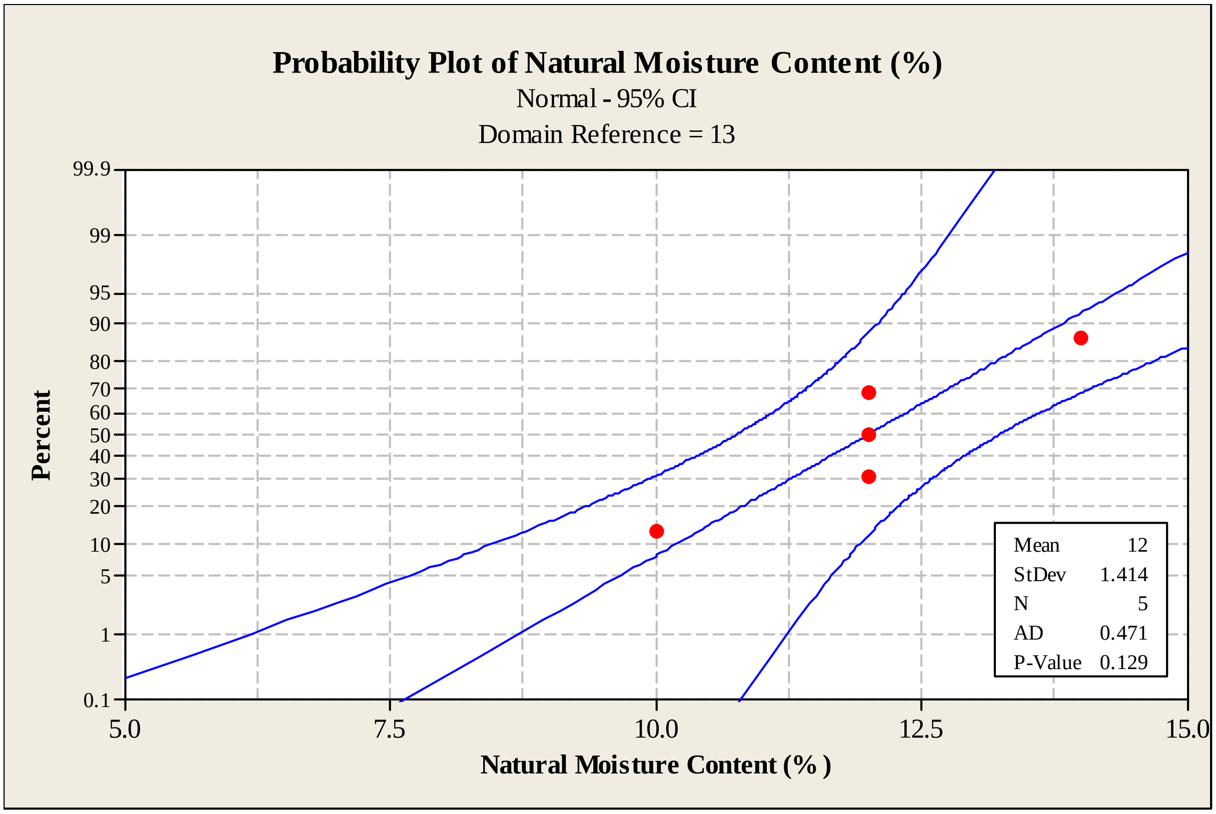
The results of more detailed ‘Normality’ testing are summarised in Appendix A1.

Only data from till soils are plotted.

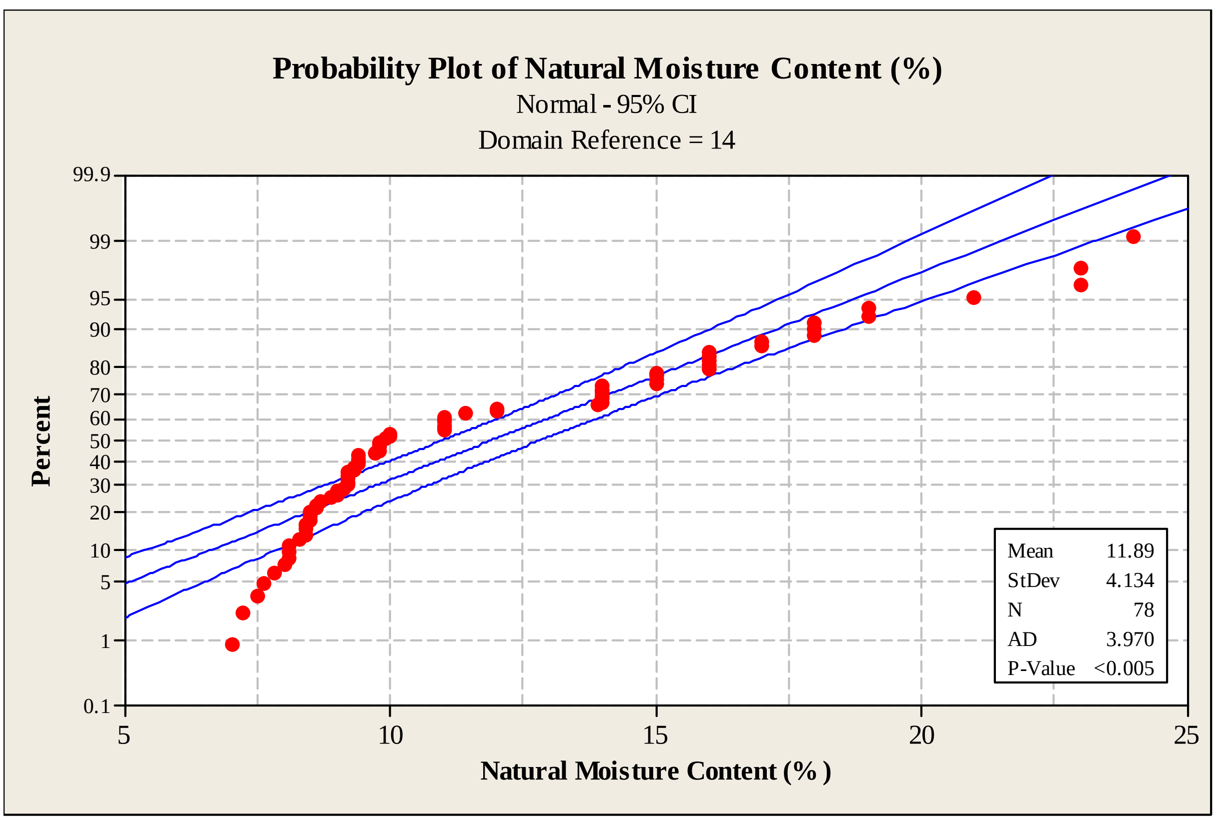
Natural Water Content



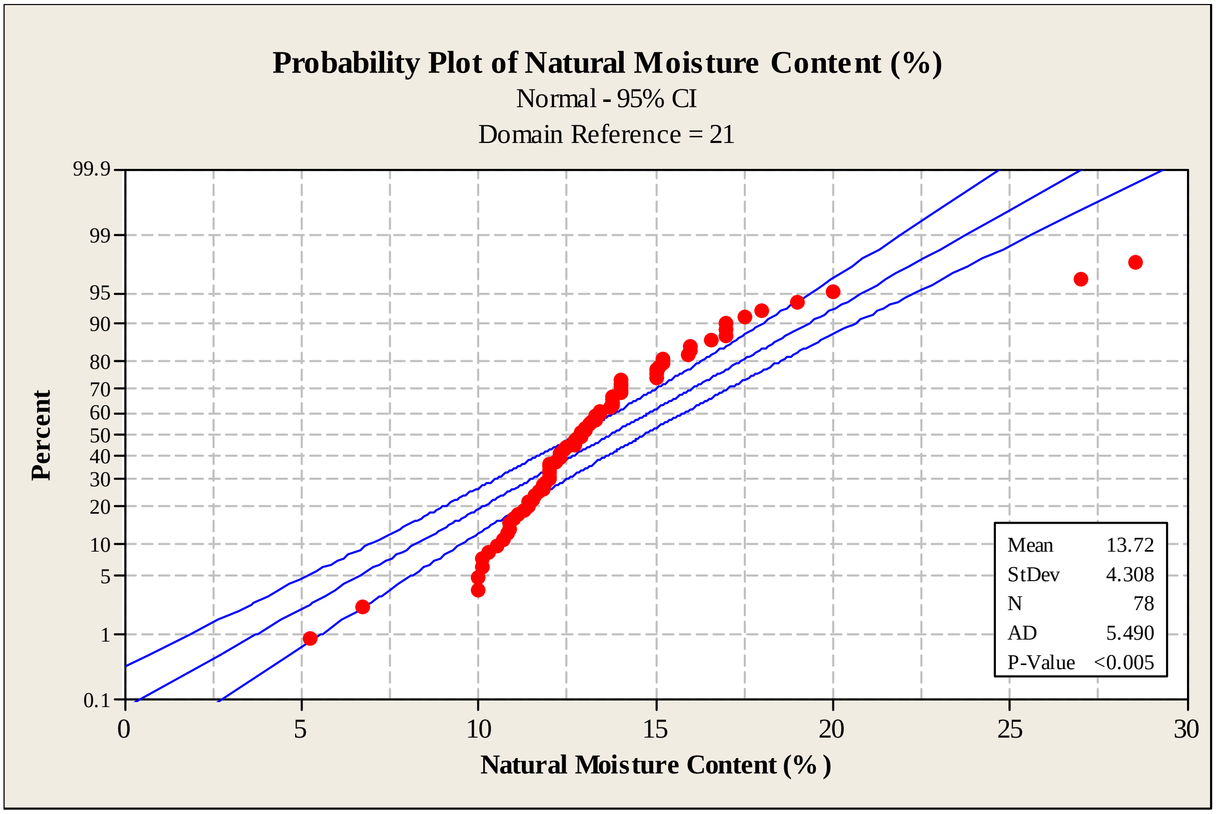


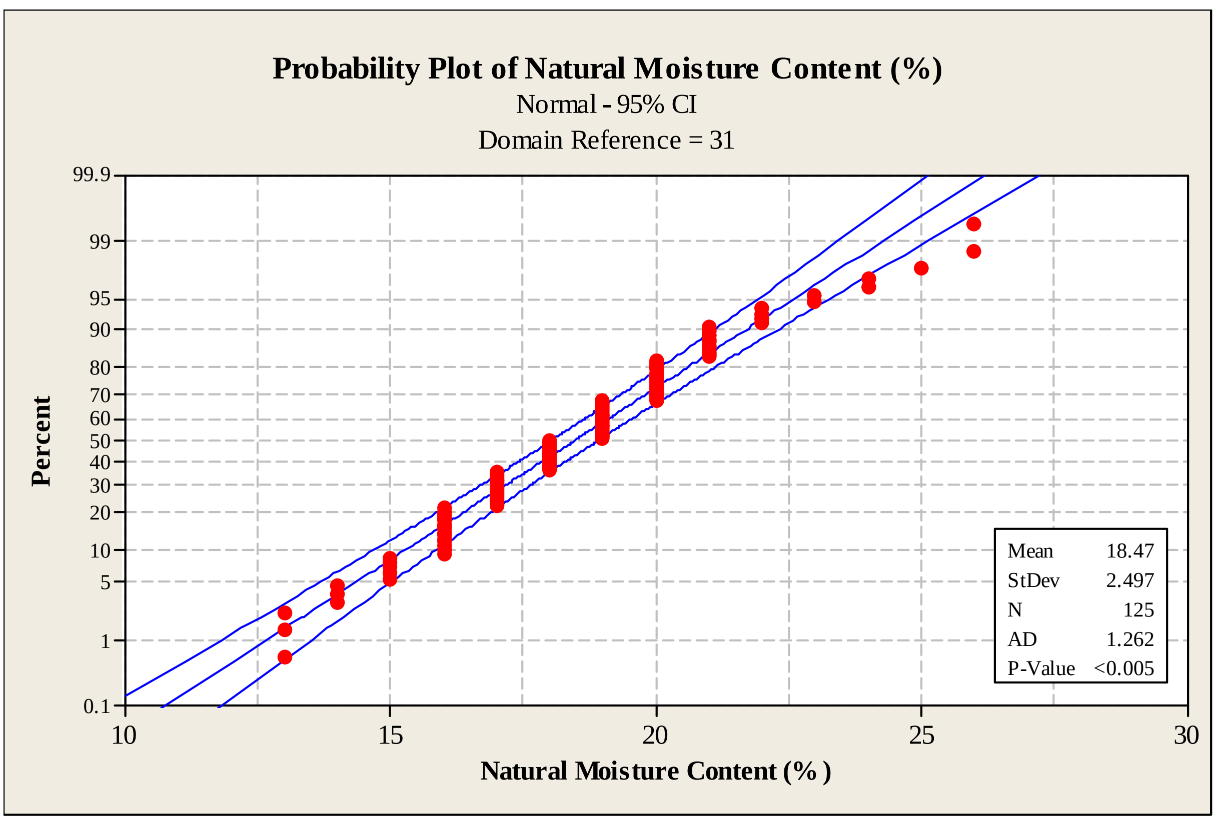


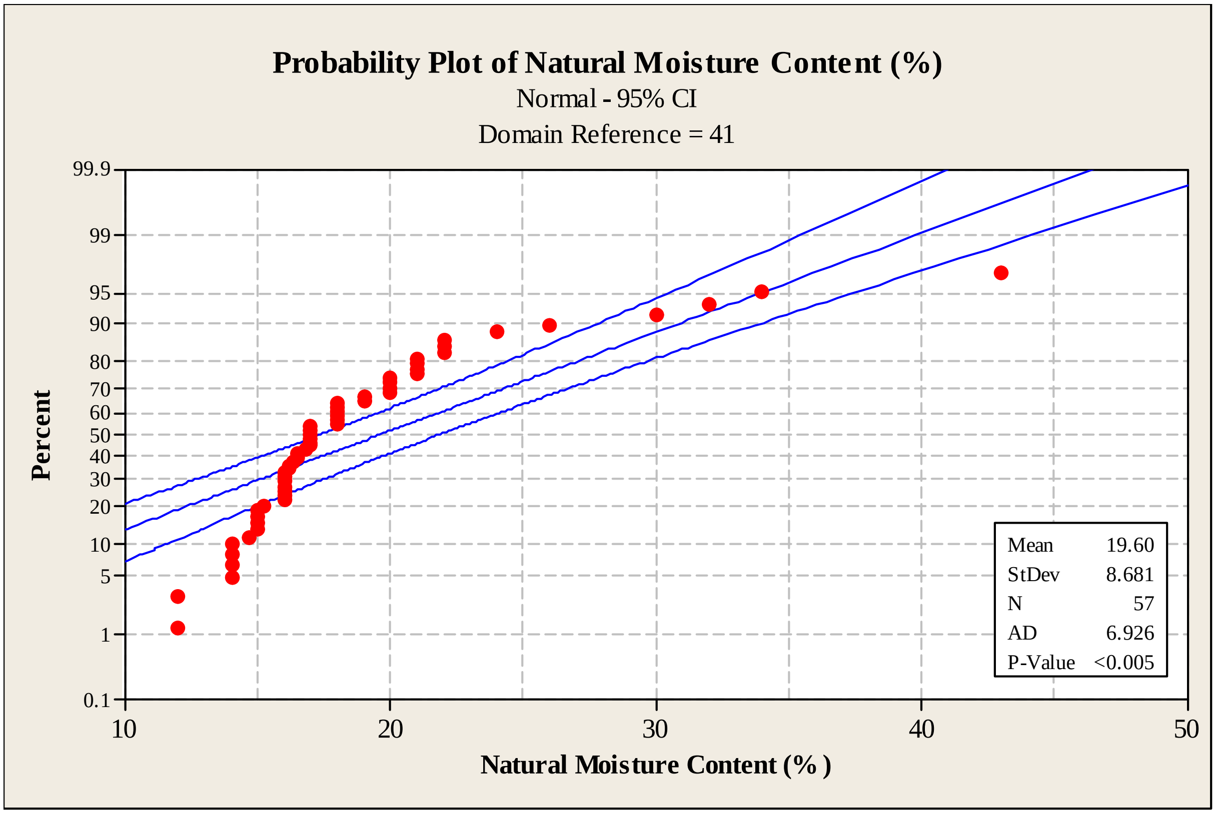
Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 13
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
5.0
7.5
10.0
12.5
15.0
Natural Moisture Content (%)
Mean 12
StDev 1.414
N 5
AD 0.471
P-Value 0.129

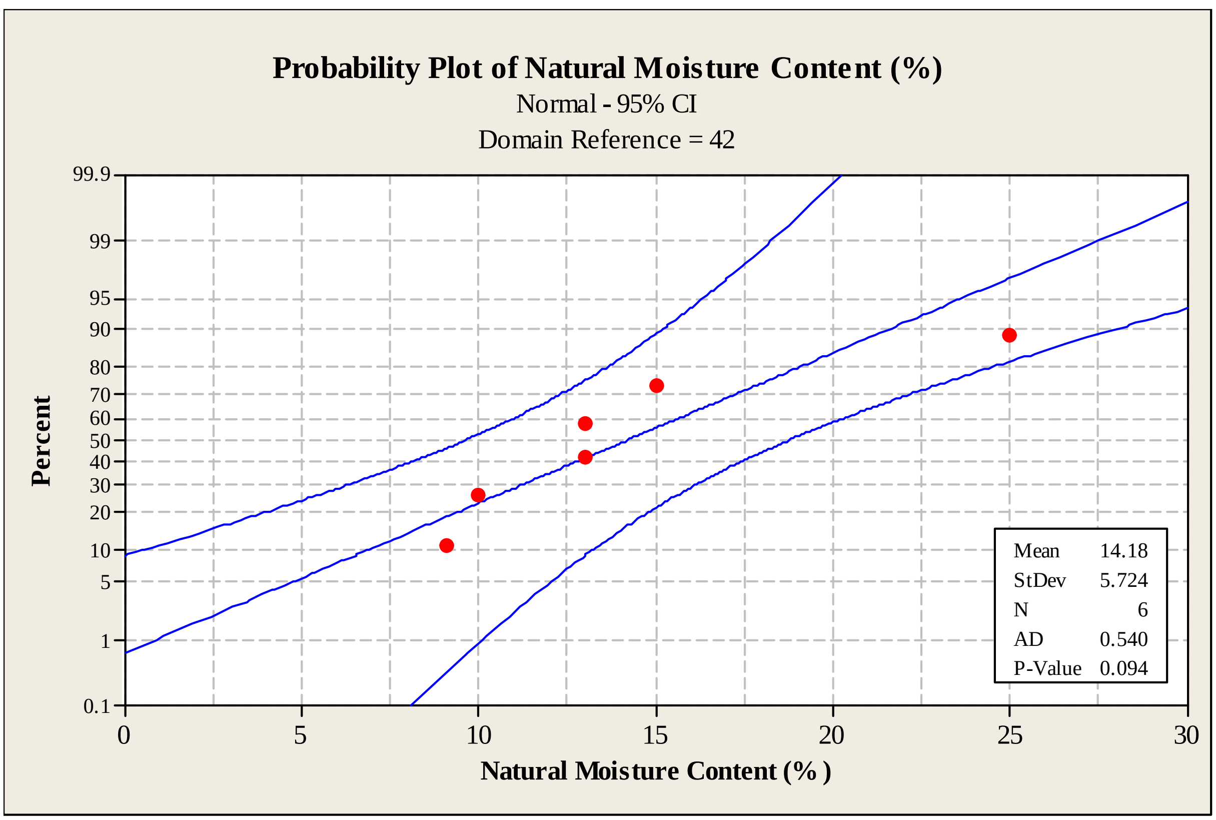


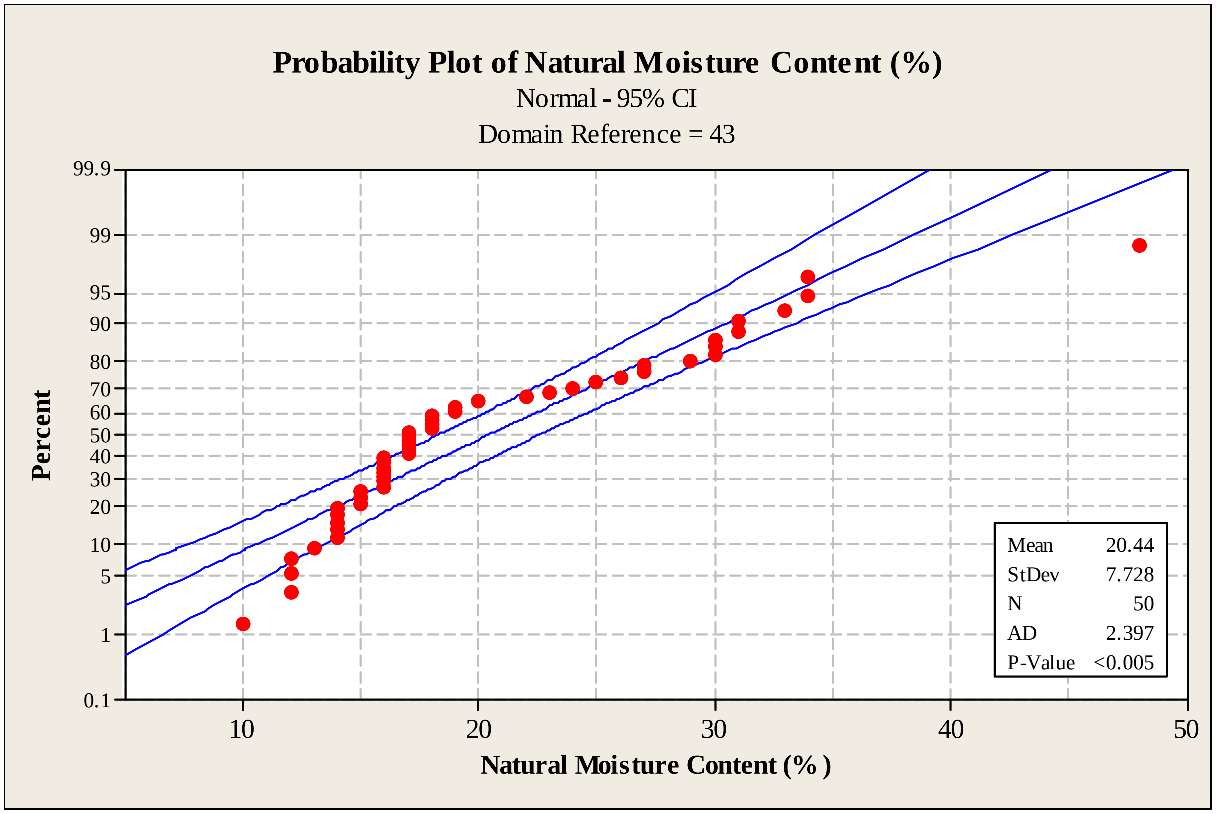
Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 14
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
5
10
15
20
25
Natural Moisture Content (%)
Mean 11.89
StDev 4.134
N 78
AD 3.970
P-Value <0.005


Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 21
Percent
Natural Moisture Content (%)
Mean 13.72
StDev 4.308
N 78
AD 5.490
P-Value <0.005

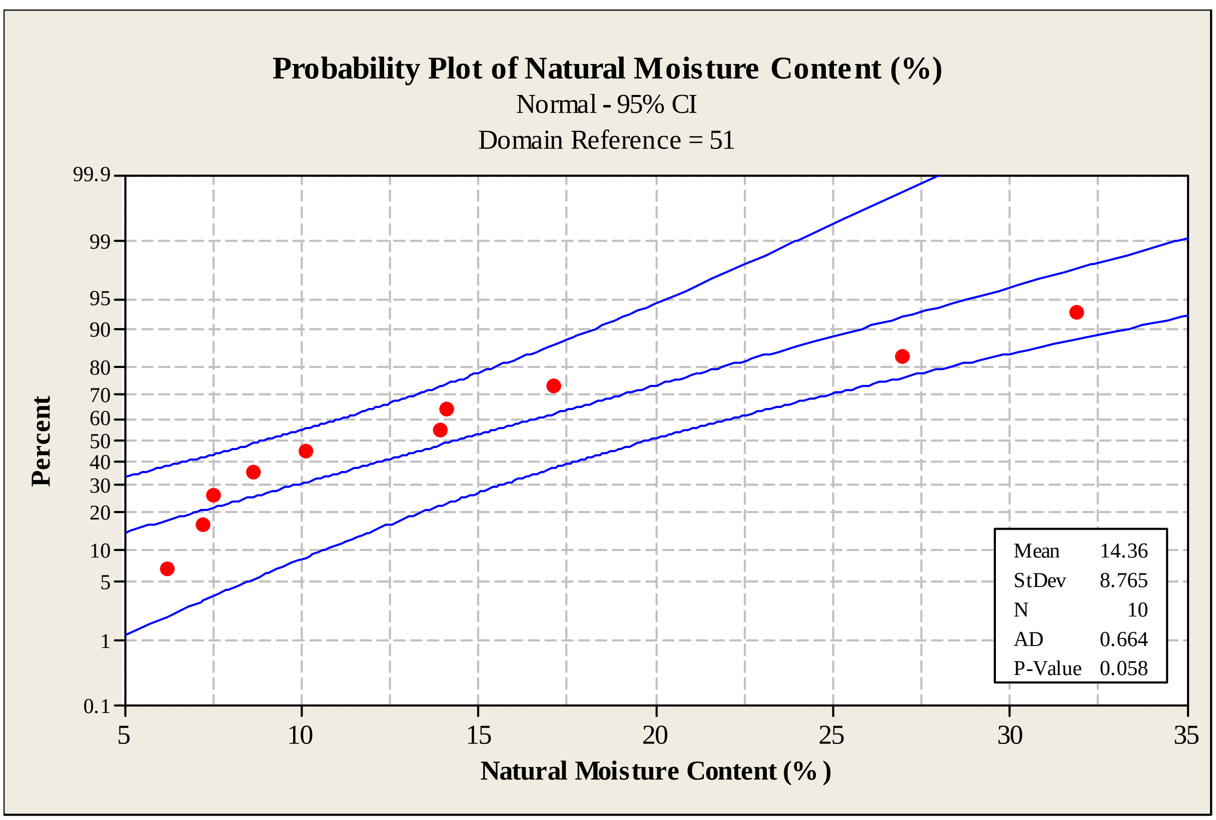

Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 31
Percent
Natural Moisture Content (%)
Mean 18.47
StDev 2.497
N 125
AD 1.262
P-Value <0.005


Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 41
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
10
20
30
40
50
Natural Moisture Content (%)
Mean 19.60
StDev 8.681
N 57
AD 6.926
P-Value <0.005

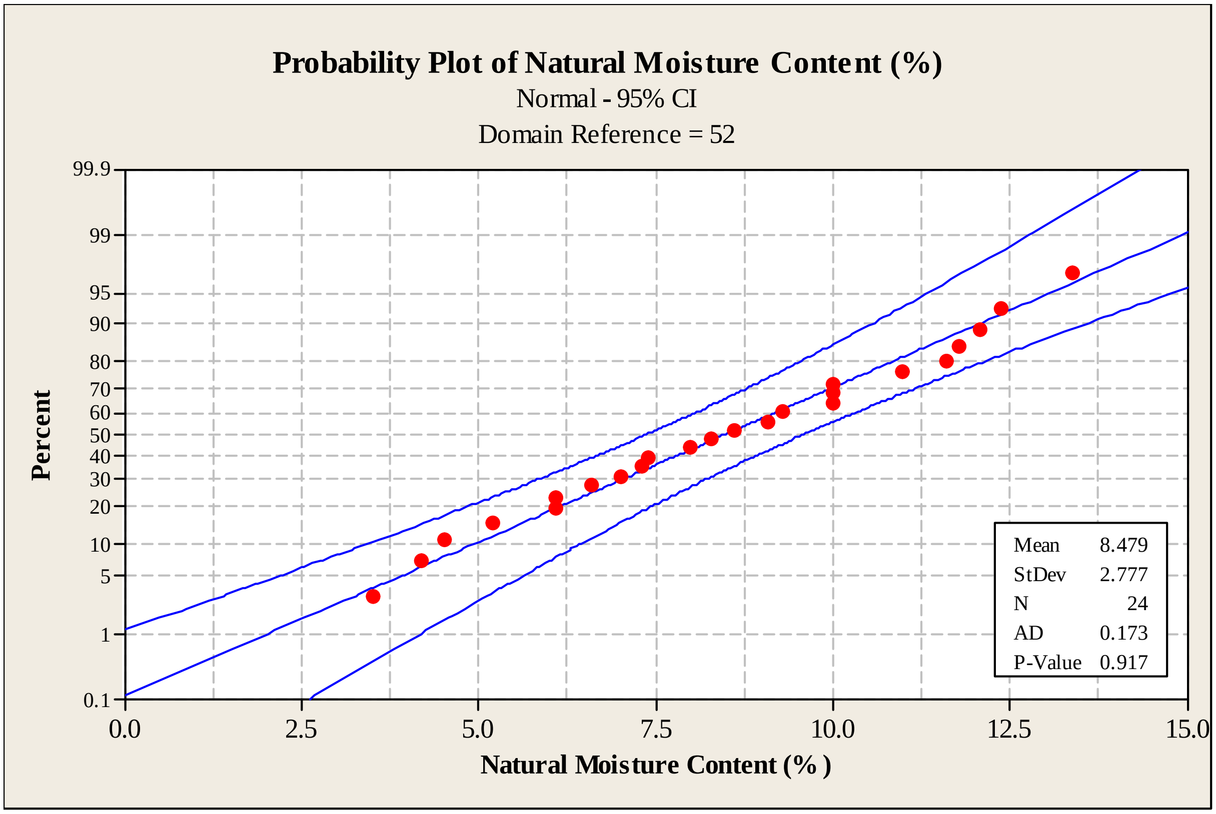

Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 42
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0
5
10
15
20
25
30
Natural Moisture Content (%)
Mean 14.18
StDev 5.724
N 6
AD 0.540
P-Value 0.094



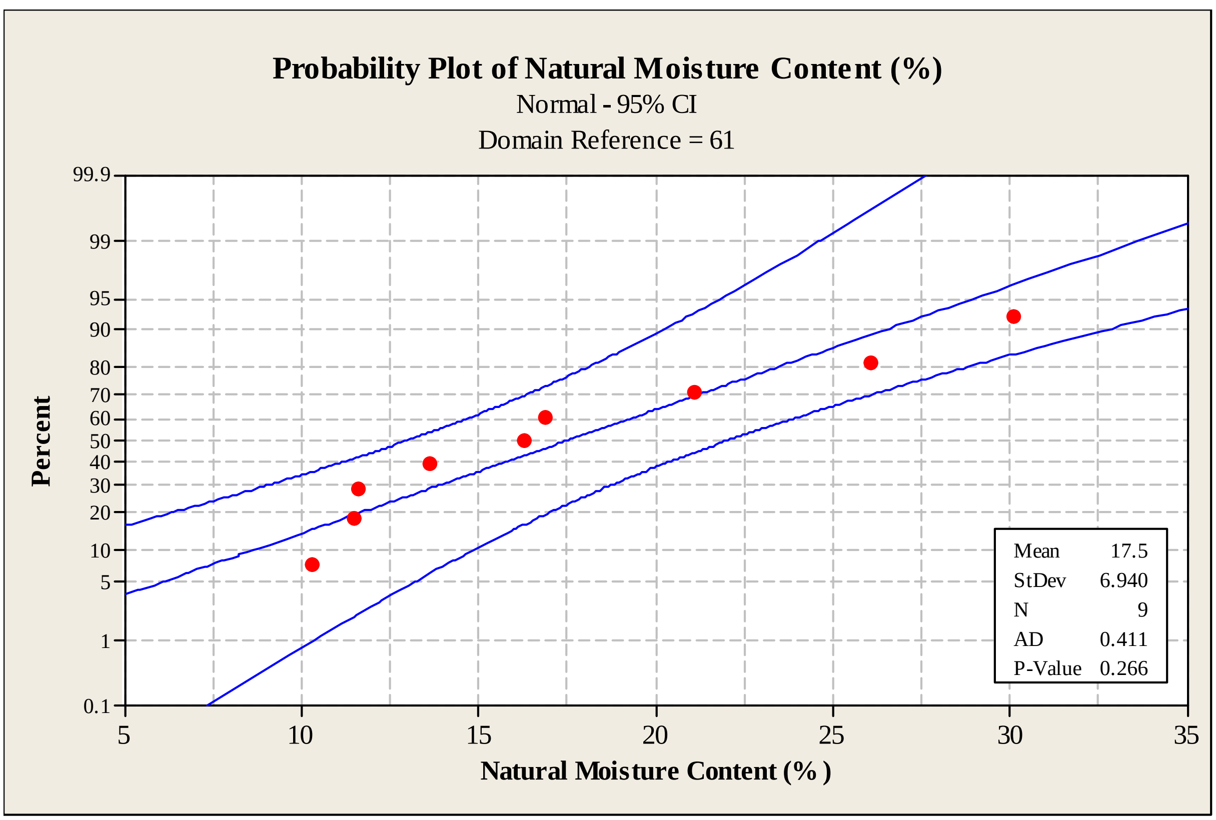
Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 43
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
10
20
30
40
50
Natural Moisture Content (%)
Mean 20.44
StDev 7.728
N 50
AD 2.397
P-Value <0.005

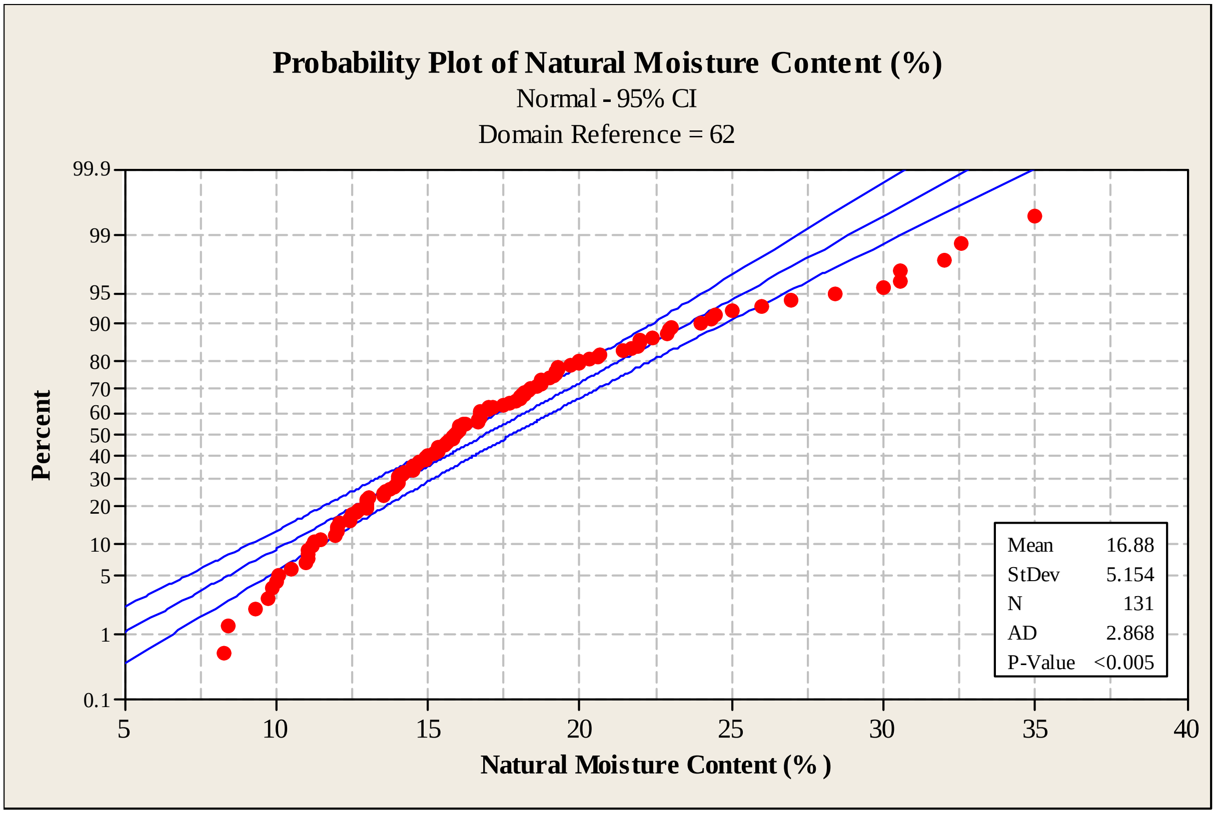


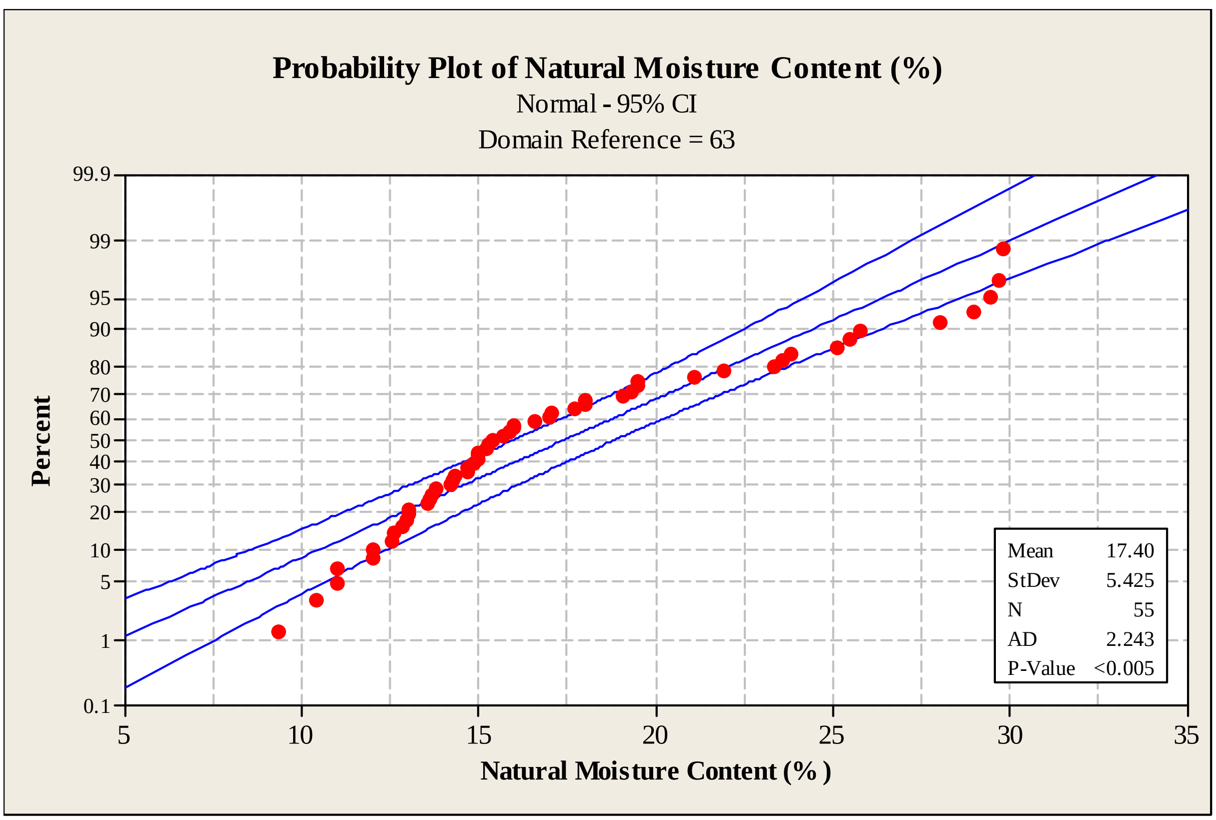
Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 51
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
5
10
15
20
25
30
35
Natural Moisture Content (%)
Mean 14.36
StDev 8.765
N 10
AD 0.664
P-Value 0.058

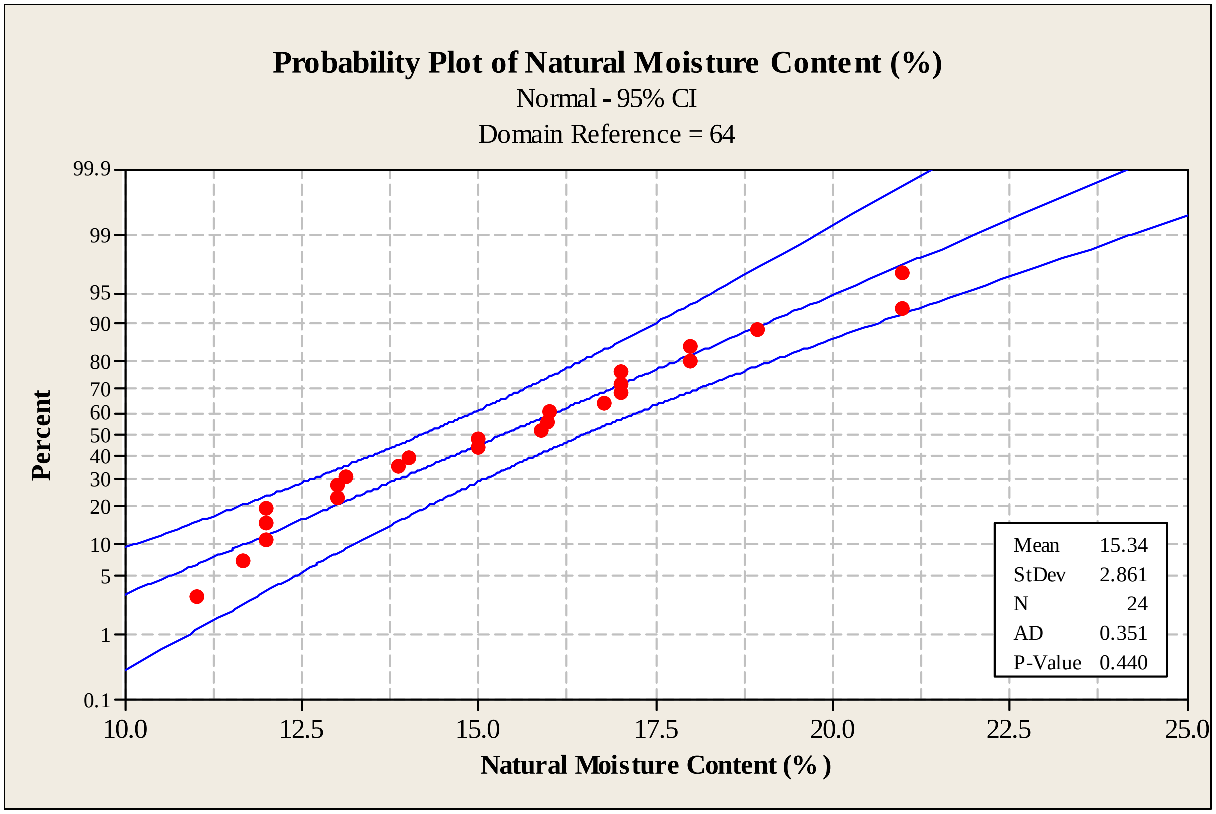


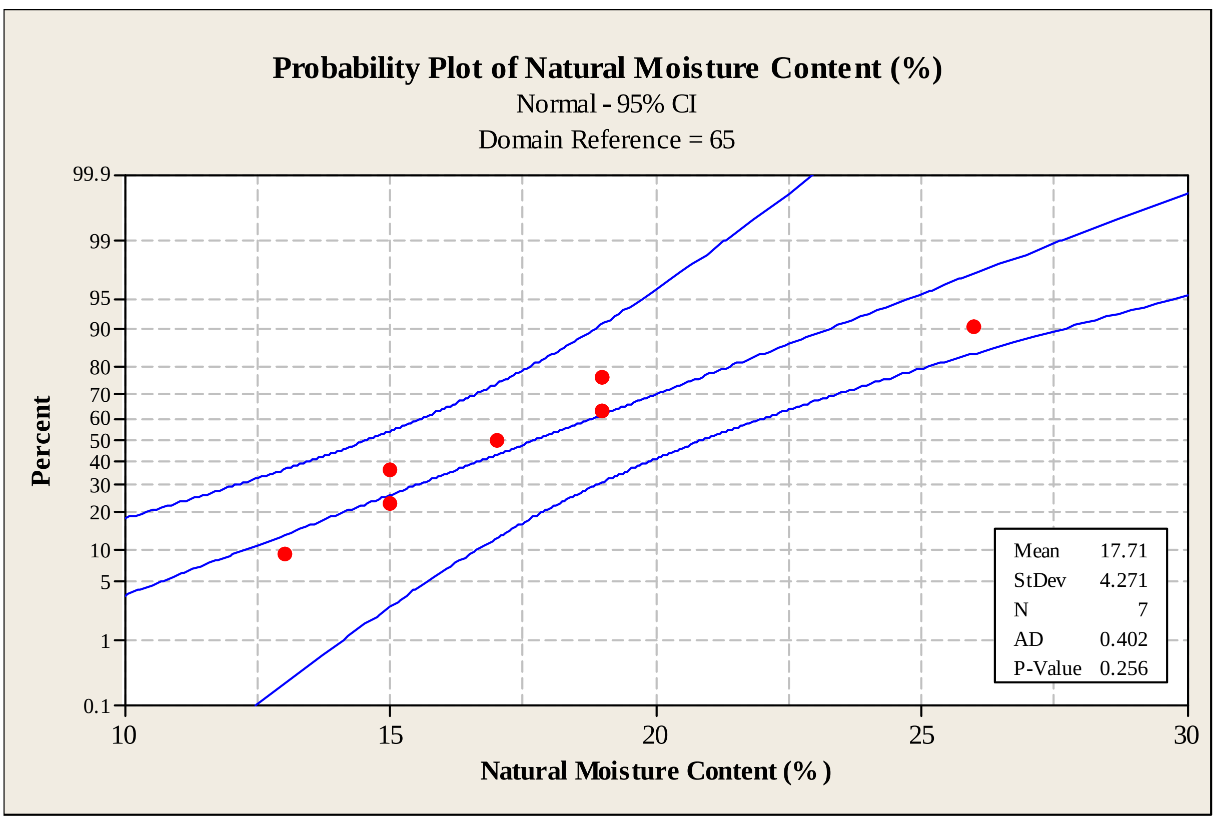
(Domain 53: insufficient data)

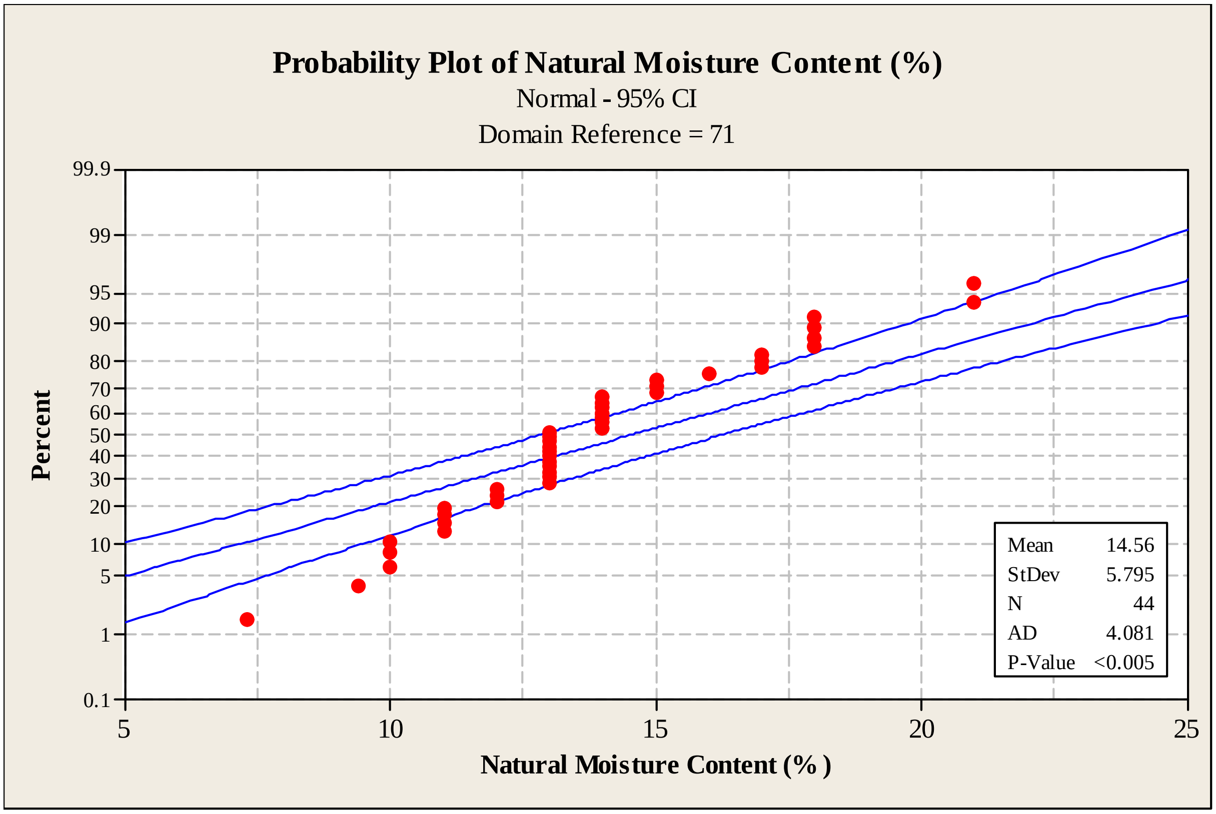


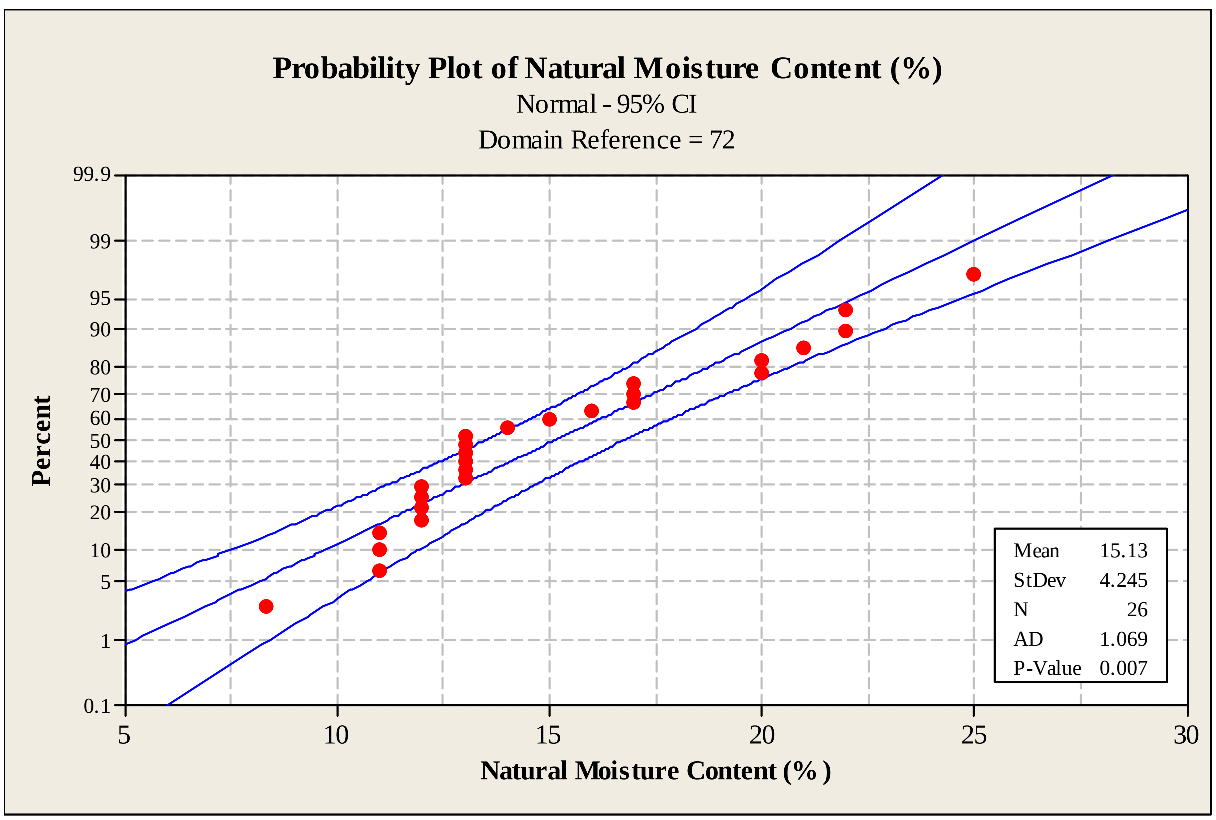

Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 62
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
5
10
15
20
25
30
35
40
Natural Moisture Content (%)
Mean 16.88
StDev 5.154
N 131
AD 2.868
P-Value <0.005


Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 63
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
5
10
15
20
25
30
35
Natural Moisture Content (%)
Mean 17.40
StDev 5.425
N 55
AD 2.243
P-Value <0.005

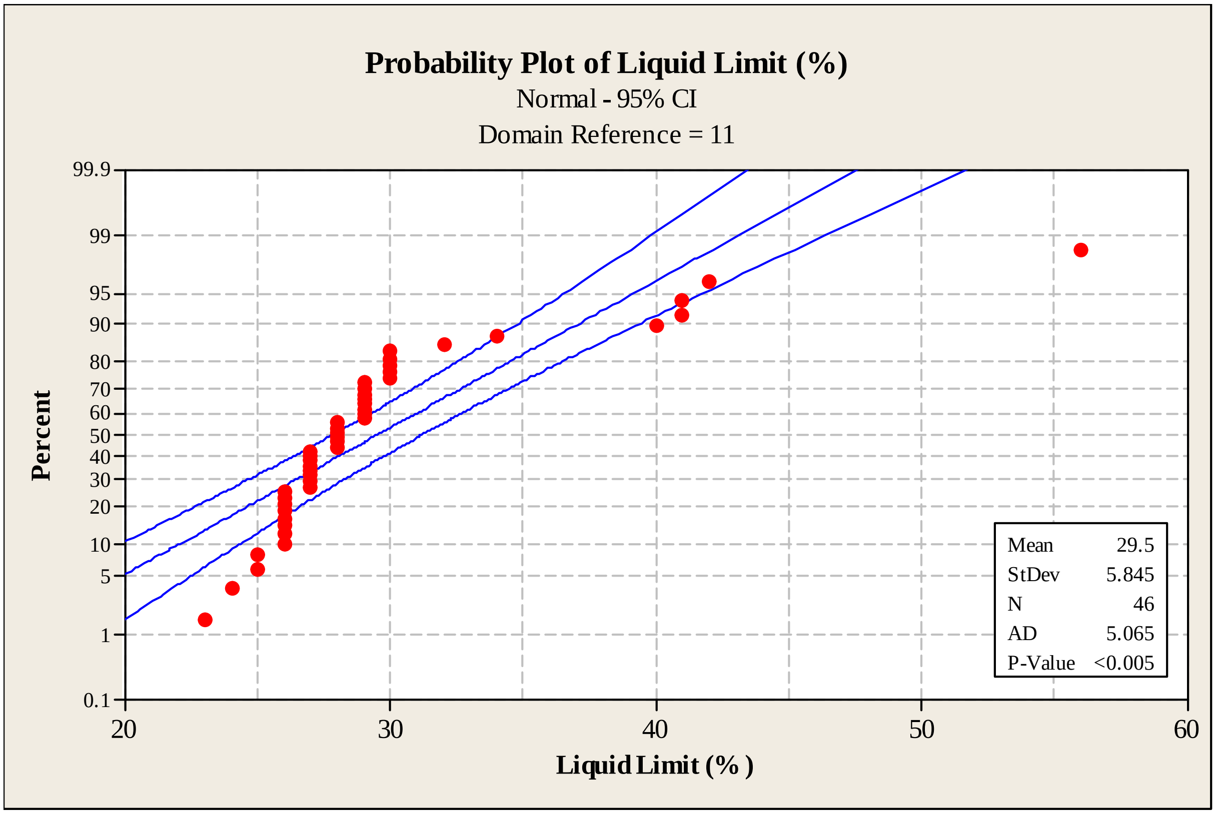

Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 64
Percent
Natural Moisture Content (%)
Mean 15.34
StDev 2.861
N 24
AD 0.351
P-Value 0.440

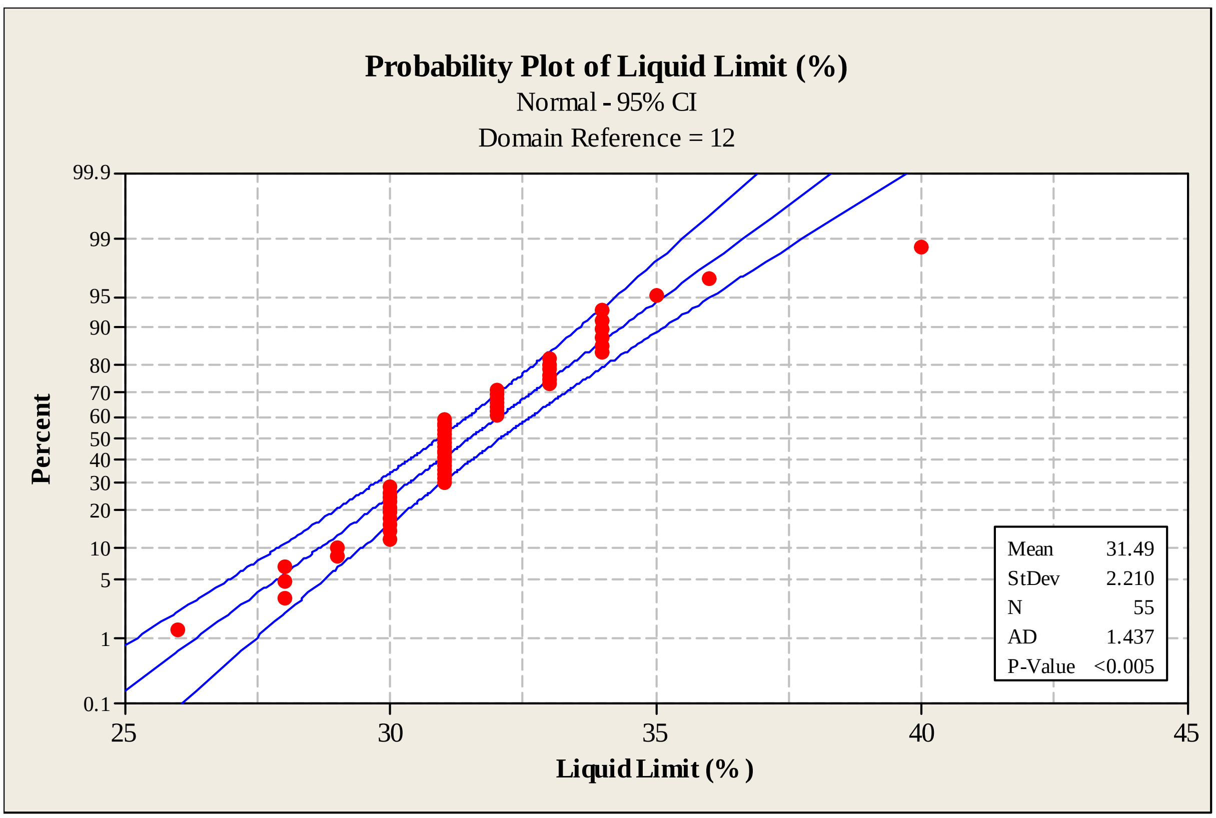

Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 65
Percent
Natural Moisture Content (%)
Mean 17.71
StDev 4.271
N 7
AD 0.402
P-Value 0.256


Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 71
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
5
10
15
20
25
Natural Moisture Content (%)
Mean 14.56
StDev 5.795
N 44
AD 4.081
P-Value <0.005

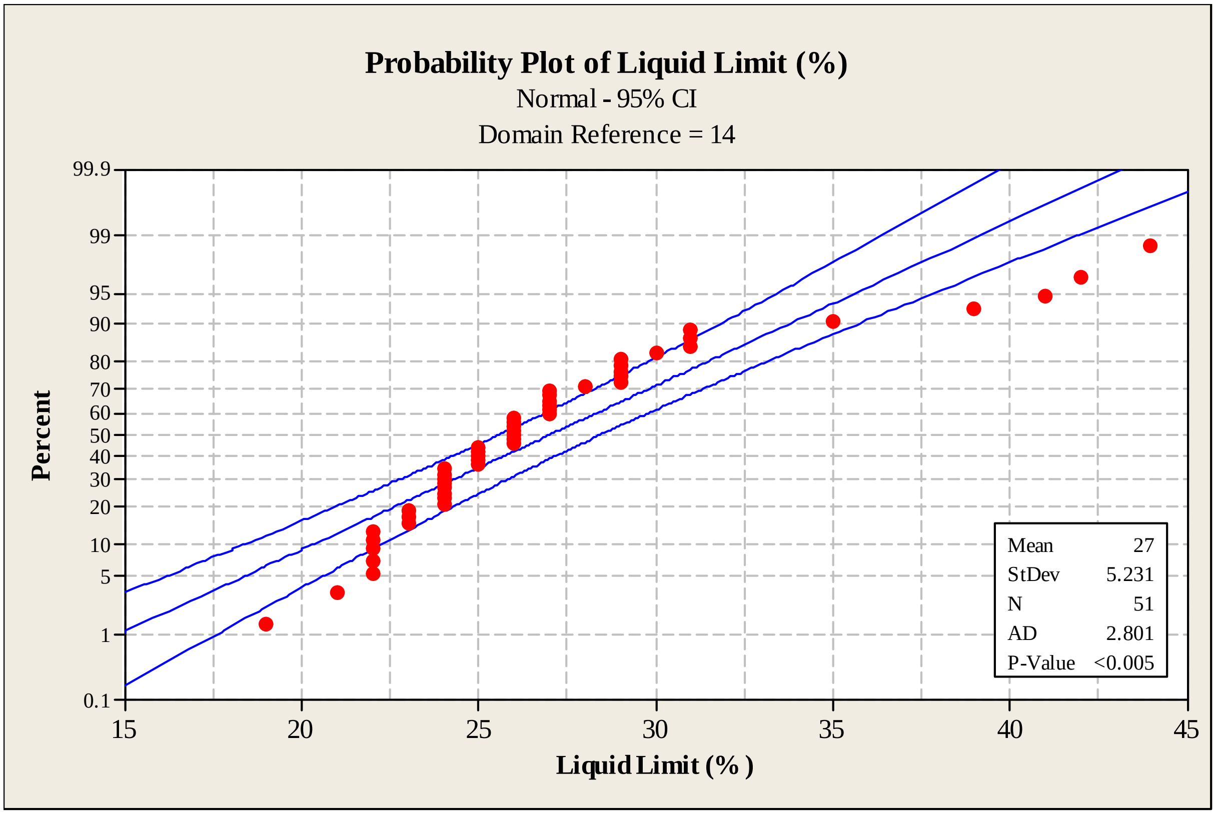

Probability Plot of Natural Moisture Content (%)
Normal - 95% CI
Domain Reference = 72
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
5
10
15
20
25
30
Natural Moisture Content (%)
Mean 15.13
StDev 4.245
N 26
AD 1.069
P-Value 0.007

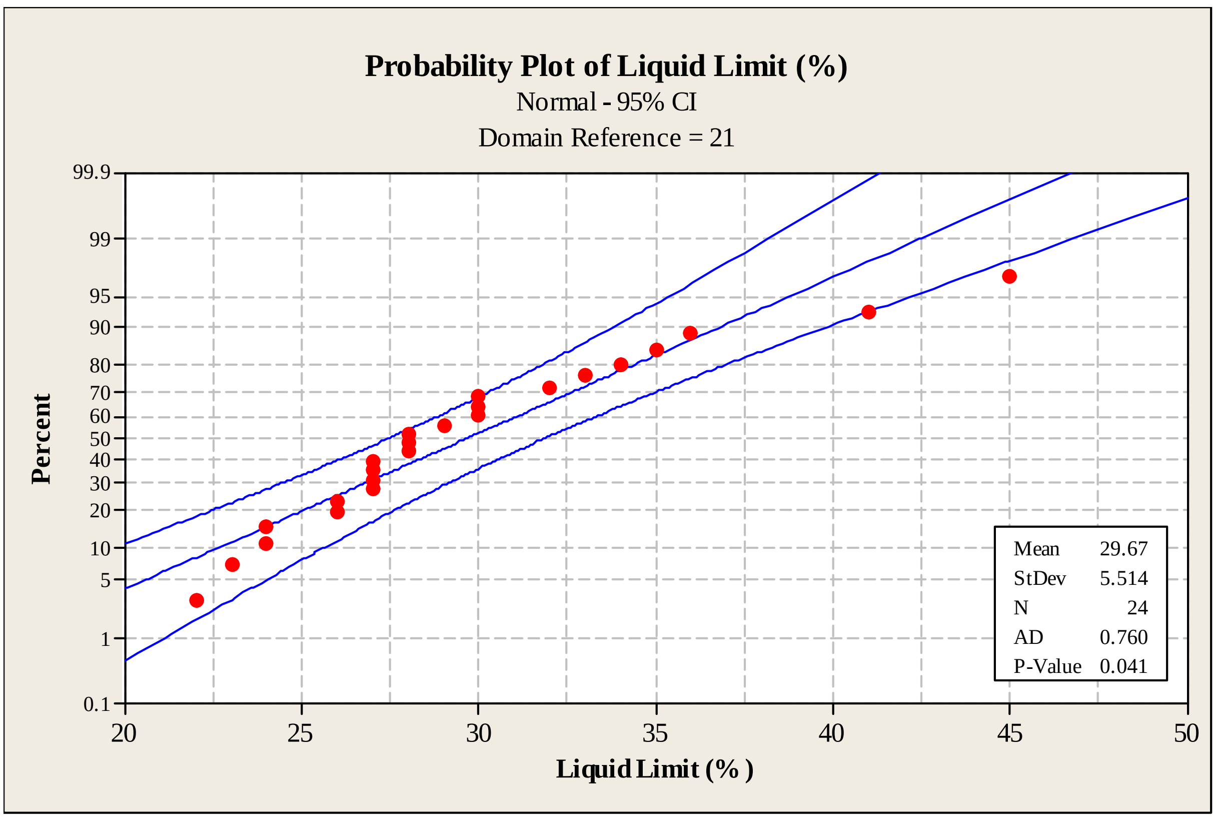
Liquid Limit

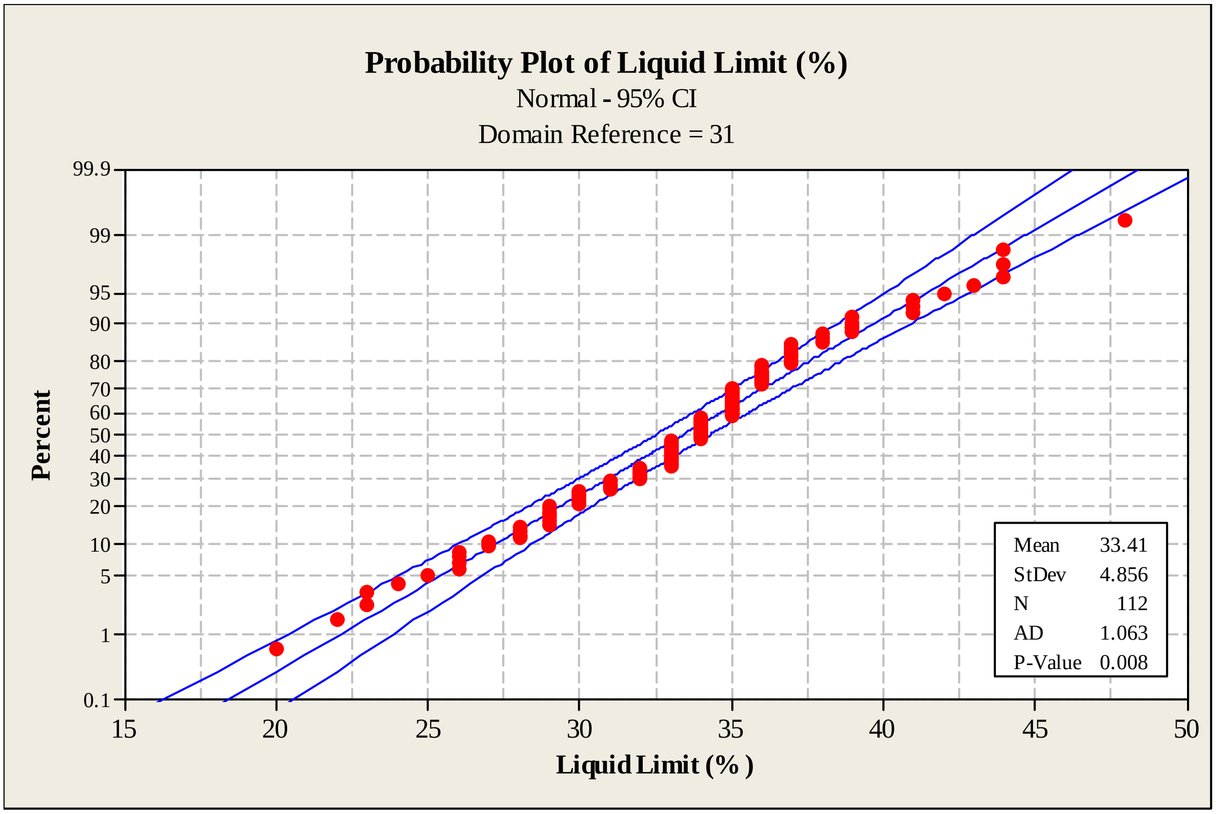


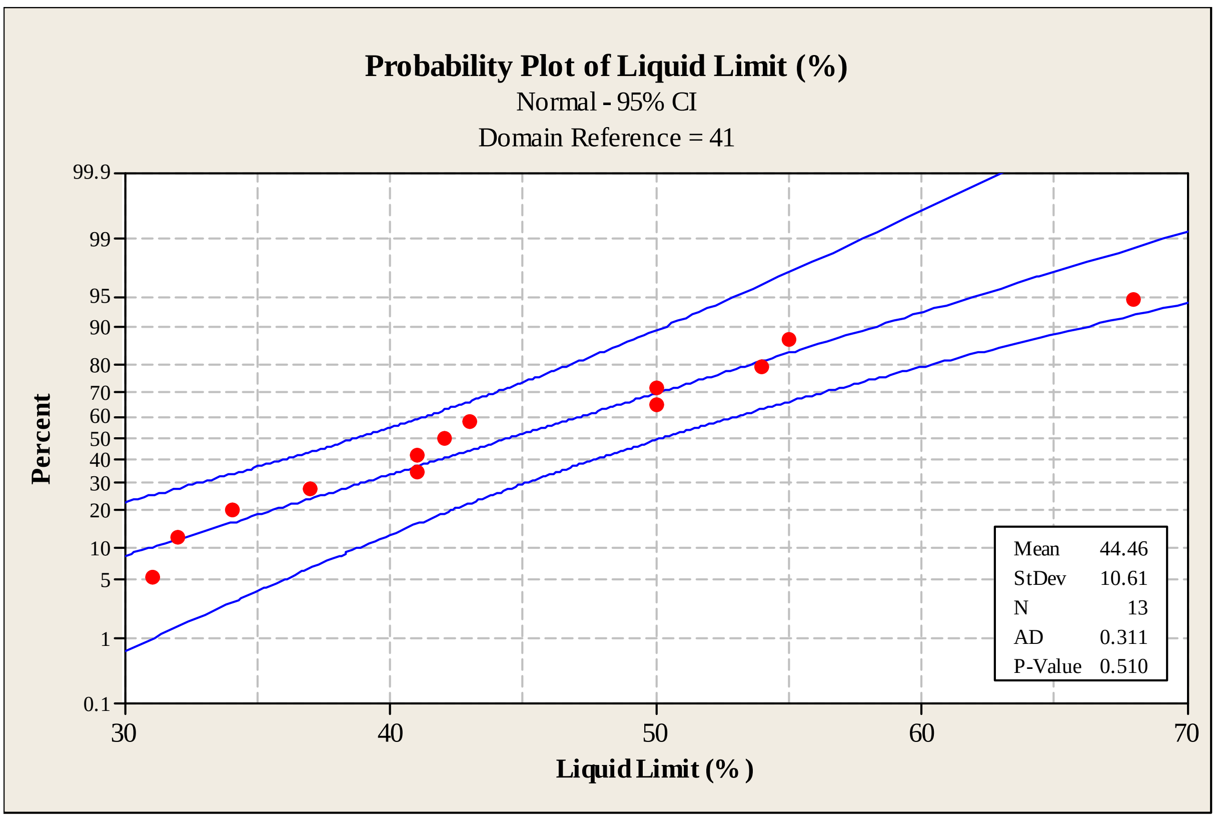


(Domain 13: insufficient data)

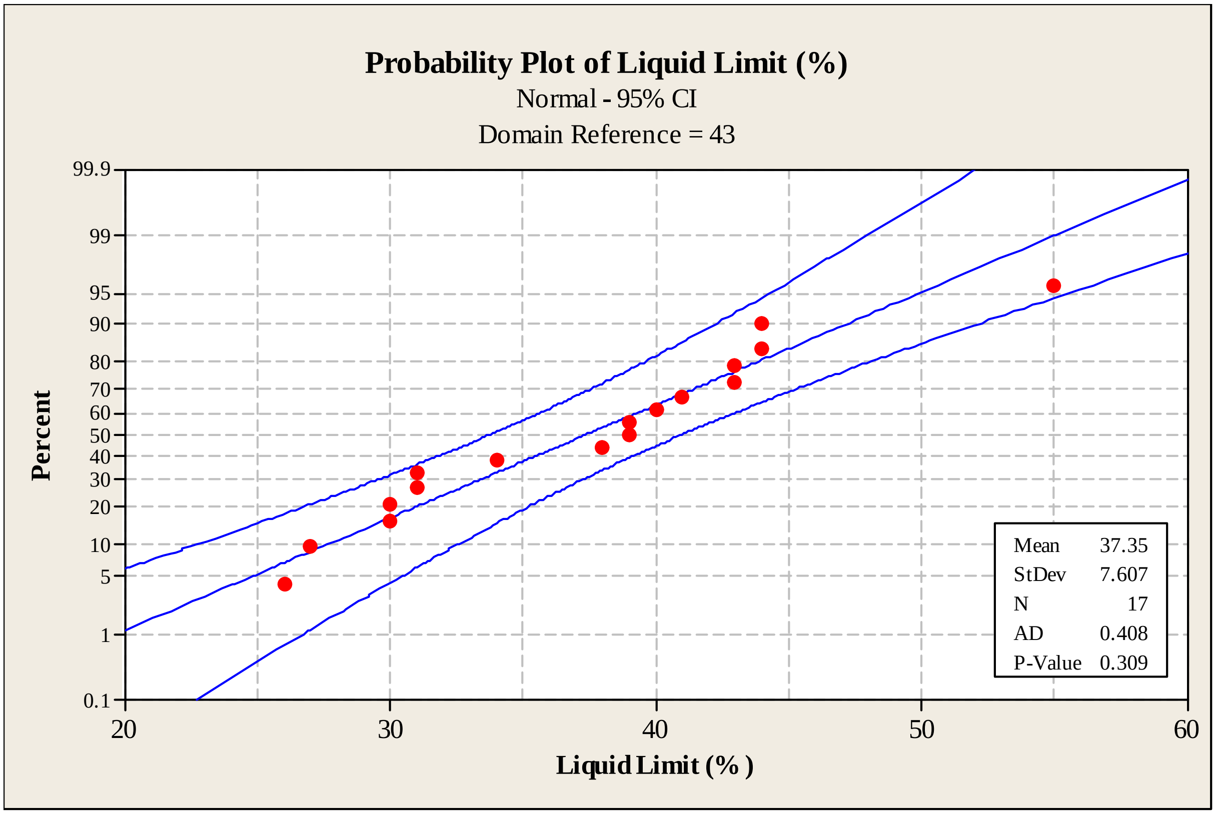


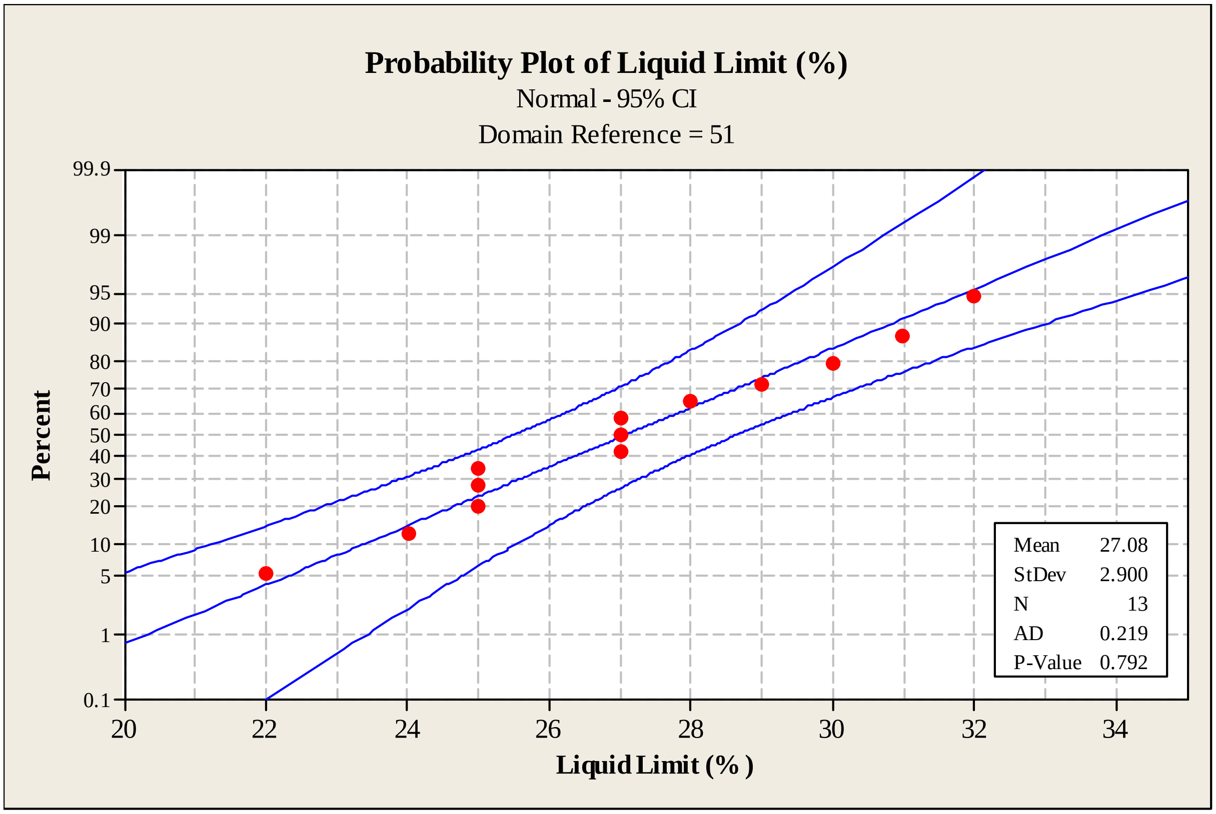


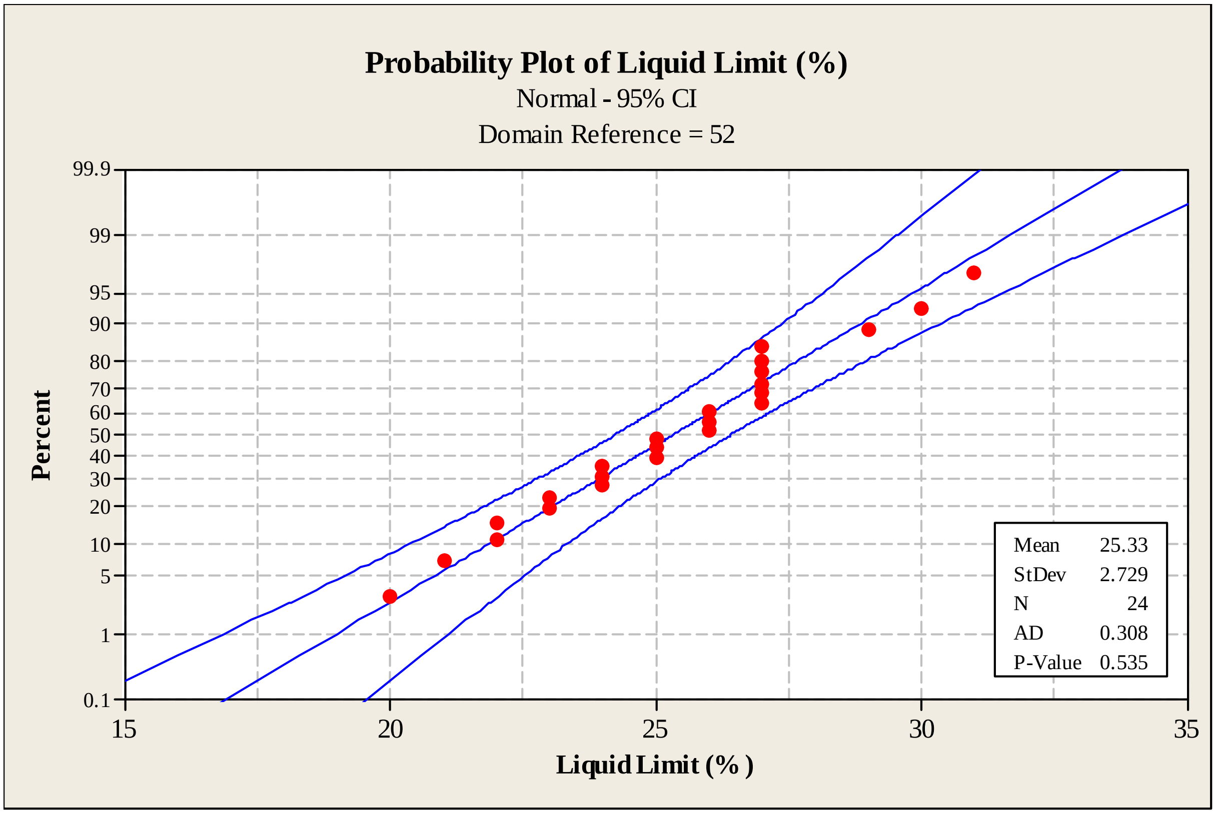

Probability Plot of Liquid Limit (%)
Normal - 95% CI
Domain Reference = 31
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
15
20
25
30
35
40
45
50
Liquid Limit (%)
Mean 33.41
StDev 4.856
N 112
AD 1.063
P-Value 0.008


Probability Plot of Liquid Limit (%)
Normal - 95% CI
Domain Reference = 41
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
30
40
50
60
70
Liquid Limit (%)
Mean 44.46
StDev 10.61
N 13
AD 0.311
P-Value 0.510

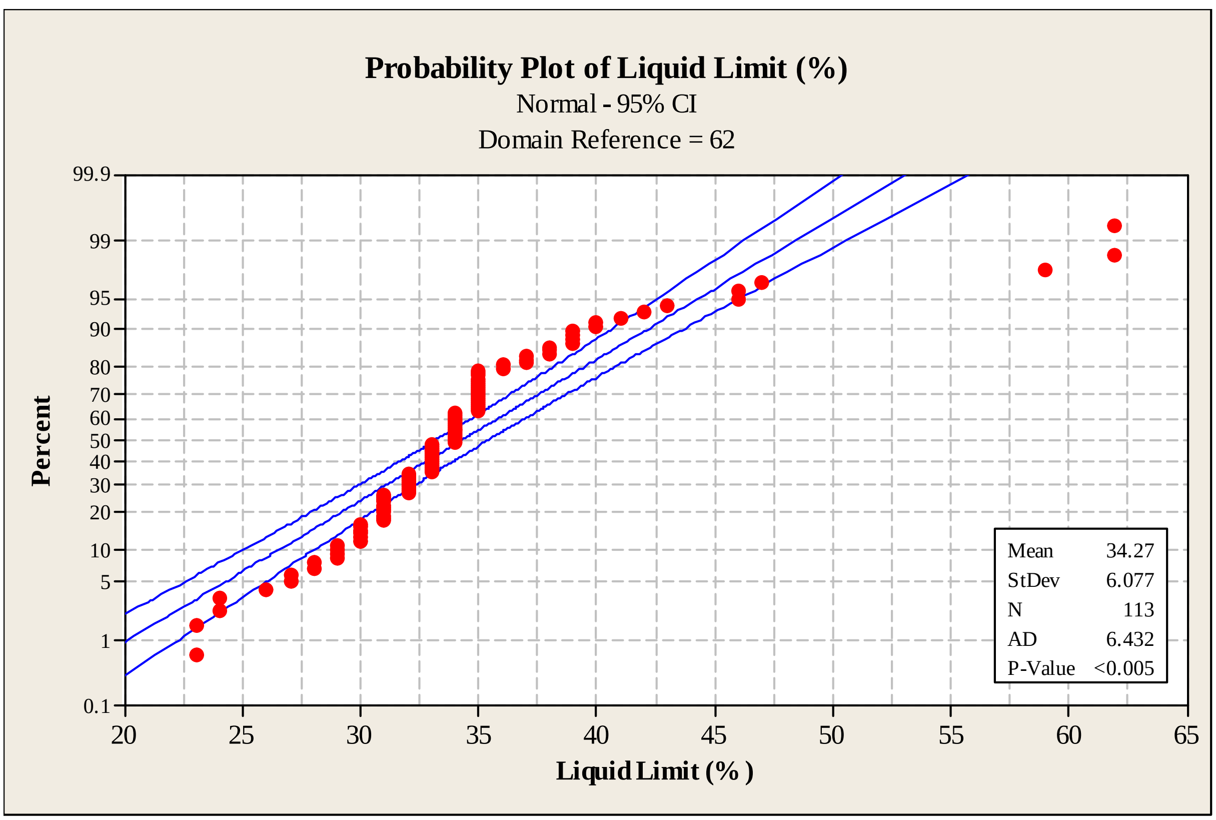
(Domain 42: insufficient data)

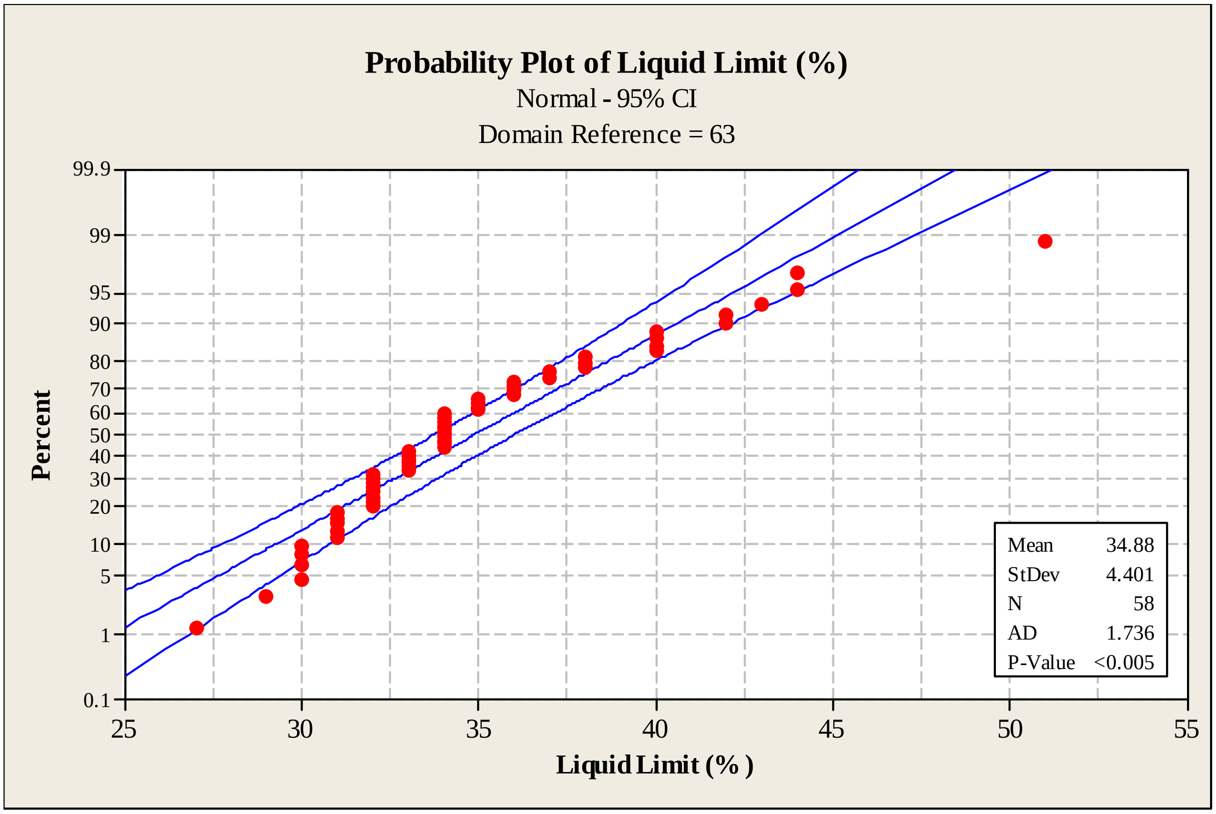


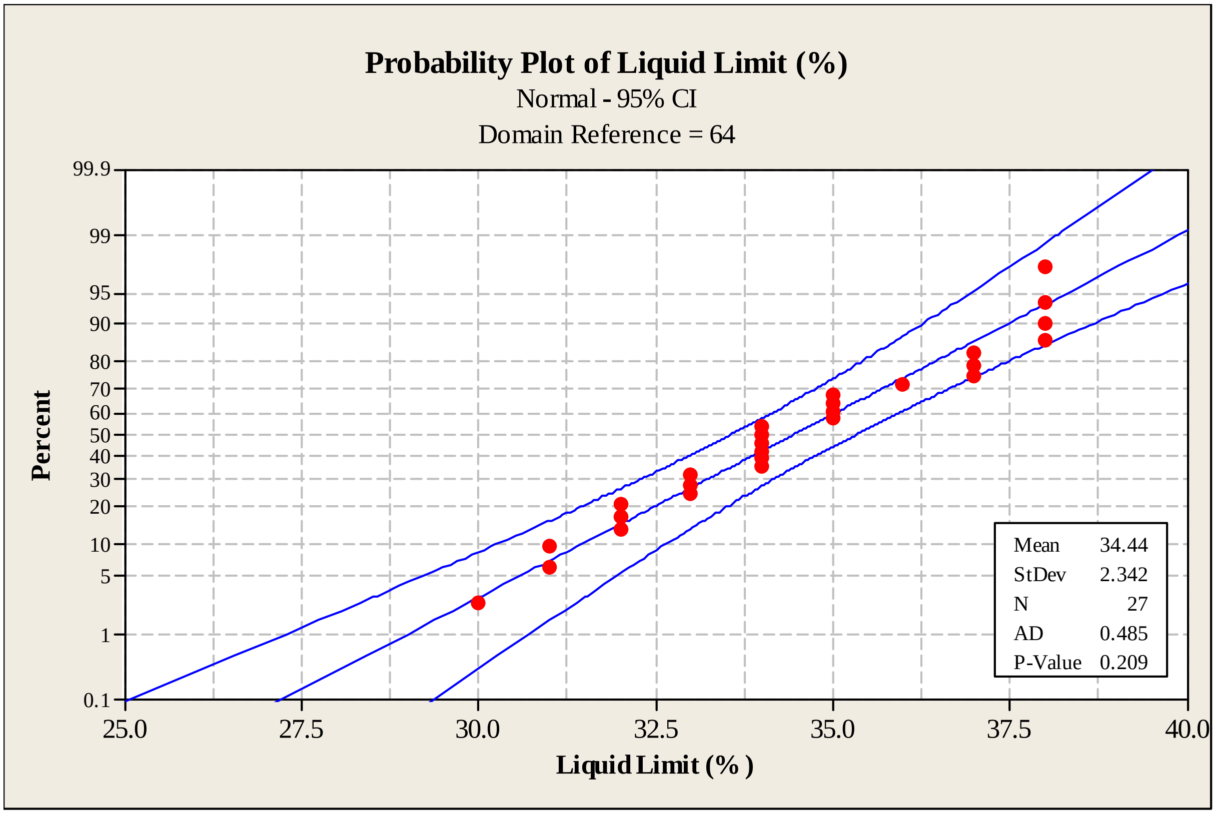


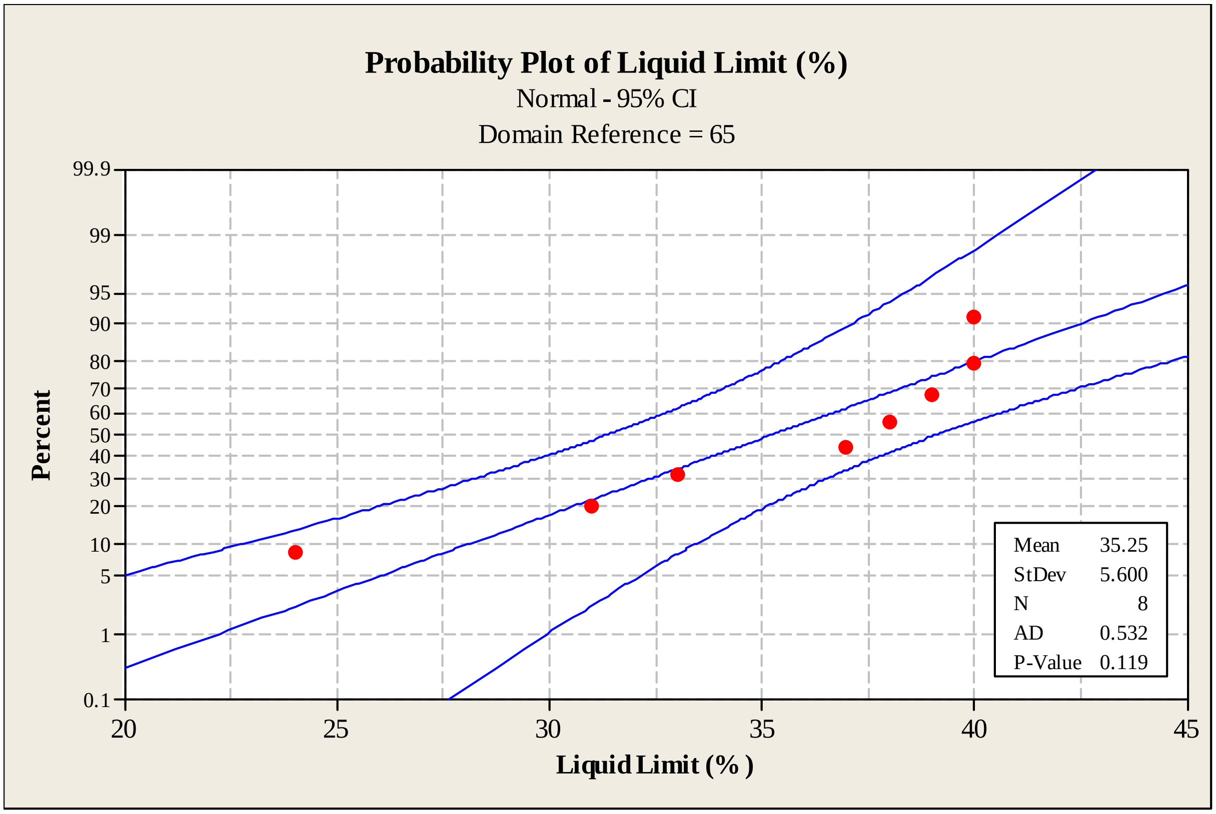


(Domain 53: insufficient data; Domain 61: no data)

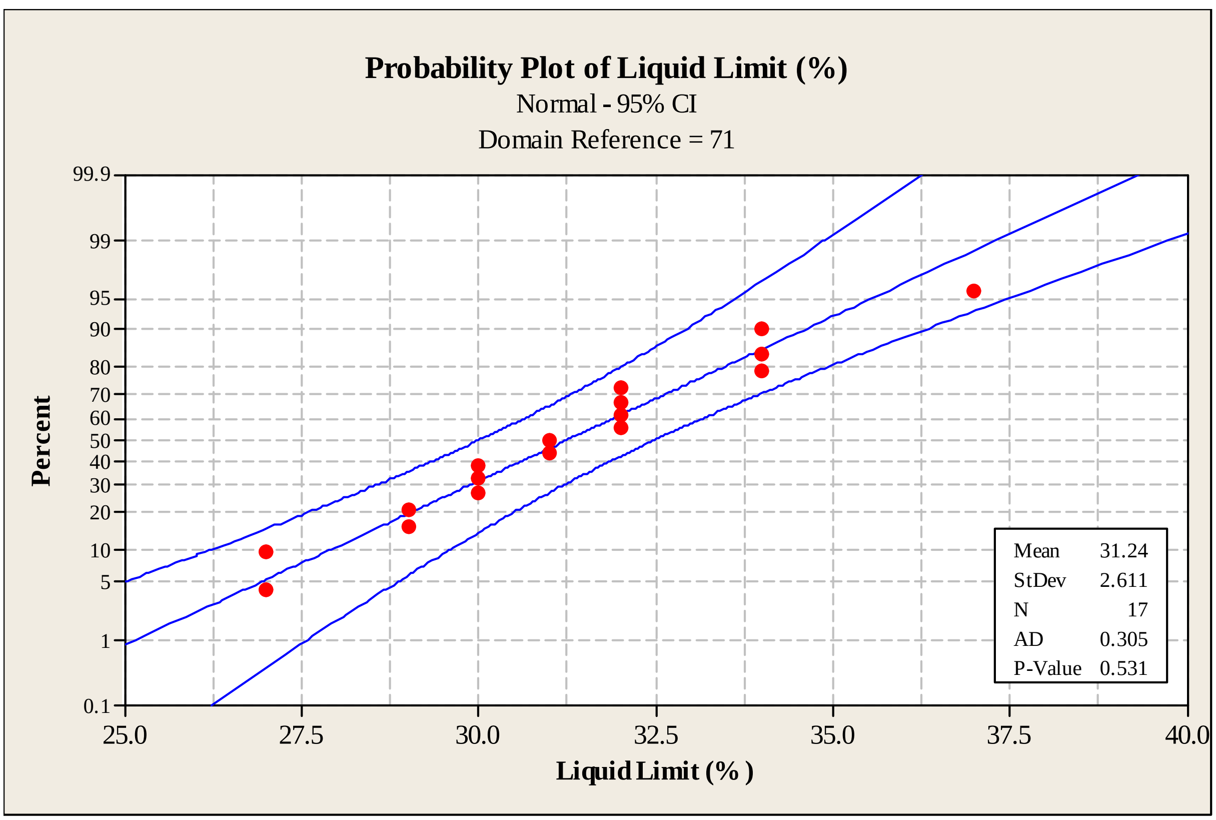



Probability Plot of Liquid Limit (%)
Normal - 95% CI
Domain Reference = 63
Percent
Liquid Limit (%)
Mean 34.88
StDev 4.401
N 58
AD 1.736
P-Value <0.005

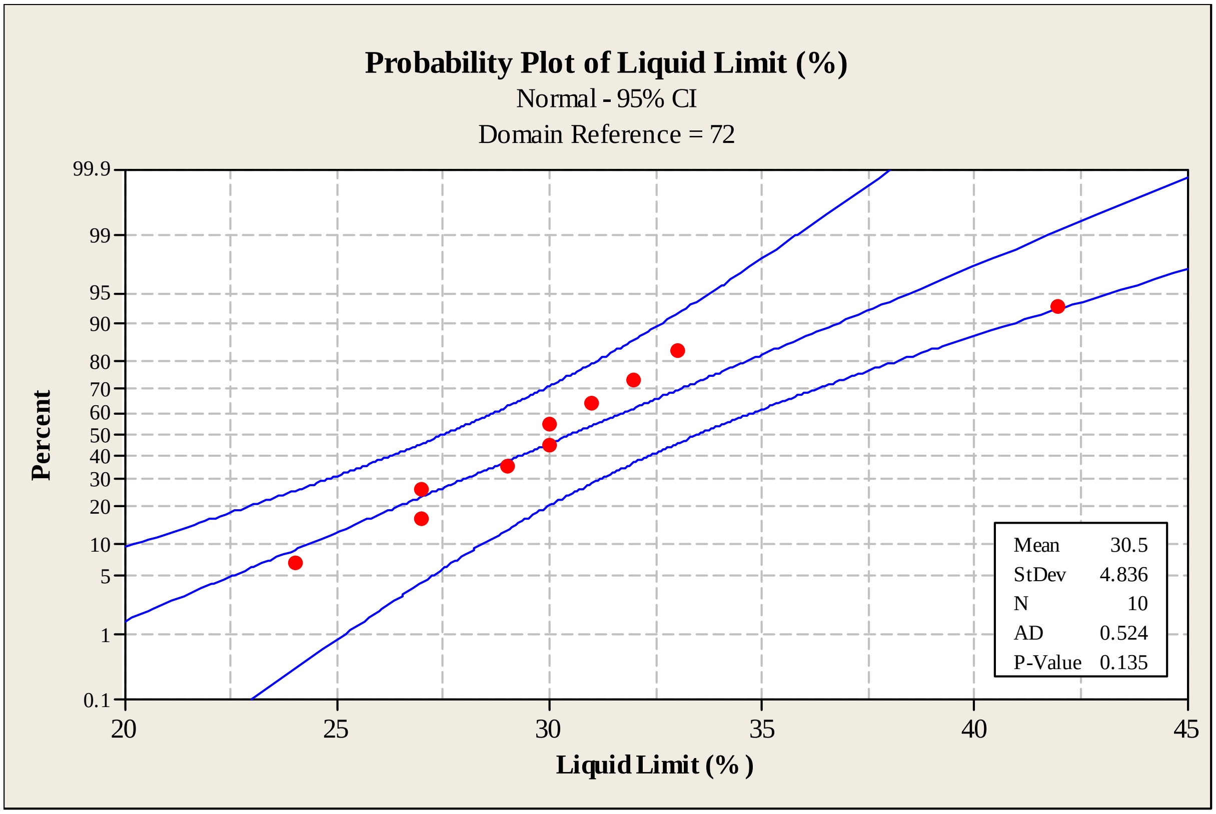

Probability Plot of Liquid Limit (%)
Normal - 95% CI
Domain Reference = 64
Percent
Liquid Limit (%)
Mean 34.44
StDev 2.342
N 27
AD 0.485
P-Value 0.209



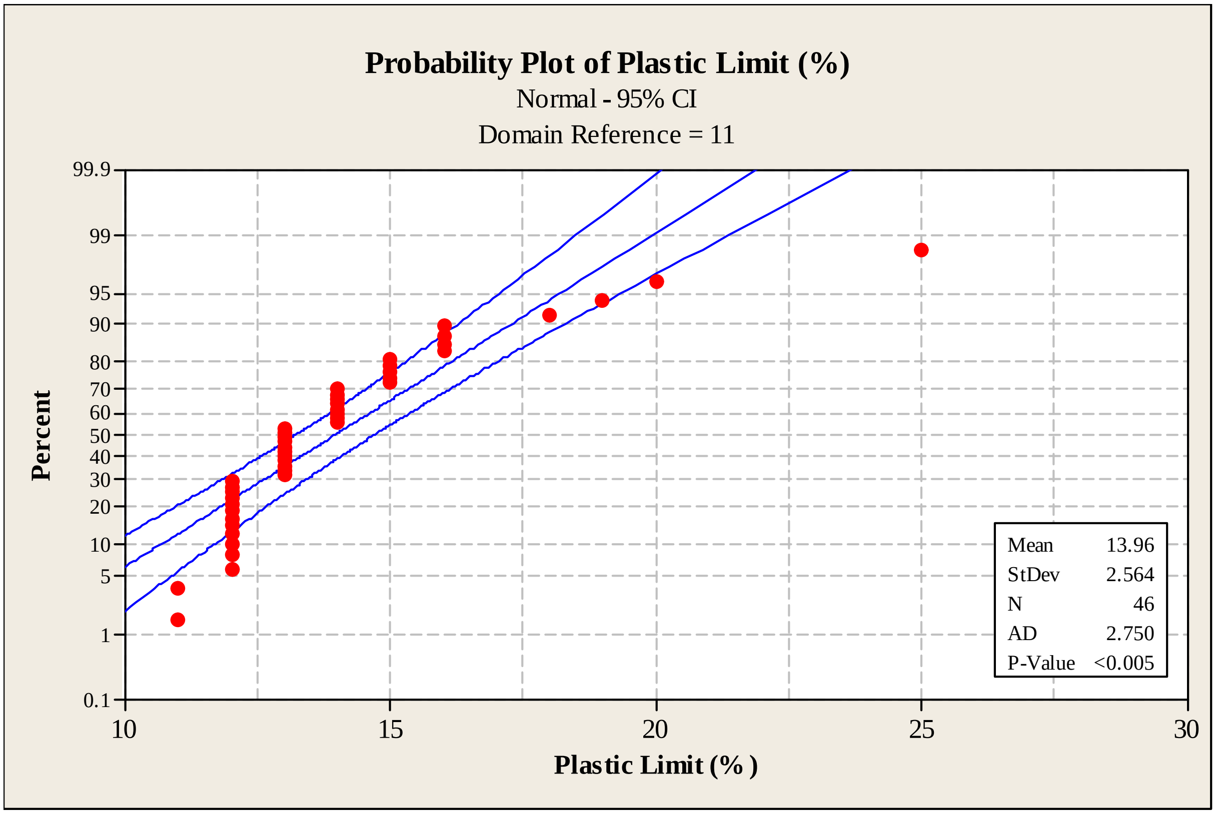
Probability Plot of Liquid Limit (%)
Normal - 95% CI
Domain Reference = 65
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
20
25
30
35
40
45
Liquid Limit (%)
Mean 35.25
StDev 5.600
N 8
AD 0.532
P-Value 0.119

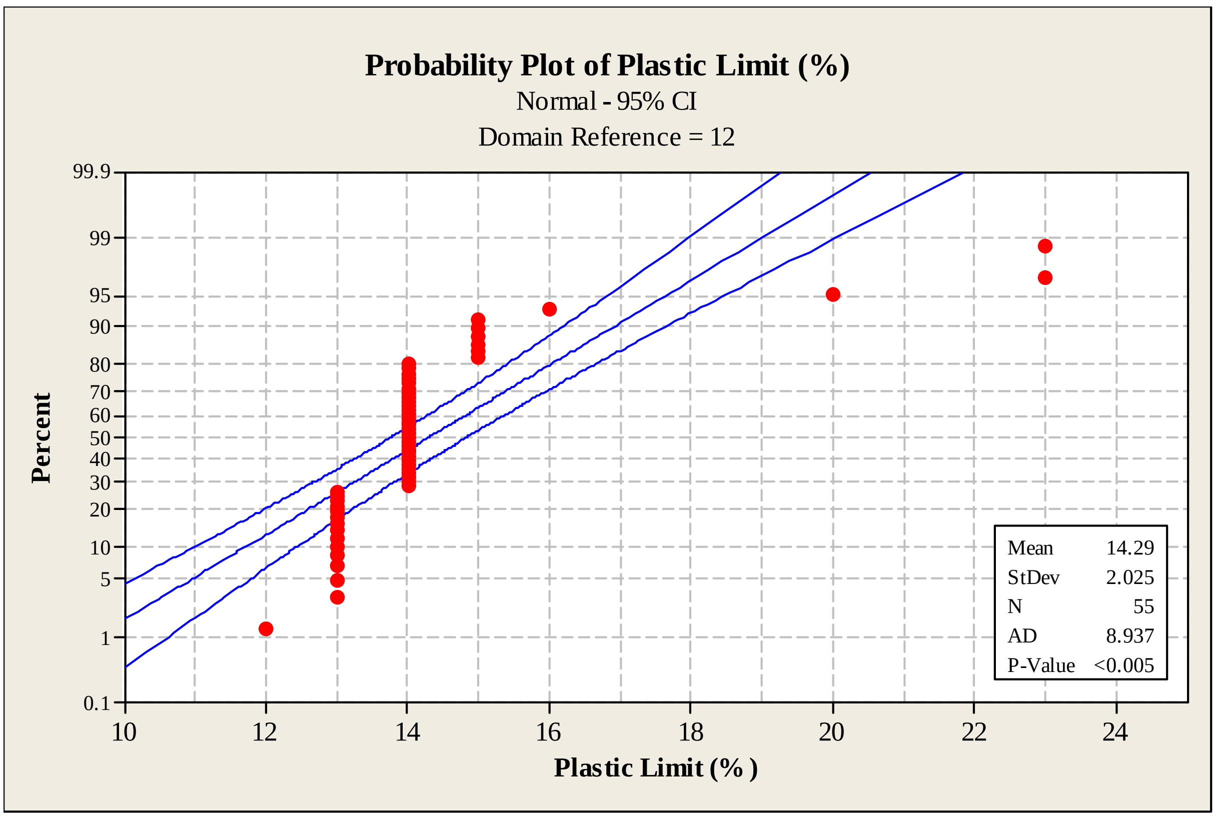


Probability Plot of Liquid Limit (%)
Normal - 95% CI
Domain Reference = 71
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
25.0
27.5
30.0
32.5
35.0
37.5
40.0
Liquid Limit (%)
Mean 31.24
StDev 2.611
N 17
AD 0.305
P-Value 0.531

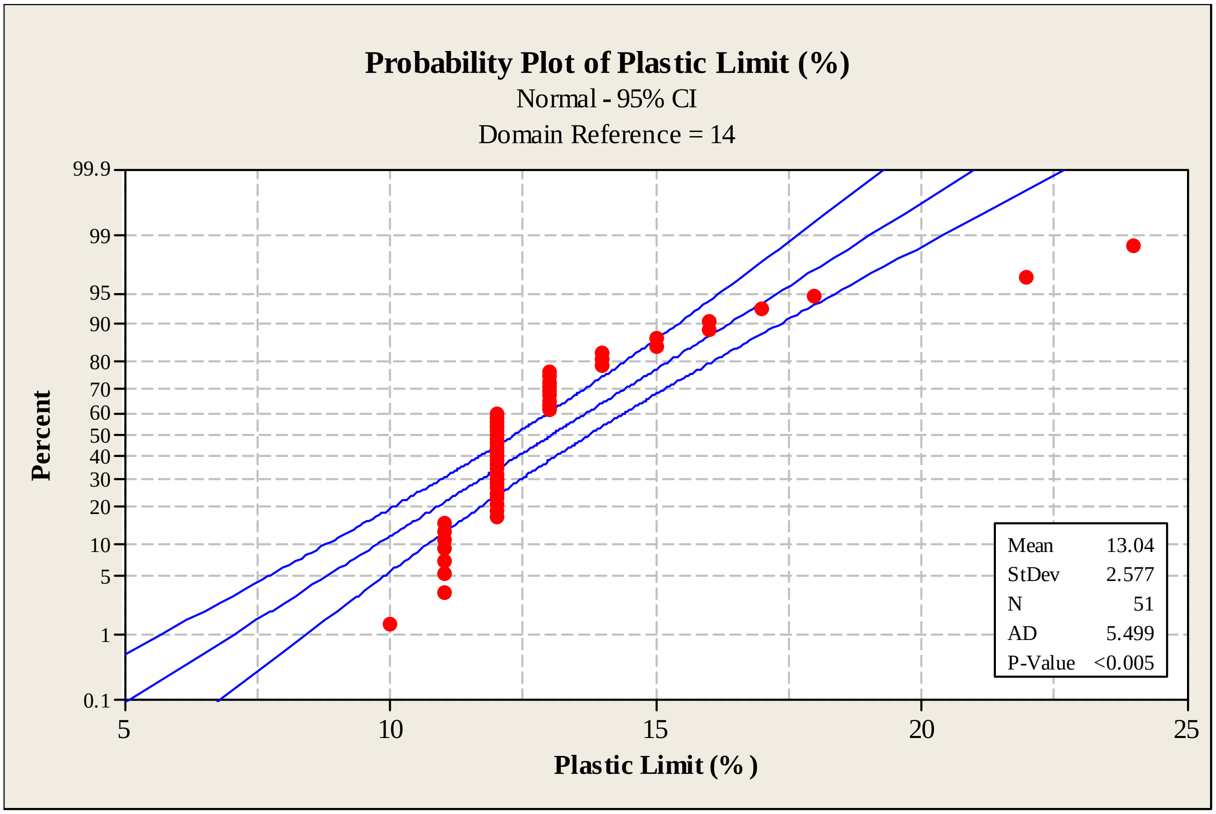

Probability Plot of Liquid Limit (%)
Normal - 95% CI
Domain Reference = 72
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
20
25
30
35
40
45
Liquid Limit (%)
Mean 30.5
StDev 4.836
N 10
AD 0.524
P-Value 0.135

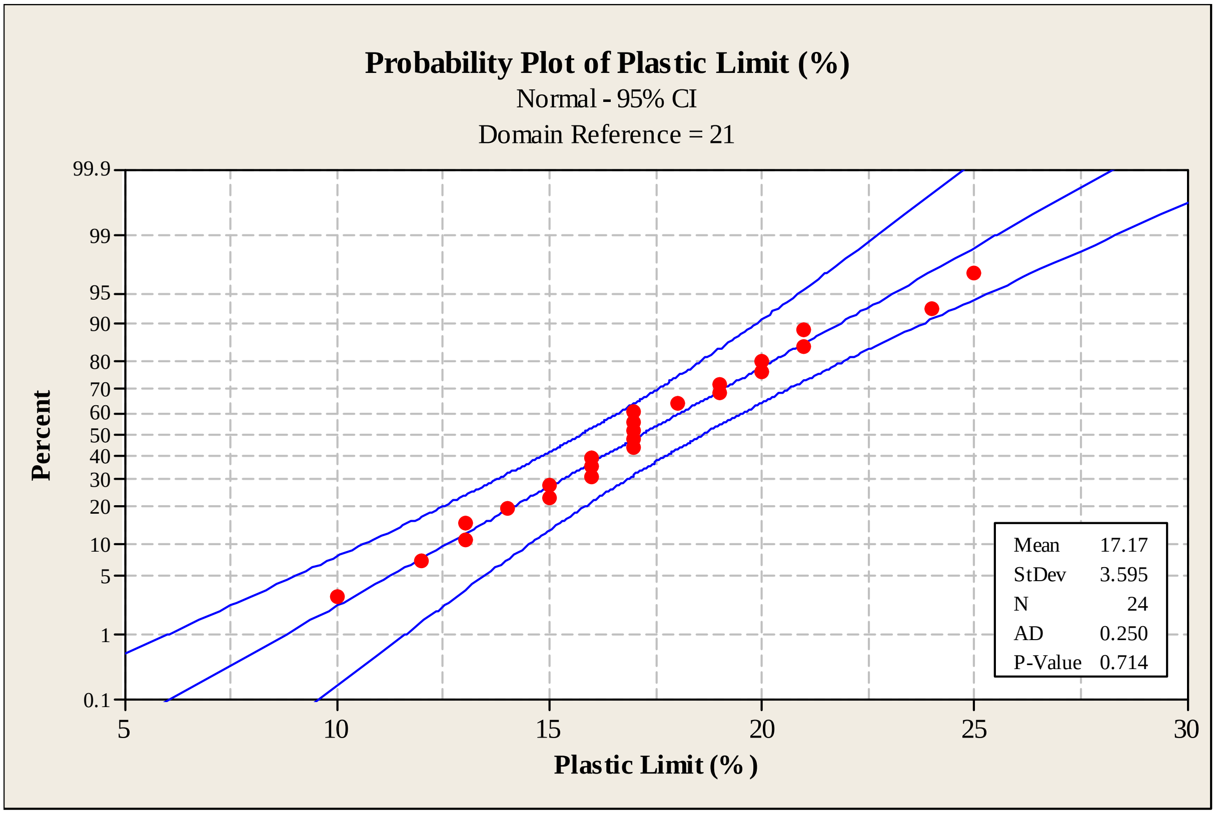
Plastic Limit

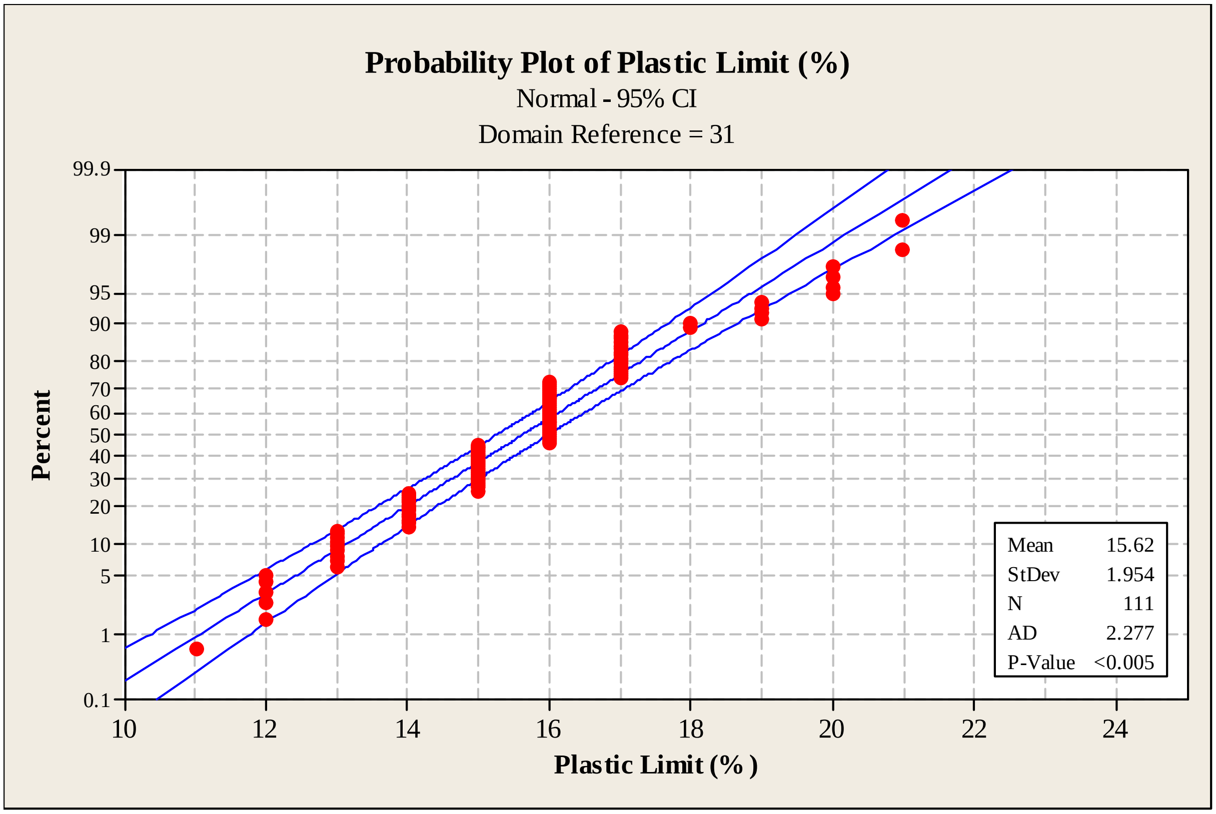




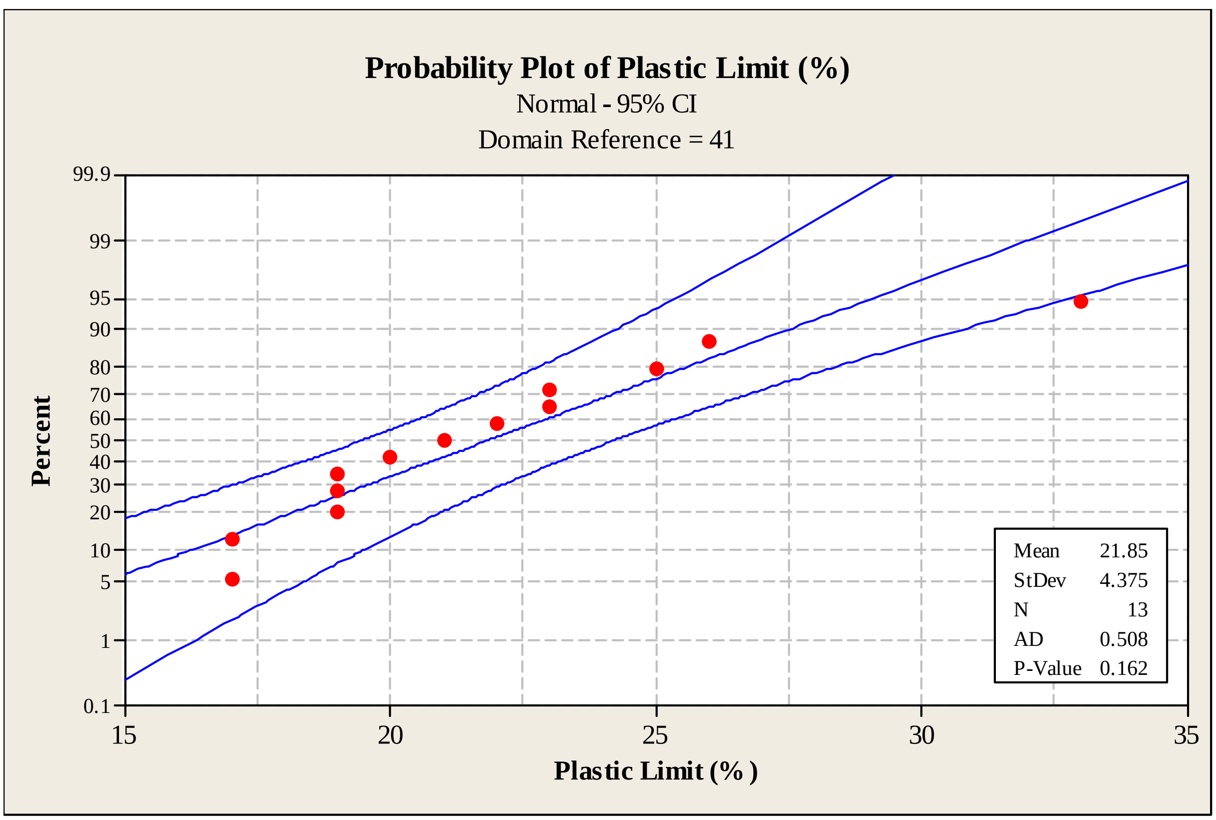
(Domain 13: insufficient data)





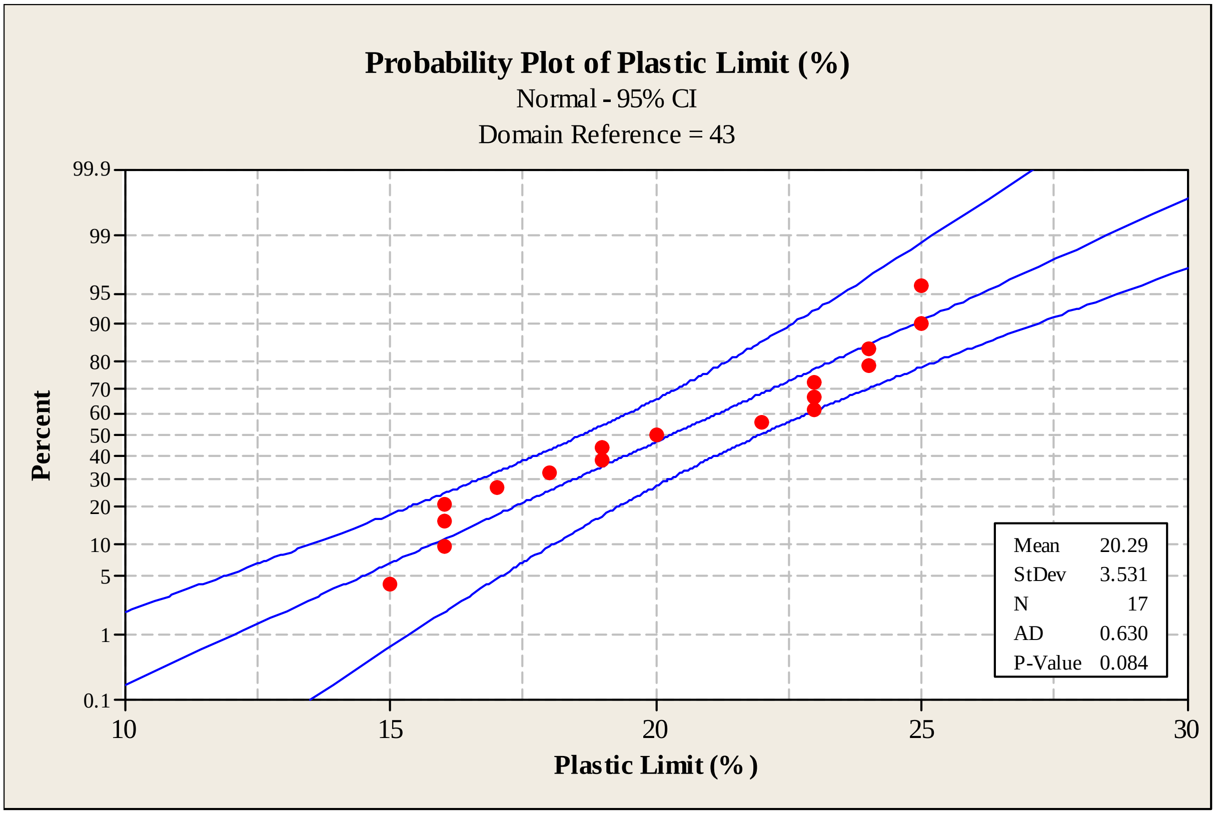


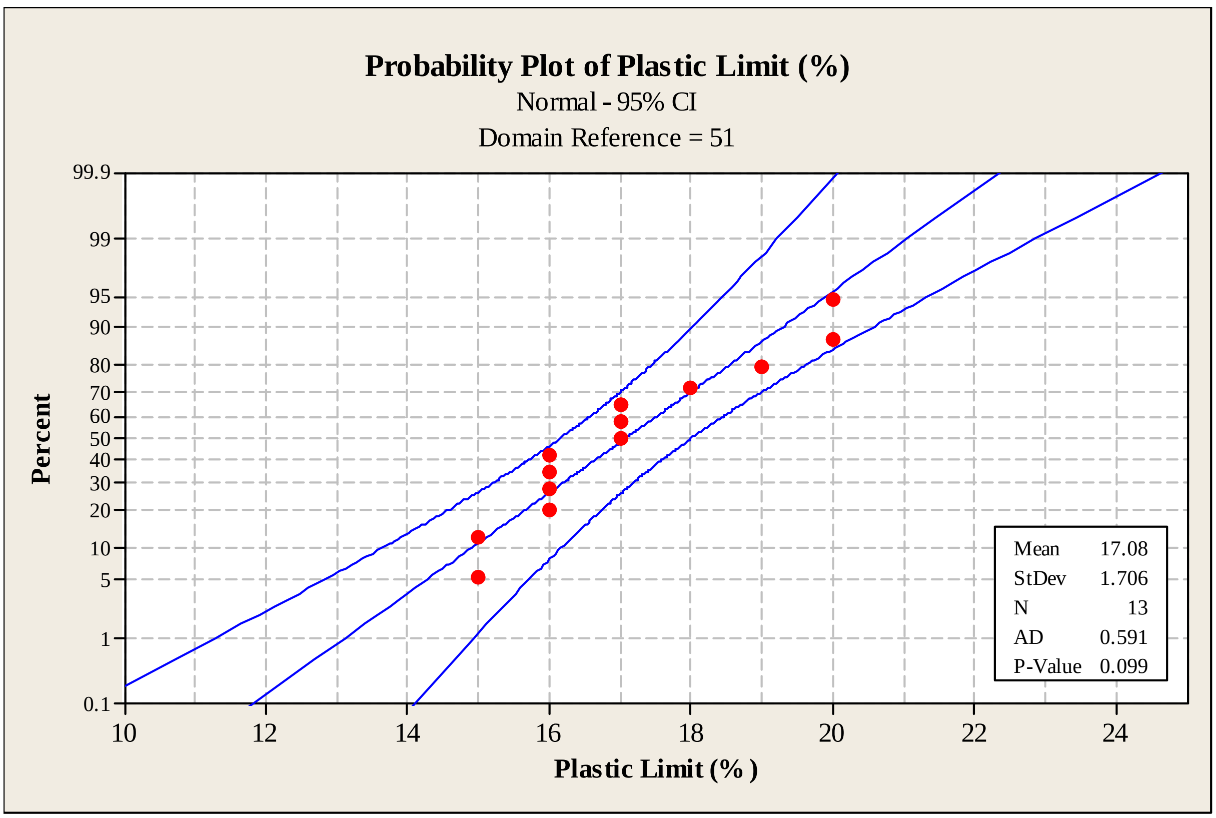
Probability Plot of Plastic Limit (%)
Normal - 95% CI
Domain Reference = 31
Percent
Plastic Limit (%)
Mean 15.62
StDev 1.954
N 111
AD 2.277
P-Value <0.005

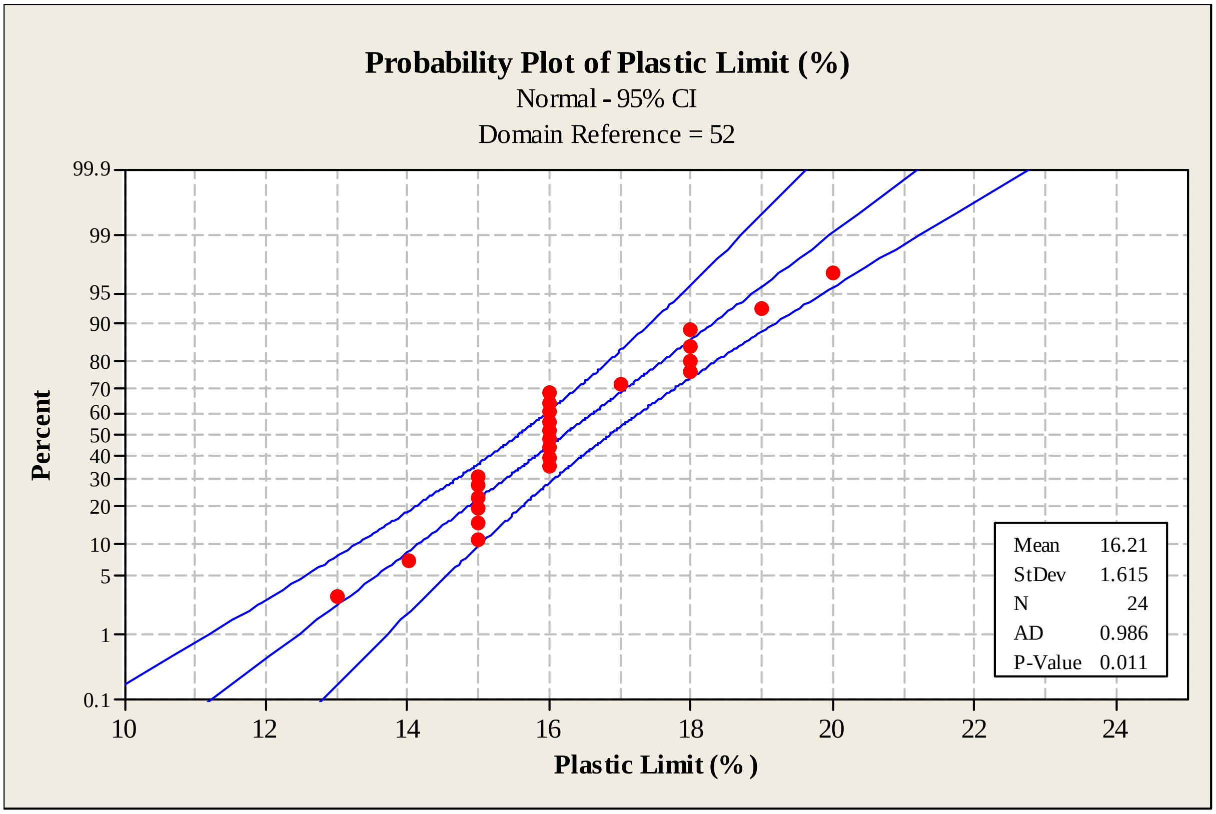


Probability Plot of Plastic Limit (%)
Normal - 95% CI
Domain Reference = 41
Percent
Plastic Limit (%)
Mean 21.85
StDev 4.375
N 13
AD 0.508
P-Value 0.162

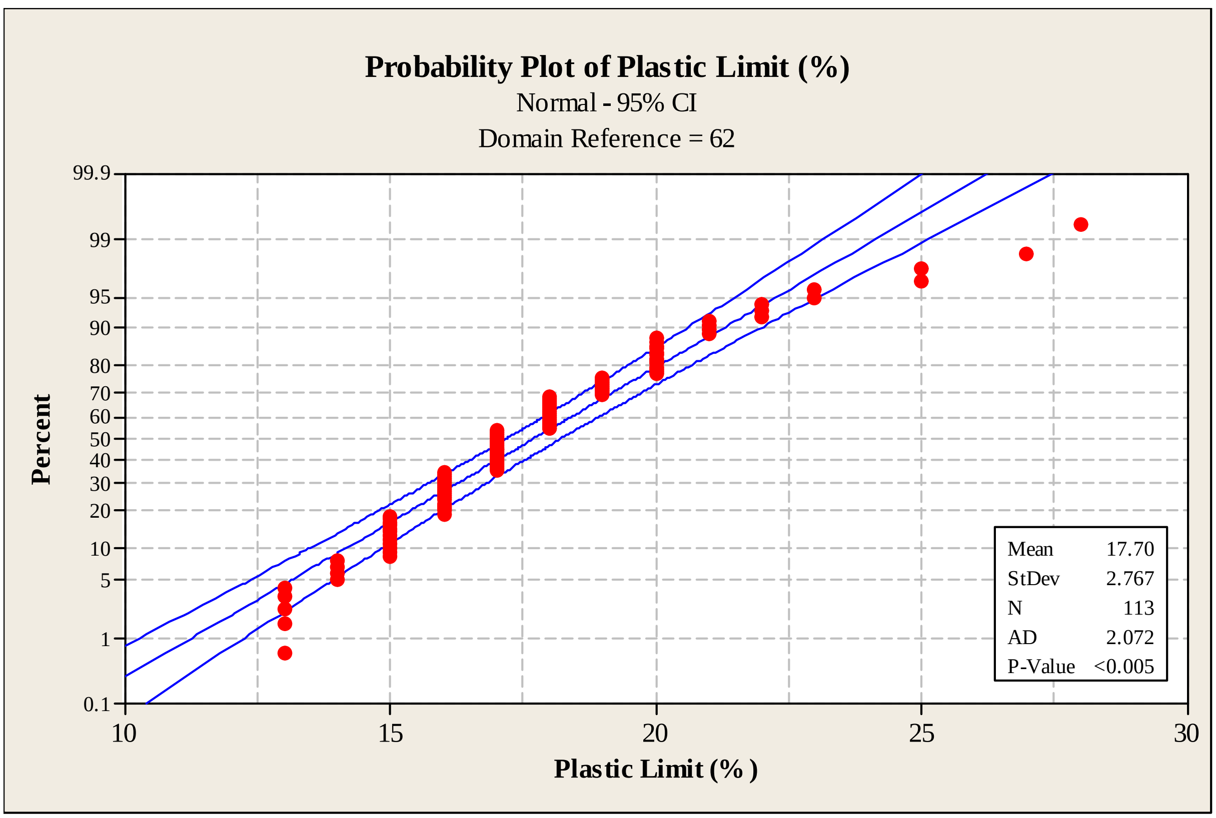
(Domain 42: insufficient data)

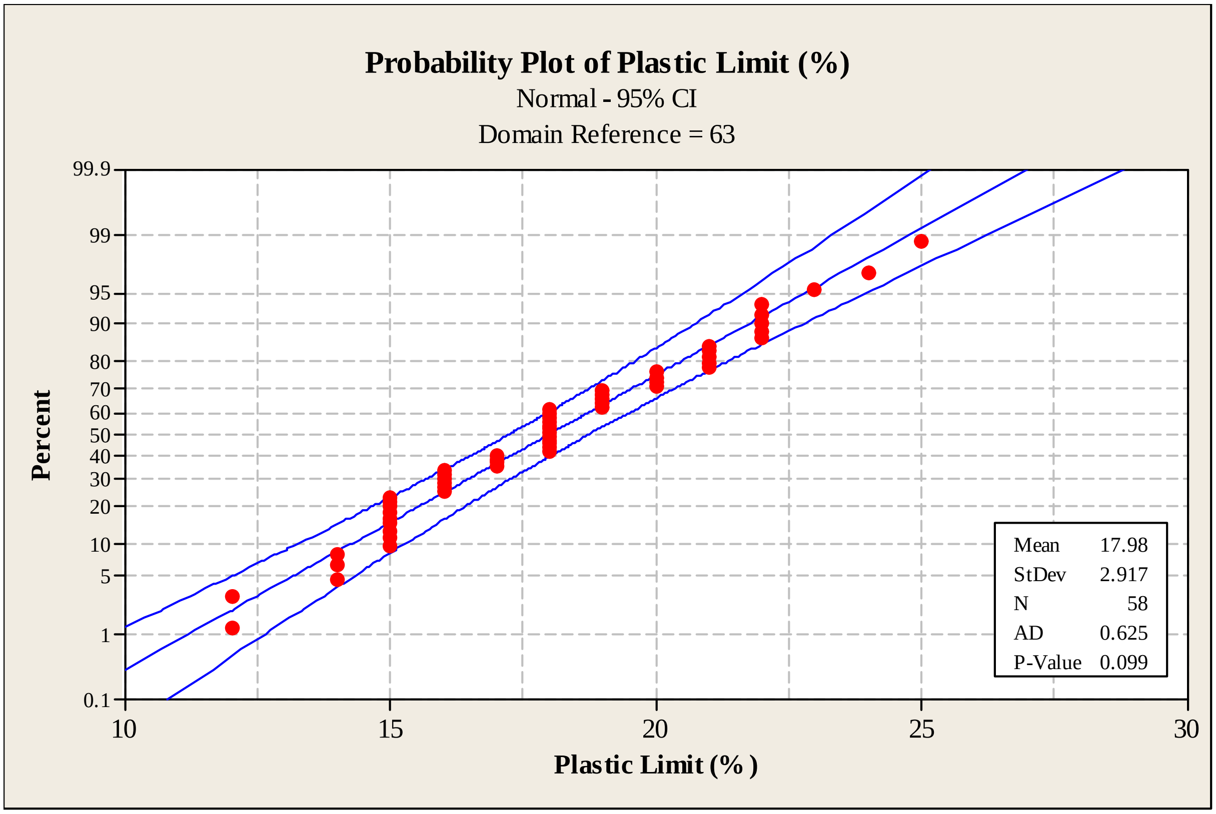


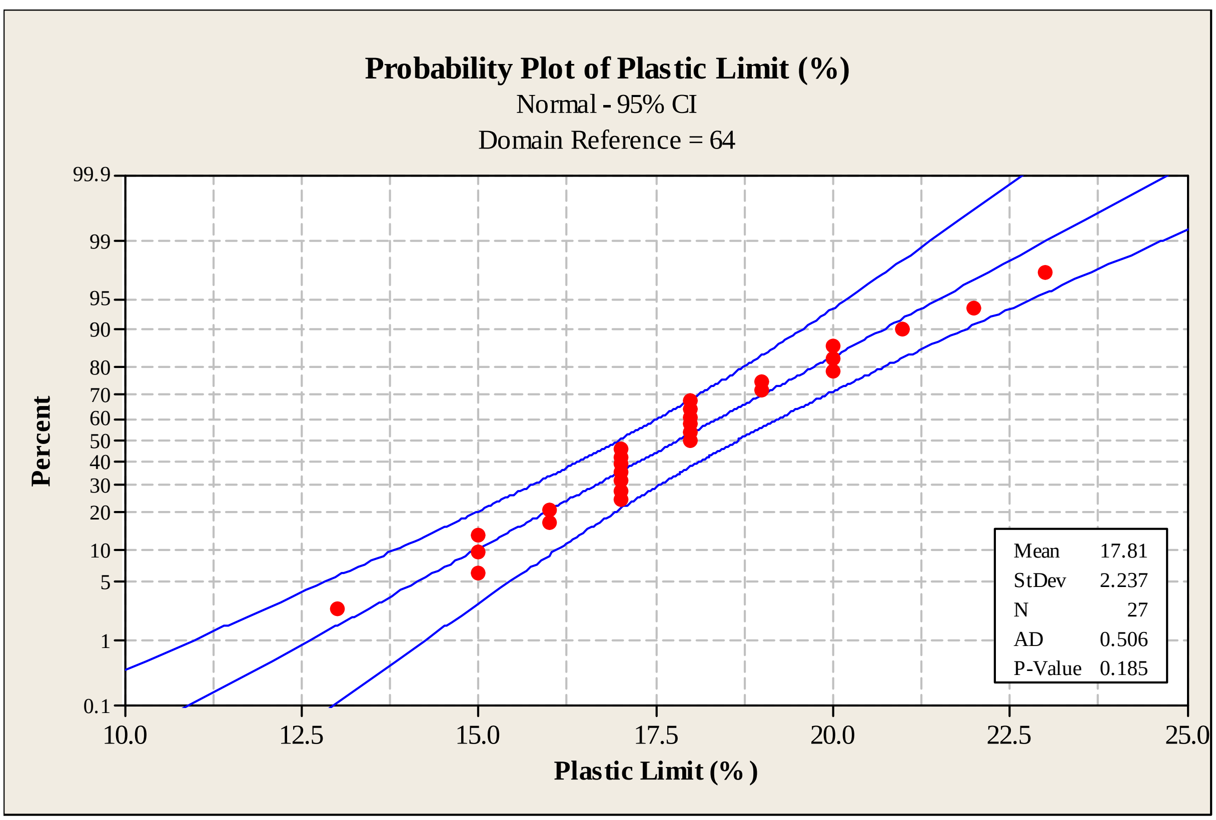


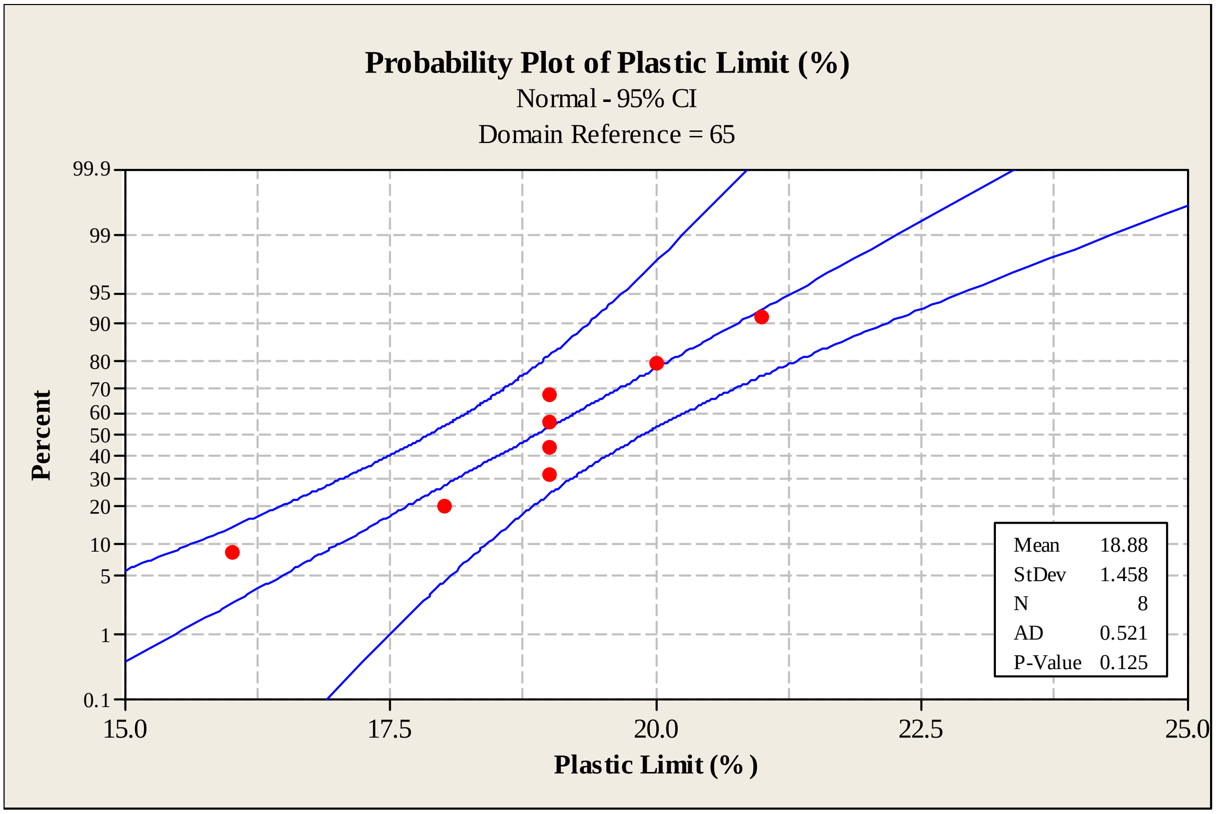


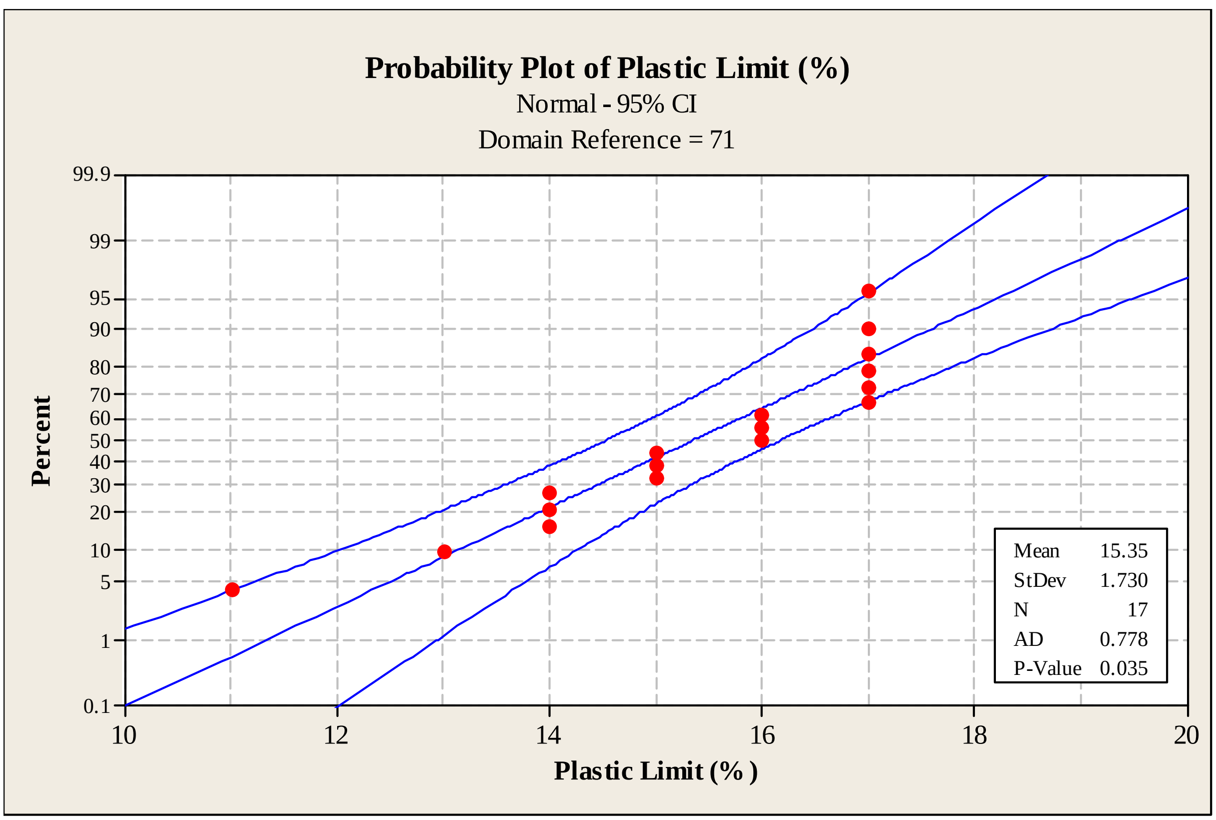
(Domain 53: insufficient data; Domain 61: no data)

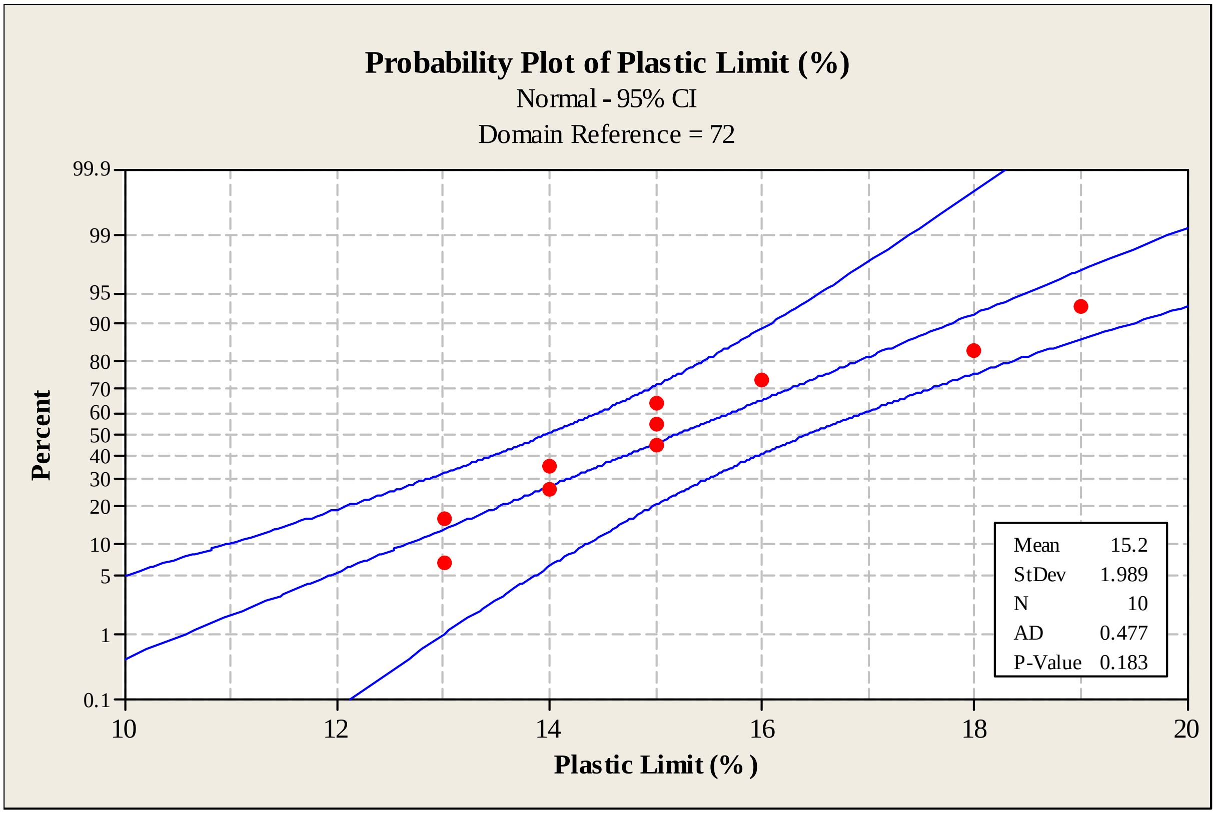



Probability Plot of Plastic Limit (%)
Normal - 95% CI
Domain Reference = 63
Percent
Plastic Limit (%)
Mean 17.98
StDev 2.917
N 58
AD 0.625
P-Value 0.099


Probability Plot of Plastic Limit (%)
Normal - 95% CI
Domain Reference = 64
Percent
Plastic Limit (%)
Mean 17.81
StDev 2.237
N 27
AD 0.506
P-Value 0.185

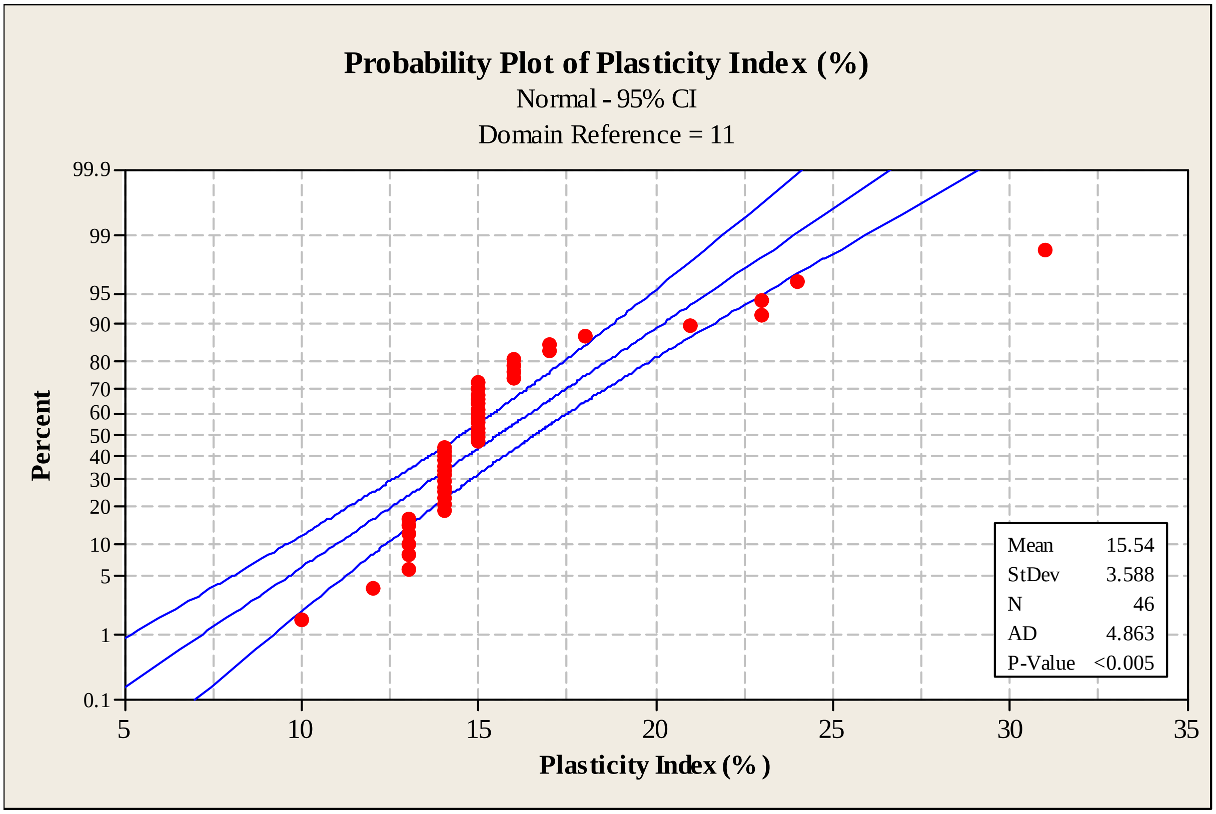

Probability Plot of Plastic Limit (%)
Normal - 95% CI
Domain Reference = 65
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
15.0
17.5
20.0
22.5
25.0
Plastic Limit (%)
Mean 18.88
StDev 1.458
N 8
AD 0.521
P-Value 0.125

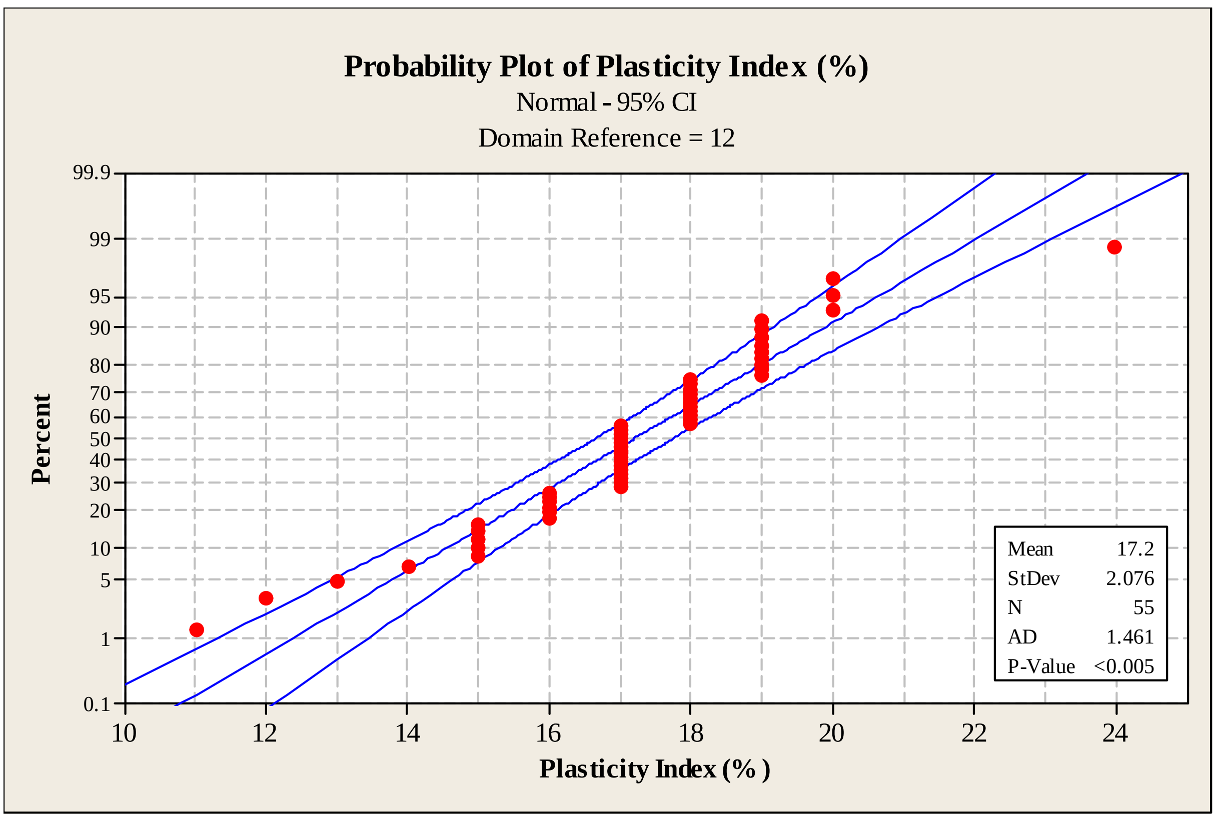

Probability Plot of Plastic Limit (%)
Normal - 95% CI
Domain Reference = 71
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
10
12
14
16
18
20
Plastic Limit (%)
Mean 15.35
StDev 1.730
N 17
AD 0.778
P-Value 0.035



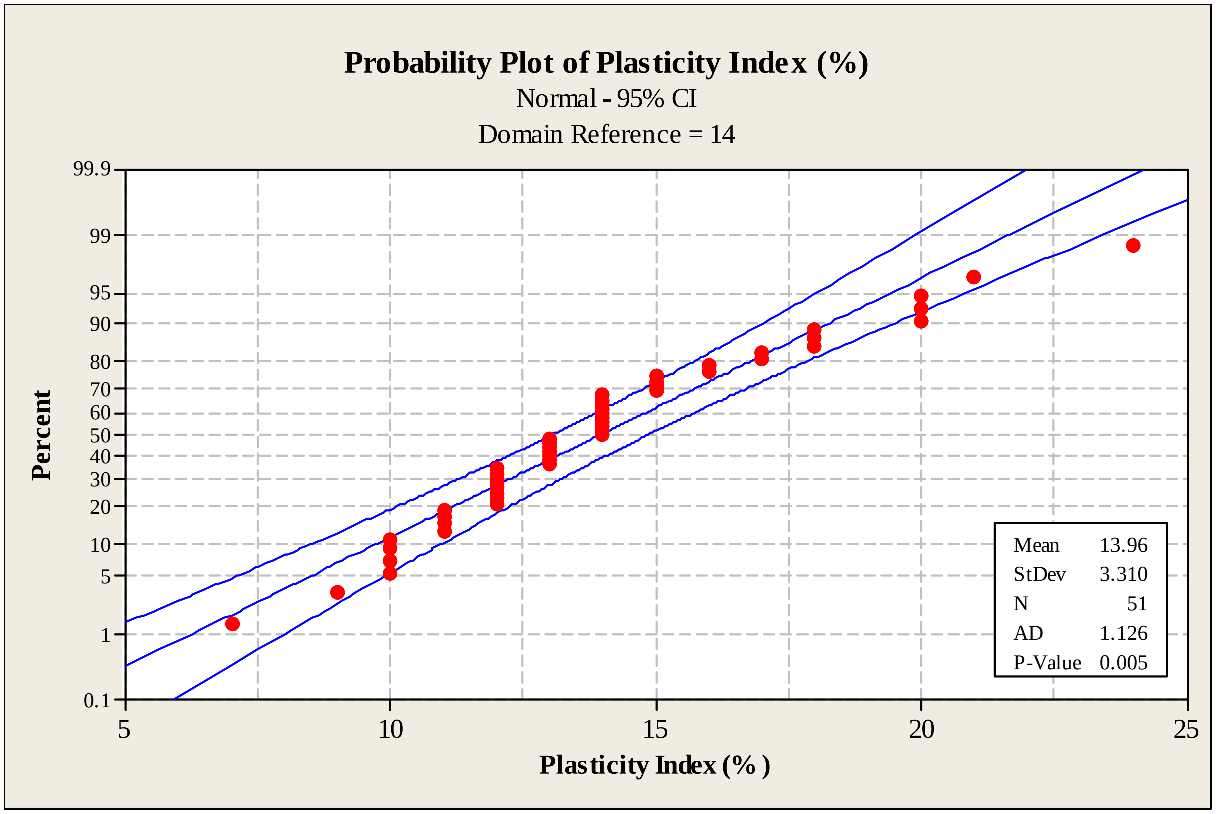
Probability Plot of Plastic Limit (%)
Normal - 95% CI
Domain Reference = 72
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
10
12
14
16
18
20
Plastic Limit (%)
Mean 15.2
StDev 1.989
N 10
AD 0.477
P-Value 0.183

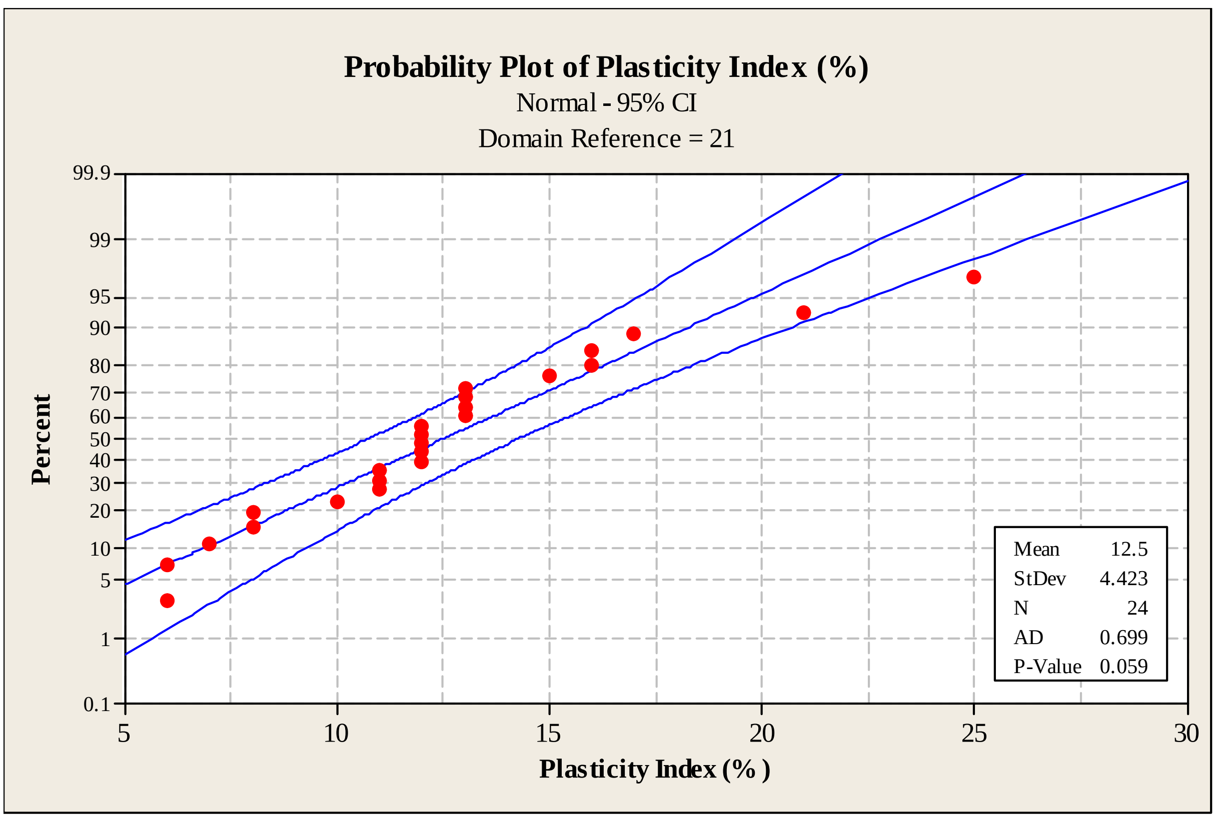
Plasticity Index

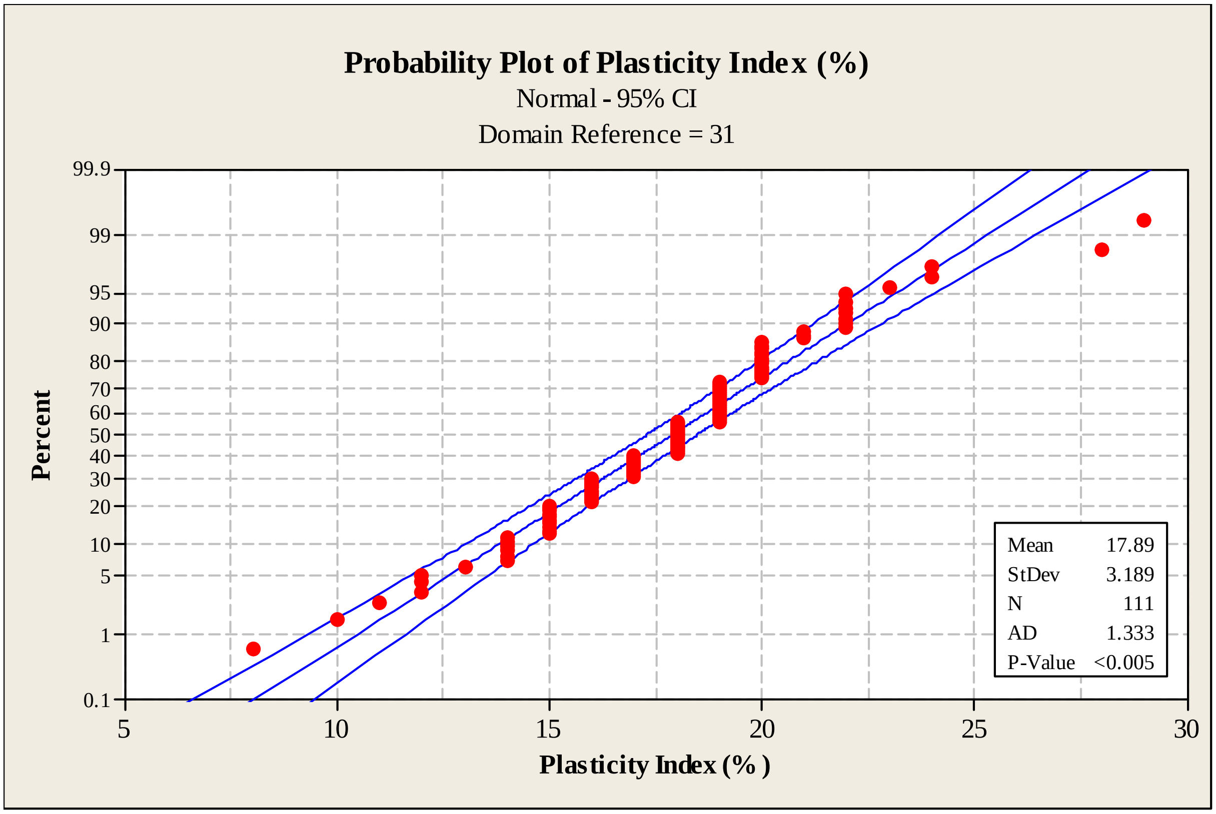


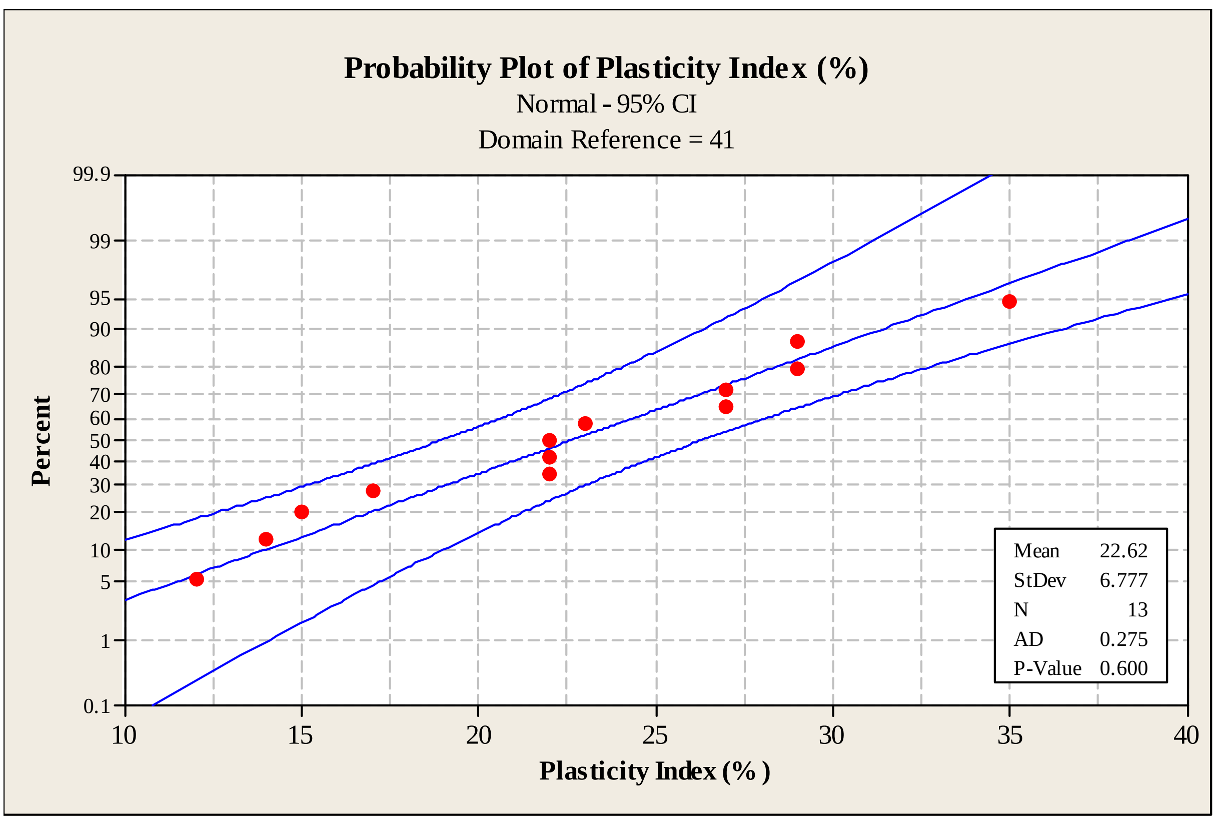


(Domain 13: insufficient data)

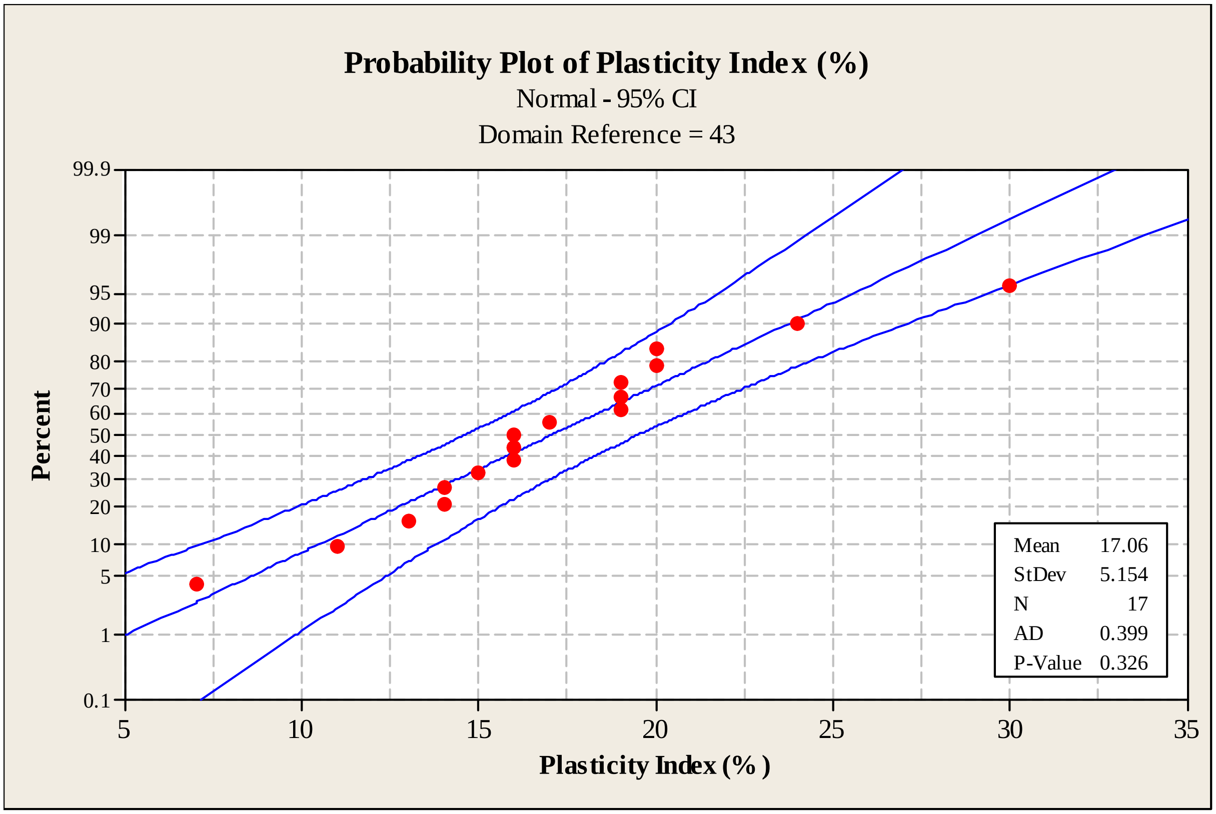


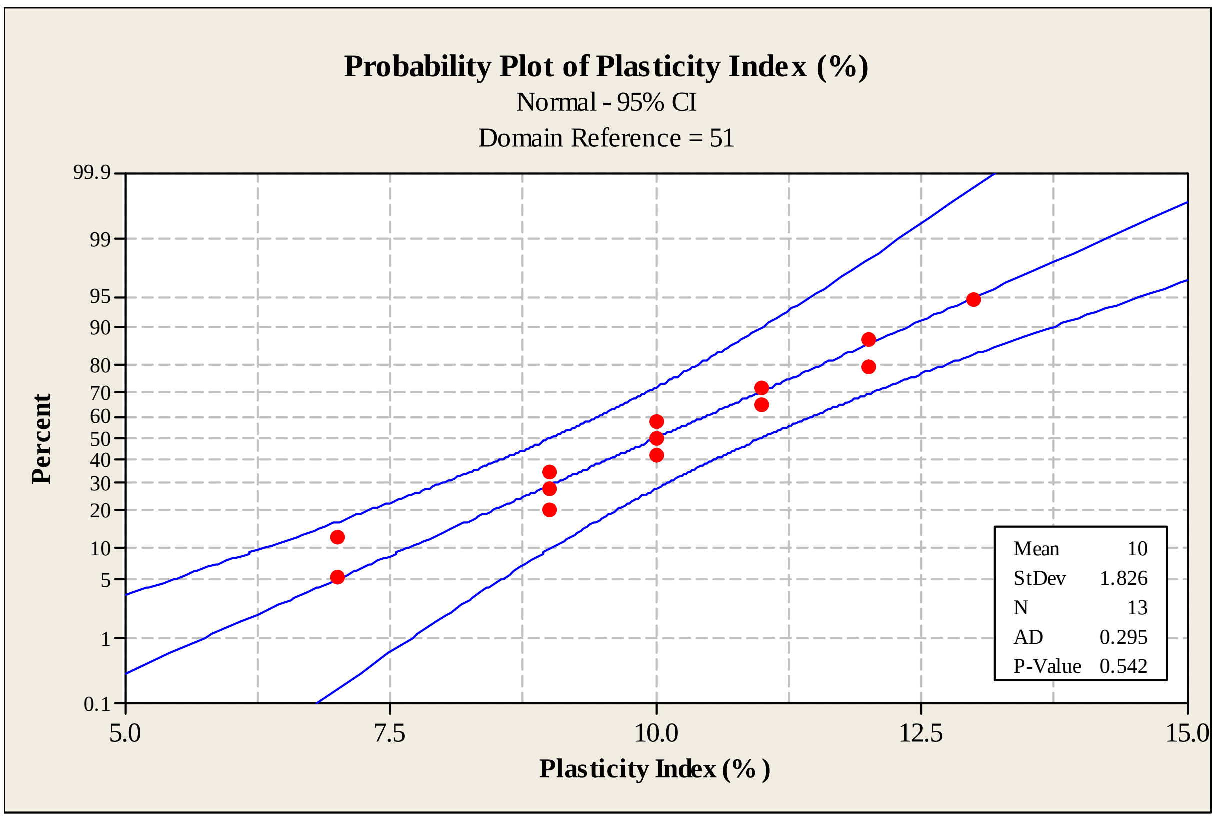


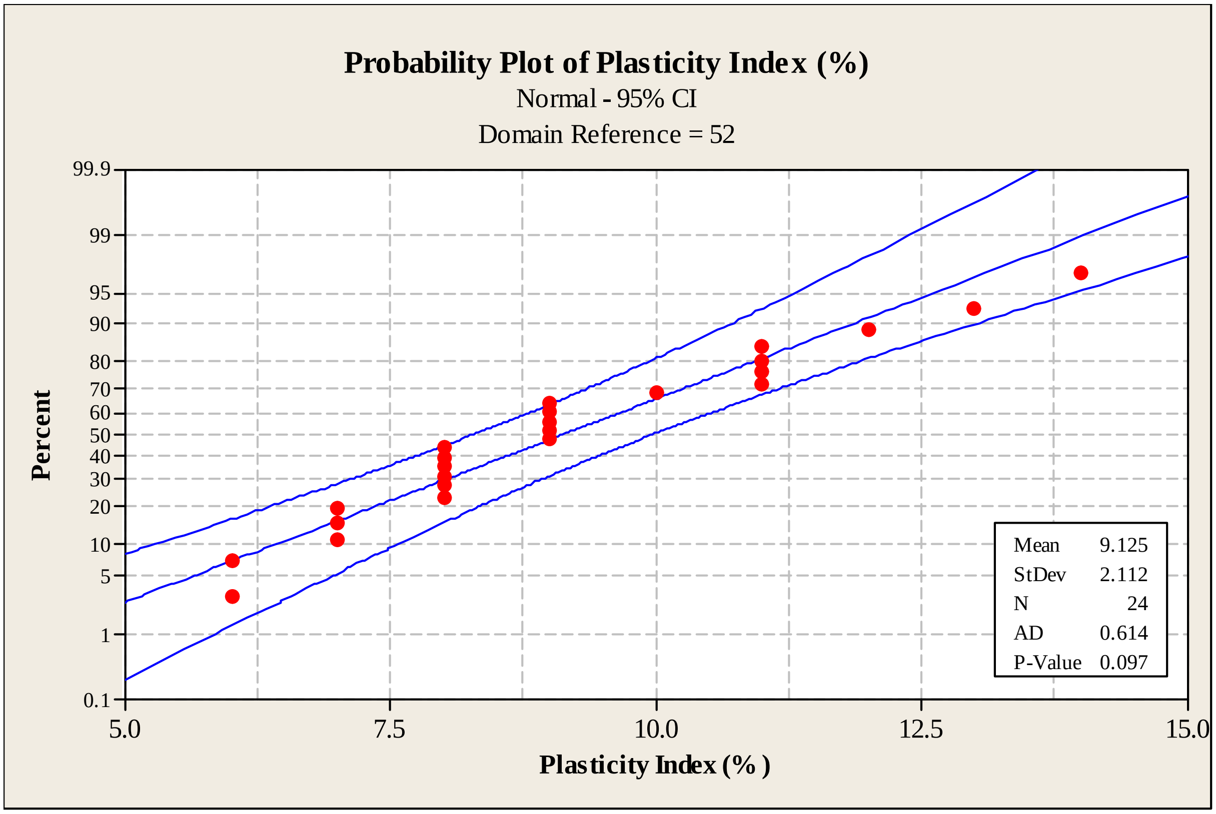

Probability Plot of Plasticity Index (%)
Normal - 95% CI
Domain Reference = 31
Percent
Plasticity Index (%)
Mean 17.89
StDev 3.189
N 111
AD 1.333
P-Value <0.005


Probability Plot of Plasticity Index (%)
Normal - 95% CI
Domain Reference = 41
Percent
Plasticity Index (%)
Mean 22.62
StDev 6.777
N 13
AD 0.275
P-Value 0.600

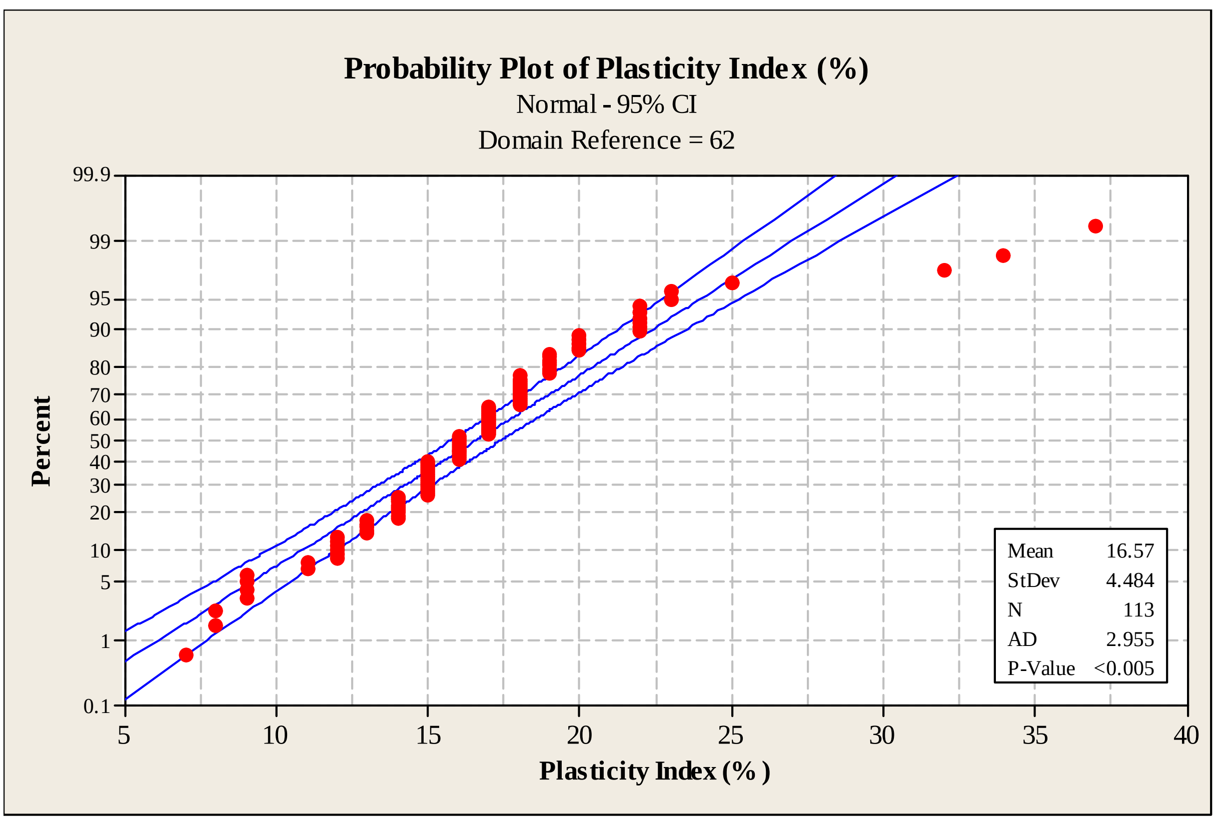
(Domain 42: insufficient data)

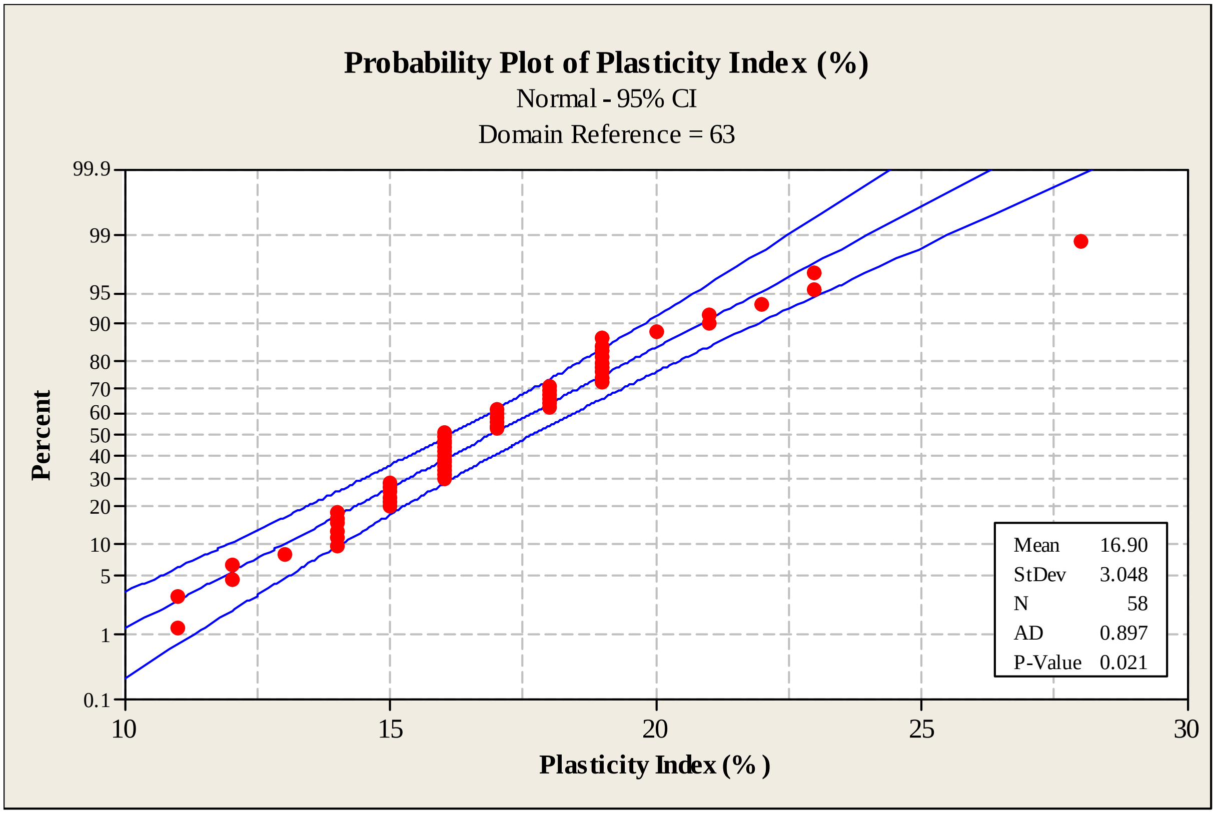




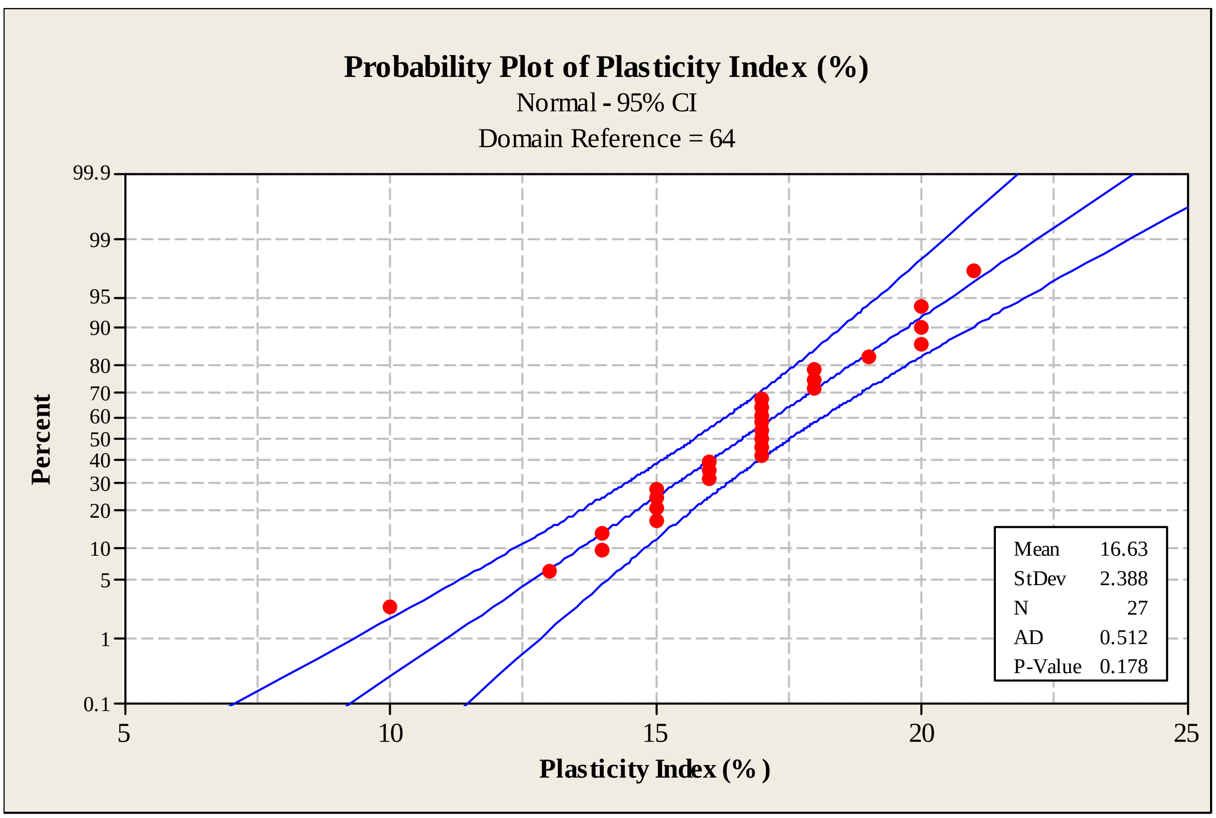


(Domain 53: insufficient data; Domain 61: no data)

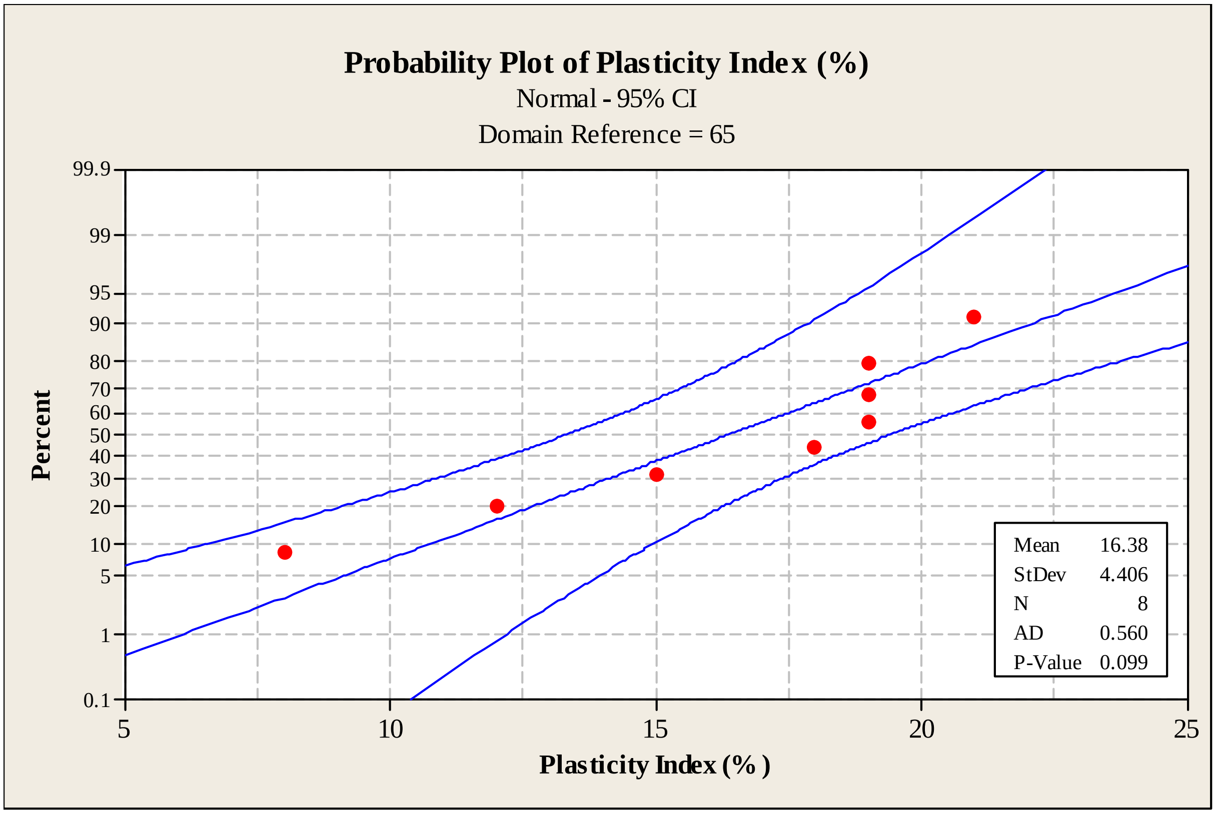


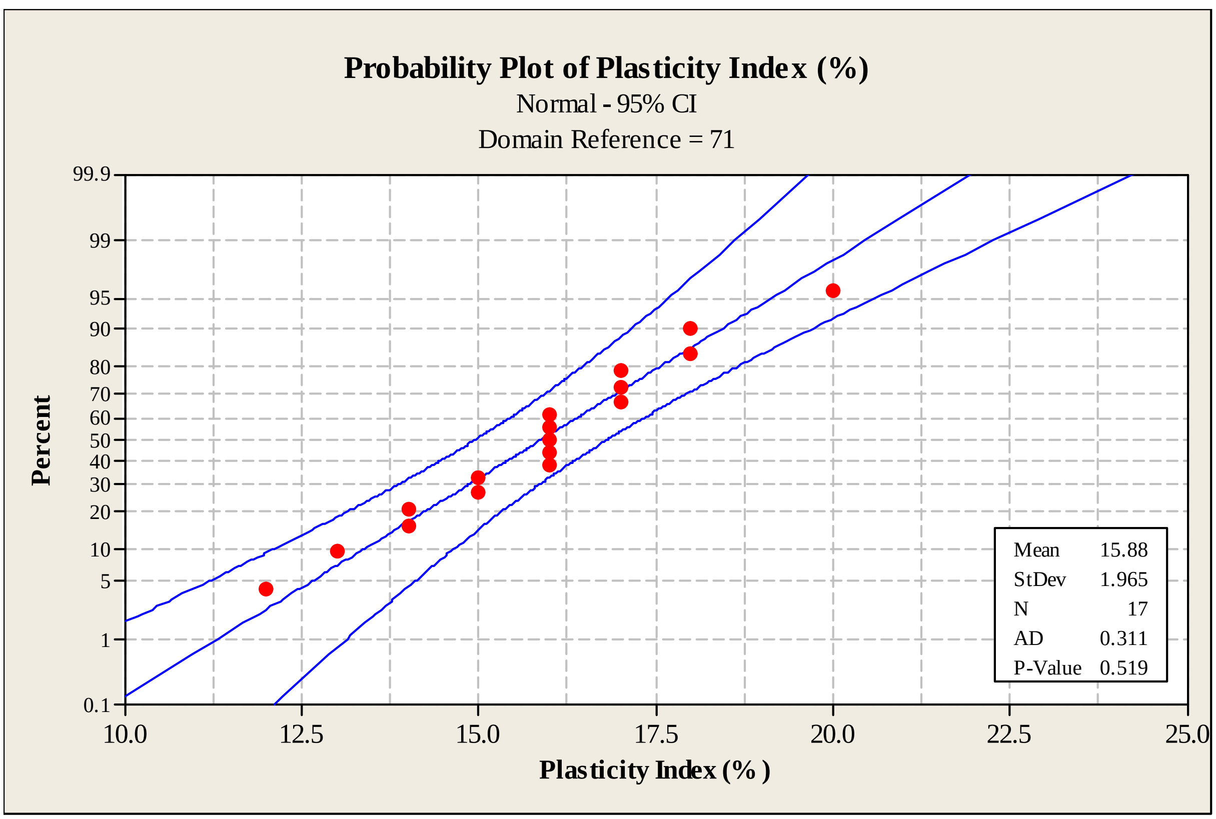


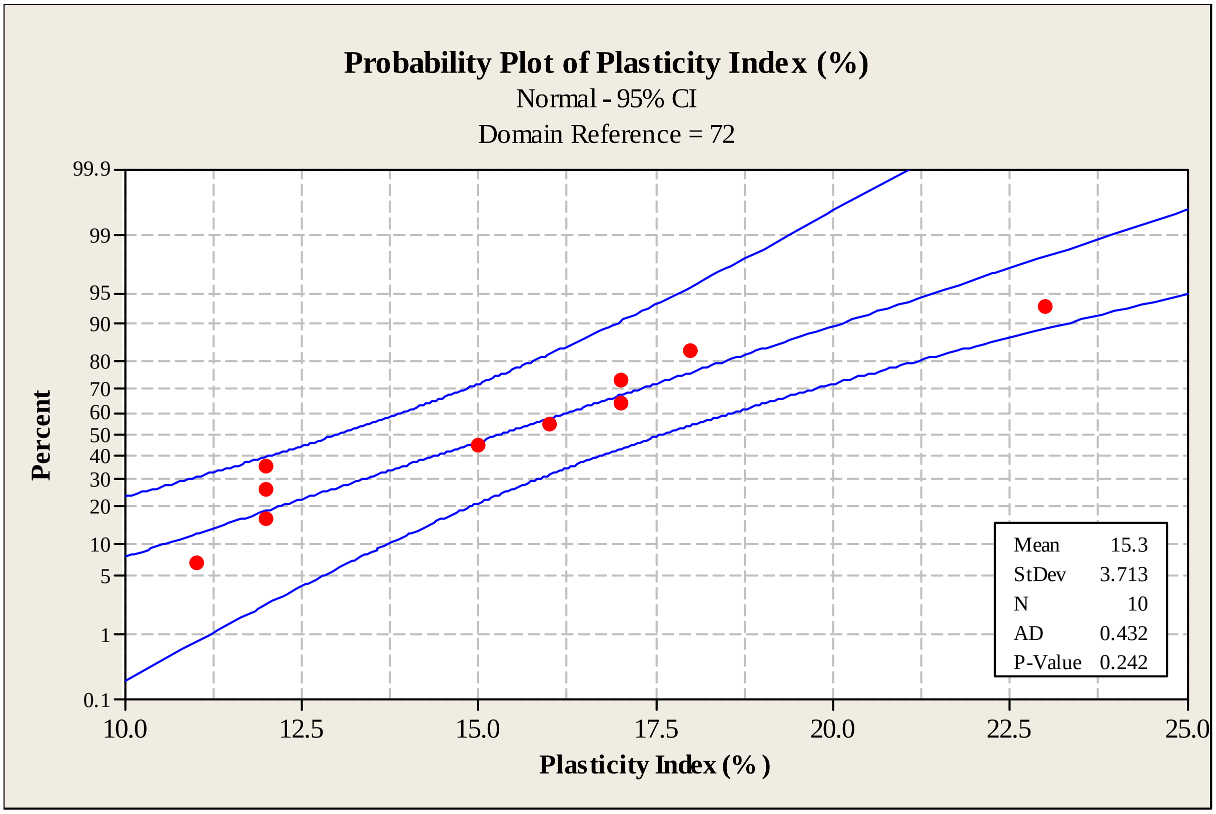
Probability Plot of Plasticity Index (%)
Normal - 95% CI
Domain Reference = 63
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
10
15
20
25
30
Plasticity Index (%)
Mean 16.90
StDev 3.048
N 58
AD 0.897
P-Value 0.021



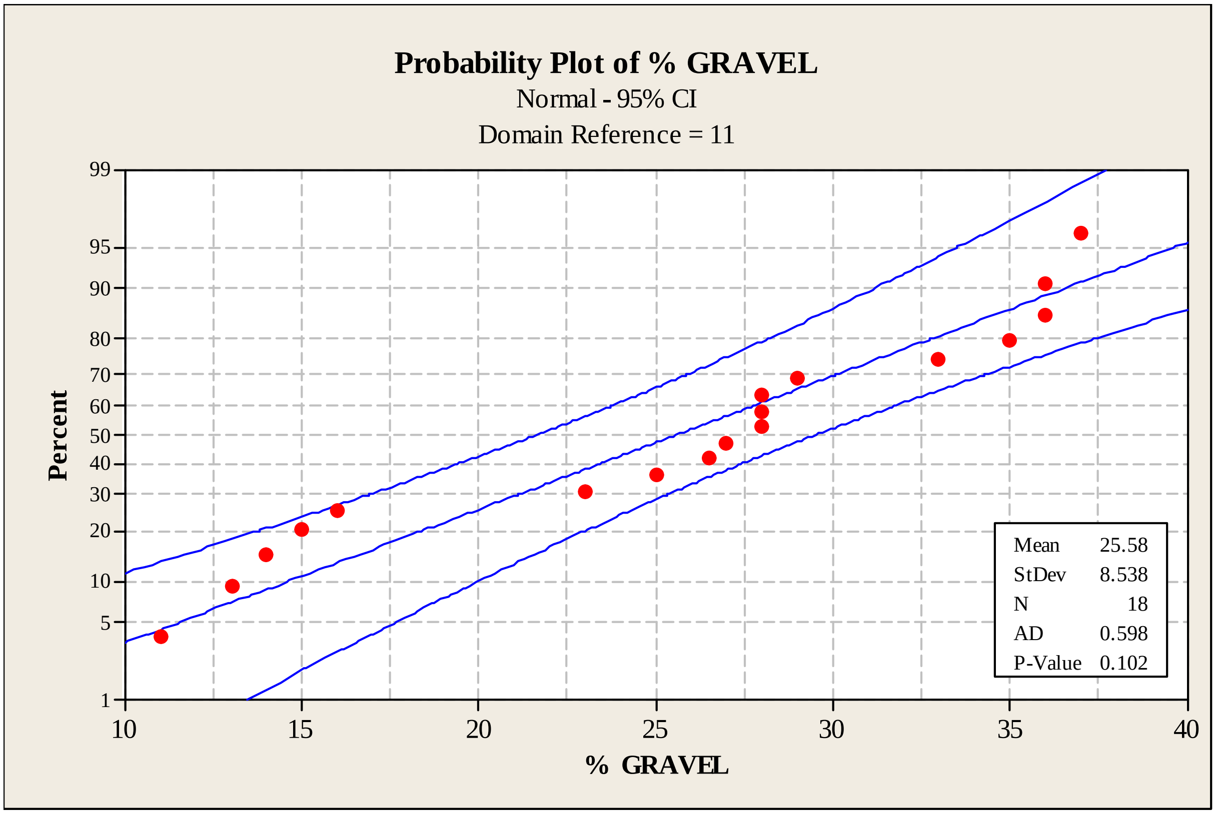
Probability Plot of Plasticity Index (%)
Normal - 95% CI
Domain Reference = 64
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
5
10
15
20
25
Plasticity Index (%)
Mean 16.63
StDev 2.388
N 27
AD 0.512
P-Value 0.178

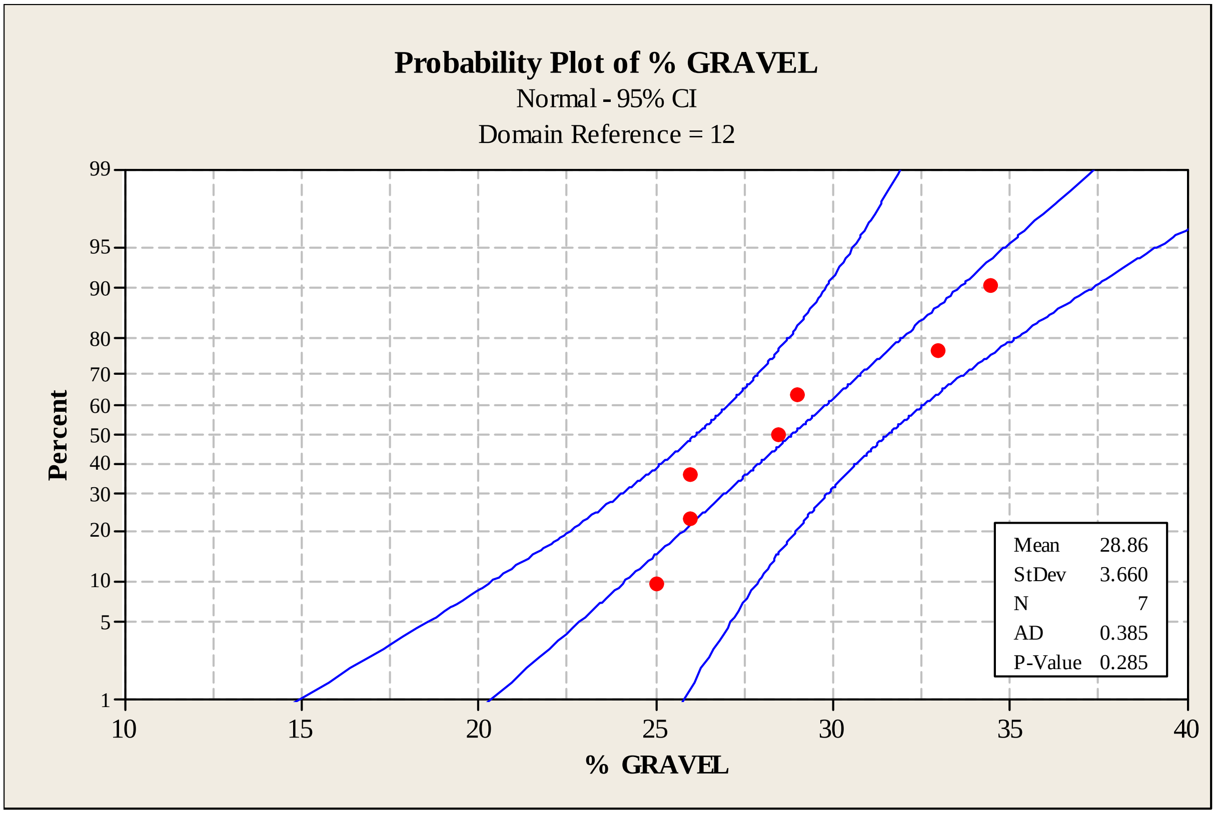

Probability Plot of Plasticity Index (%)
Normal - 95% CI
Domain Reference = 65
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
5
10
15
20
25
Plasticity Index (%)
Mean 16.38
StDev 4.406
N 8
AD 0.560
P-Value 0.099


Probability Plot of Plasticity Index (%)
Normal - 95% CI
Domain Reference = 71
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
10.0
12.5
15.0
17.5
20.0
22.5
25.0
Plasticity Index (%)
Mean 15.88
StDev 1.965
N 17
AD 0.311
P-Value 0.519

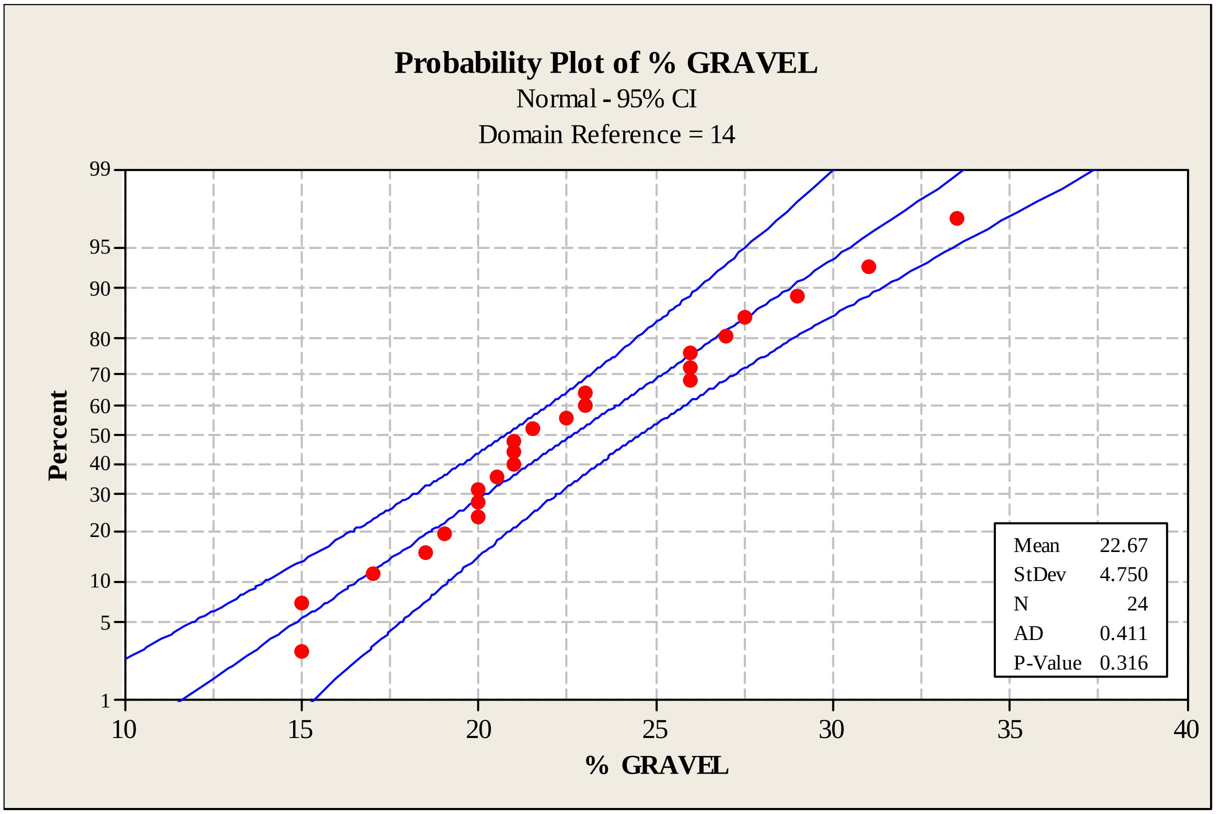

Probability Plot of Plasticity Index (%)
Normal - 95% CI
Domain Reference = 72
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
10.0
12.5
15.0
17.5
20.0
22.5
25.0
Plasticity Index (%)
Mean 15.3
StDev 3.713
N 10
AD 0.432
P-Value 0.242

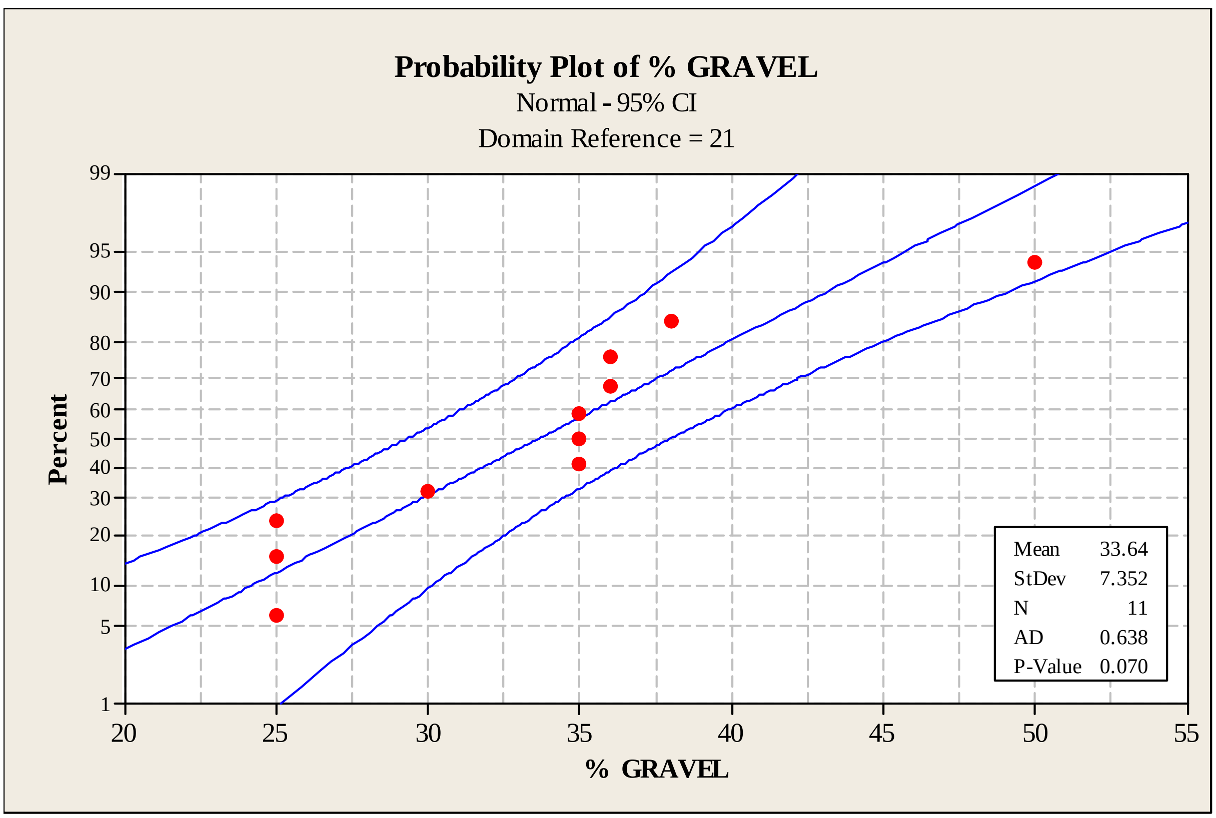
Grading Fraction: Gravel

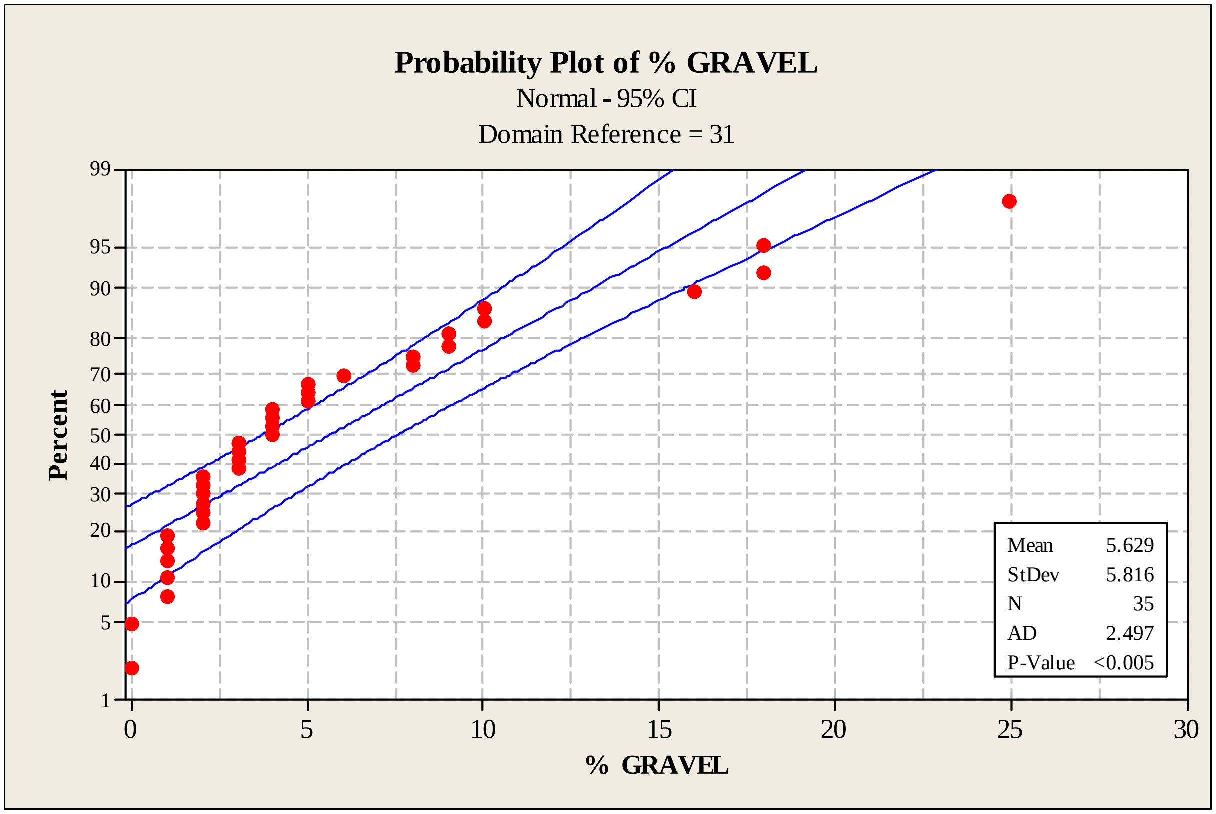


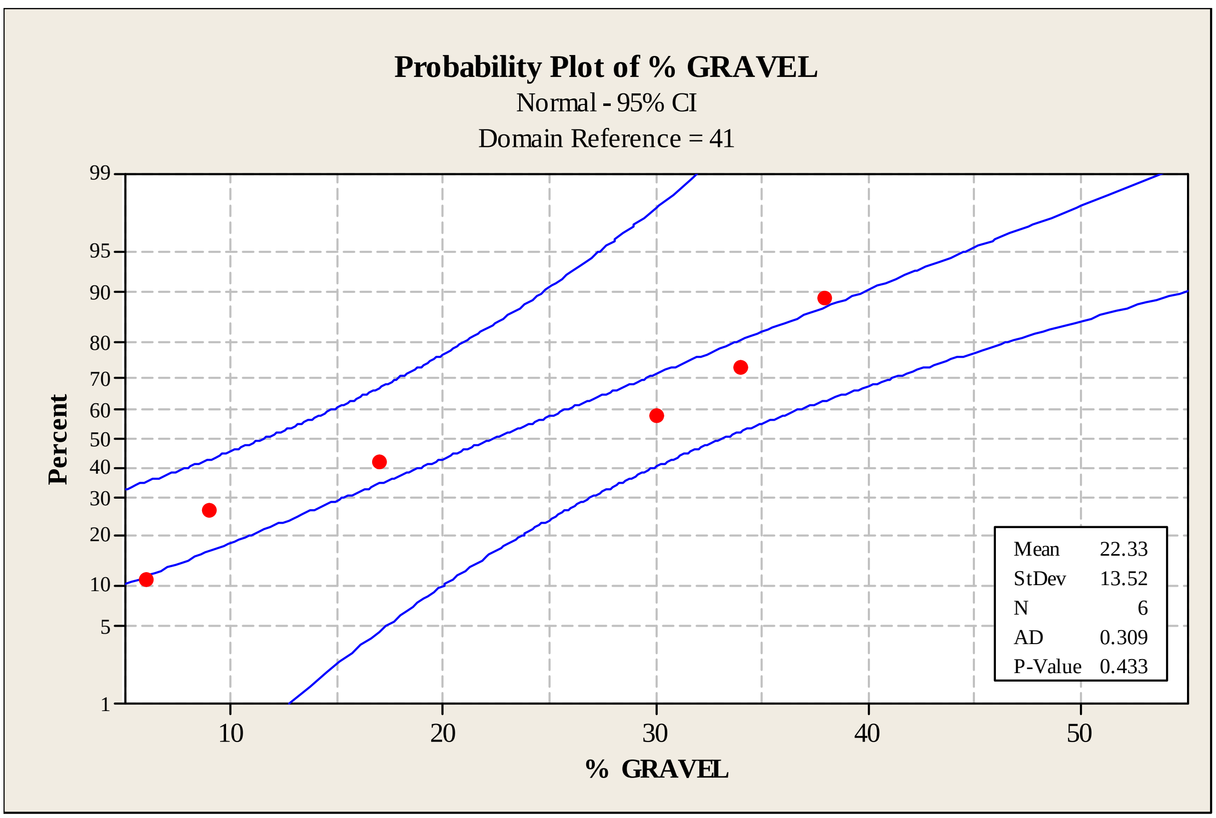


(Domain 13: insufficient data)

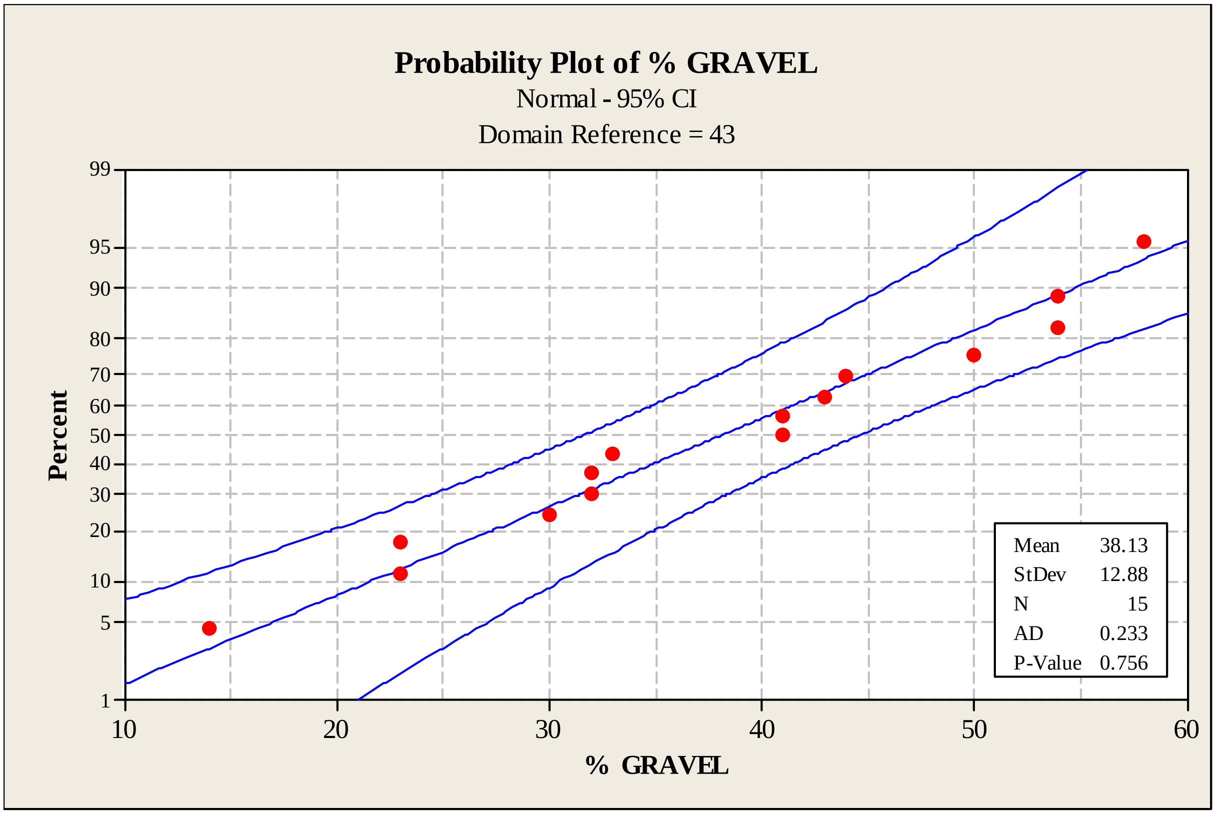


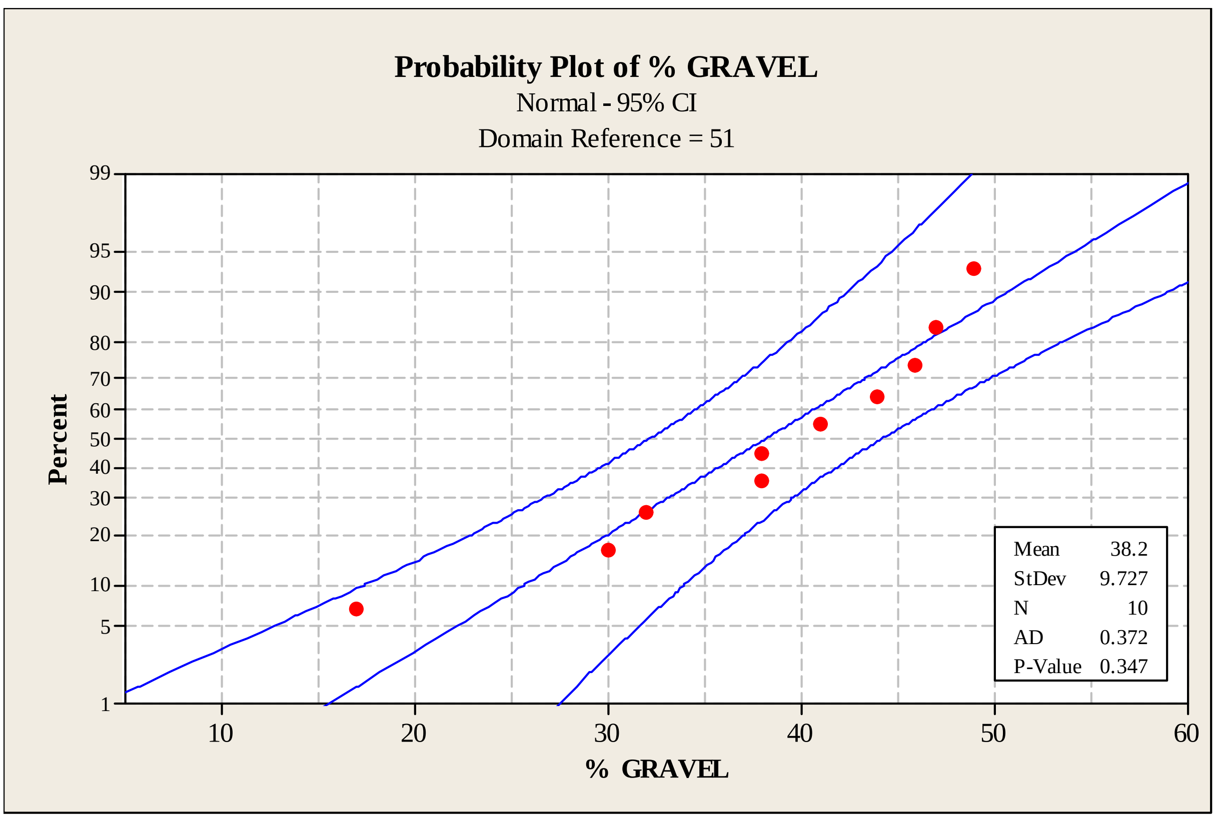


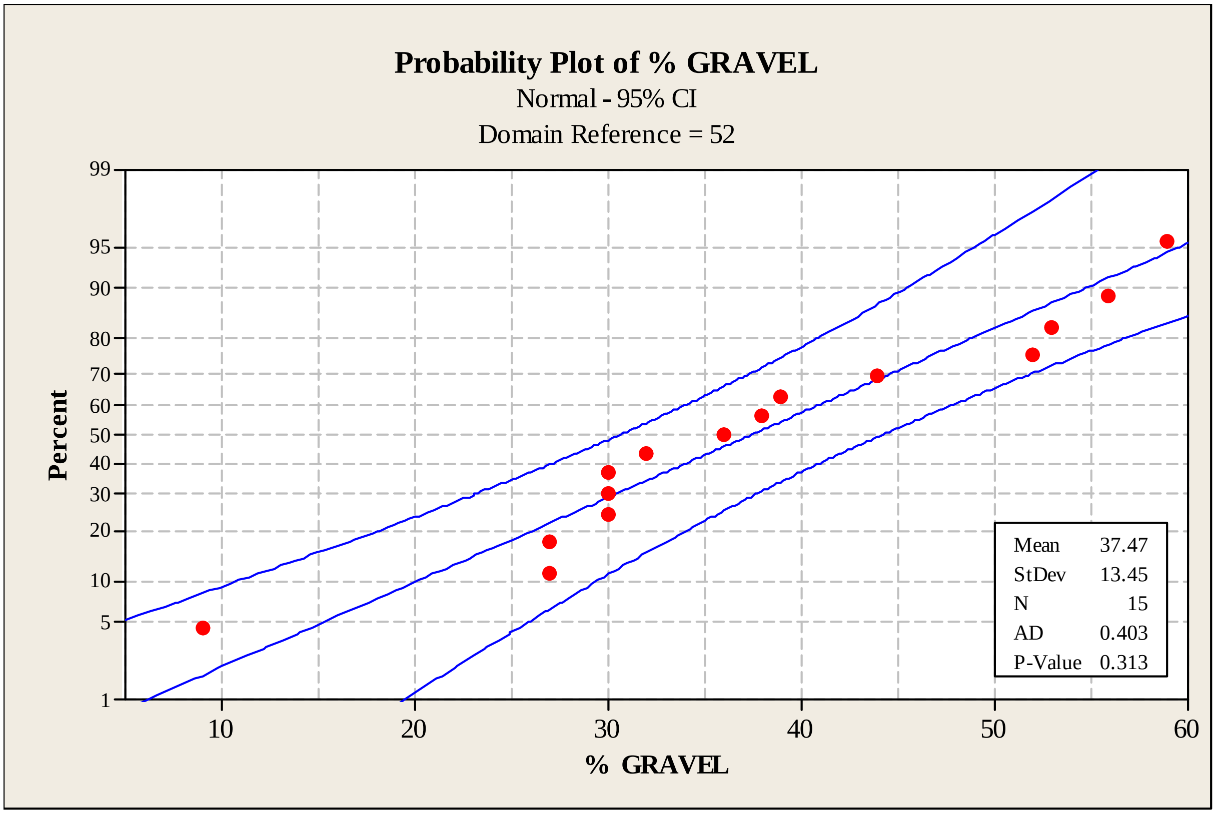

Probability Plot of % GRAVEL
Normal - 95% CI
Domain Reference = 31
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
0
5
10
15
20
25
30
% GRAVEL
Mean 5.629
StDev 5.816
N 35
AD 2.497
P-Value <0.005


Probability Plot of % GRAVEL
Normal - 95% CI
Domain Reference = 41
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
10
20
30
40
50
% GRAVEL
Mean 22.33
StDev 13.52
N 6
AD 0.309
P-Value 0.433

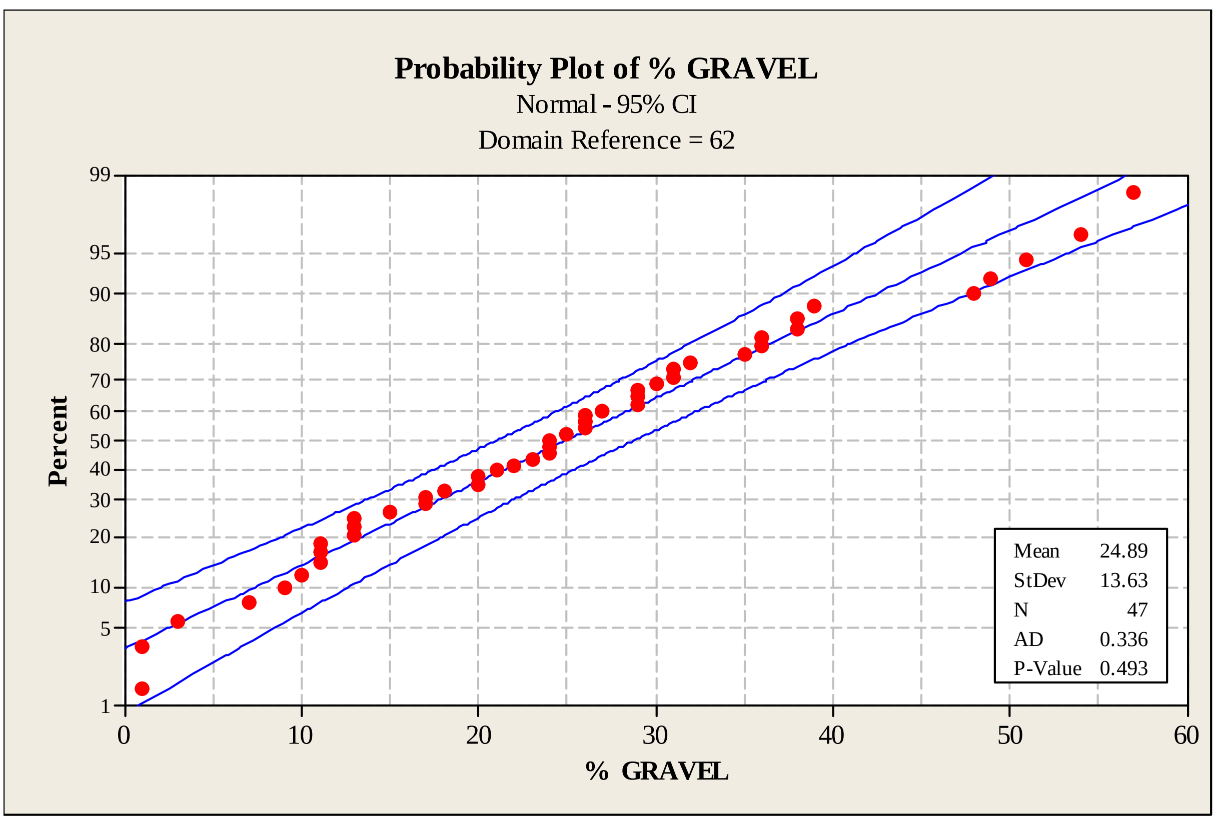
(Domain 42: insufficient data)

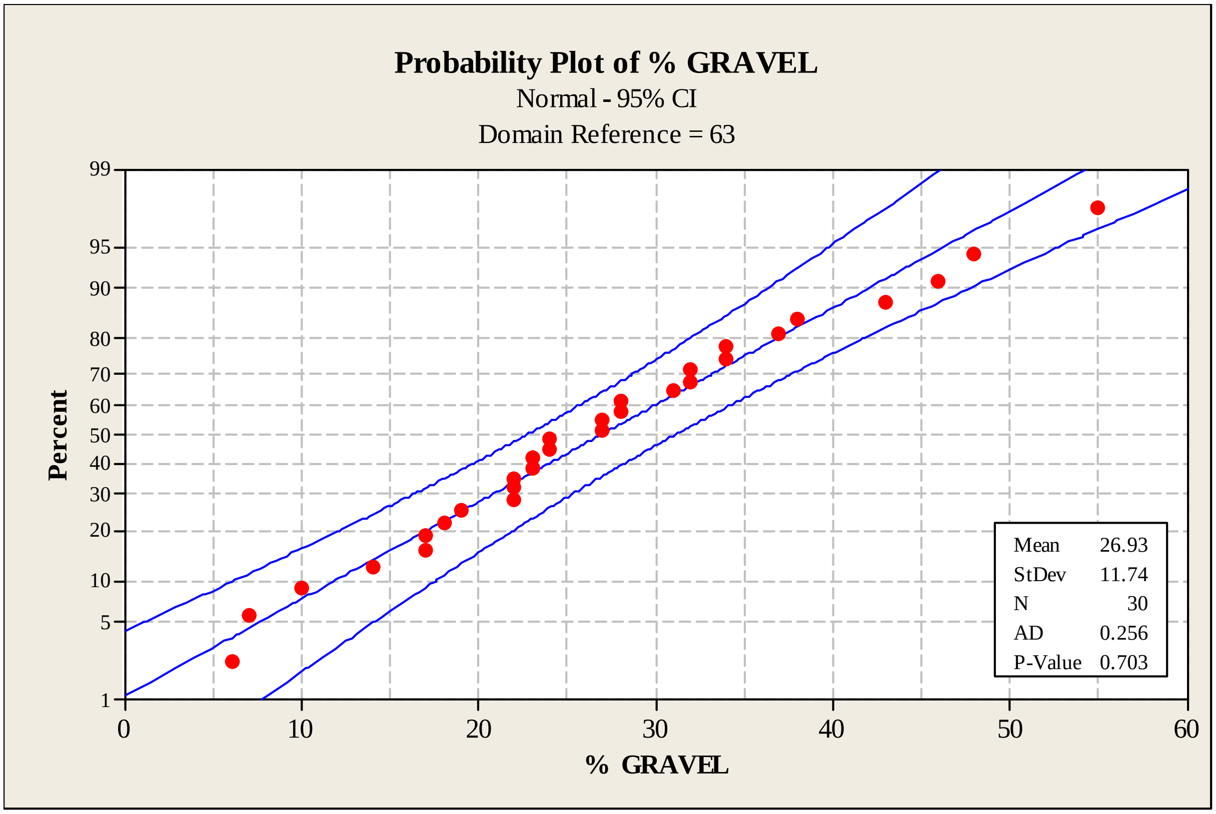




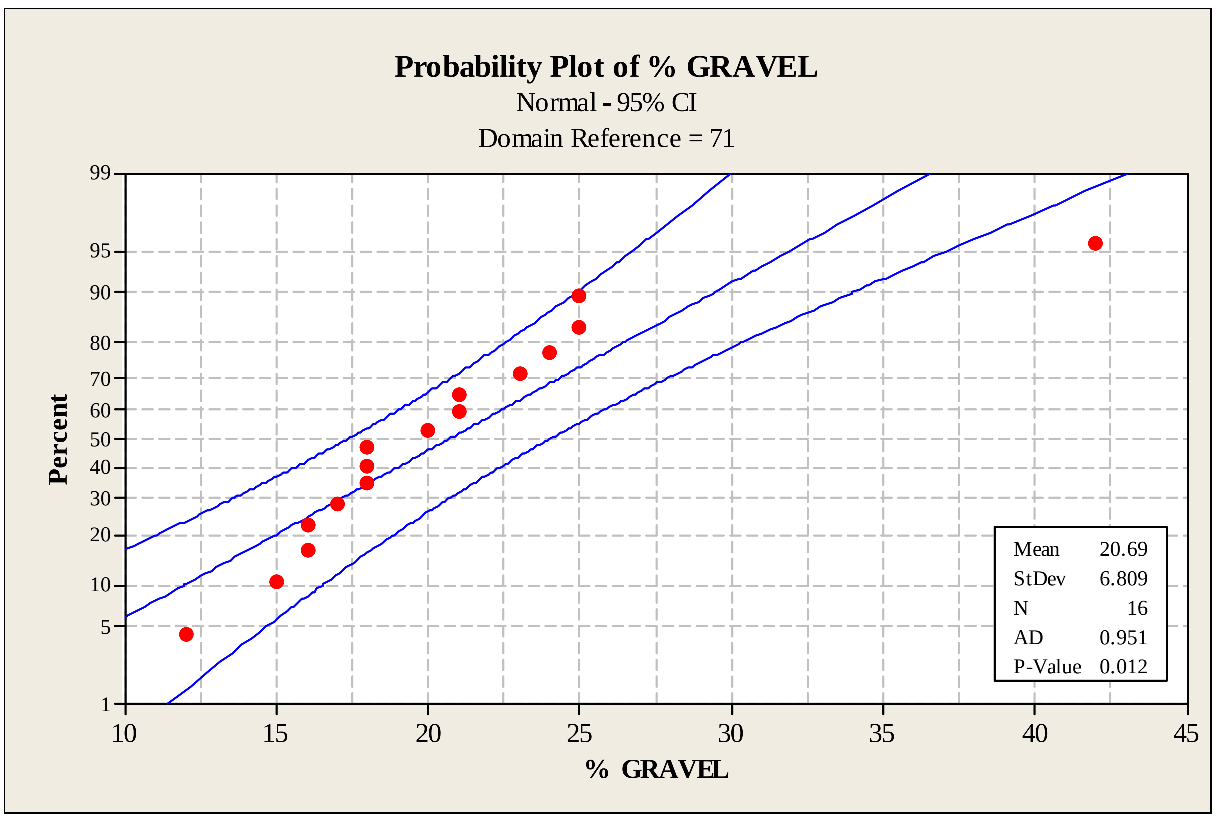


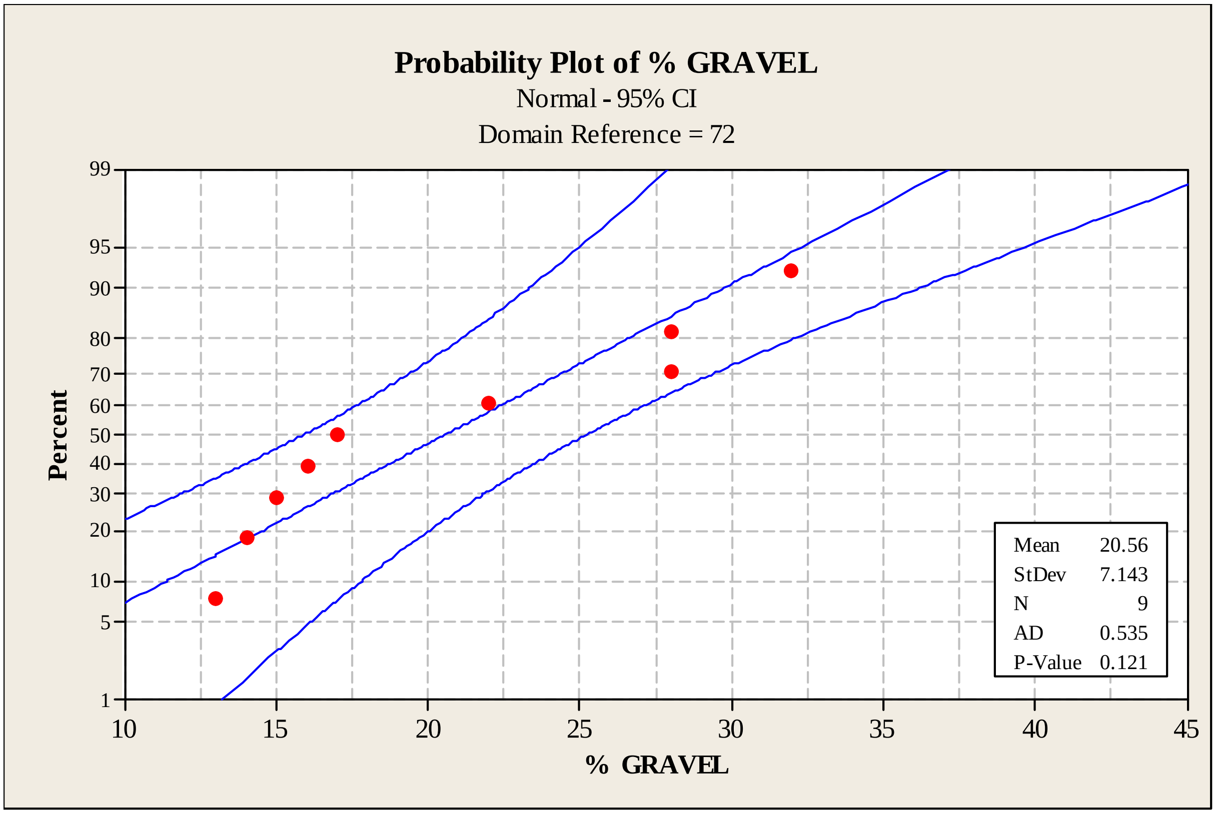
(Domain 53: insufficient data; Domain 61: no data)



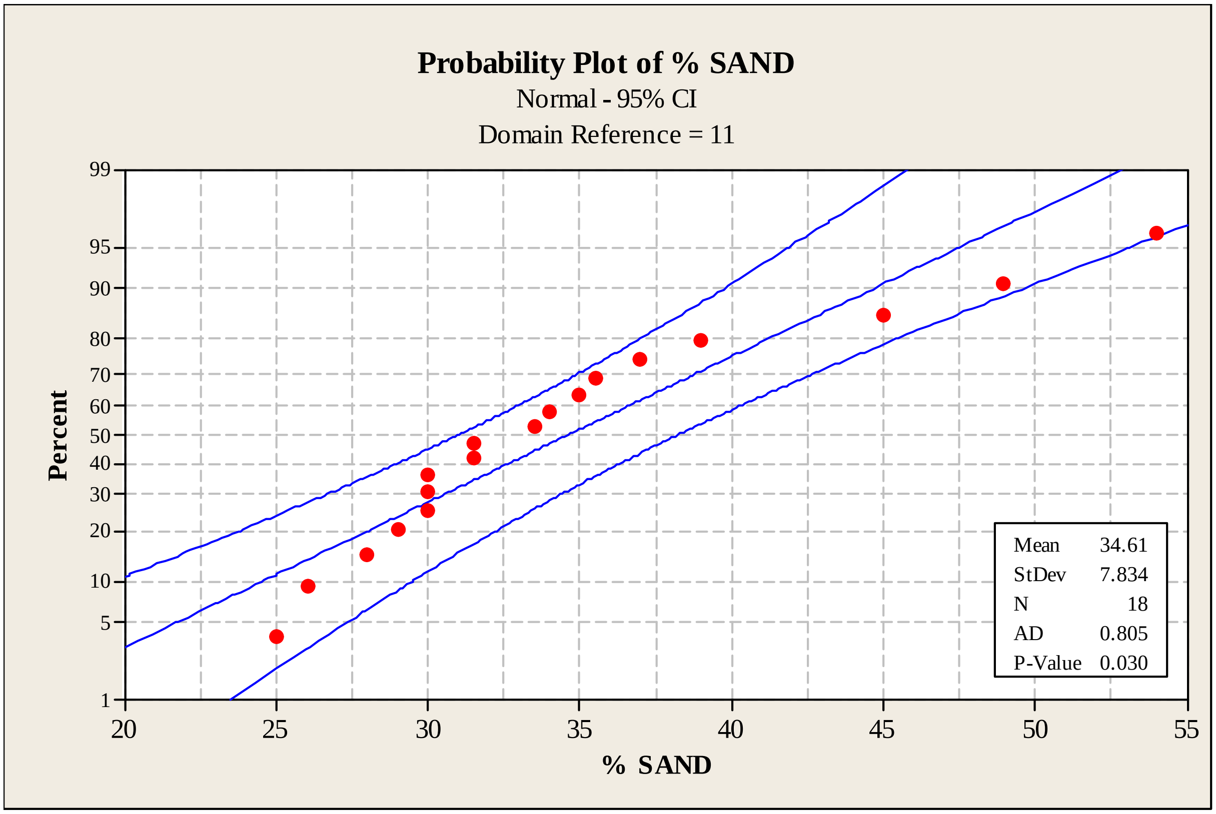


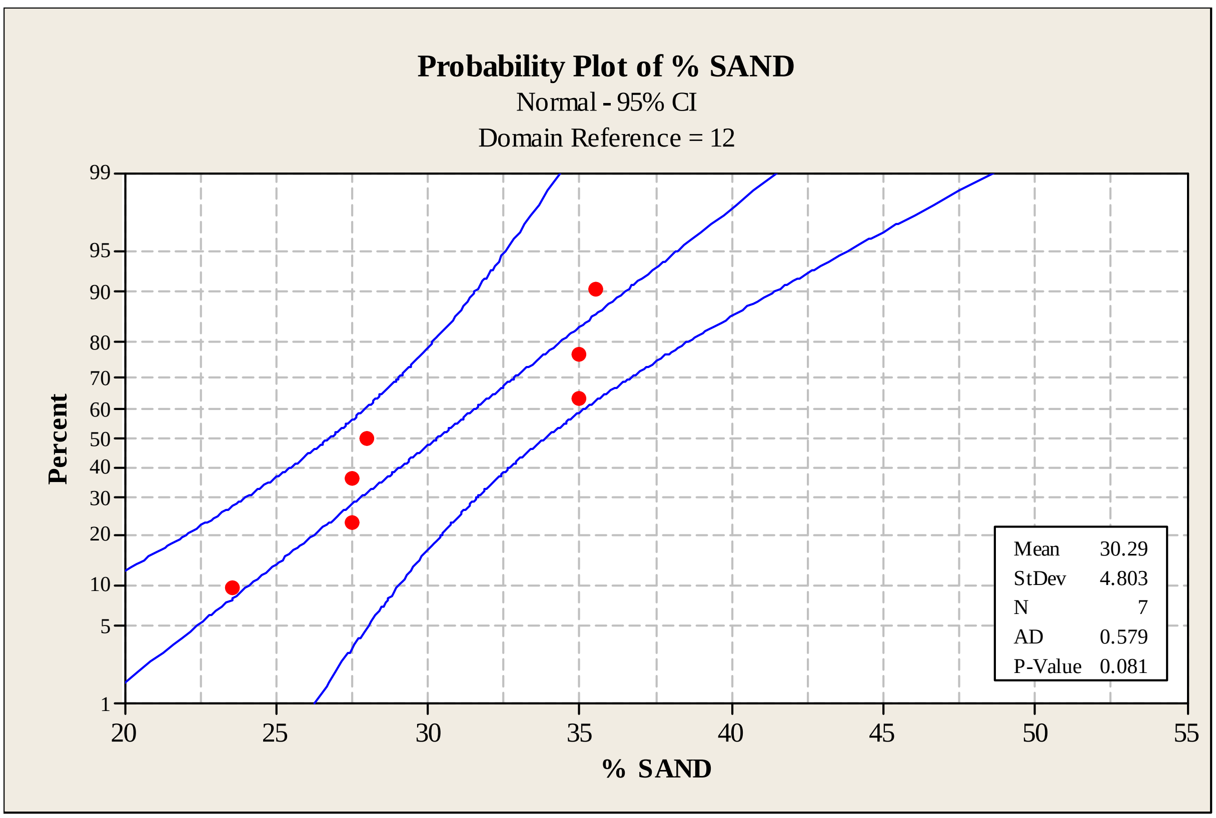
(Domains 64 and 65: insufficient data)



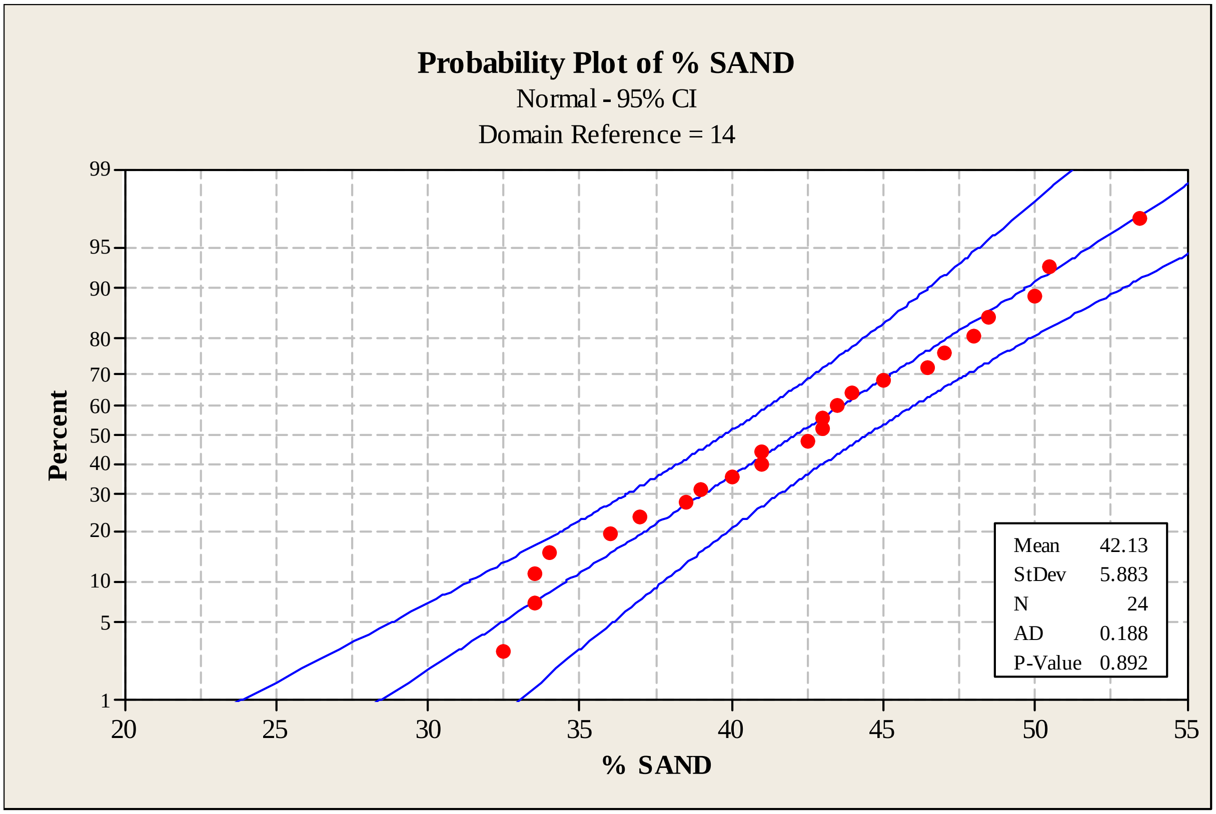

Probability Plot of % GRAVEL
Normal - 95% CI
Domain Reference = 72
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
10
15
20
25
30
35
40
45
% GRAVEL
Mean 20.56
StDev 7.143
N 9
AD 0.535
P-Value 0.121

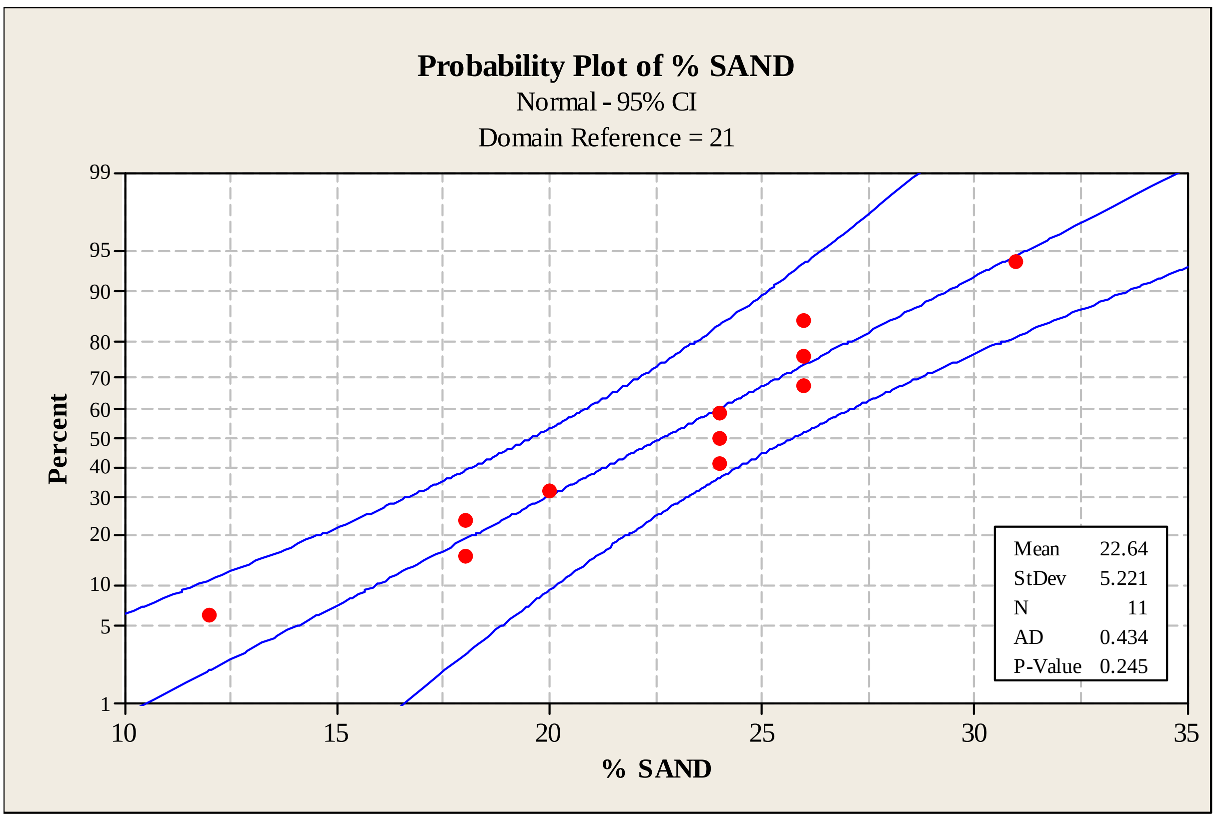
Grading Fraction: Sand

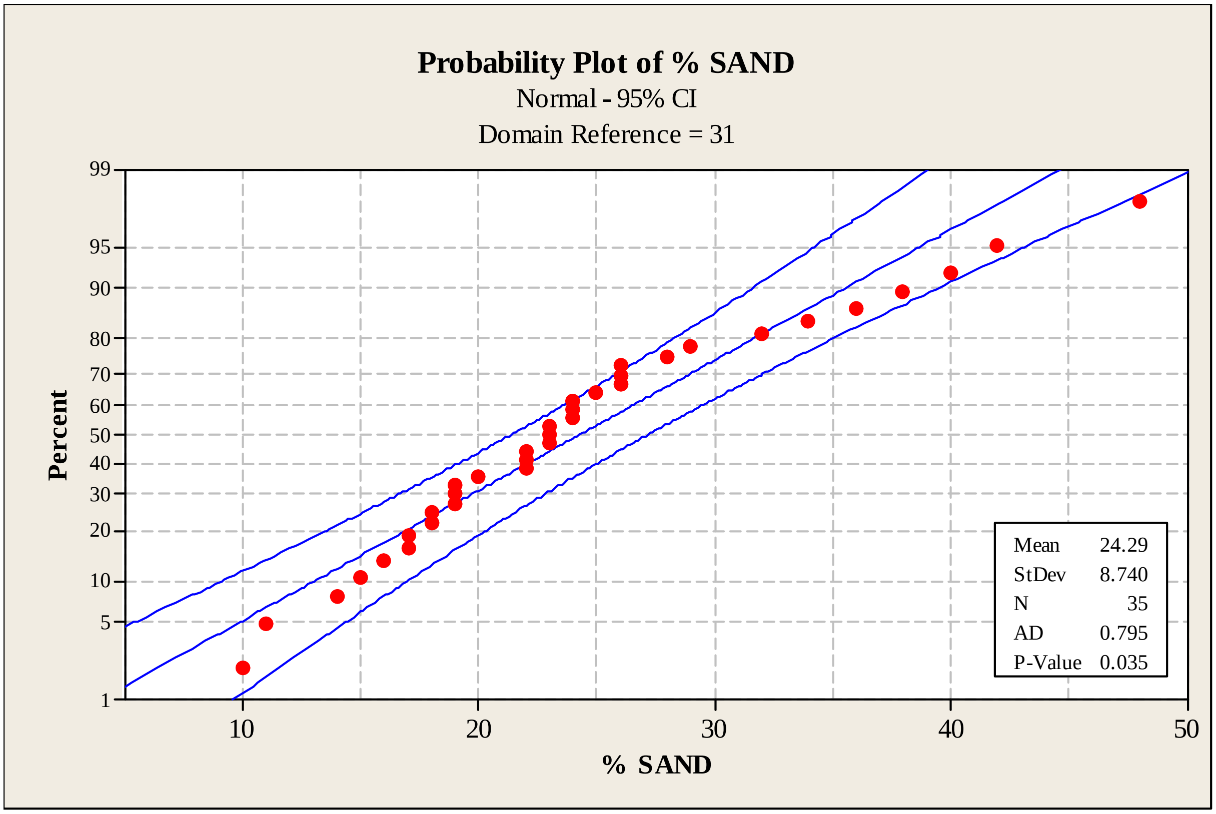




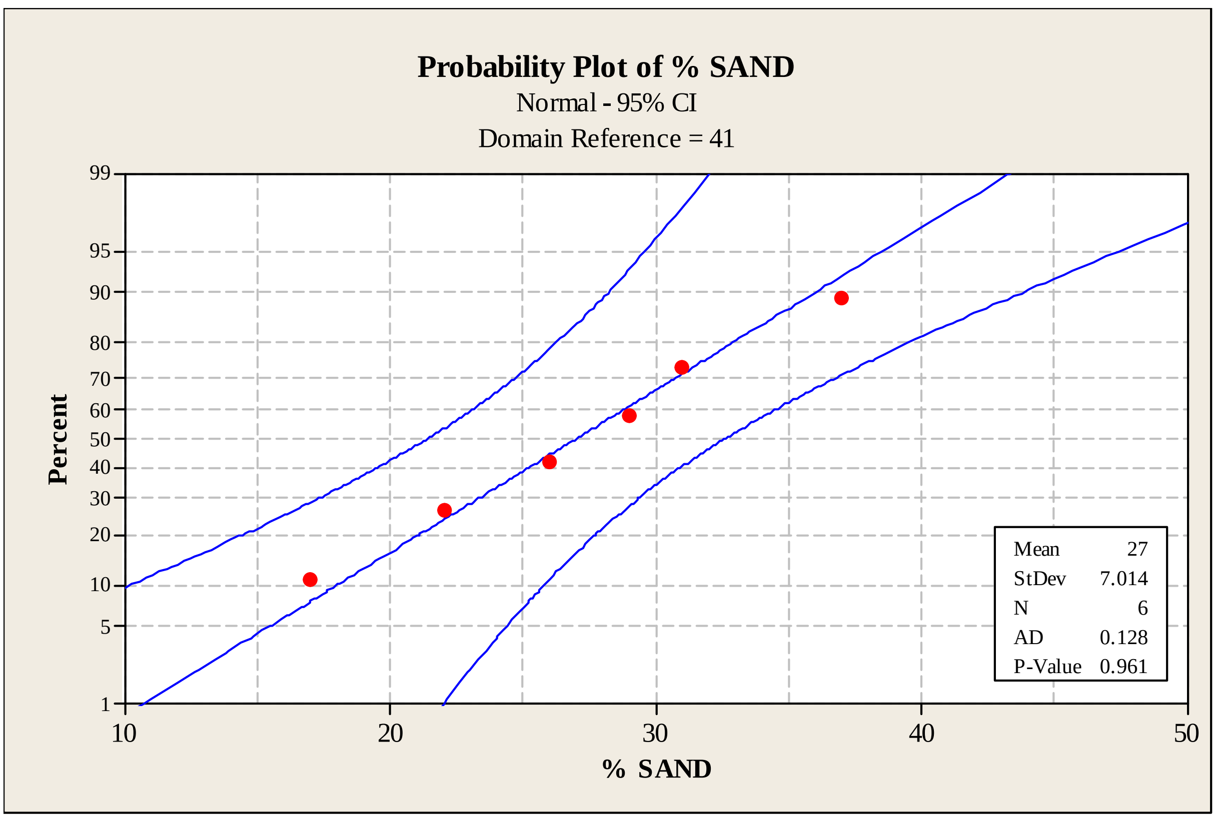
(Domain 13: insufficient data)





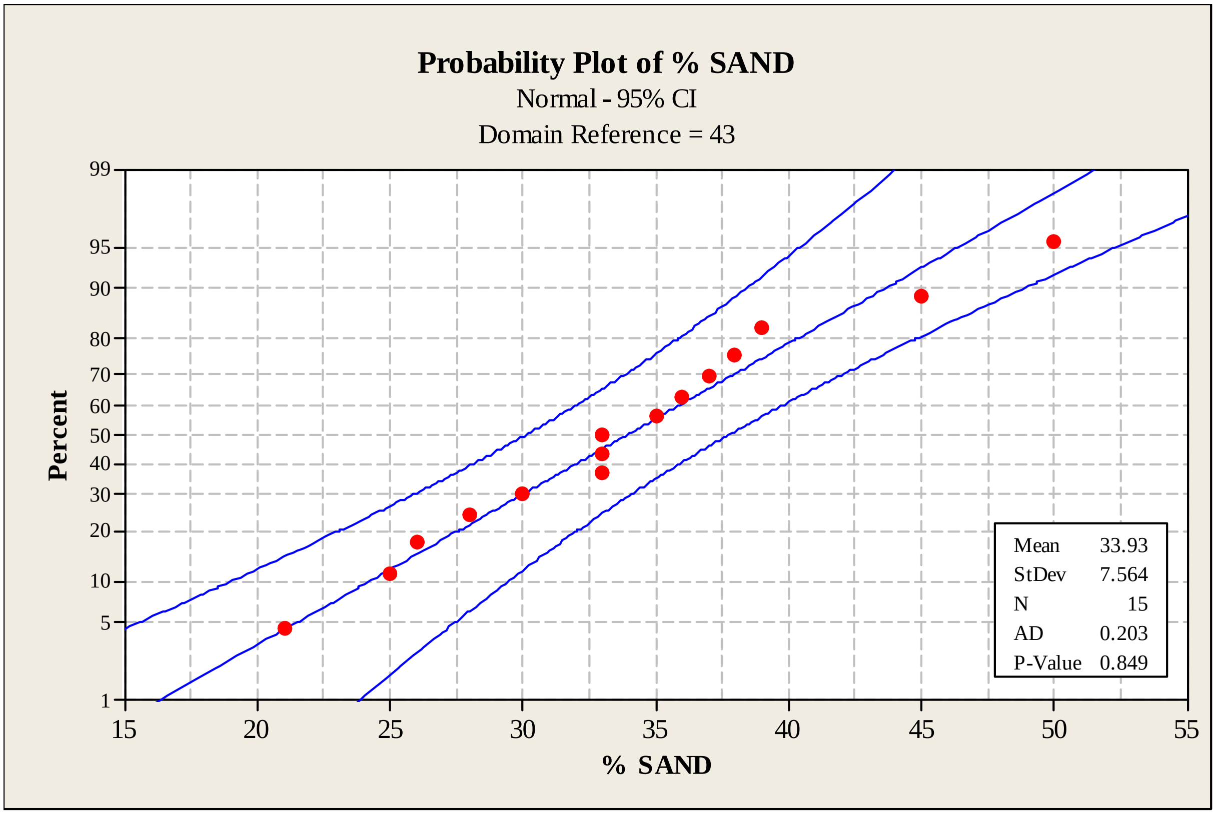


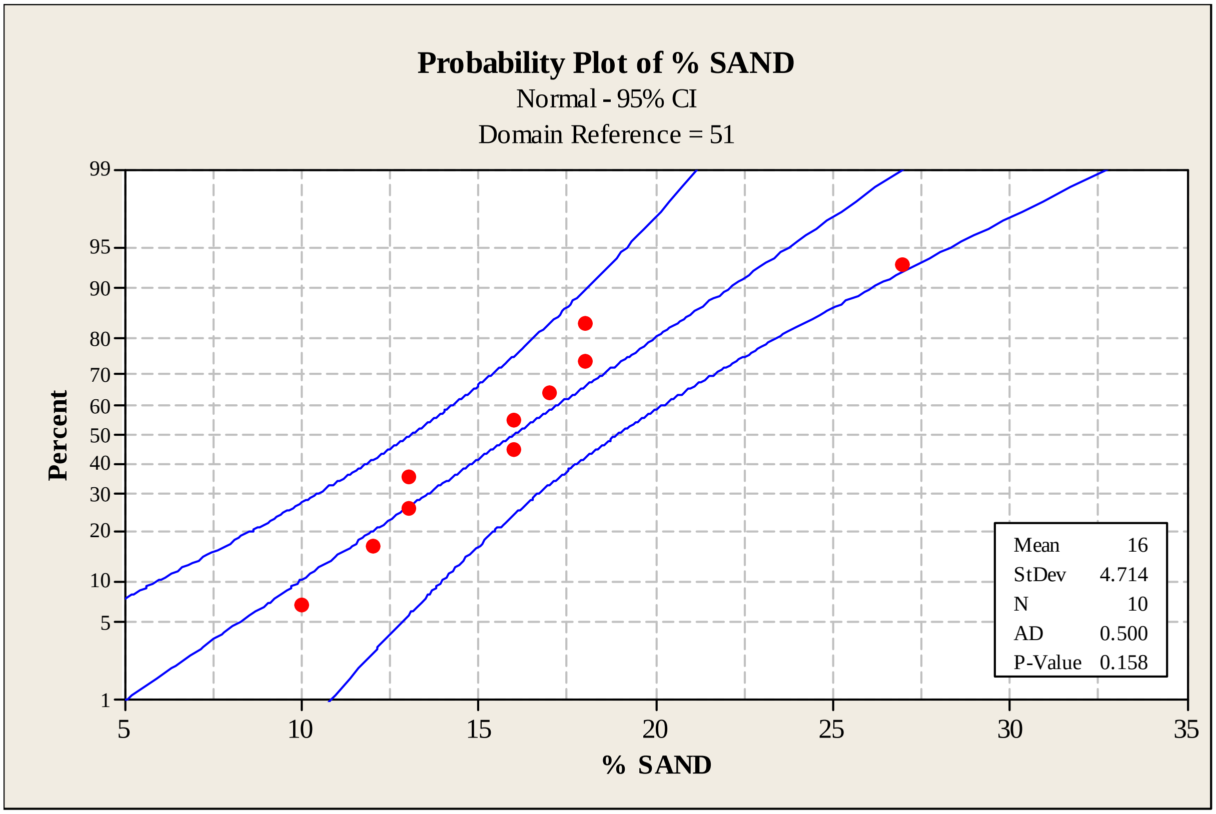
Probability Plot of % SAND
Normal - 95% CI
Domain Reference = 31
Percent
% SAND
Mean 24.29
StDev 8.740
N 35
AD 0.795
P-Value 0.035

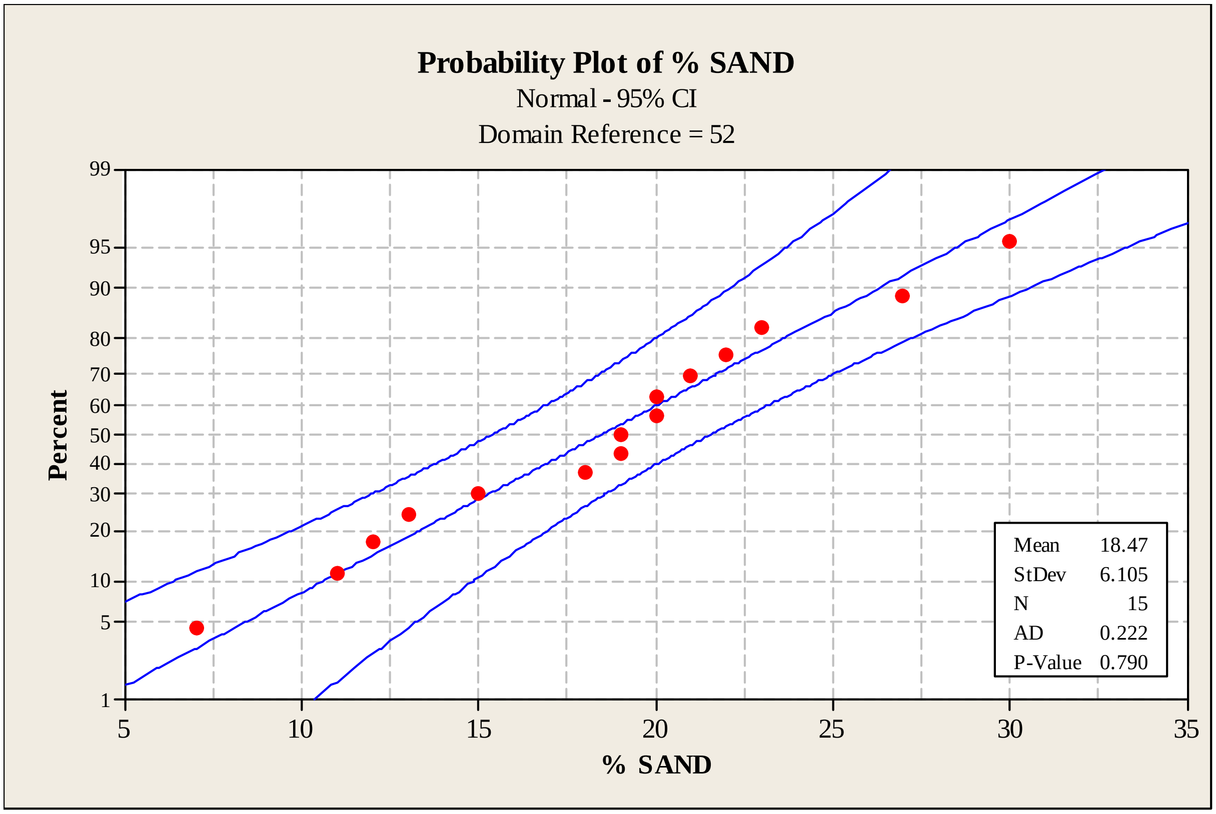


Probability Plot of % SAND
Normal - 95% CI
Domain Reference = 41
Percent
% SAND
Mean 27
StDev 7.014
N 6
AD 0.128
P-Value 0.961

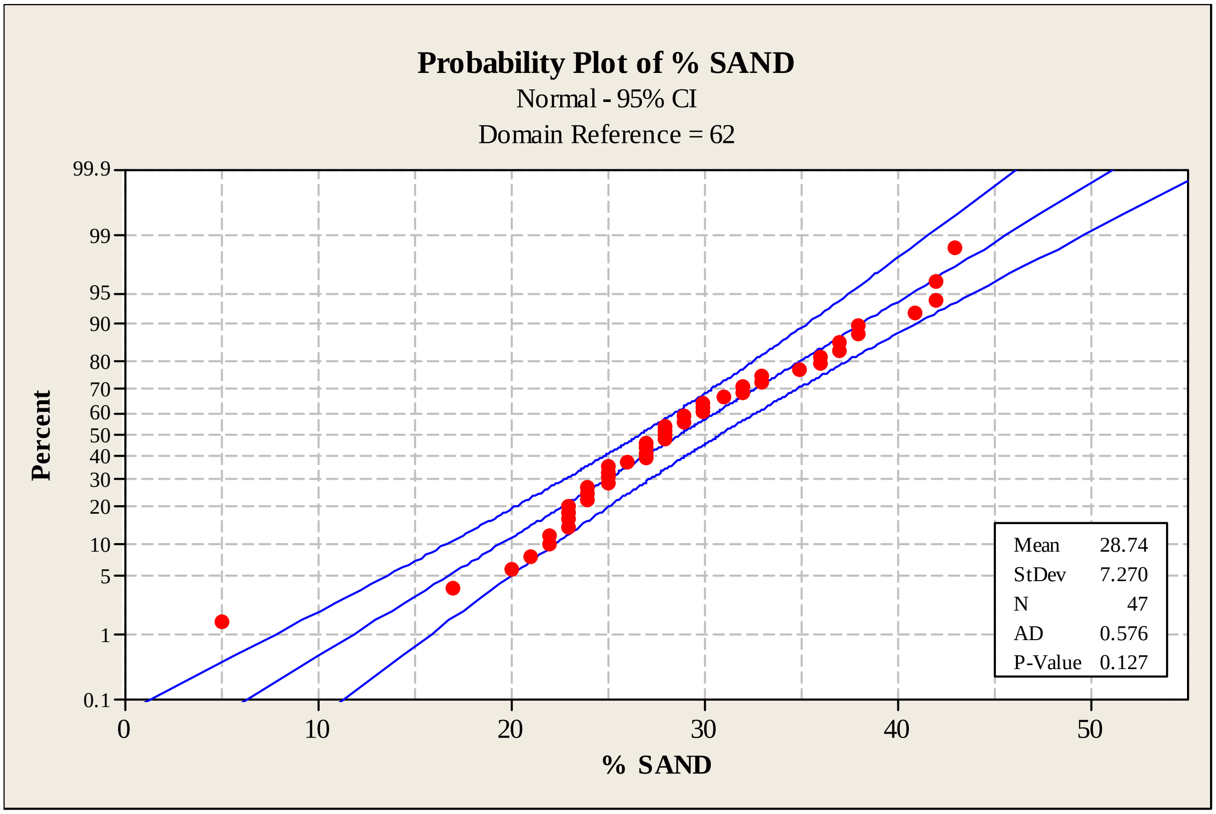
(Domain 42: insufficient data)

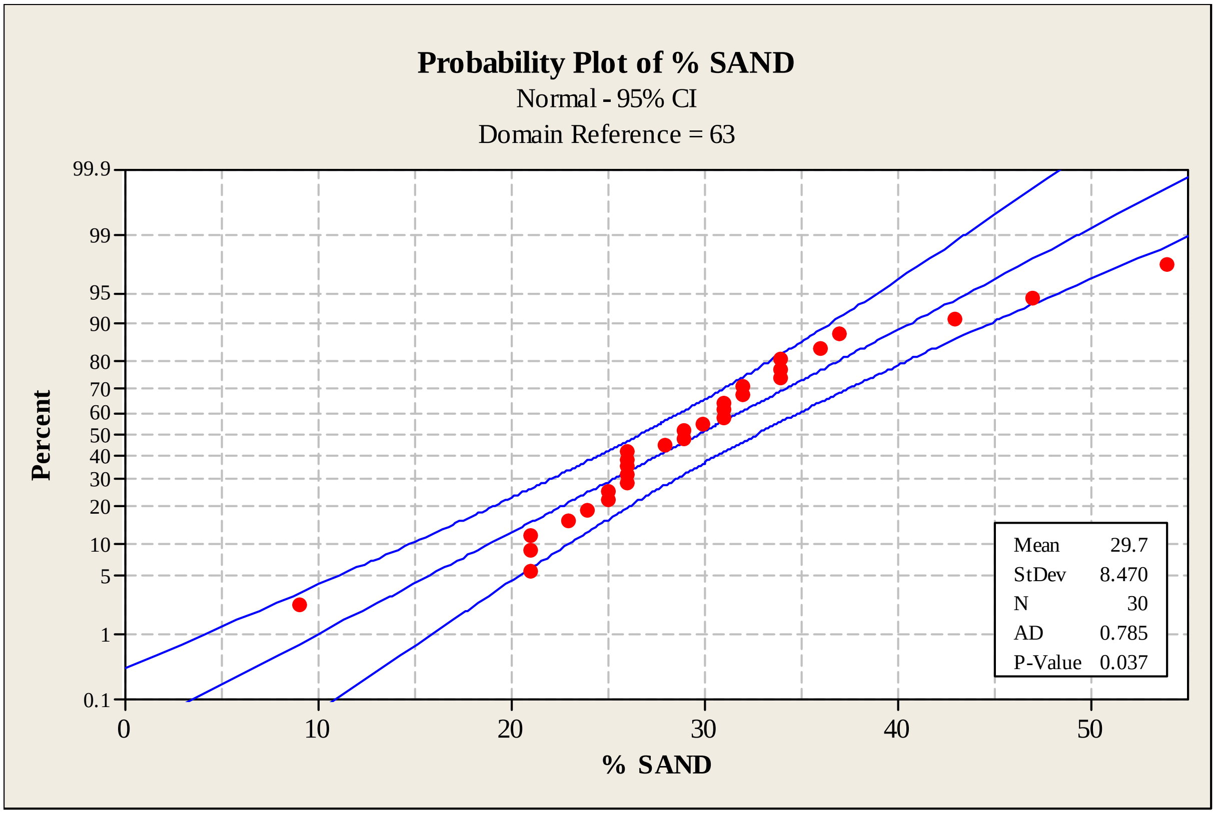




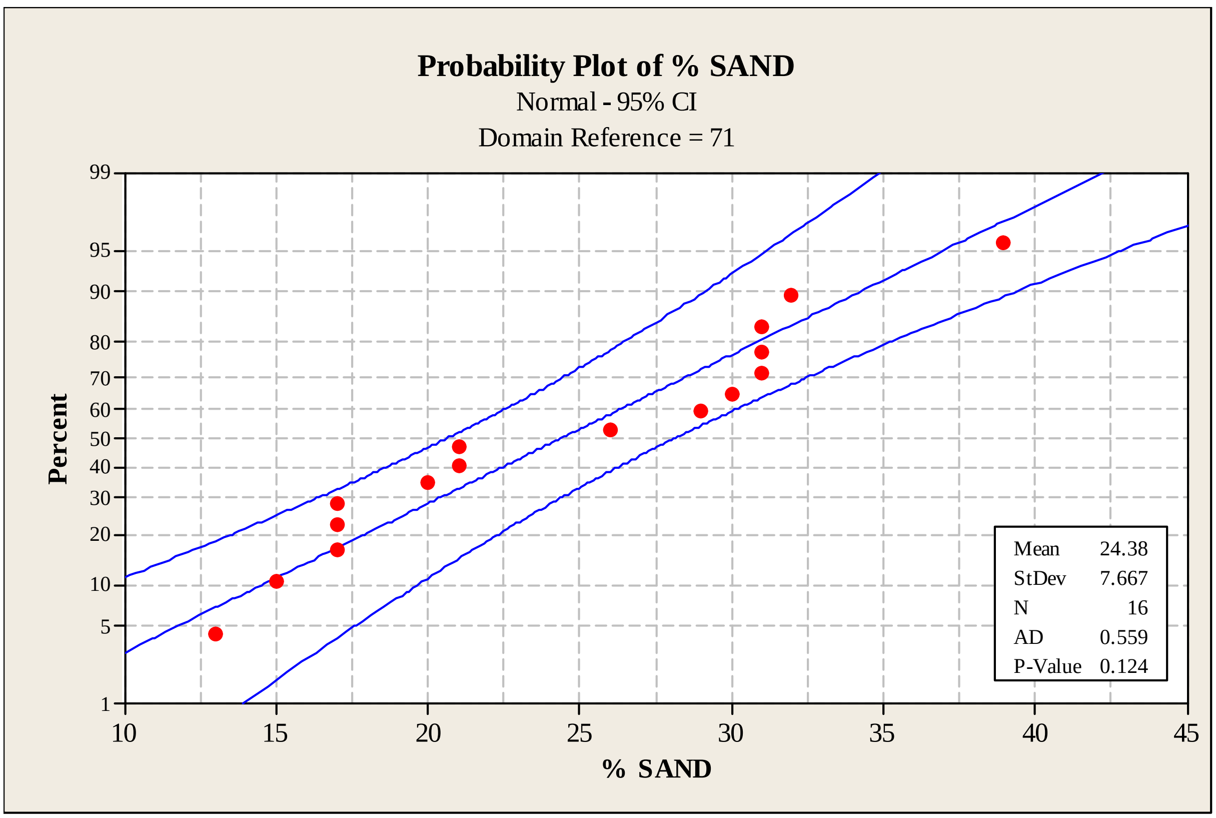


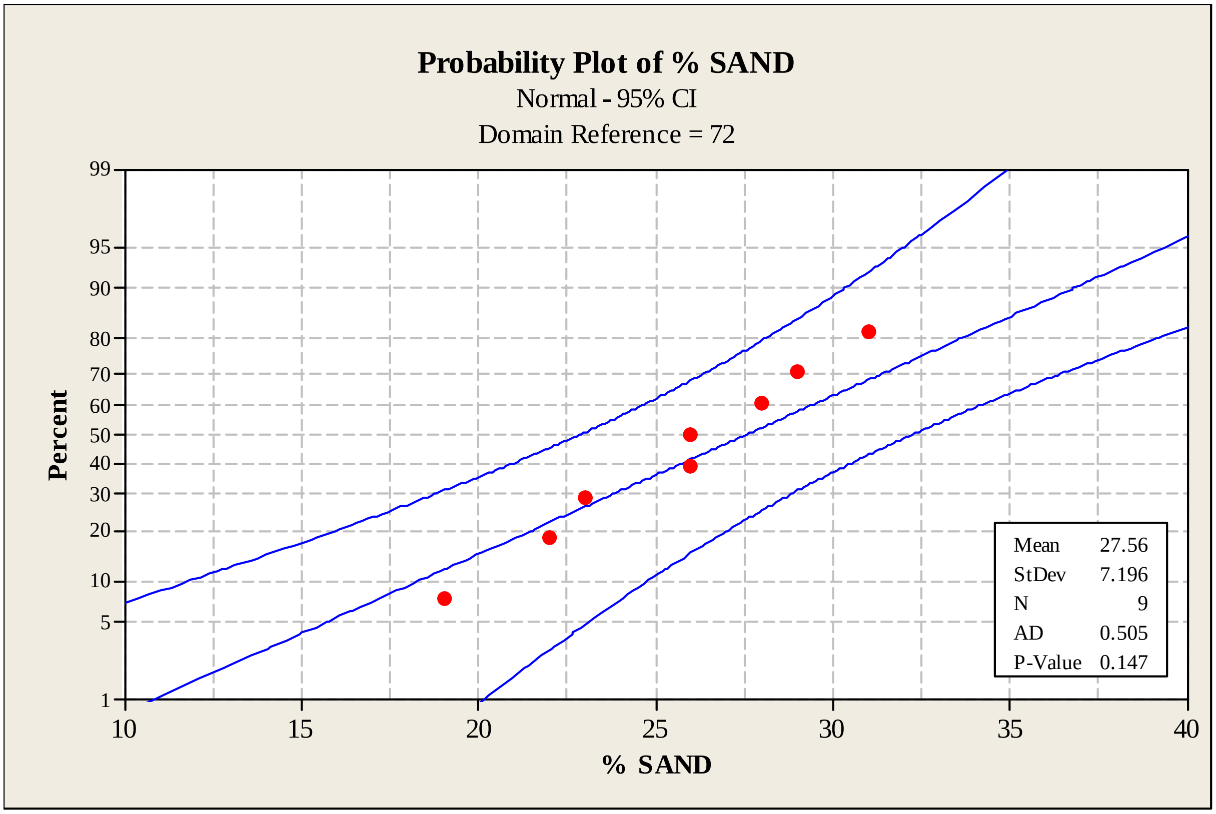
(Domain 53: insufficient data; Domain 61: no data)



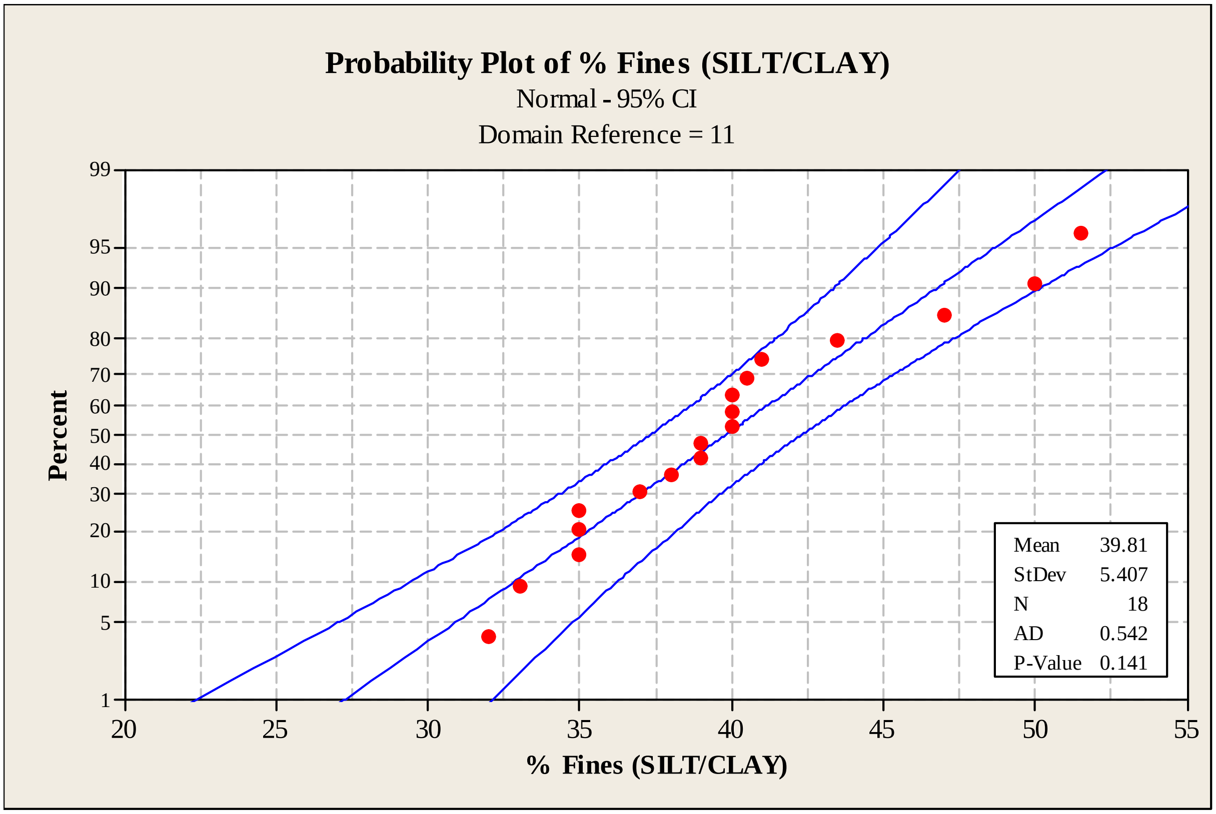


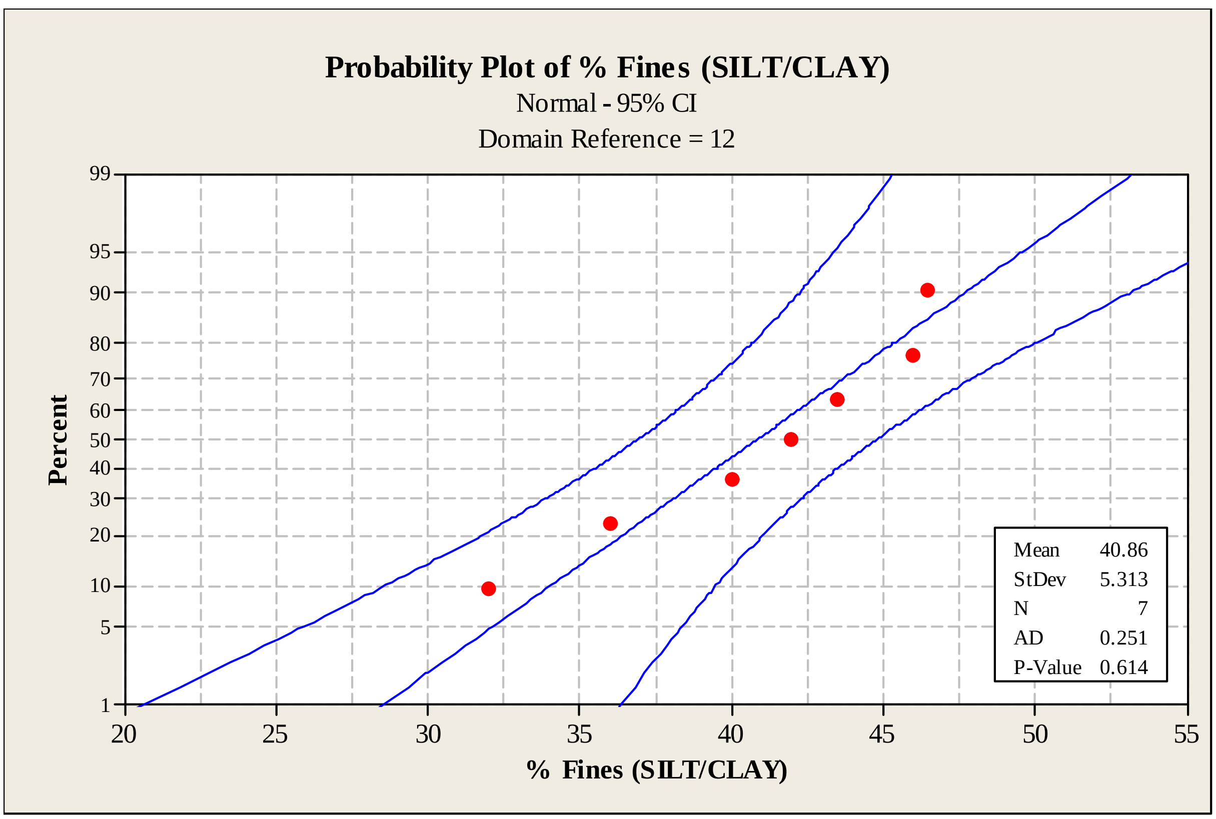
(Domains 64 and 65: insufficient data)



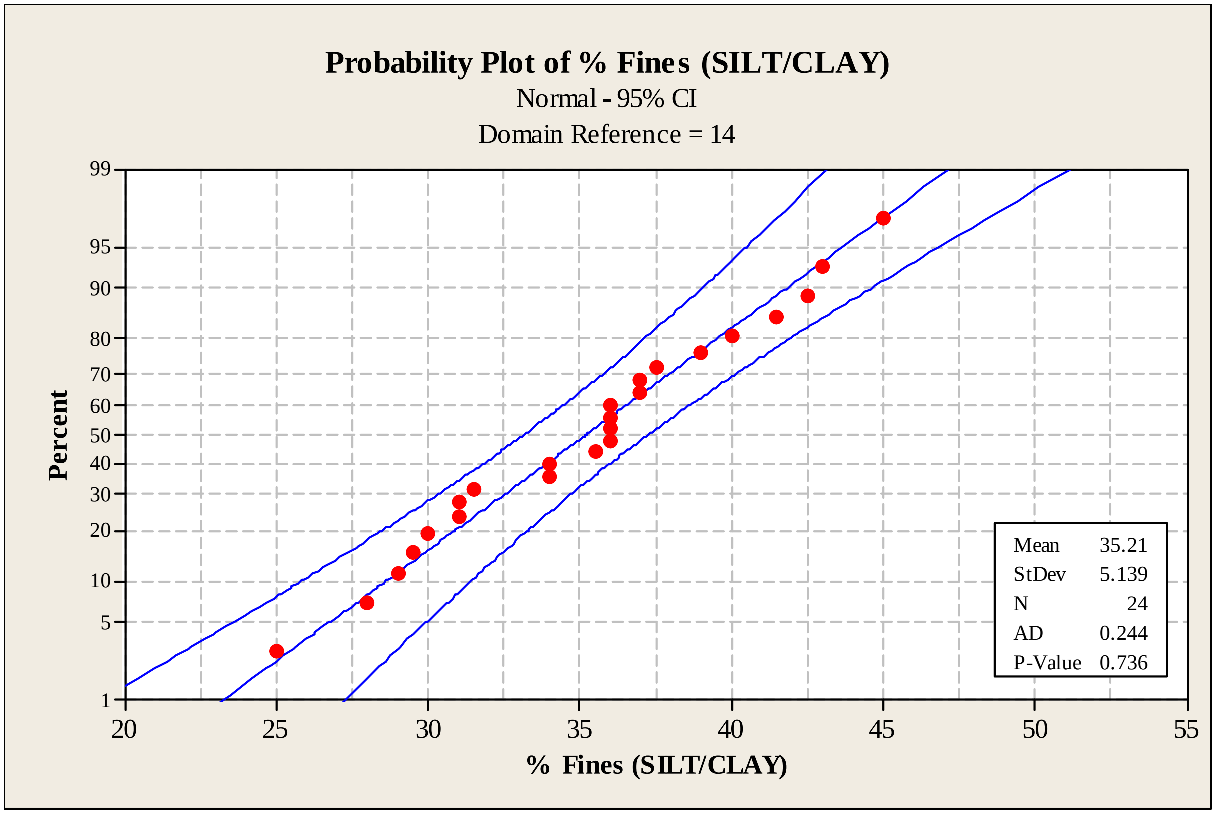

Probability Plot of % SAND
Normal - 95% CI
Domain Reference = 72
Percent
% SAND
99
95
90
80
70
60
50
40
30
20
10
5
1
10
15
20
25
30
35
40
Mean 27.56
StDev 7.196
N 9
AD 0.505
P-Value 0.147

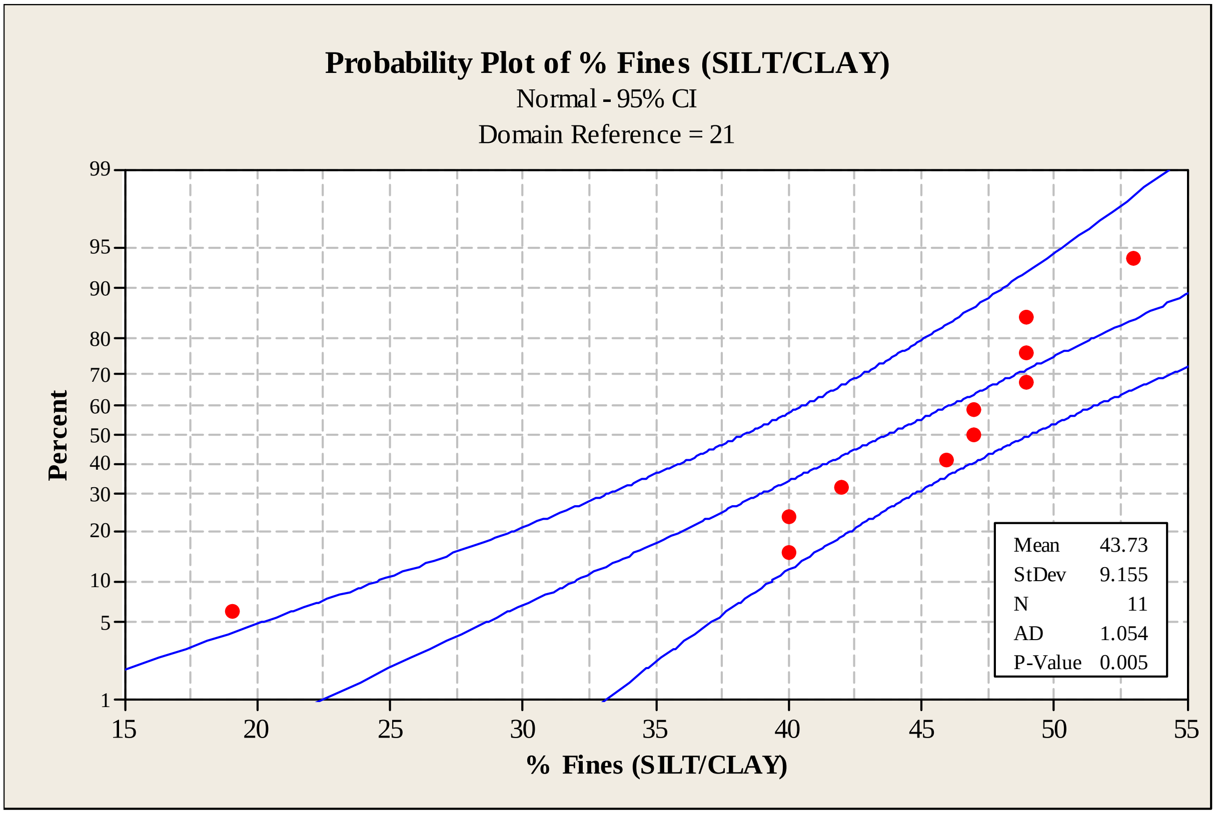
Grading Fraction: (Fines)

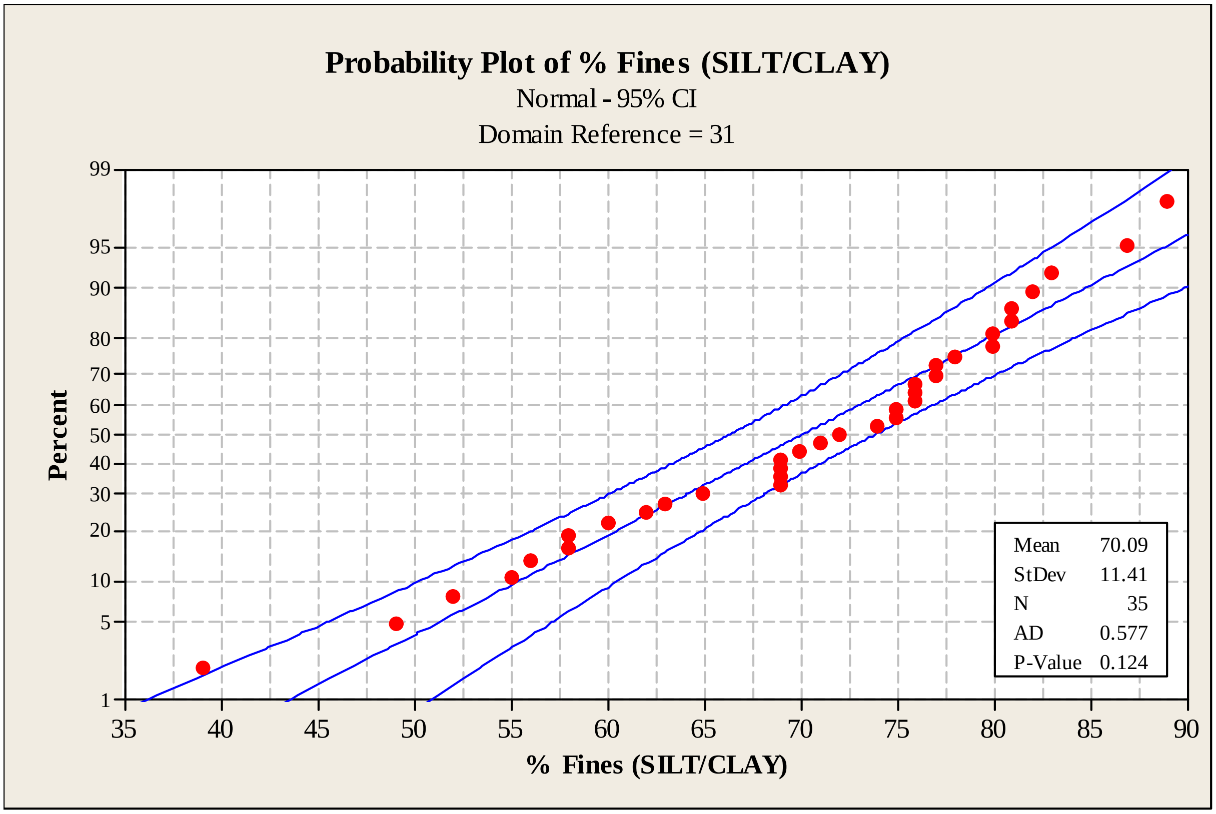


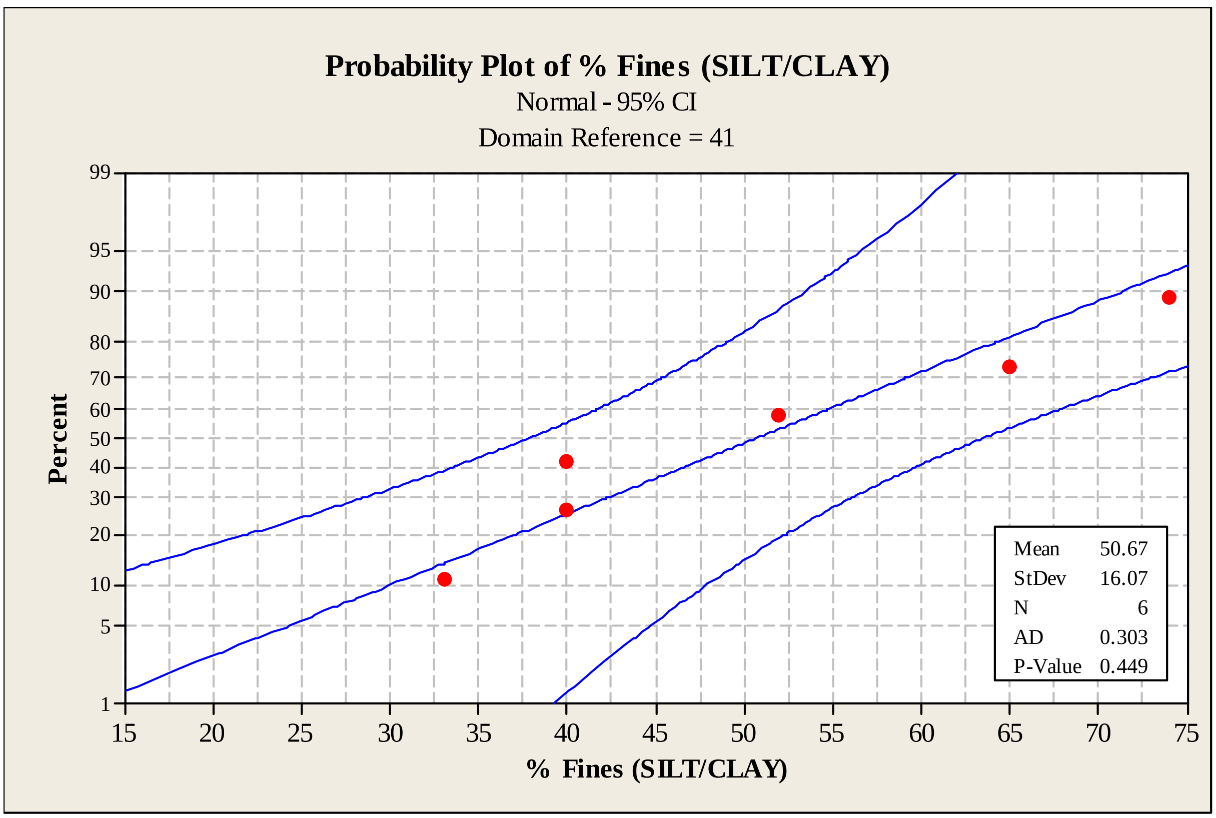


(Domain 13: insufficient data)

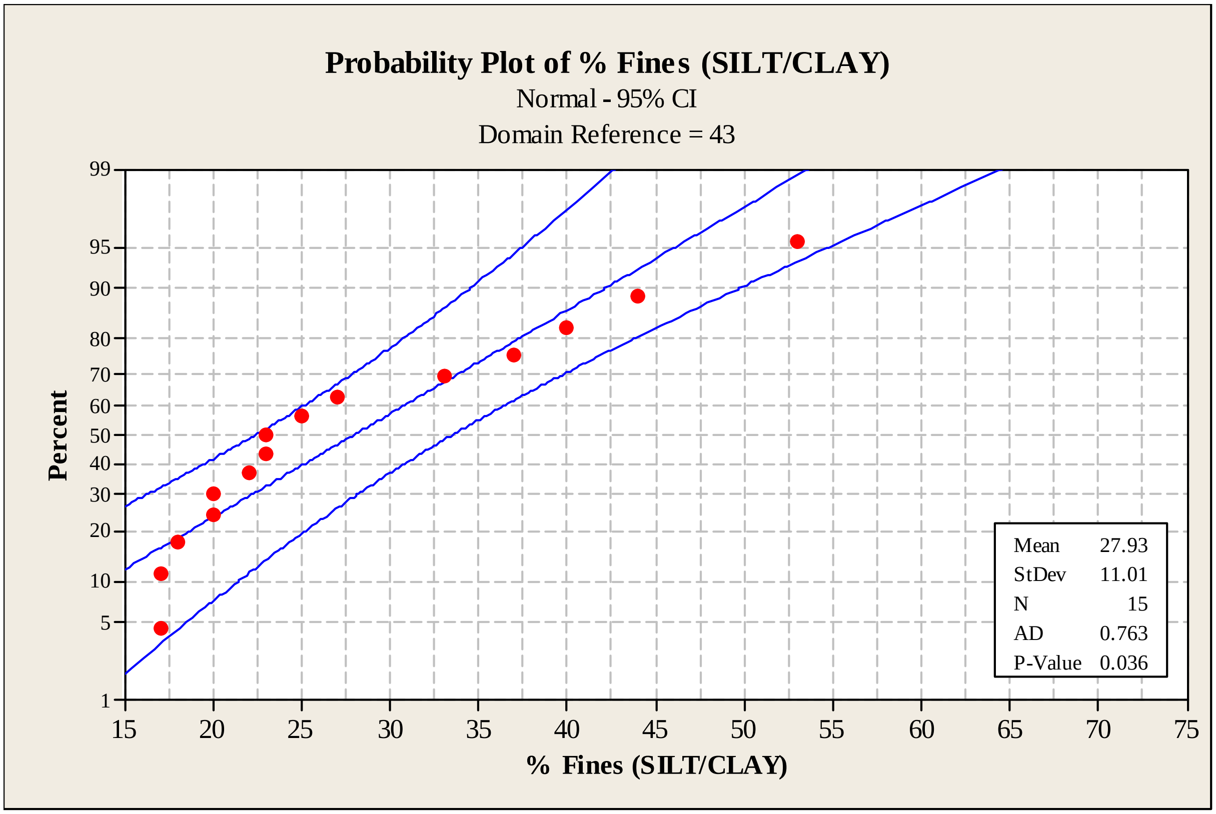


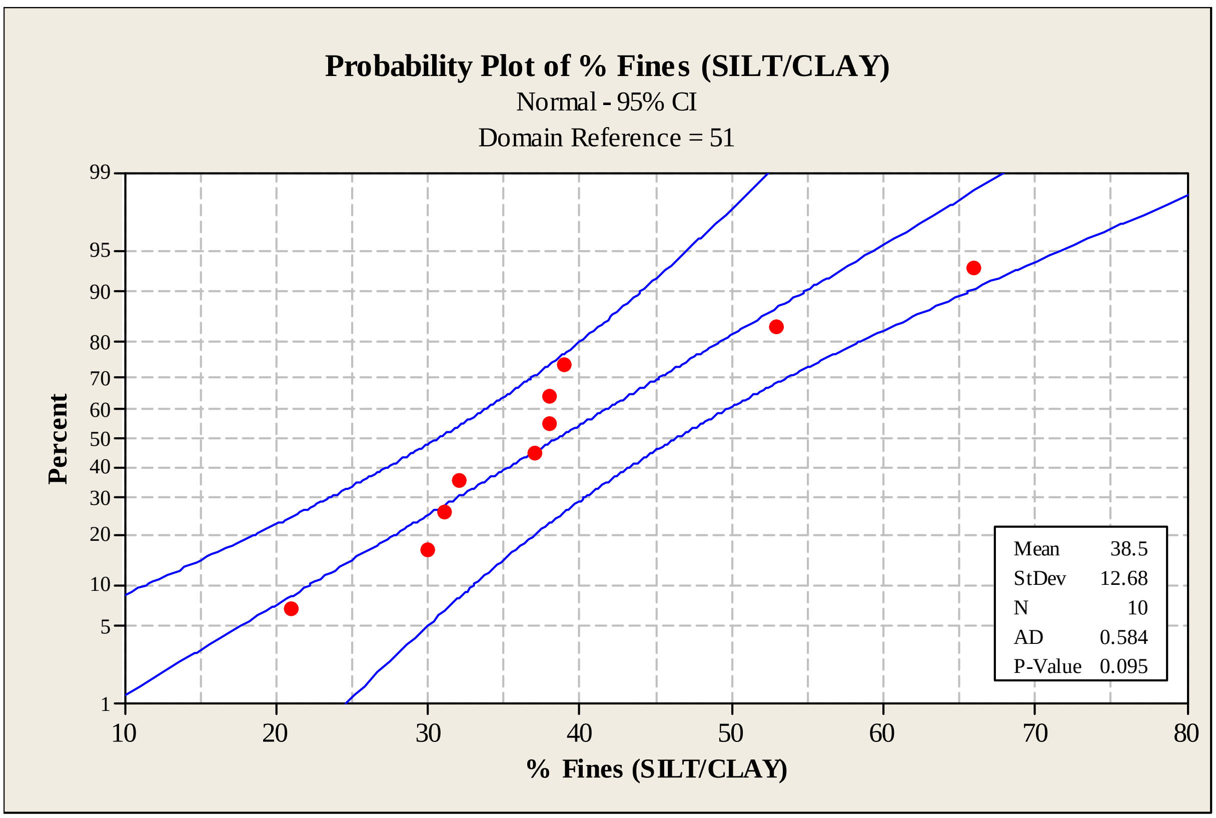


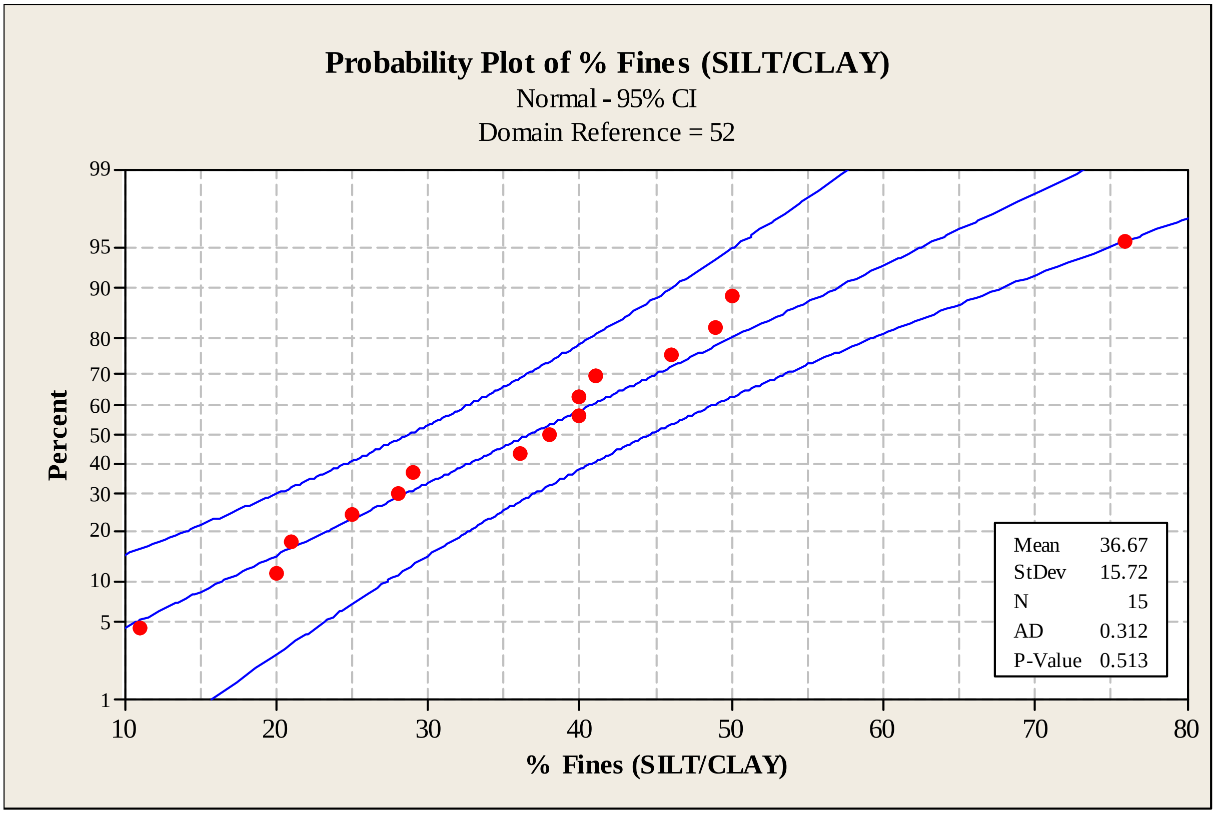

Probability Plot of % Fines (SILT/CLAY)
Normal - 95% CI
Domain Reference = 31
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
35
40
45
50
55
60
65
70
75
80
85
90
% Fines (SILT/CLAY)
Mean 70.09
StDev 11.41
N 35
AD 0.577
P-Value 0.124


Probability Plot of % Fines (SILT/CLAY)
Normal - 95% CI
Domain Reference = 41
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
15
20
25
30
35
40
45
50
55
60
65
70
75
% Fines (SILT/CLAY)
Mean 50.67
StDev 16.07
N 6
AD 0.303
P-Value 0.449

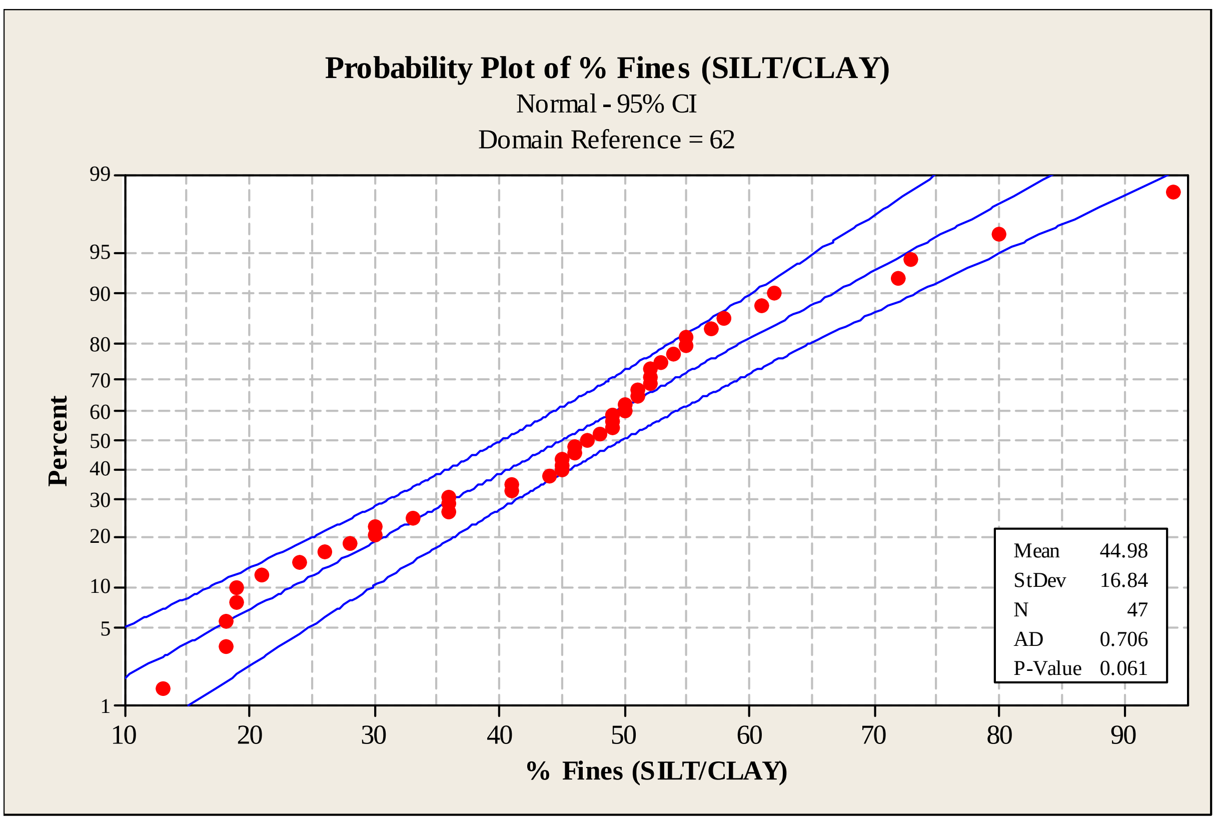
(Domain 42: insufficient data)

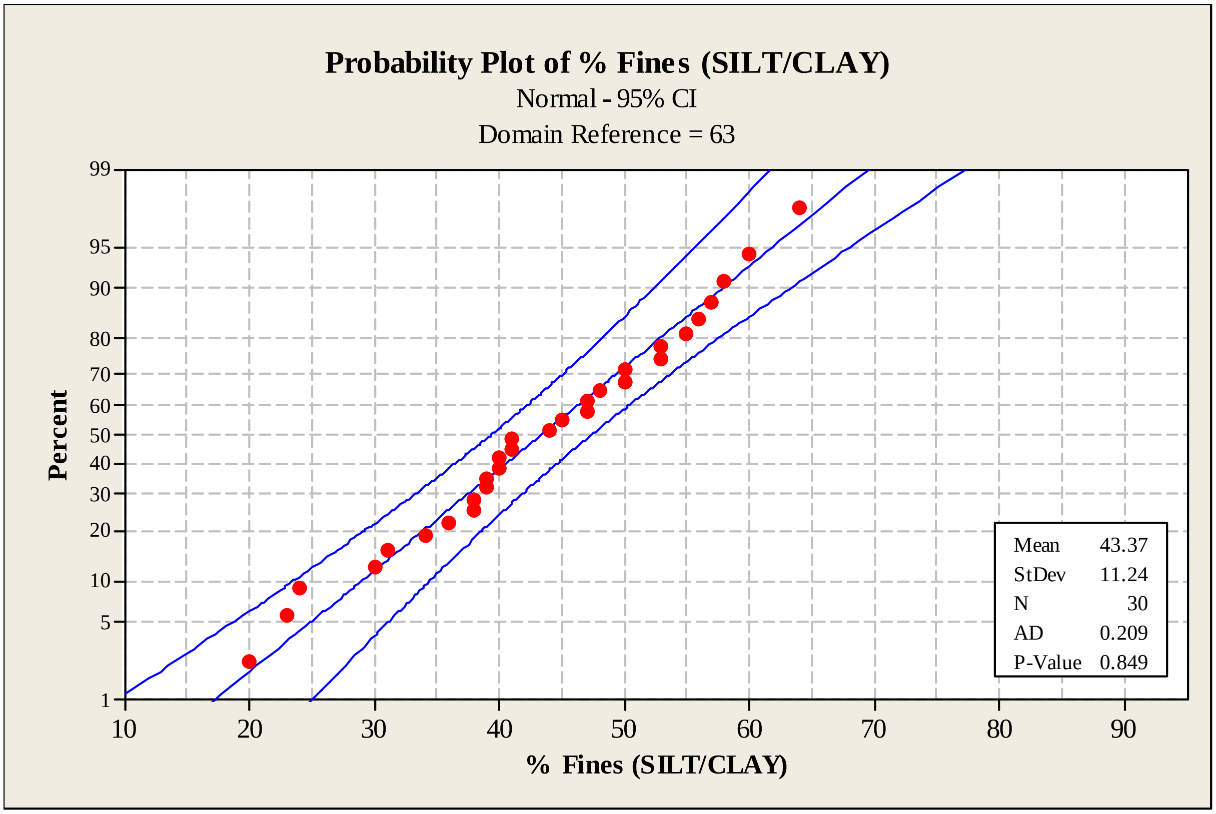




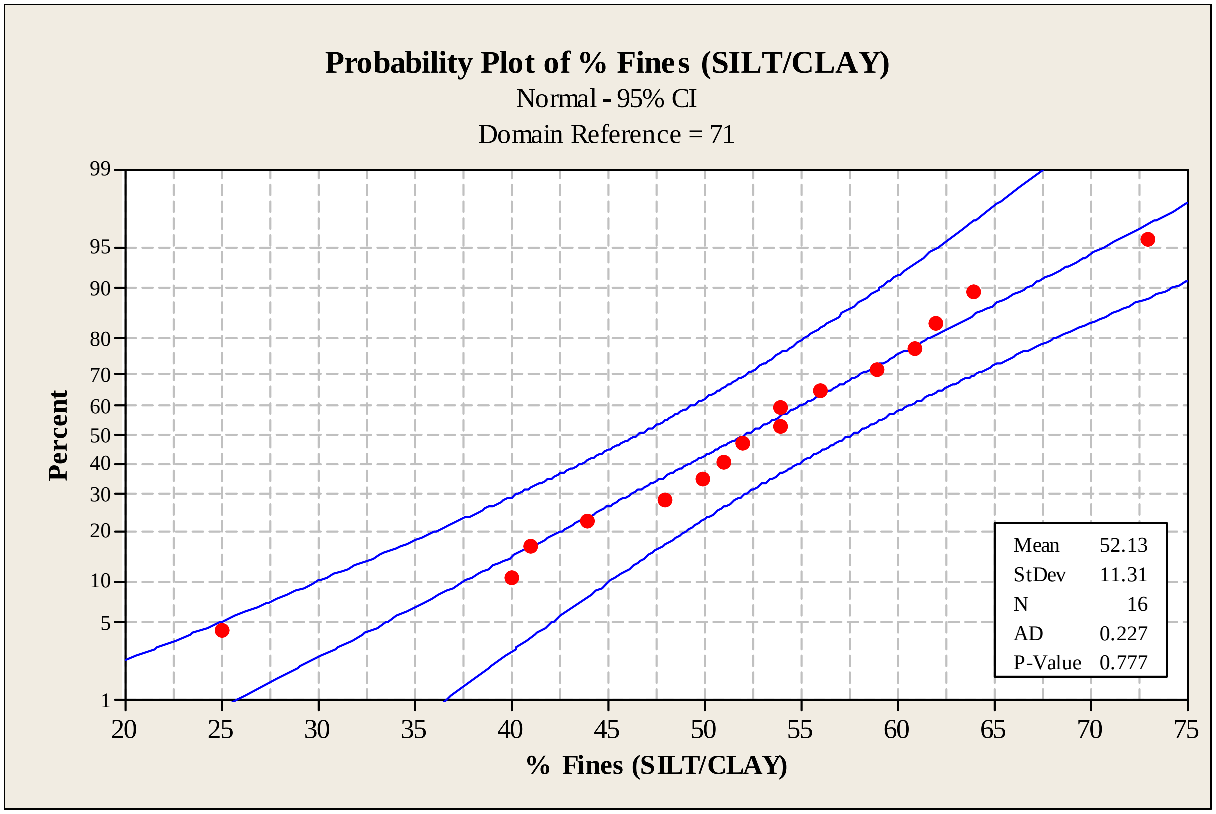


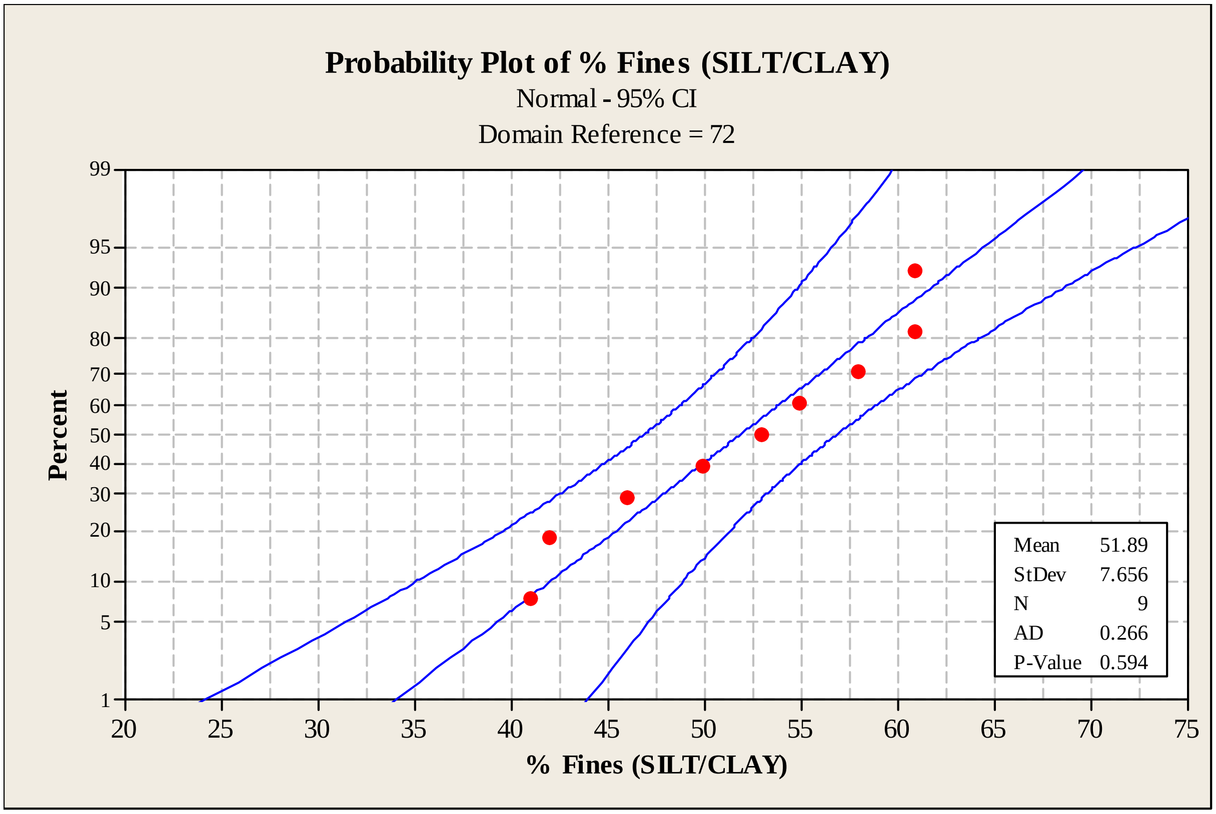
(Domain 53: insufficient data; Domain 61: no data)





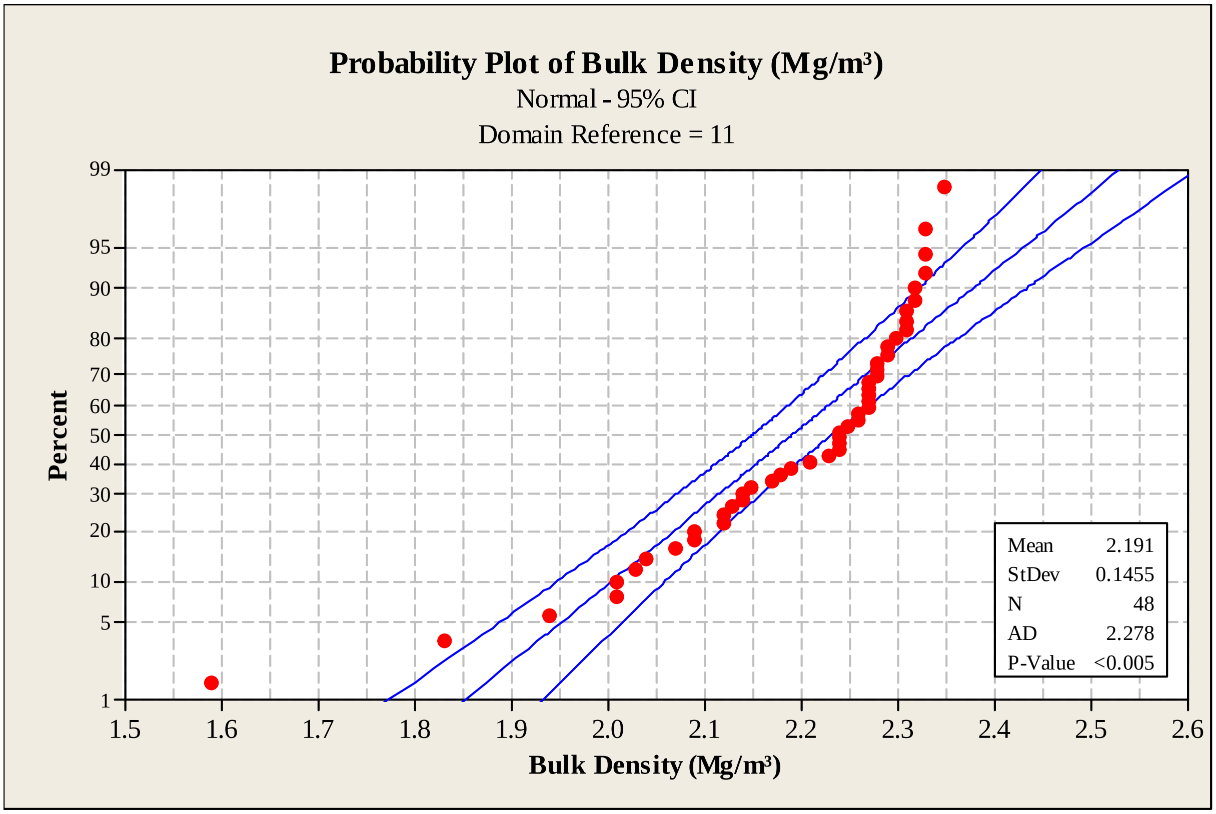
(Domains 64 and 65: insufficient data)

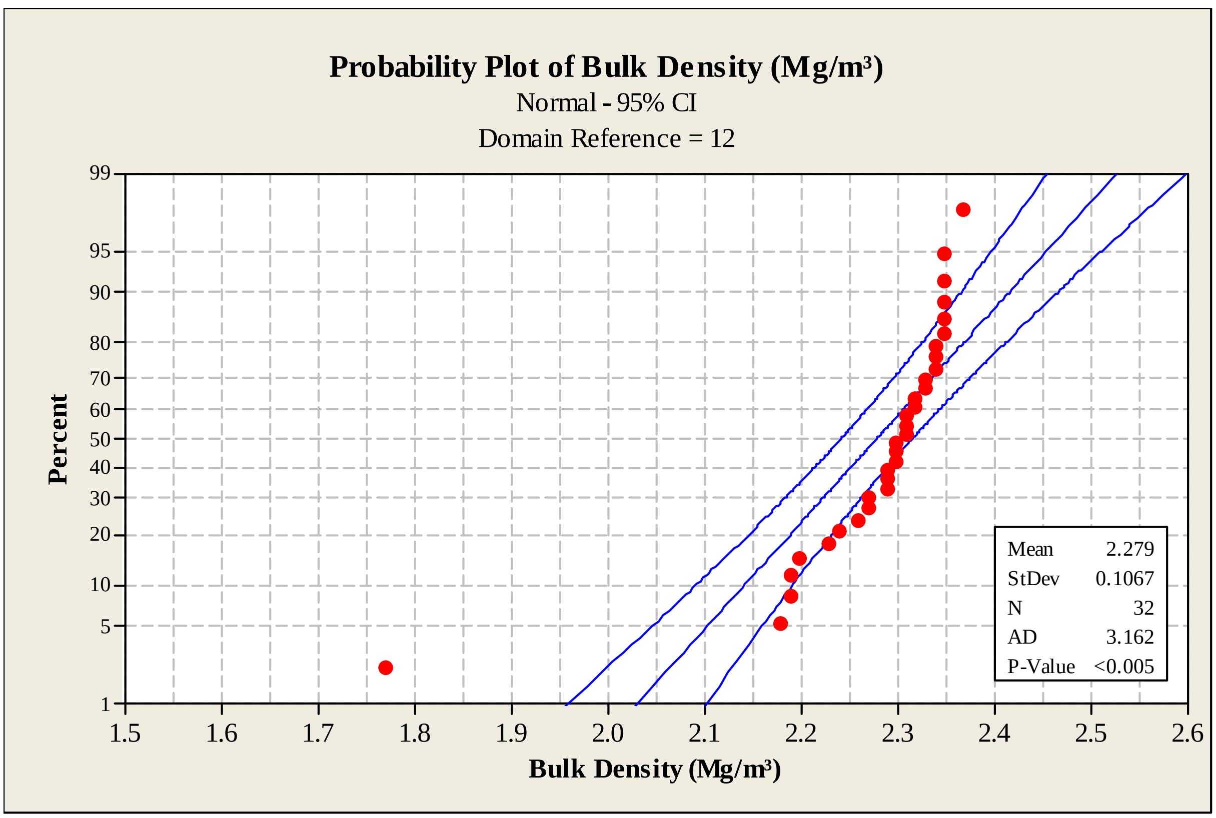




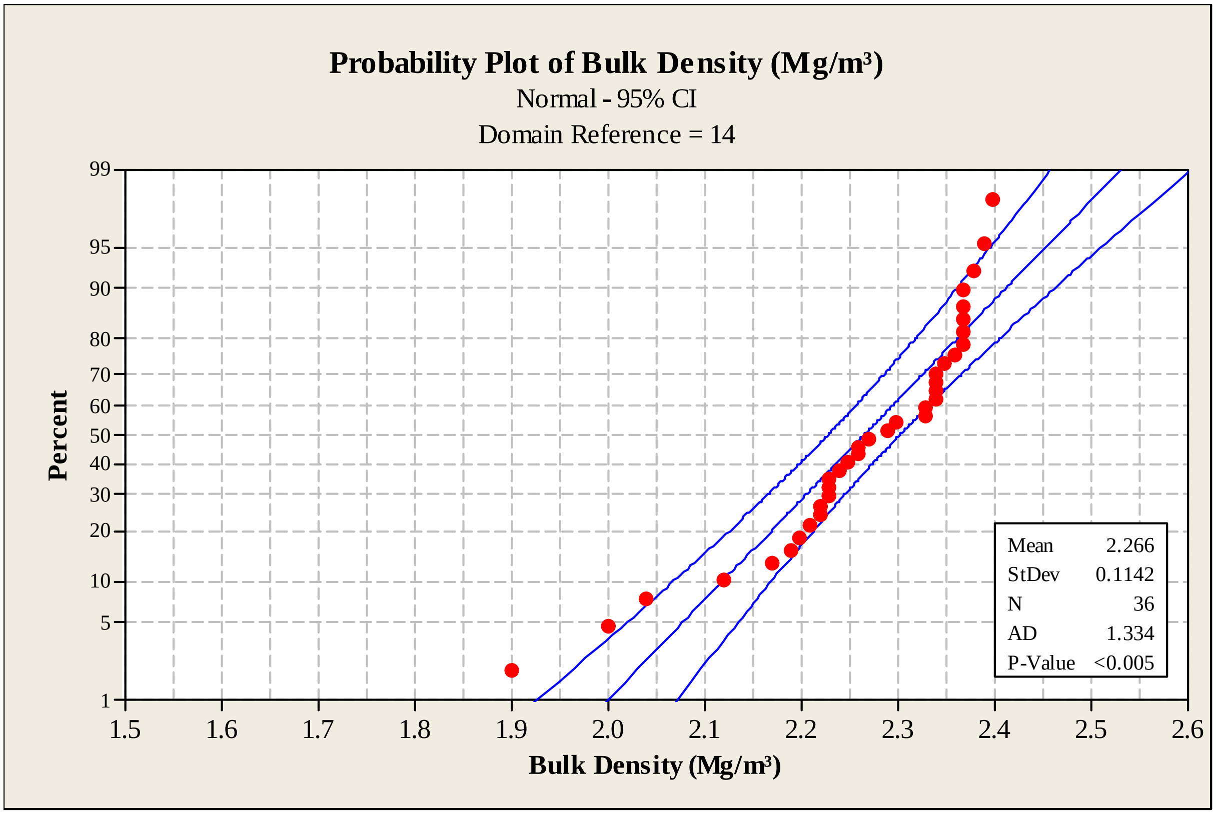
Probability Plot of % Fines (SILT/CLAY)
Normal - 95% CI
Domain Reference = 72
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
20
25
30
35
40
45
50
55
60
65
70
75
% Fines (SILT/CLAY)
Mean 51.89
StDev 7.656
N 9
AD 0.266
P-Value 0.594

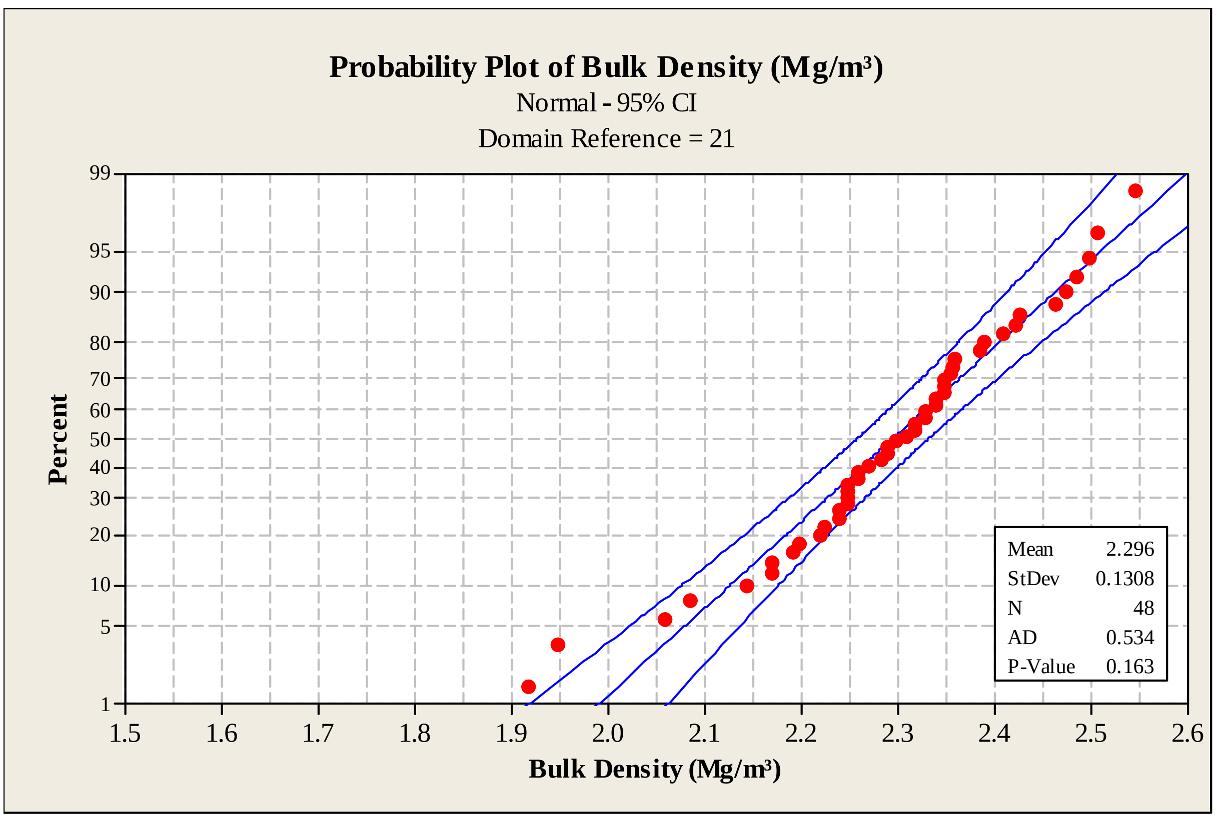
Bulk Density

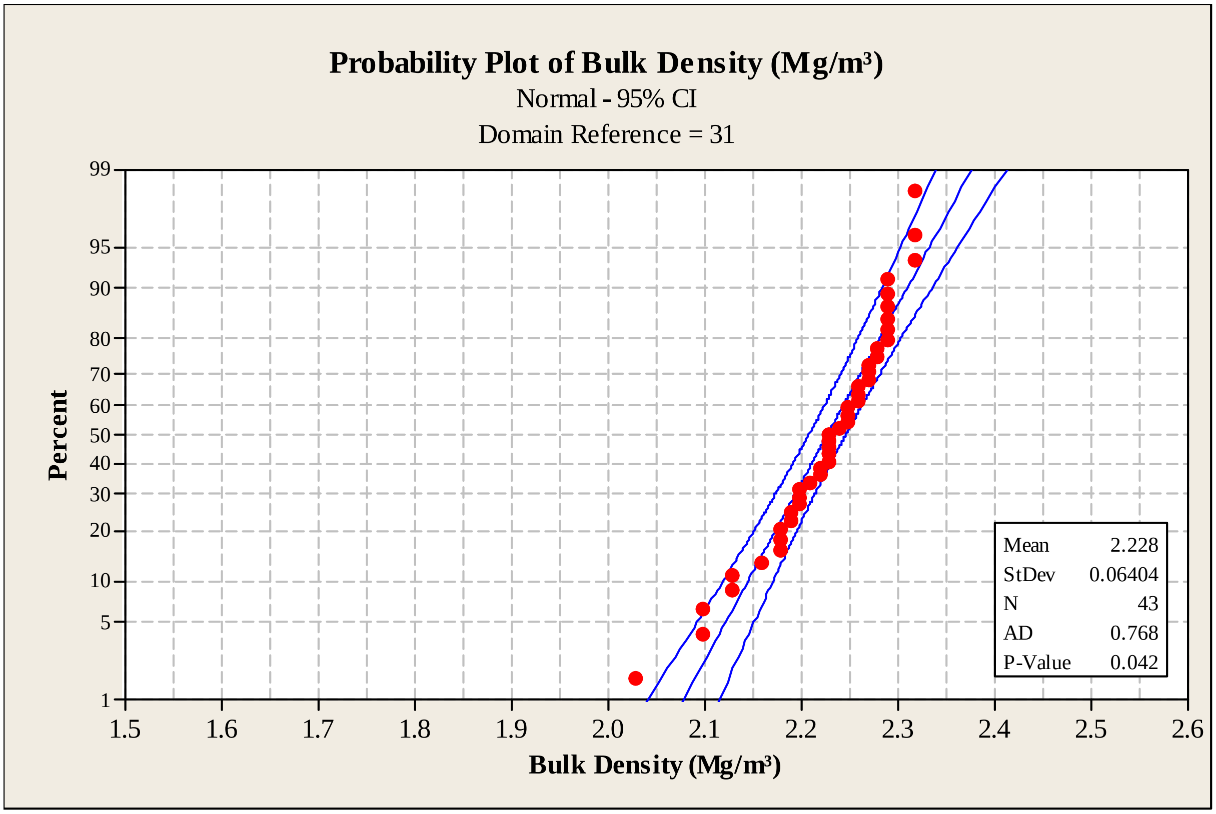


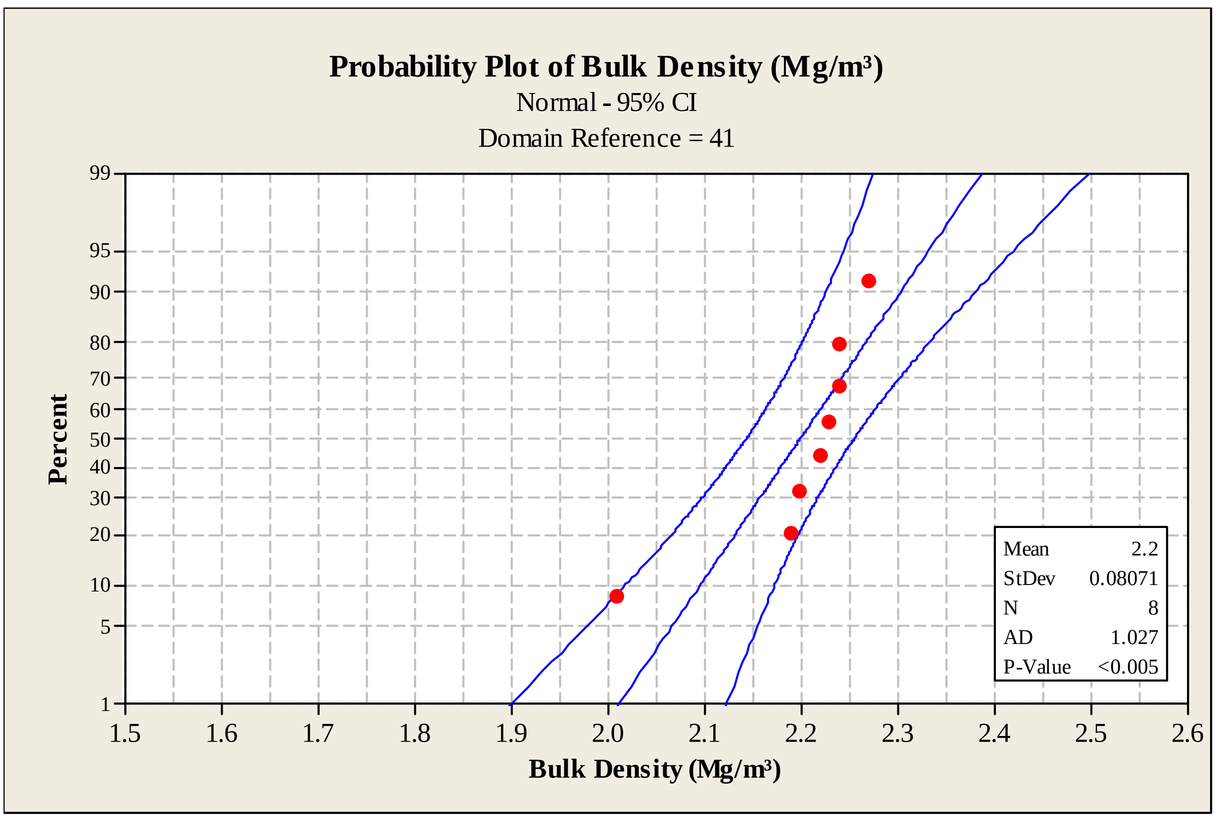


(Domain 13: insufficient data)

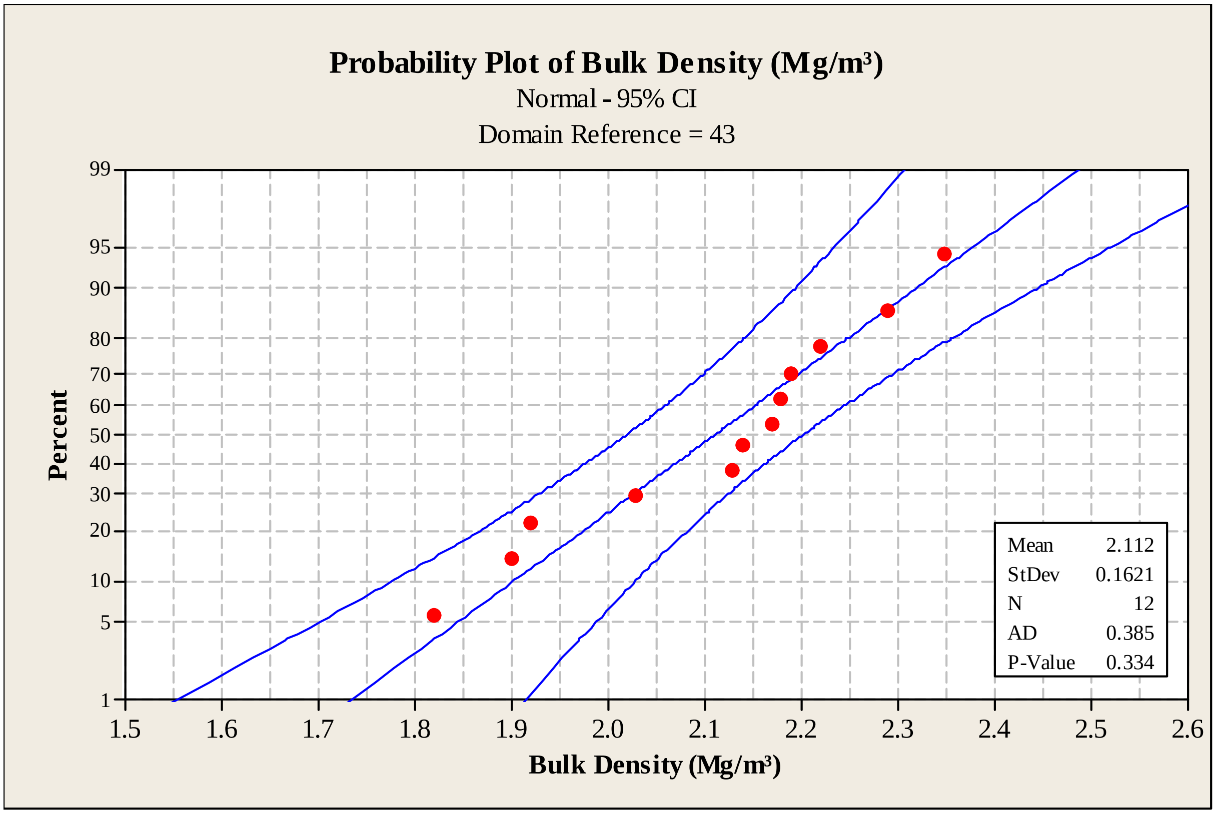




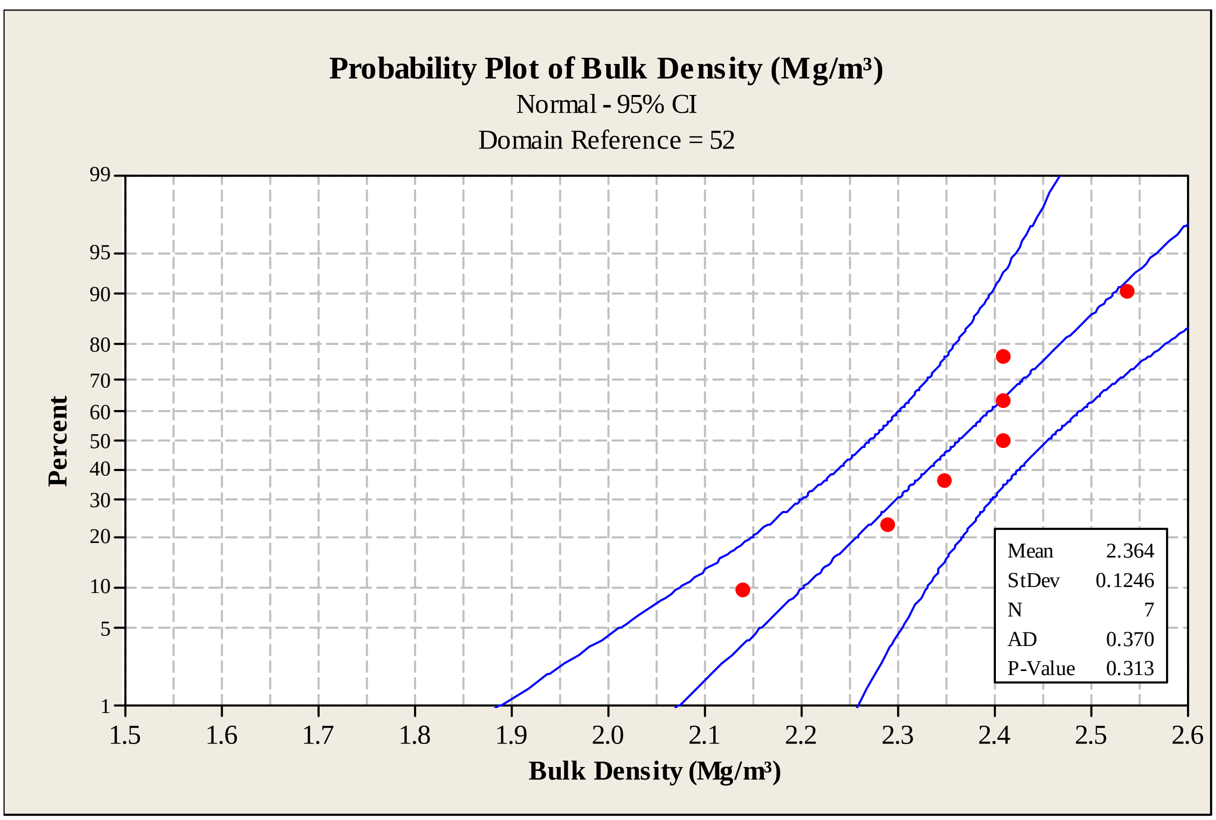


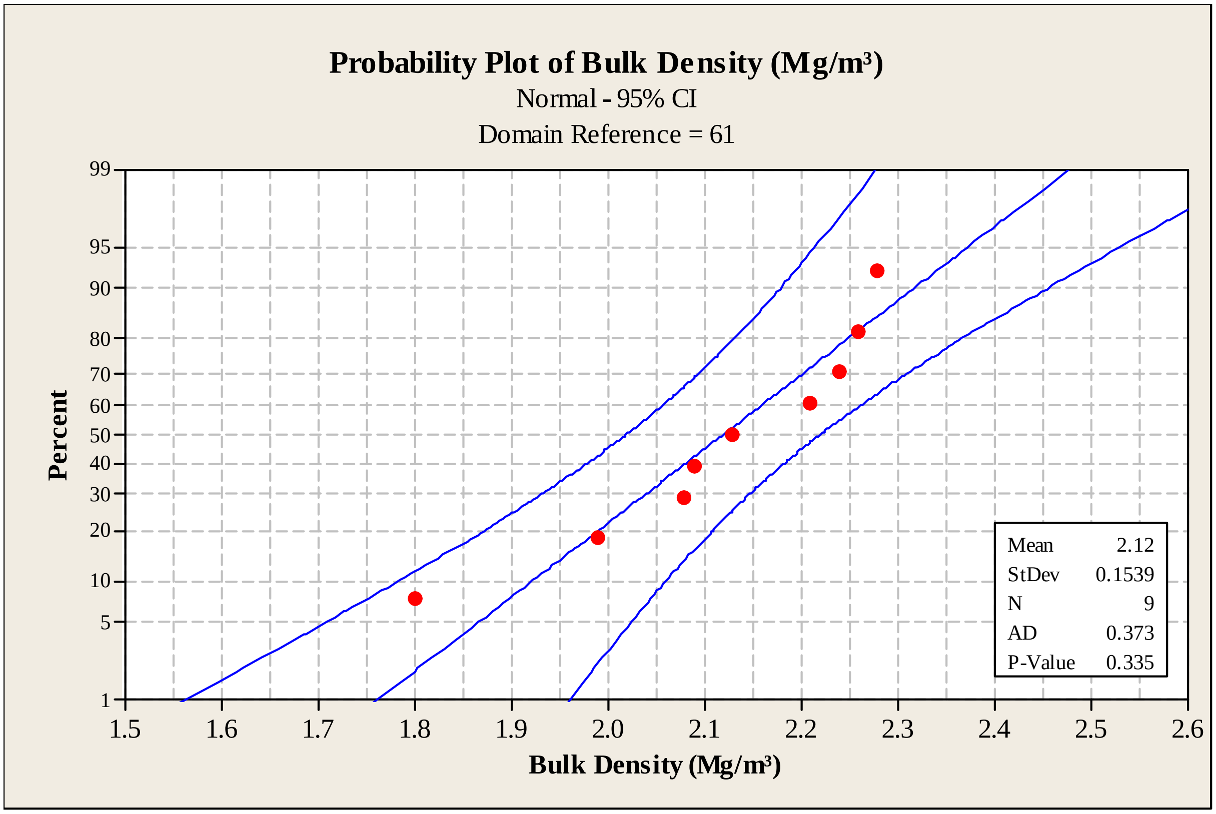


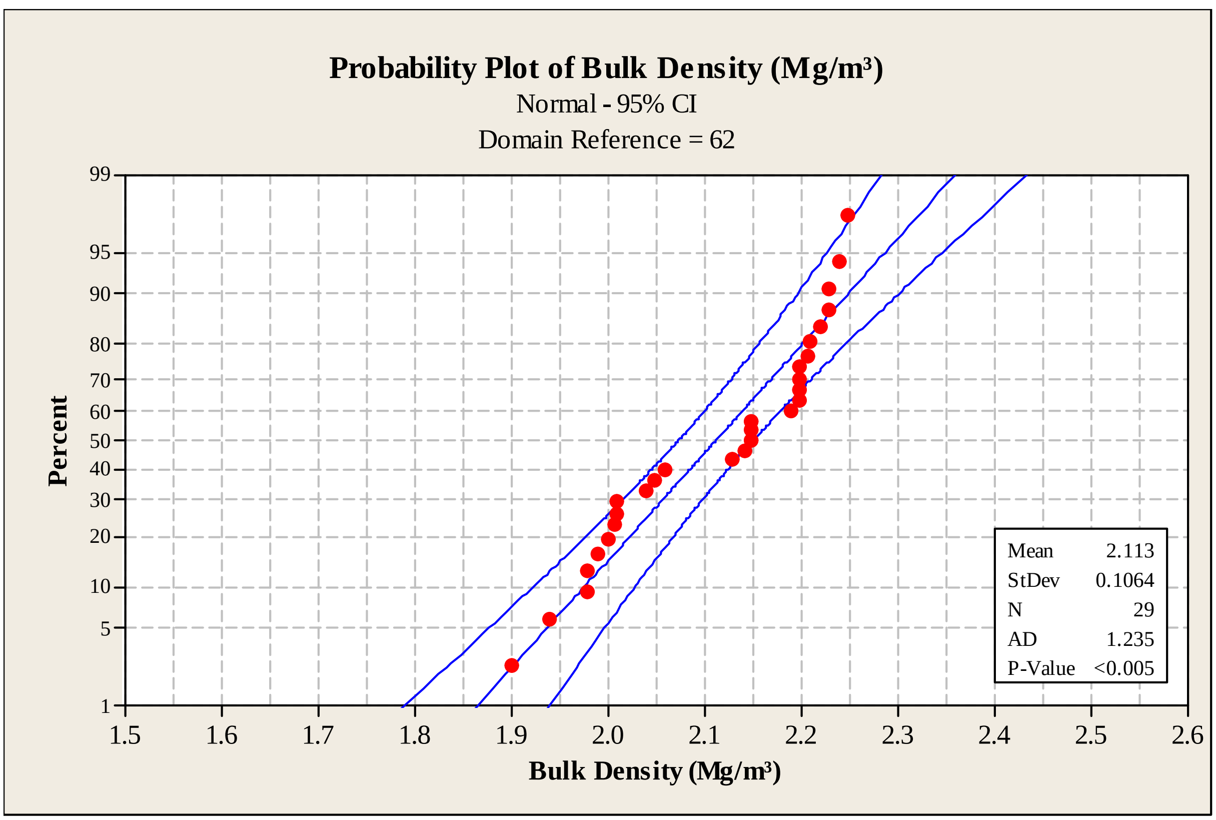
(Domain 42: no data)

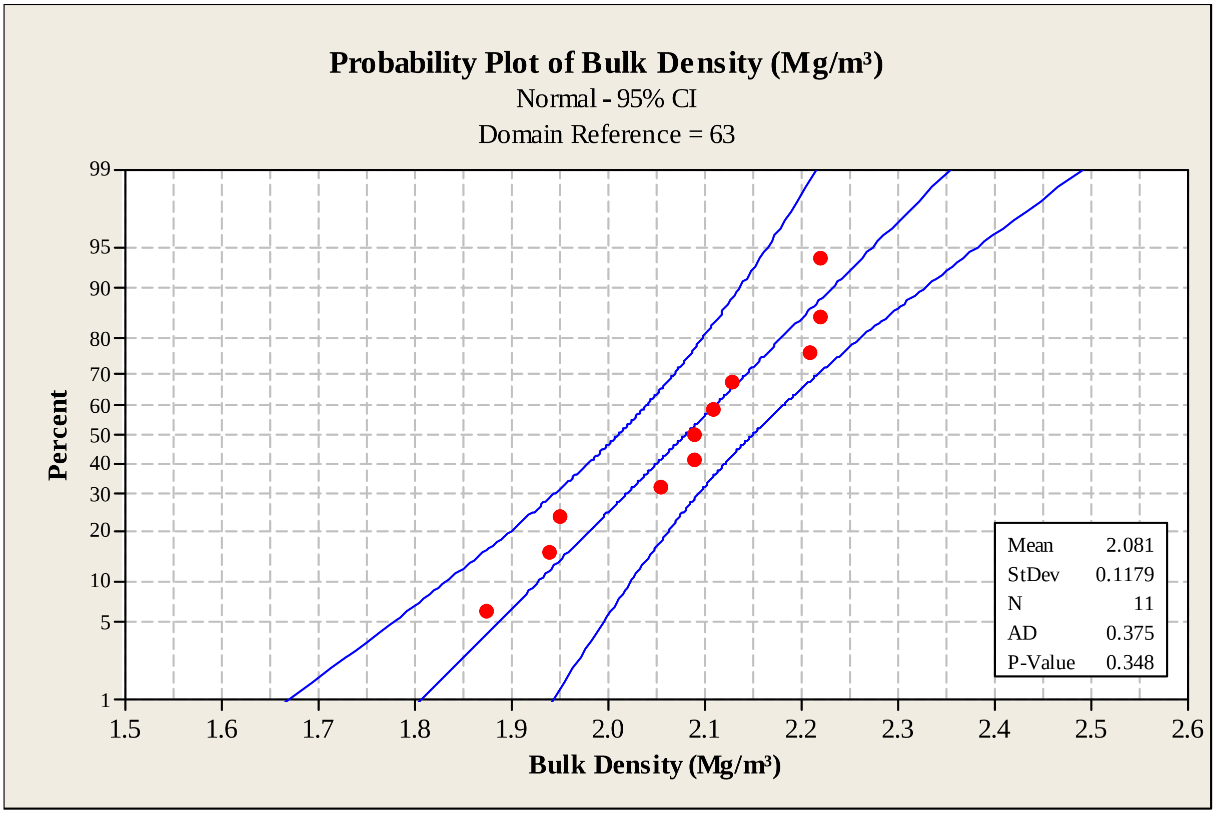


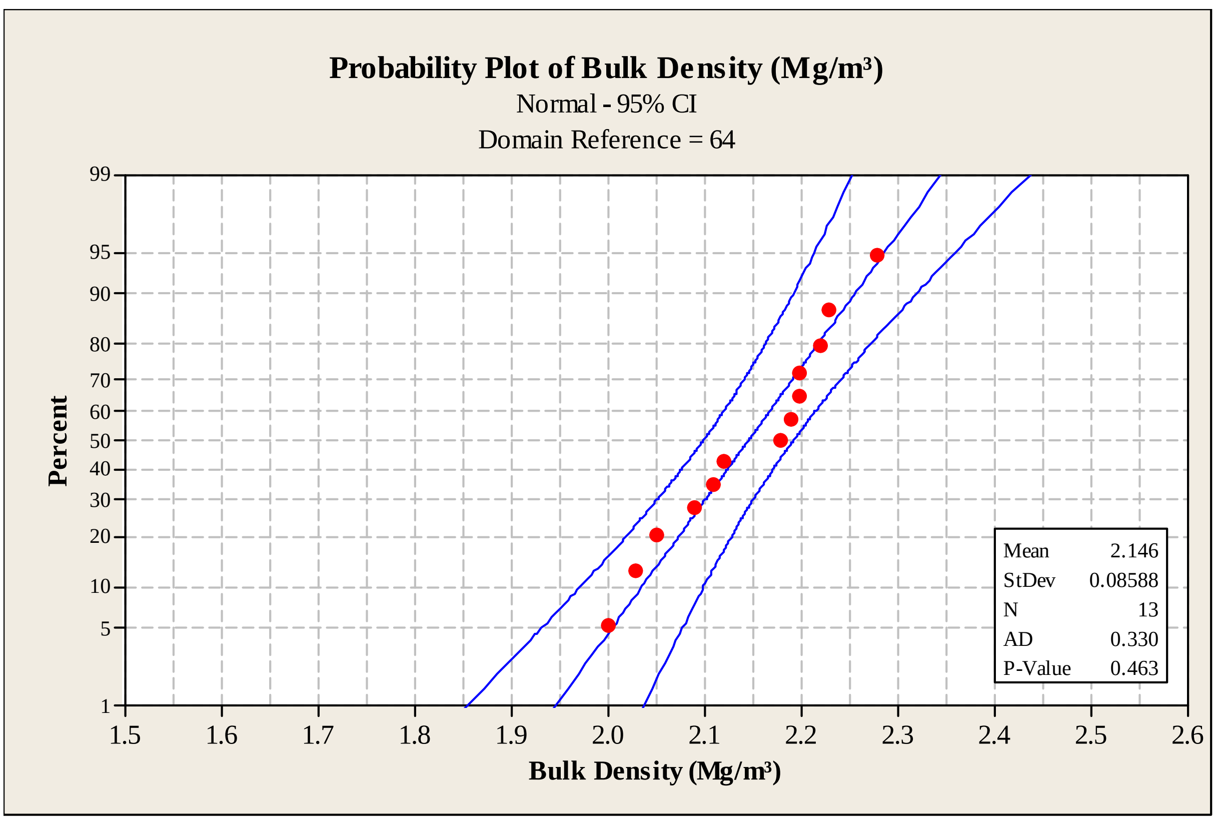
(Domain 51: insufficient data)

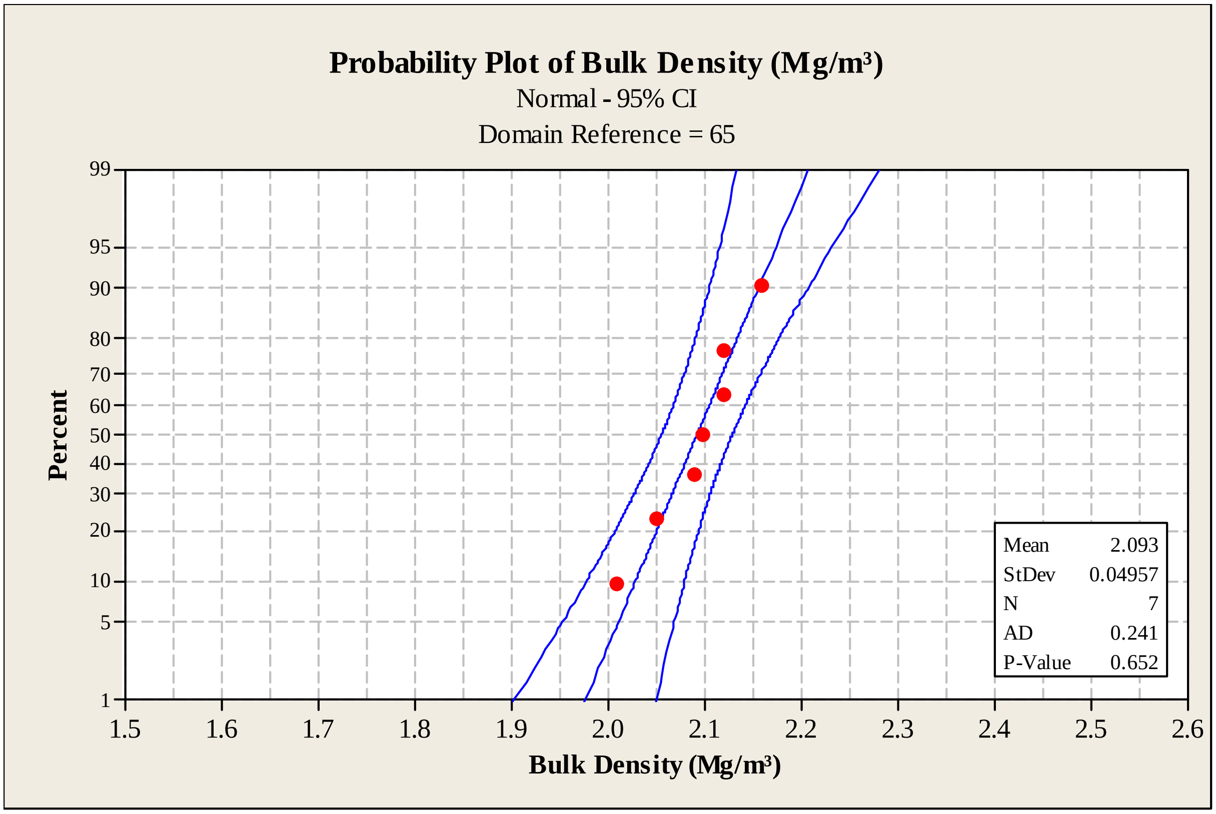


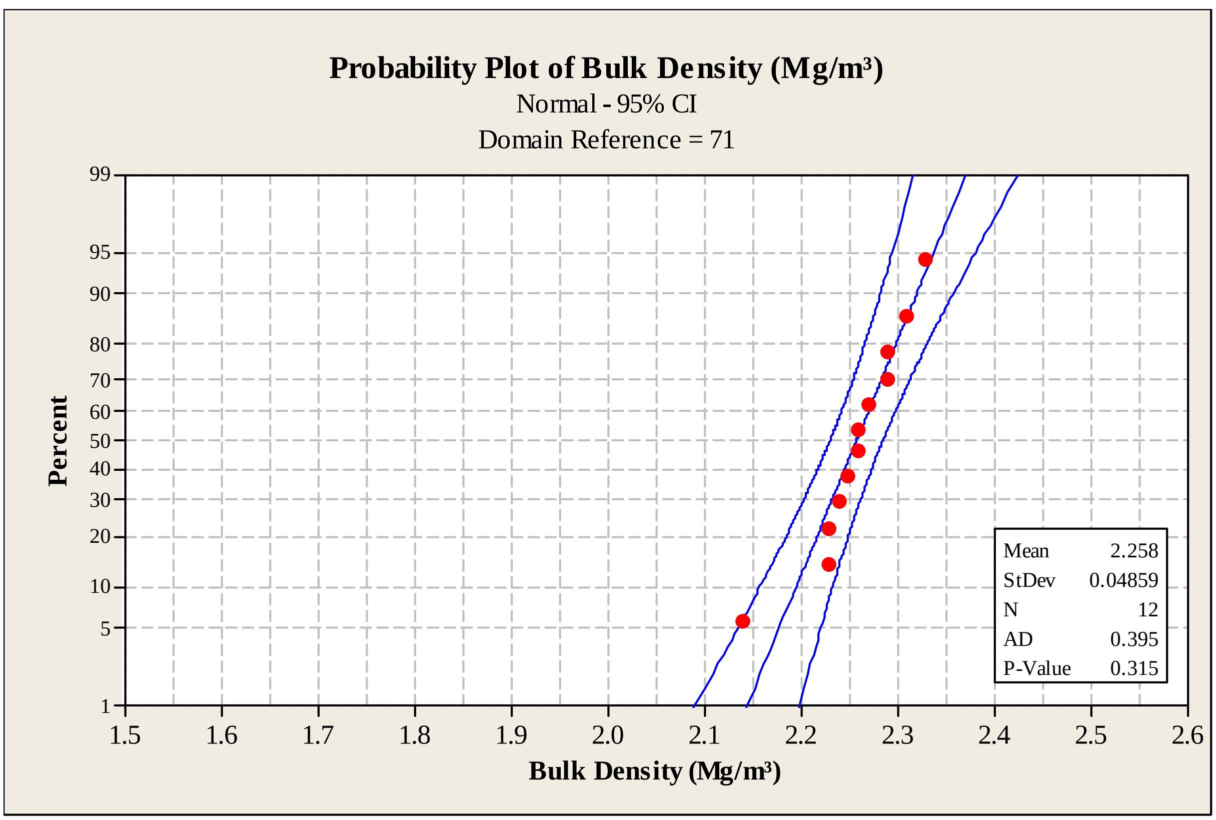

Probability Plot of Bulk Density (Mg/m³)
Normal - 95% CI
Domain Reference = 61
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
Bulk Density (Mg/m³)
Mean 2.12
StDev 0.1539
N 9
AD 0.373
P-Value 0.335

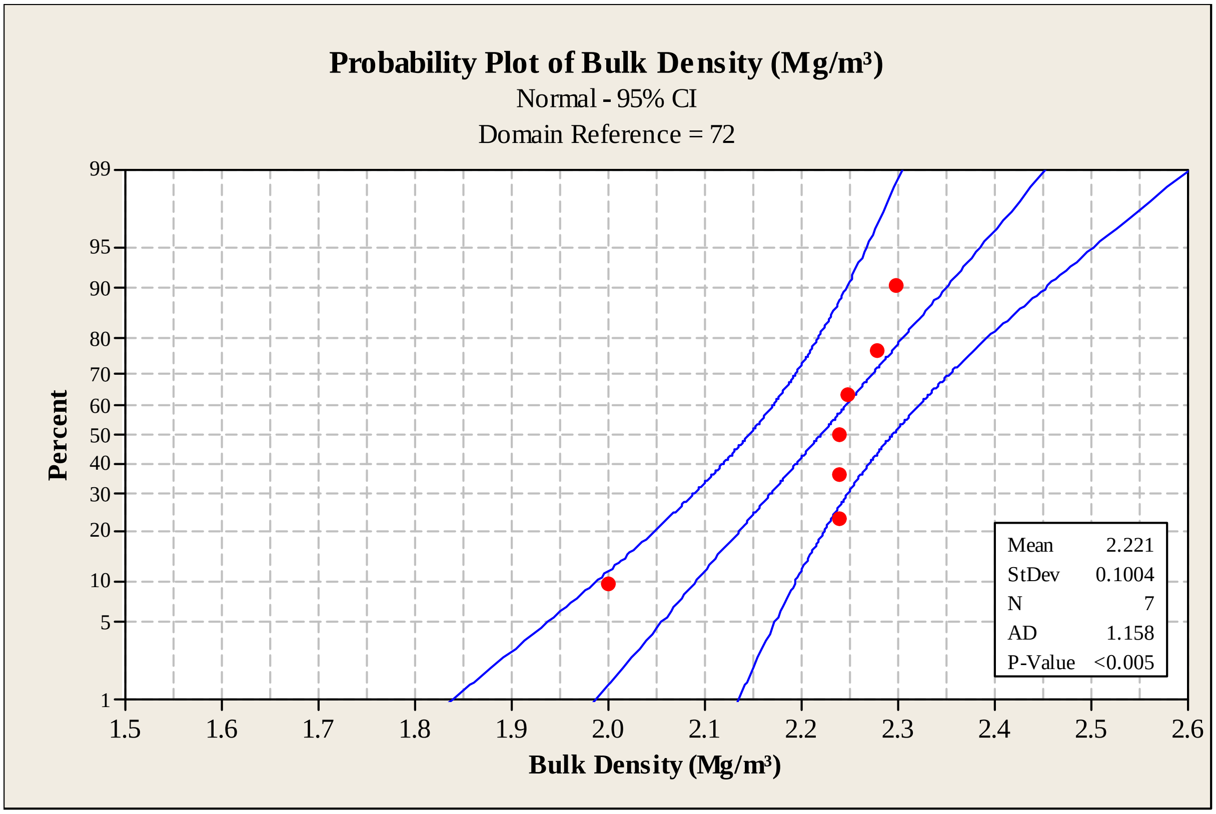

Probability Plot of Bulk Density (Mg/m³)
Normal - 95% CI
Domain Reference = 62
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
Bulk Density (Mg/m³)
Mean 2.113
StDev 0.1064
N 29
AD 1.235
P-Value <0.005


Probability Plot of Bulk Density (Mg/m³)
Normal - 95% CI
Domain Reference = 63
Percent
Bulk Density (Mg/m³)
Mean 2.081
StDev 0.1179
N 11
AD 0.375
P-Value 0.348

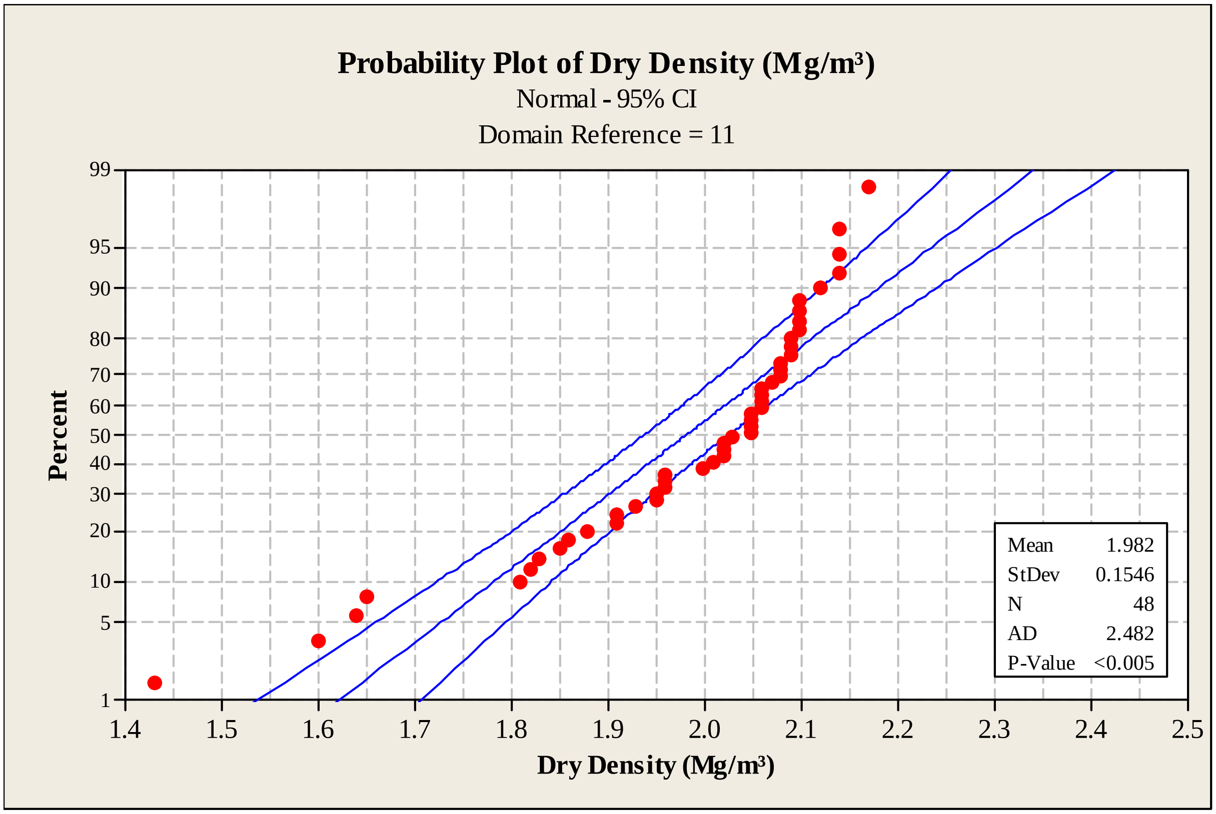

Probability Plot of Bulk Density (Mg/m³)
Normal - 95% CI
Domain Reference = 64
Percent
Bulk Density (Mg/m³)
Mean 2.146
StDev 0.08588
N 13
AD 0.330
P-Value 0.463

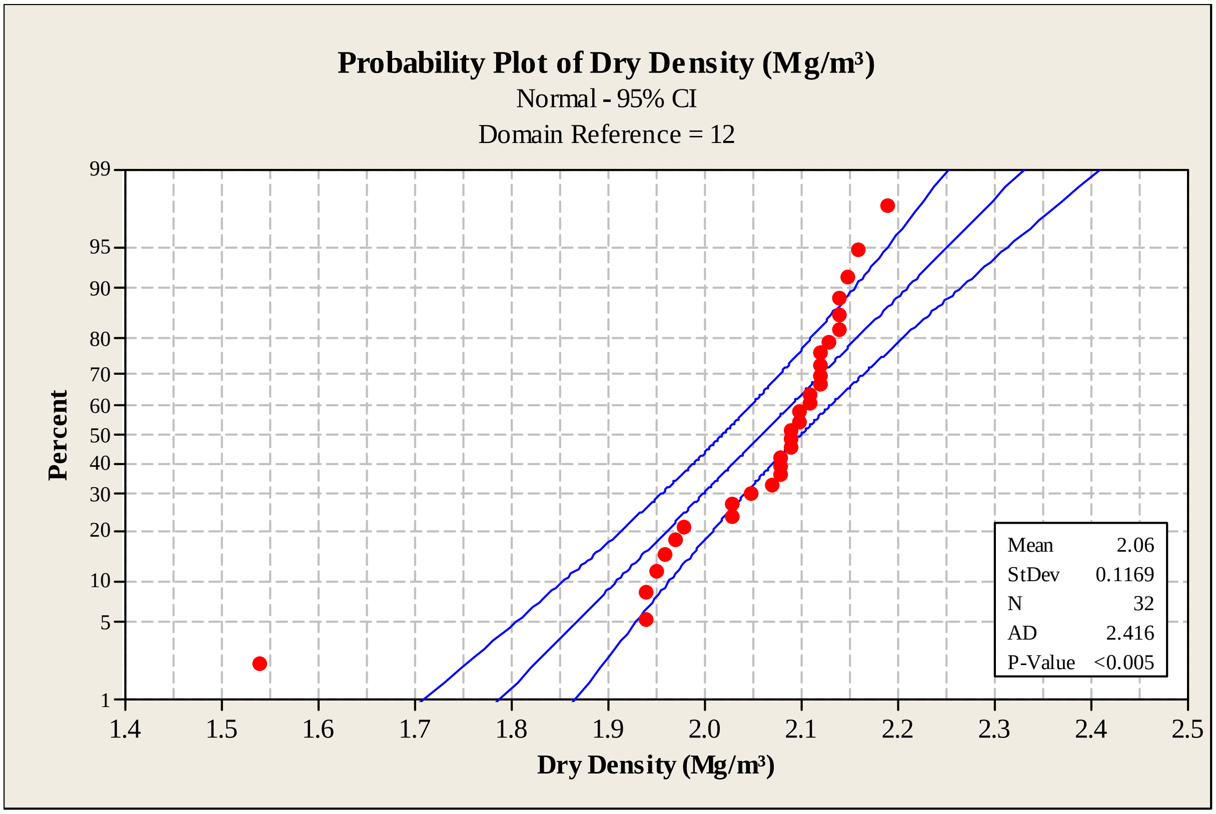

Probability Plot of Bulk Density (Mg/m³)
Normal - 95% CI
Domain Reference = 65
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
Bulk Density (Mg/m³)
Mean 2.093
StDev 0.04957
N 7
AD 0.241
P-Value 0.652


Probability Plot of Bulk Density (Mg/m³)
Normal - 95% CI
Domain Reference = 71
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
Bulk Density (Mg/m³)
Mean 2.258
StDev 0.04859
N 12
AD 0.395
P-Value 0.315

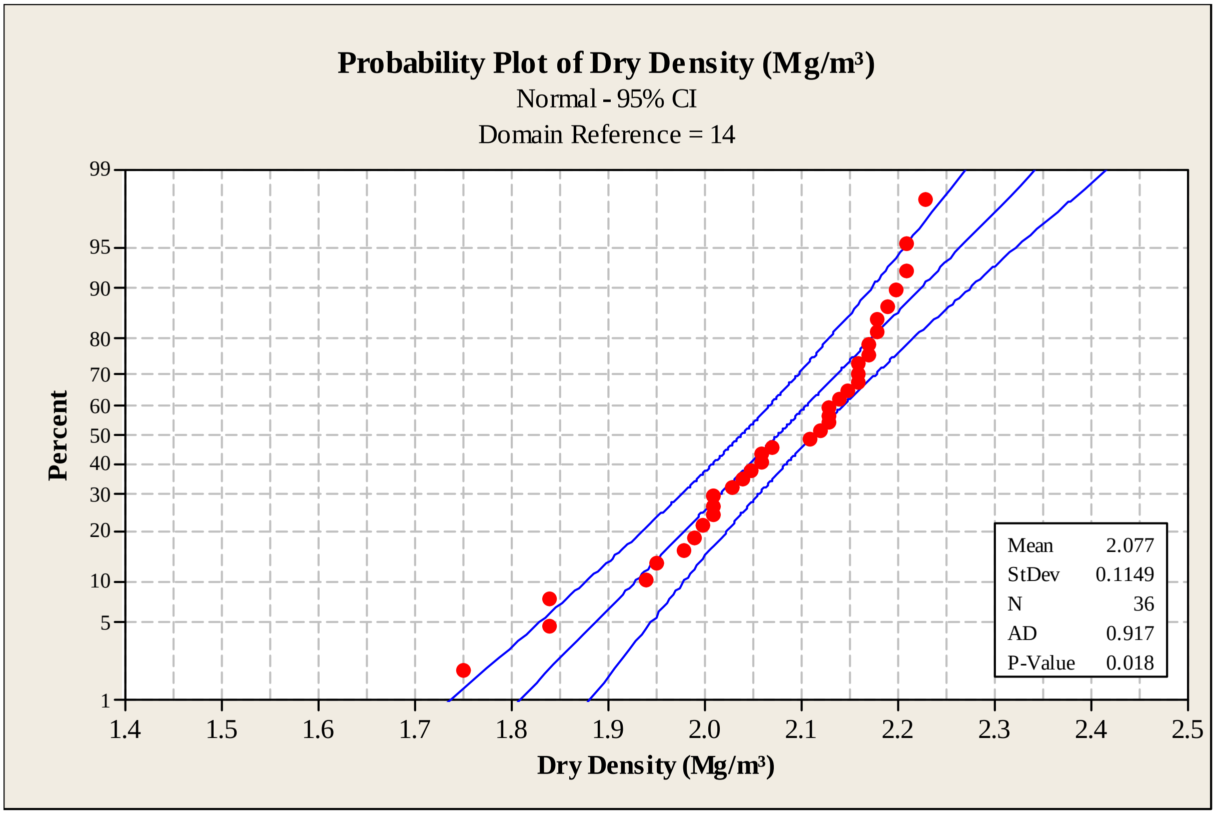

Probability Plot of Bulk Density (Mg/m³)
Normal - 95% CI
Domain Reference = 72
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
Bulk Density (Mg/m³)
Mean 2.221
StDev 0.1004
N 7
AD 1.158
P-Value <0.005

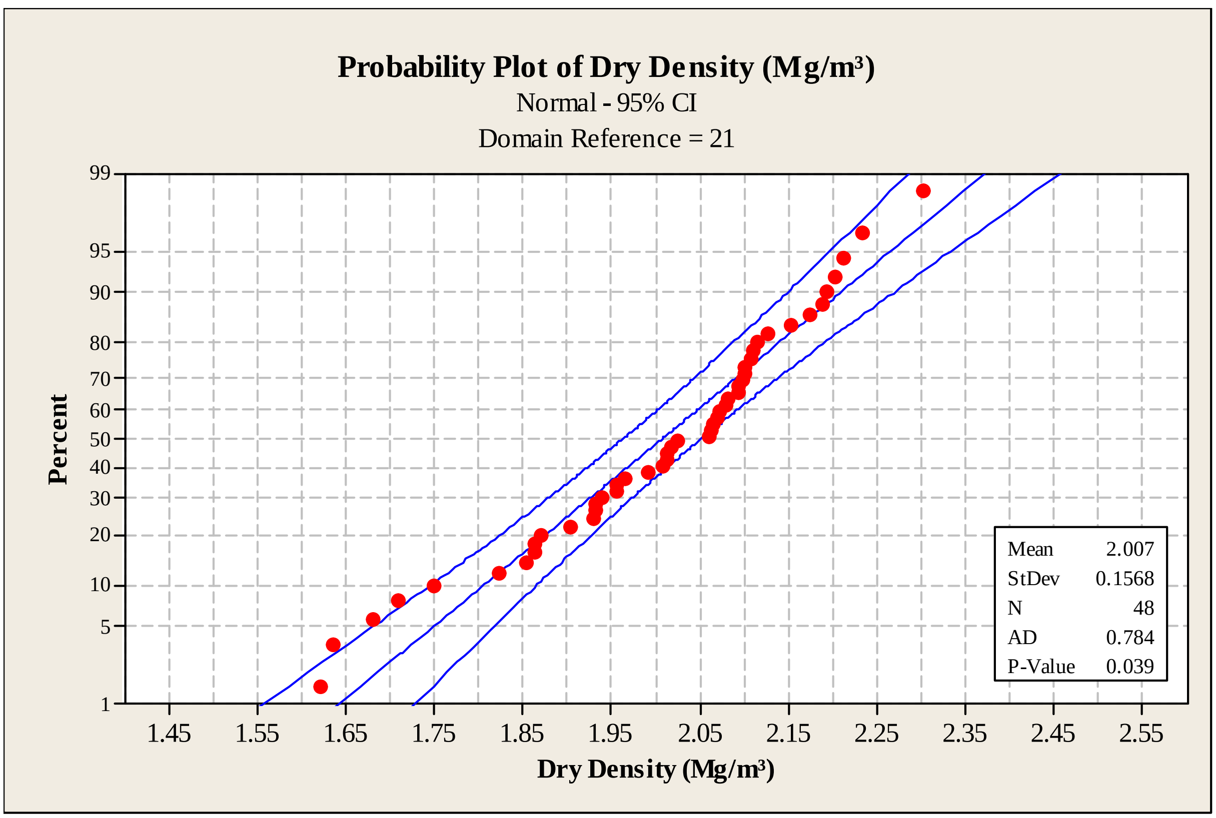
Dry Density

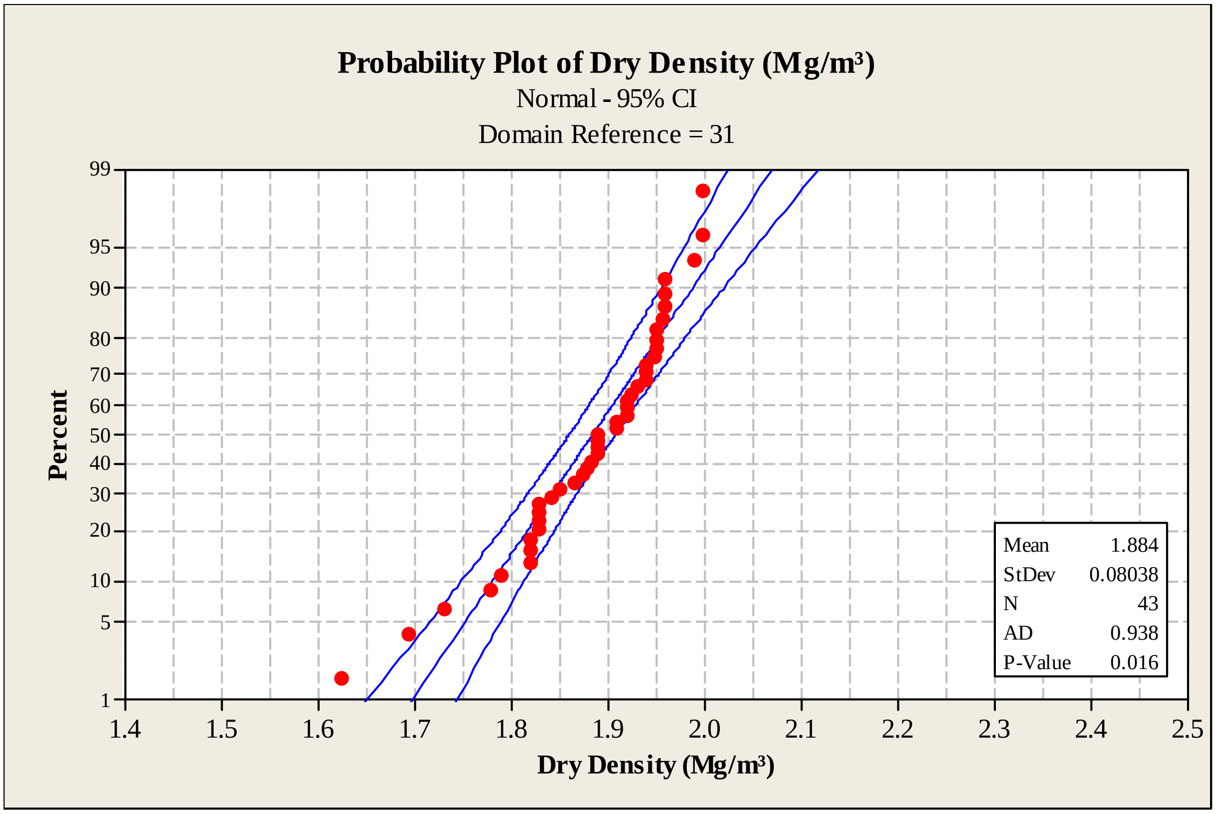

Probability Plot of Dry Density (Mg/m³)
Normal - 95% CI
Domain Reference = 11
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
Dry Density (Mg/m³)
Mean 1.982
StDev 0.1546
N 48
AD 2.482
P-Value <0.005

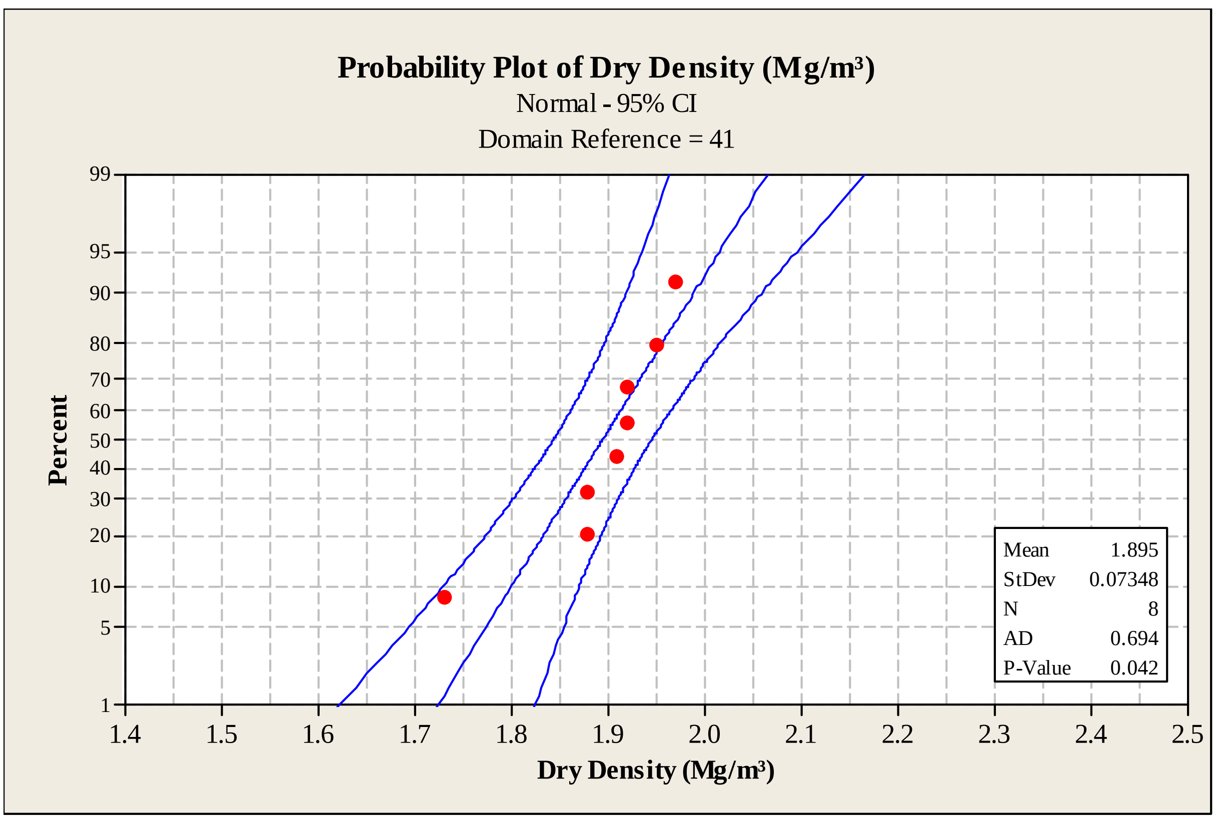

Probability Plot of Dry Density (Mg/m³)
Normal - 95% CI
Domain Reference = 12
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
Dry Density (Mg/m³)
Mean 2.06
StDev 0.1169
N 32
AD 2.416
P-Value <0.005

(Domain 13: insufficient data)

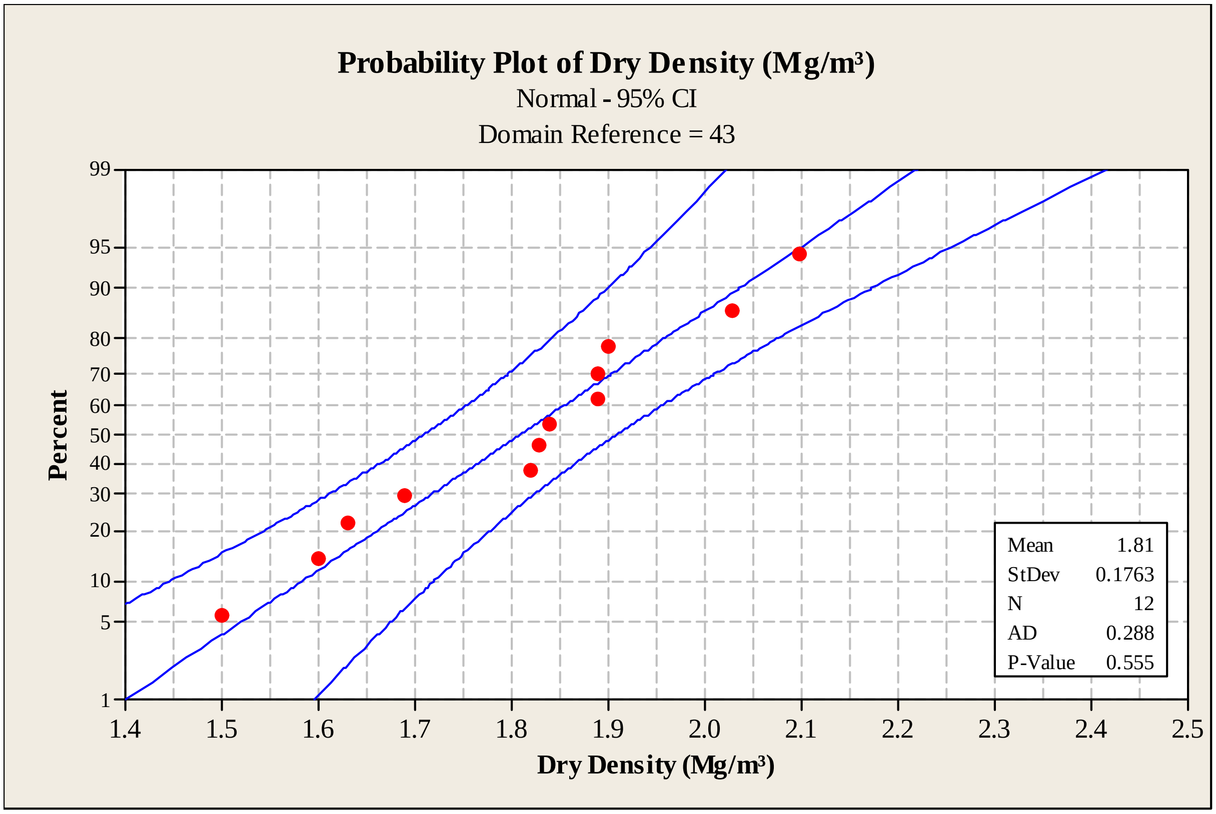




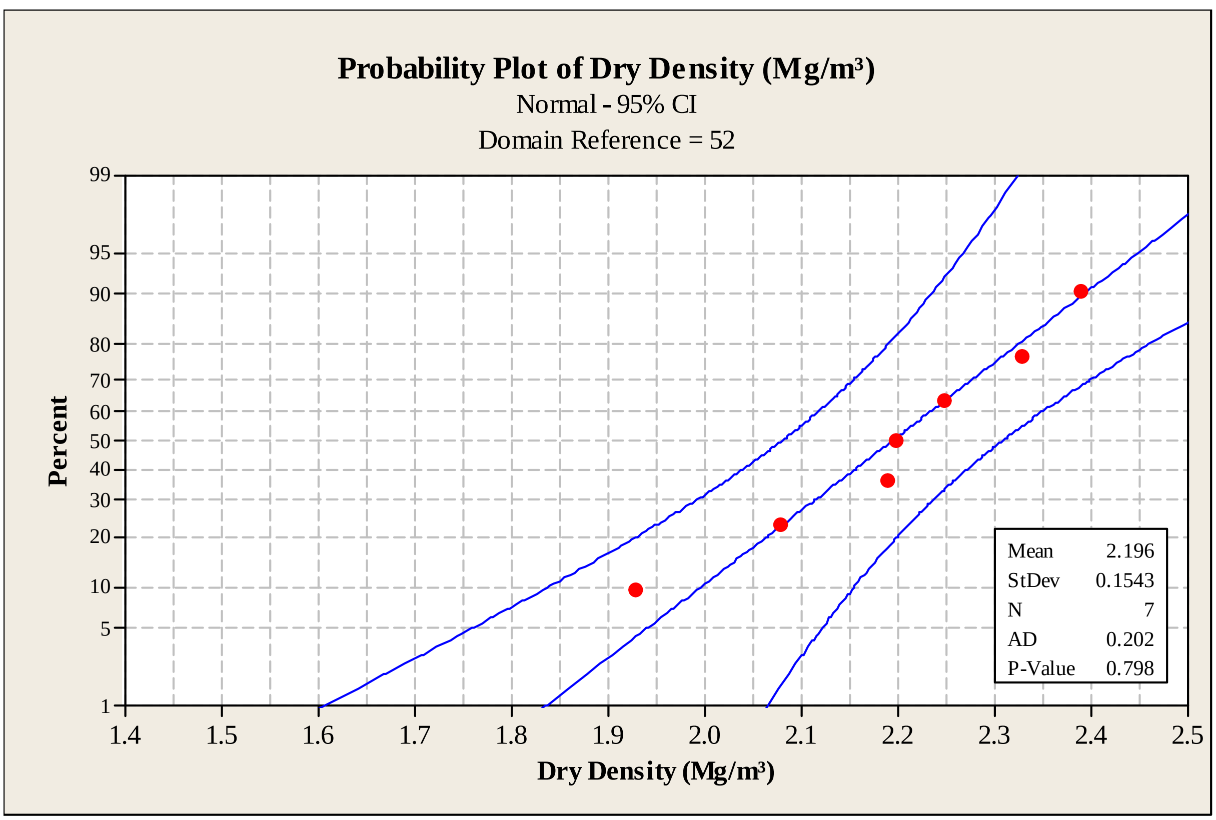




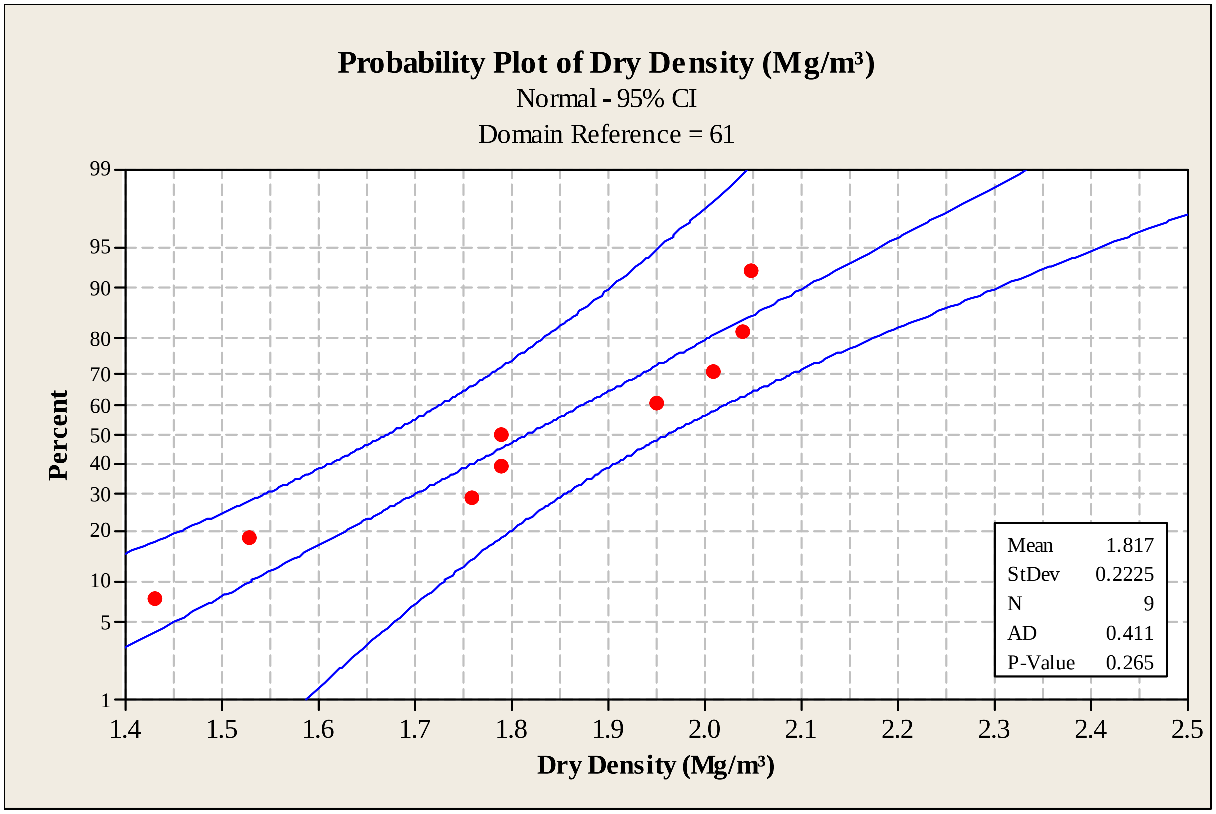
(Domain 42: no data)

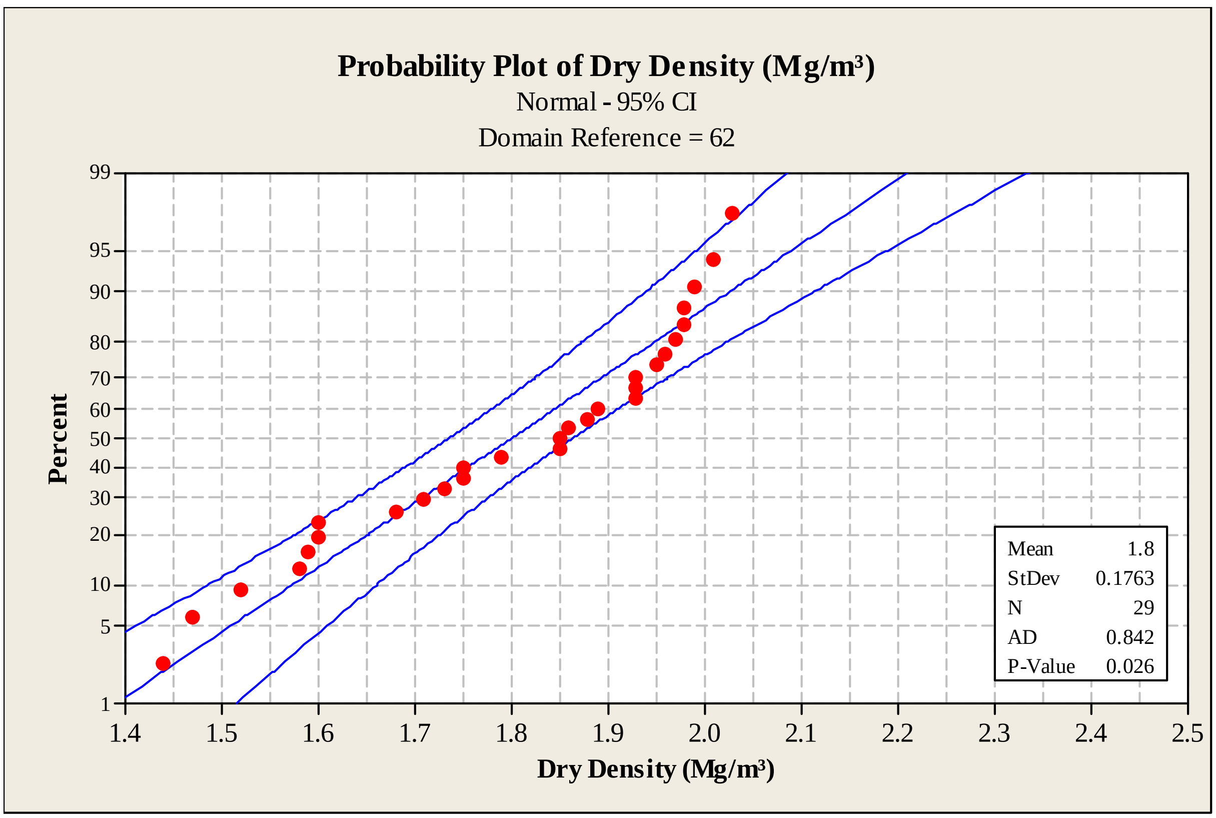


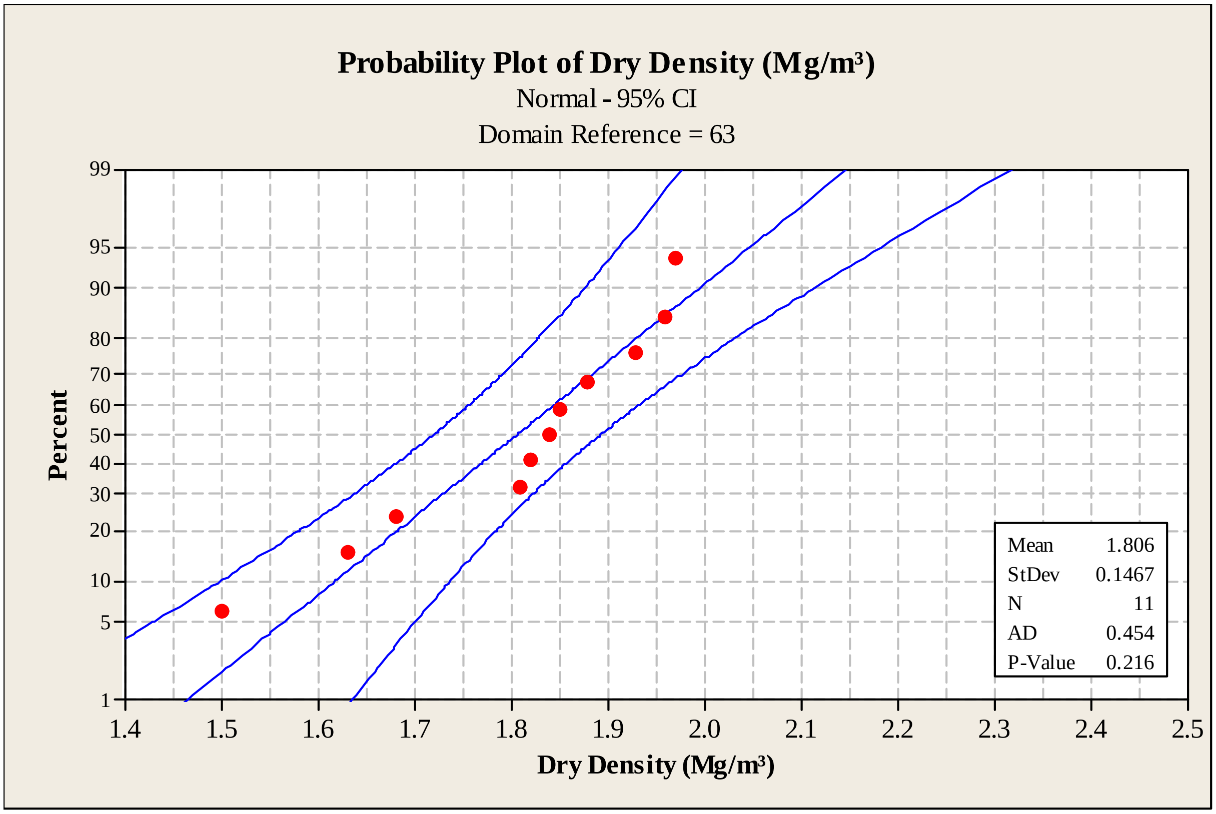
(Domain 51: insufficient data)



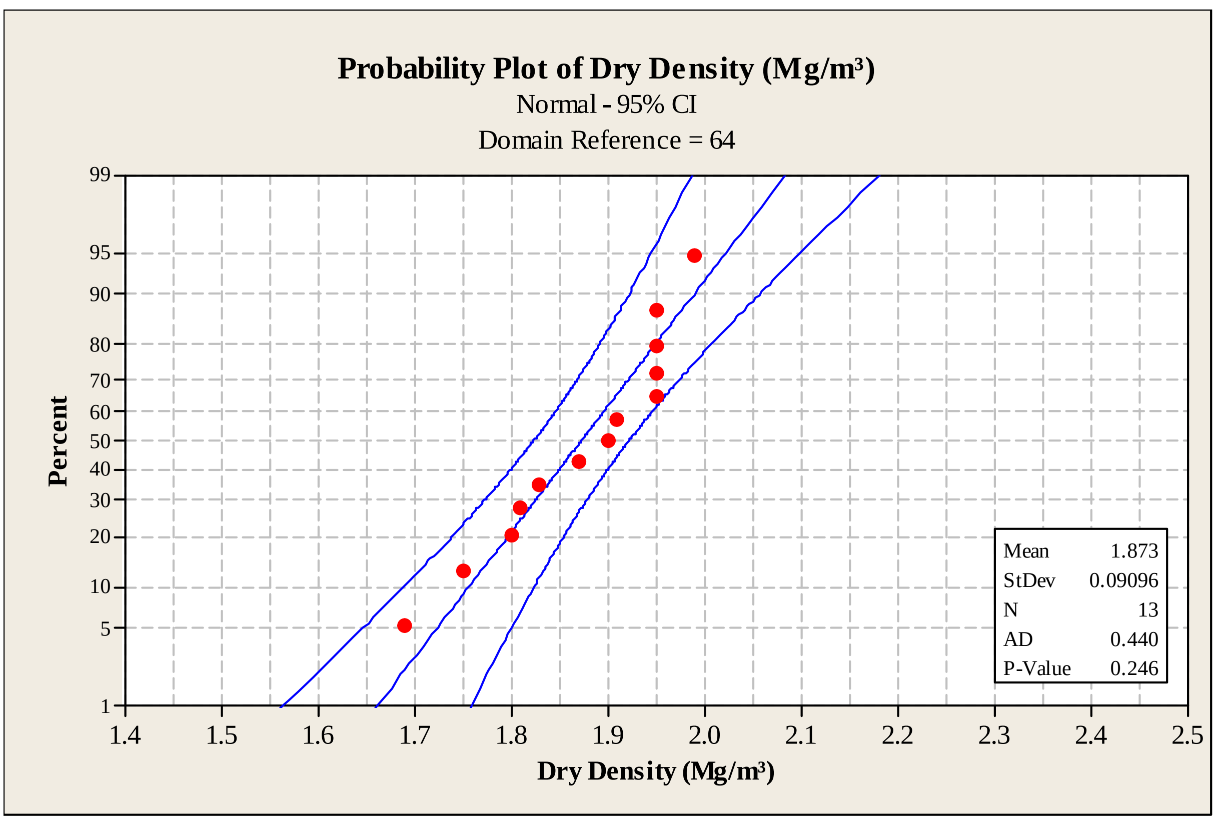
(Domain 53: insufficient data)



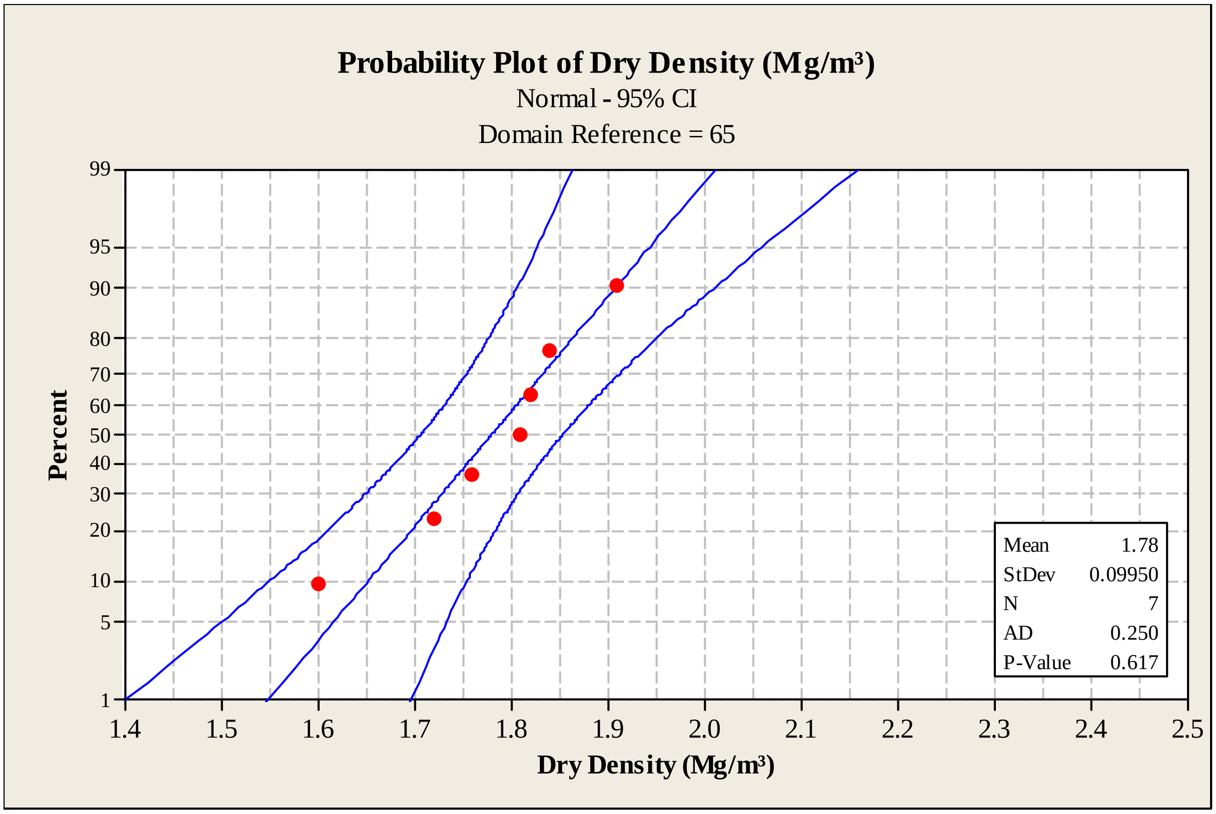


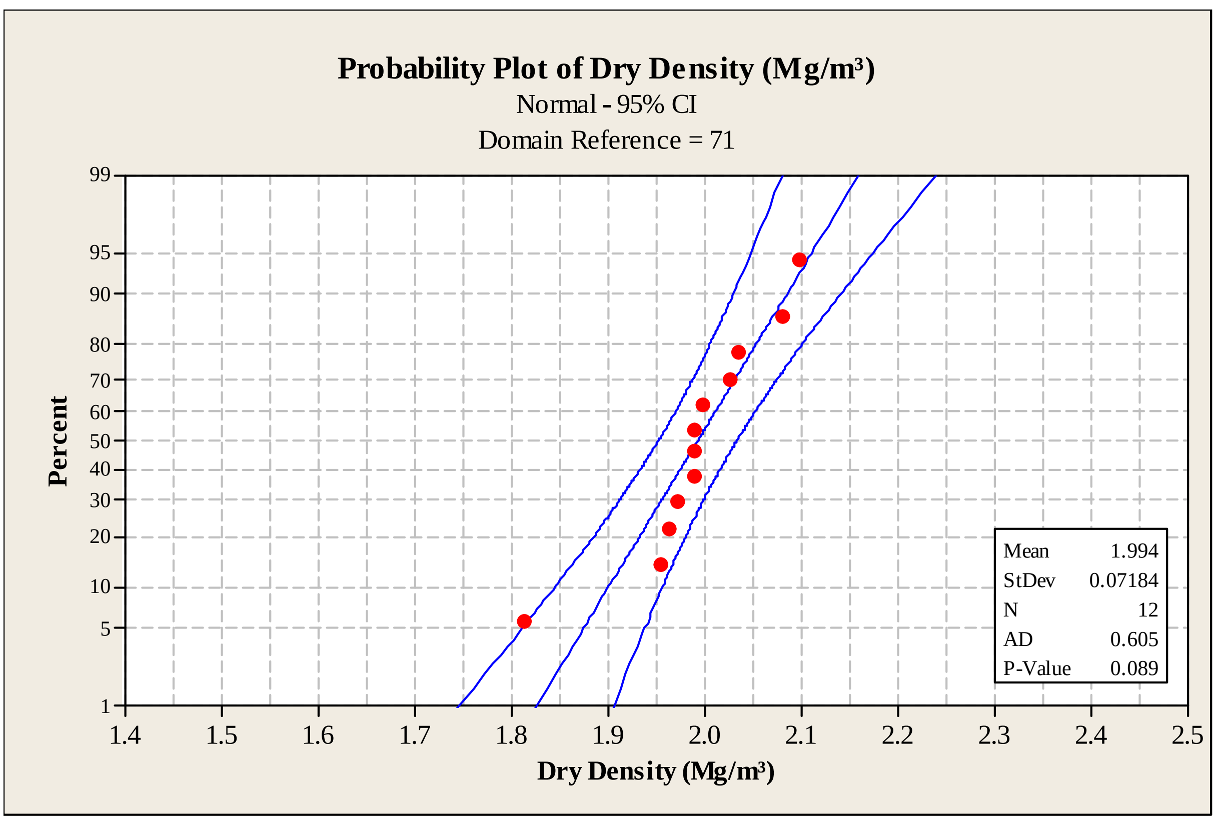


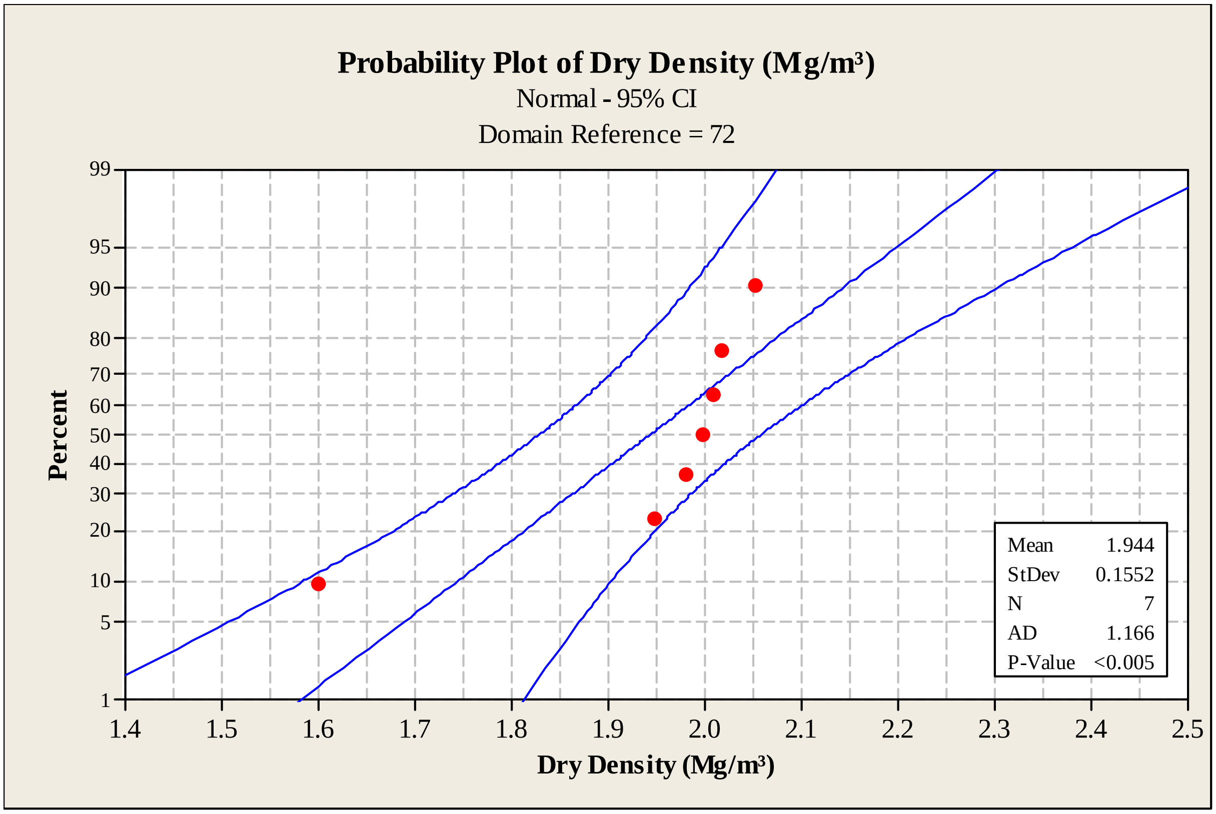
Probability Plot of Dry Density (Mg/m³)
Normal - 95% CI
Domain Reference = 63
Percent
Dry Density (Mg/m³)
Mean 1.806
StDev 0.1467
N 11
AD 0.454
P-Value 0.216



Probability Plot of Dry Density (Mg/m³)
Normal - 95% CI
Domain Reference = 64
Percent
Dry Density (Mg/m³)
Mean 1.873
StDev 0.09096
N 13
AD 0.440
P-Value 0.246


Probability Plot of Dry Density (Mg/m³)
Normal - 95% CI
Domain Reference = 65
Percent
Dry Density (Mg/m³)
Mean 1.78
StDev 0.09950
N 7
AD 0.250
P-Value 0.617


Probability Plot of Dry Density (Mg/m³)
Normal - 95% CI
Domain Reference = 71
Percent
Dry Density (Mg/m³)
Mean 1.994
StDev 0.07184
N 12
AD 0.605
P-Value 0.089



Probability Plot of Dry Density (Mg/m³)
Normal - 95% CI
Domain Reference = 72
Percent
Dry Density (Mg/m³)
99
95
90
80
70
60
50
40
30
20
10
5
1
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
Mean 1.944
StDev 0.1552
N 7
AD 1.166
P-Value <0.005

Appendix C.4: Stem and leaf plots for all data by Domain and soil type

Appendix C.4: Stem-and-Leaf Displays

In order to provide a degree of anonymity for the commercial information used in the research, a series of 'stem-and-leaf' displays prepared using Minitab® are used to describe the data, and to enable reconstruction of the data sets. The data is first subdivided by soil type (upper and lower till, silty till and hillwash), then by parameter, then each parameter type is subdivided into parcels of data from each Domain.

Each parcel of data in the following displays is constructed in the same manner. A header table defines the Domain reference from which the data is drawn (row 1), the data count N (row 2), and the unit size of each 'leaf' (row 3). Then follow three columns, these being the count, the 'stem' and the 'leaves'. The 'stem' and each individual 'leaf' represent a single data point, with the 'leaf' being the rightmost digit of the data value, and the 'stem' being the remaining digits to the left of the data value.

Header data

```
Domain Reference = 43
N  = 7
Leaf Unit = 1.0

 1   2  6         Data value 26
 1   3            (blank data 30-35)
 2   3  8         Data value 38
(4)  4  0134      Data values 40,41,43,44
 1   4            (blank data 45-49)
 1   5            (blank data 50-54)
 1   5  5         Data value 55
```

Median lies on this line of data

Data count (Cumulative)

The first column is the cumulative count of data points in each row as follows: the count for the row containing the median value is highlighted using parentheses; the count for a row above the median represents the total count for that row and all the rows above it, and the count for a row below the median represents the total count for that row and all the rows below it. Each row forms a 'branch' of data, analogous to a histogram bin width.

The second (middle) column is the 'stem'. The stem value represents all the digits to the left of the 'leaf' digit. To determine the value of the stem, multiply it by ten times the 'leaf unit'; thus for a leaf unit of 1.0 this column would represent tens of units.

The third and final column contains the 'leaf' values: the 'leaf unit' is the multiplication factor to apply to each of the 'leaves'. Each single digit in the leaf column represents the rightmost digit from a single observation. Every data value from the set is included, so the column width varies depending upon the number of data points represented on each 'branch'.

The resulting display of three columns takes the appearance of a histogram turned through 90 degrees with the data values encoded, the stem representing the 'bin' widths and the stacked leaves being the bar heights.

Results for: Upper Till

Stem-and-Leaf Displays: w (%)

```
Domain Reference = 11
N  = 32
Leaf Unit = 1.0

 10   0  6778888999
(15)  1  001111122223344
 7    1  69
 5    2  0123
 1    2  8


Domain Reference = 12
N  = 9
Leaf Unit = 1.0

 1   0  9
 4   1  334
(3)  1  568
 2   2  22


Domain Reference = 13
N  = 2
Leaf Unit = 1.0

(2)  1  24


Domain Reference = 14
N  = 49
Leaf Unit = 1.0

(30)  0  777888888888889999999999999999
 19   1  0112234
 12   1  55567889
 4    2  1334


Domain Reference = 21
N  = 4
Leaf Unit = 1.0

 2  1  33
 2  1  8
 1  2
 1  2  7


Domain Reference = 31
N  = 52
Leaf Unit = 1.0

 1    1  3
(27)  1  555666666777777888889999999
 24   2  000000000011111112244
 3    2  566
```

```
Domain Reference = 41
N  = 35
Leaf Unit = 1.0

 1    1  4
(21)  1  555666666677778888899
 13   2  0000112224
 3    2  6
 2    3  04

Domain Reference = 42
N  = 3
Leaf Unit = 1.0

 1   1  3
(1)  1  5
 1   2
 1   2  5


Domain Reference = 43
N  = 22
Leaf Unit = 1.0

 6   1  568889
 9   2  034
(4)  2  5679
 9   3  00011344
 1   3
 1   4
 1   4  8


Domain Reference = 51
N  = 5
Leaf Unit = 1.0

(3)  0  778
 2   1  04


Domain Reference = 52
N  = 17
Leaf Unit = 1.0

 2   0  44
(7)  0  5668899
 8   1  00111223


Domain Reference = 53
N  = 2
Leaf Unit = 1.0

 1  0  5
 1  1  1
```

Results for: Upper Till

Stem-and-Leaf Displays: w (%)

```
Domain Reference = 61
N  = 5
Leaf Unit = 1.0

 1   1  3
 2   1  6
(1)  2  1
 2   2  6
 1   3  0
```

```
Domain Reference = 62
N  = 89
Leaf Unit = 1.0

 1    0  8
 27   1  00011111222223333333444444
(37)  1
5555556666666677777888888888889999999
 25   2  0000111222223444
 9    2  678
 6    3  00022
 1    3  5
```

```
Domain Reference = 63
N  = 24
Leaf Unit = 1.0

 5   1  23444
 12  1  5555666
 12  2  1333
 8   2  55589999
```

```
Domain Reference = 64
N  = 13
Leaf Unit = 1.0

 4   1  2333
(8)  1  55667788
 1   2  0
```

```
Domain Reference = 65
N  = 6
Leaf Unit = 1.0

 1   1  3
(4)  1  5579
 1   2
 1   2  6
```

```
Domain Reference = 71
N  = 16
Leaf Unit = 1.0

 2    0  79
(11)  1  12333444444
 3    1  577
```

```
Domain Reference = 72
N  = 17
Leaf Unit = 1.0

 1   0  8
 7   1  113333
(4)  1  5677
 6   2  00122
 1   2  5
```

Results for: Upper Till

Stem-and-Leaf Displays: wL (%)

```
Domain Reference = 11
N  = 20
Leaf Unit = 1.0

(13)  2  5566666777779
 7    3  04
 5    3
 5    4  0112
 1    4
 1    5
 1    5  6


Domain Reference = 12
N  = 9
Leaf Unit = 1.0

 2   2  88
(4)  3  0444
 3   3  56
 1   4  0


Domain Reference = 13
N  = 2
Leaf Unit = 1.0

 1  2  8
 1  3  4


Domain Reference = 14
N  = 25
Leaf Unit = 1.0

 1    1  9
 10   2  223334444
(10)  2  6666677999
 5    3
 5    3  59
 3    4  124
```

* NOTE * No data in Domain 21

```
Domain Reference = 31
N  = 48
Leaf Unit = 1.0

 3    2  023
 11   2  56899999
 23   3  000000112334
(17)  3  55555566778889999
 8    4  1112344
 1    4  8


Domain Reference = 41
N  = 4
Leaf Unit = 1.0

 1  3  1
 1  3
 2  4  3
 2  4
 2  5  00


Domain Reference = 42
N  = 2
Leaf Unit = 1.0

 1  3  4
 1  3  8


Domain Reference = 43
N  = 7
Leaf Unit = 1.0

 1   2  6
 1   3
 2   3  8
(4)  4  0134
 1   4
 1   5
 1   5  5


Domain Reference = 51
N  = 8
Leaf Unit = 1.0

 1   2  4
(7)  2  5557779


Domain Reference = 52
N  = 17
Leaf Unit = 1.0

 6   2  023444
(9)  2  566777779
 2   3  01


Domain Reference = 53
N  = 2
Leaf Unit = 1.0

(2)  2  34
```

* NOTE * No data in Domain 61

Results for: Upper Till

Stem-and-Leaf Displays: wL (%)

```
Domain Reference = 62
N  = 74
Leaf Unit = 1.0

 2    2  44
 8    2  678999
(33)  3  
001111111222222222333333344444444
 33   3  5555555555555578889999
 10   4  0123
 6    4  667
 3    5  
 3    5  9
 2    6  22
```

```
Domain Reference = 63
N  = 27
Leaf Unit = 1.0

 9   3  022334444
(9)  3  555567788
 9   4  00002234
 1   4  
 1   5  1
```

```
Domain Reference = 64
N  = 16
Leaf Unit = 1.0

(9)  3  013334444
 7   3  5577788
```

```
Domain Reference = 65
N  = 7
Leaf Unit = 1.0

 1   2  4
 1   2  
 3   3  13
(3)  3  789
 1   4  0
```

```
Domain Reference = 71
N  = 6
Leaf Unit = 1.0

 2   2  79
(4)  3  1124
```

```
Domain Reference = 72
N  = 7
Leaf Unit = 1.0

 1   2  4
 3   2  79
(3)  3  001
 1   3  
 1   4  2
```

Results for: Upper Till

Stem-and-Leaf Displays: wP (%)

```
Domain Reference = 11
N  = 20
Leaf Unit = 1.0

 1    1  1
(12)  1  222222233333
 7    1  4
 6    1  66
 4    1  89
 2    2  0
 1    2
 1    2  5


Domain Reference = 12
N  = 9
Leaf Unit = 1.0

 1   1  3
(4)  1  4445
 4   1  6
 3   1
 3   2  0
 2   2  33


Domain Reference = 13
N  = 2
Leaf Unit = 1.0

 1  1  2
 1  1
 1  1  6


Domain Reference = 14
N  = 25
Leaf Unit = 1.0

 3    1  011
(15)  1  222222222222233
 7    1  445
 4    1  7
 3    1  8
 2    2
 2    2  2
 1    2  4


* NOTE * No data in Domain 21


Domain Reference = 31
N  = 47
Leaf Unit = 1.0

 6    1  222333
 20   1  44444444555555
(17)  1  66666666666777777
 10   1  9999
 6    2  000011

Domain Reference = 41
N  = 4
Leaf Unit = 1.0

 1  1  7
 1  1
 2  2  1
 2  2  33


Domain Reference = 42
N  = 2
Leaf Unit = 1.0

 1  1  7
 1  1
 1  2
 1  2  2


Domain Reference = 43
N  = 7
Leaf Unit = 1.0

 1   1  9
 1   2
(3)  2  233
 3   2  455


Domain Reference = 51
N  = 8
Leaf Unit = 1.0

 1   1  5
(6)  1  666677
 1   1  8


Domain Reference = 52
N  = 17
Leaf Unit = 1.0

 1   1  3
 4   1  455
(8)  1  66666667
 5   1  8889
 1   2  0


Domain Reference = 53
N  = 2
Leaf Unit = 1.0

 1  1  4
 1  1  7


* NOTE * No data in Domain 61
```

Results for: Upper Till

Stem-and-Leaf Displays: wP (%)

```
Domain Reference = 62
N  = 74
Leaf Unit = 1.0

 2    1  33
 12   1  4455555555
 34   1  6666666777777777777777
(16)  1  8888888889999999
 24   2  000000000001111
 9    2  22233
 4    2  55
 2    2  7
 1    2  8
```

```
Domain Reference = 63
N  = 27
Leaf Unit = 1.0

 1   1  5
 3   1  67
 12  1  888889999
(8)  2  00011111
 7   2  22223
 2   2  45
```

```
Domain Reference = 64
N  = 16
Leaf Unit = 1.0

 1   1  5
 4   1  677
(7)  1  8888889
 5   2  001
 2   2  23
```

```
Domain Reference = 65
N  = 7
Leaf Unit = 1.0

 1   1  6
(4)  1  8999
 2   2  01
```

```
Domain Reference = 71
N  = 6
Leaf Unit = 1.0

 1   1  3
 2   1  4
(4)  1  6777
```

```
Domain Reference = 72
N  = 7
Leaf Unit = 1.0

 2   1  33
(3)  1  445
 2   1
 2   1  89
```

Results for: Upper Till

Stem-and-Leaf Displays: IP (%)

```
Domain Reference = 11
N  = 20
Leaf Unit = 1.0

 3    1  333
(10)  1  4444445555
 7    1  7
 6    1  8
 5    2  1
 4    2  33
 2    2  4
 1    2
 1    2
 1    3  1


Domain Reference = 12
N  = 9
Leaf Unit = 1.0

 1   1  1
 2   1  3
(3)  1  455
 4   1  6
 3   1  9
 2   2  0
 1   2
 1   2  4


Domain Reference = 13
N  = 2
Leaf Unit = 1.0

 1  1  6
 1  1  8


Domain Reference = 14
N  = 25
Leaf Unit = 1.0

 1   0  7
 1   0
 5   1  0011
 11  1  222233
(7)  1  4444555
 7   1  67
 5   1
 5   2  0001
 1   2
 1   2  4


* NOTE * No data in Domain 21


Domain Reference = 31
N  = 47
Leaf Unit = 1.0

 1    0  8
 2    1  1
 4    1  23
 12   1  45555555
 18   1  666666
(11)  1  88888999999
 18   2  0000011
 11   2  22222223
 3    2  44
 1    2
 1    2  8


Domain Reference = 41
N  = 4
Leaf Unit = 1.0

 1  1  4
 1  1
 1  1
 1  2
 2  2  2
 2  2
 2  2  77


Domain Reference = 42
N  = 2
Leaf Unit = 1.0

(2)  1  67


Domain Reference = 43
N  = 7
Leaf Unit = 1.0

 1   0  7
 1   0
 1   1
 1   1
 2   1  4
 3   1  7
(2)  1  99
 2   2  0
 1   2
 1   2
 1   2
 1   2
 1   3  0
```

Results for: Upper Till

Stem-and-Leaf Displays: IP (%)

```
Domain Reference = 51
N  = 8
Leaf Unit = 1.0

 1  0  7
 4  0  999
 4  1  001
 1  1  3
```

```
Domain Reference = 52
N  = 17
Leaf Unit = 1.0

 3   0  777
(8)  0  88888999
 6   1  111
 3   1  23
 1   1  4
```

```
Domain Reference = 53
N  = 2
Leaf Unit = 1.0

 1  0  7
 1  0  9
```

```
* NOTE * No data in Domain 61
```

```
Domain Reference = 62
N  = 74
Leaf Unit = 1.0

 1    0  7
 5    0  8999
 7    1  11
 14   1  2222333
 26   1  444445555555
(21)  1  666666666777777777777
 27   1  888888888999999
 12   2  000
 9    2  22223
 4    2  5
 3    2
 3    2
 3    3
 3    3  2
 2    3  4
 1    3  7
```

```
Domain Reference = 63
N  = 27
Leaf Unit = 1.0

 2   1  11
 3   1  2
 8   1  44455
(7)  1  6666777
 12  1  88999999
 4   2  0
 3   2  33
 1   2
 1   2
 1   2  8
```

```
Domain Reference = 64
N  = 16
Leaf Unit = 1.0

 1   1  0
 2   1  3
 6   1  4455
(7)  1  6677777
 3   1  89
 1   2  0
```

```
Domain Reference = 65
N  = 7
Leaf Unit = 1.0

 1   0  8
 1   1
 2   1  2
 3   1  5
 3   1
(4)  1  8999
```

```
Domain Reference = 71
N  = 6
Leaf Unit = 1.0

 1   1  3
(3)  1  445
 2   1  6
 1   1  8
```

```
Domain Reference = 72
N  = 7
Leaf Unit = 1.0

 1   1  1
 3   1  22
(1)  1  5
 3   1  77
 1   1
 1   2
 1   2  3
```

Results for: Upper Till

Stem-and-Leaf Displays: % Gravel

```
Domain Reference = 11
N  = 10
Leaf Unit = 1.0

 3  1  134
 5  1  56
 5  2
 5  2  889
 2  3
 2  3  67
```

```
Domain Reference = 12
N  = 3
Leaf Unit = 1.0

(2)  2  56
 1   3  4
```

```
Domain Reference = 13
N  = 1
Leaf Unit = 1.0

(1)  2  4
```

```
Domain Reference = 14
N  = 12
Leaf Unit = 1.0

 3   1  589
(4)  2  0123
 5   2  669
 2   3  13
```

```
Domain Reference = 21
N  = 1
Leaf Unit = 1.0

(1)  3  5
```

```
Domain Reference = 31
N  = 16
Leaf Unit = 1.0

(11)  0  00111122344
 5    0  58
 3    1  0
 2    1  8
 1    2
 1    2  5
```

```
Domain Reference = 41
N  = 1
Leaf Unit = 1.0

(1)  3  0
```

```
Domain Reference = 42
N  = 4
Leaf Unit = 1.0

 1   3  3
(3)  4  044
```

```
Domain Reference = 43
N  = 5
Leaf Unit = 1.0

 1   2  3
(2)  3  02
 2   4  1
 1   5  4
```

```
Domain Reference = 51
N  = 8
Leaf Unit = 1.0

 4  3  0288
 4  4  1469
```

```
Domain Reference = 52
N  = 10
Leaf Unit = 1.0

 1   0  9
 1   1
 2   2  7
(6)  3  002689
 2   4  4
 1   5  6
```

```
Domain Reference = 53
N  = 1
Leaf Unit = 1.0

(1)  4  4
```

* NOTE * No data in Domain 61

```
Domain Reference = 62
N  = 28
Leaf Unit = 1.0

 4   0  1137
 11  1  1113778
(6)  2  012469
 11  3  01156689
 3   4  89
 1   5  4
```

Results for: Upper Till

Stem-and-Leaf Displays: % Gravel

```
Domain Reference = 63
N  = 19
Leaf Unit = 1.0

 2   0  67
 5   1  479
(7)  2  3344788
 7   3  22478
 2   4  38


Domain Reference = 64
N  = 1
Leaf Unit = 1.0

(1)  2  7


Domain Reference = 65
N  = 2
Leaf Unit = 1.0

 1  1  2
 1  2  8


Domain Reference = 71
N  = 7
Leaf Unit = 1.0

(4)  1  5678
 3   2  135


Domain Reference = 72
N  = 6
Leaf Unit = 1.0

 2   1  35
(3)  2  288
 1   3  2
```

Stem-and-Leaf Displays: % Sand

```
Domain Reference = 11
N  = 10
Leaf Unit = 1.0

 1  2  9
 5  3  0014
 5  3  59
 3  4
 3  4  59
 1  5  4


Domain Reference = 12
N  = 3
Leaf Unit = 1.0

 1   2  3
(1)  2  7
 1   3
 1   3  5


Domain Reference = 13
N  = 1
Leaf Unit = 1.0

(1)  2  8


Domain Reference = 14
N  = 12
Leaf Unit = 1.0

 3   3  334
 5   3  89
(4)  4  0114
 3   4  56
 1   5  3


Domain Reference = 21
N  = 1
Leaf Unit = 1.0

(1)  1  2


Domain Reference = 31
N  = 16
Leaf Unit = 1.0

 2   1  14
 5   1  788
(5)  2  23444
 6   2  56
 4   3  24
 2   3  6
 1   4  2
```

```
Domain Reference = 41
N  = 1
Leaf Unit = 1.0

(1)  3  7


Domain Reference = 42
N  = 4
Leaf Unit = 1.0

 1   2  0
 1   2
(3)  3  113


Domain Reference = 43
N  = 5
Leaf Unit = 1.0

 1   2  1
 1   2
 2   3  3
(2)  3  67
 1   4
 1   4  5


Domain Reference = 51
N  = 8
Leaf Unit = 1.0

 2   1  23
(5)  1  66788
 1   2
 1   2  7


Domain Reference = 52
N  = 10
Leaf Unit = 1.0

 3   1  123
 4   1  5
(4)  2  0123
 2   2  7
 1   3  0


Domain Reference = 53
N  = 1
Leaf Unit = 1.0

(1)  2  2


* NOTE * No data in Domain 61
```

Results for: Upper Till

Stem-and-Leaf Displays: % Sand

```
Domain Reference = 62
N  = 28
Leaf Unit = 1.0

 1   0  5
 1   1
 2   1  7
 8   2  012234
(8)  2  56778899
 12  3  0133
 8   3  5778
 4   4  1223
```

```
Domain Reference = 63
N  = 19
Leaf Unit = 1.0

 1   0  9
 1   1
 1   1
 3   2  14
 9   2  556669
(6)  3  112244
 4   3  7
 3   4  3
 2   4  7
 1   5  4
```

```
Domain Reference = 64
N  = 1
Leaf Unit = 1.0

(1)  2  6
```

```
Domain Reference = 65
N  = 2
Leaf Unit = 1.0

 1  3  3
 1  3  5
```

```
Domain Reference = 71
N  = 7
Leaf Unit = 1.0

 1   1  3
 1   1
 2   2  0
 3   2  9
(3)  3  111
 1   3  9
```

```
Domain Reference = 72
N  = 6
Leaf Unit = 1.0

 1   1  9
 1   2
(4)  2  6689
 1   3
 1   3
 1   4  4
```

Stem-and-Leaf Displays: % Fines (SILT/CLAY)

```
Domain Reference = 11
N  = 10
Leaf Unit = 1.0

 2  3  23
 5  3  558
 5  4  001
 2  4
 2  5  01


Domain Reference = 12
N  = 3
Leaf Unit = 1.0

(2)  4  02
 1   4  6


Domain Reference = 13
N  = 1
Leaf Unit = 1.0

(1)  4  7


Domain Reference = 14
N  = 12
Leaf Unit = 1.0

 2   2  89
 5   3  114
(5)  3  56779
 2   4  2
 1   4  5


Domain Reference = 21
N  = 1
Leaf Unit = 1.0

(1)  5  3


Domain Reference = 31
N  = 16
Leaf Unit = 1.0

 1   3  9
 1   4
 1   4
 1   5
 4   5  568
 5   6  0
 5   6
 7   7  01
(4)  7  5567
 5   8  0112
 1   8  9


Domain Reference = 41
N  = 1
Leaf Unit = 1.0

(1)  3  3


Domain Reference = 42
N  = 4
Leaf Unit = 1.0

(3)  2  557
 1   3
 1   3
 1   4
 1   4  7


Domain Reference = 43
N  = 5
Leaf Unit = 1.0

 2   2  33
(1)  2  5
 2   3  3
 1   3
 1   4  4


Domain Reference = 51
N  = 8
Leaf Unit = 1.0

 1  2  1
 1  2
 4  3  012
 4  3  789
 1  4
 1  4
 1  5  3


Domain Reference = 52
N  = 10
Leaf Unit = 1.0

 1  1  1
 1  1
 2  2  1
 3  2  8
 3  3
 5  3  68
 5  4  001
 2  4  6
 1  5
 1  5
 1  6
 1  6
 1  7
 1  7  6
```

Results for: Upper Till

Stem-and-Leaf Displays: % Fines (SILT/CLAY)

```
Domain Reference = 53
N  = 1
Leaf Unit = 1.0

(1)  3  3


* NOTE * No data in Domain 61


Domain Reference = 62
N  = 28
Leaf Unit = 1.0

 1   1  3
 4   1  889
 5   2  1
 6   2  8
 8   3  03
 11  3  666
 13  4  11
(3)  4  557
 12  5  01224
 7   5  557
 4   6
 4   6
 4   7  23
 2   7
 2   8  0
 1   8
 1   9  4


Domain Reference = 63
N  = 19
Leaf Unit = 1.0

 2   2  03
 2   2
 3   3  4
 8   3  68899
(4)  4  0011
 7   4  5
 6   5  03
 4   5  568
 1   6  4


Domain Reference = 64
N  = 1
Leaf Unit = 1.0

(1)  4  7
```

```
Domain Reference = 65
N  = 2
Leaf Unit = 1.0

 1  3  7
 1  4
 1  4
 1  5
 1  5  5


Domain Reference = 71
N  = 7
Leaf Unit = 1.0

 1   2  5
 1   3
 1   3
 3   4  04
(1)  4  8
 3   5  14
 1   5
 1   6  4


Domain Reference = 72
N  = 6
Leaf Unit = 1.0

 2  4  12
 3  4  6
 3  5  03
 1  5  8
```

Results for: Upper Till

Stem-and-Leaf Displays: Bulk Density

```
Domain Reference = 11
N  = 12
Leaf Unit = 0.010

 1  19  4
 1  19
 4  20  114
 5  20  9
 5  21
 5  21
 6  22  4
 6  22  7899
 2  23  23
```

```
Domain Reference = 12
N  = 2
Leaf Unit = 0.010

 1  17  7
 1  18
 1  18
 1  19
 1  19
 1  20
 1  20
 1  21
 1  21  9
```

```
Domain Reference = 13
N  = 1
Leaf Unit = 0.010

(1)  22  0
```

```
Domain Reference = 14
N  = 29
Leaf Unit = 0.010

 2    21  29
 13   22  12233345679
(15)  23  033444456777789
 1    24  0
```

```
Domain Reference = 21
N  = 3
Leaf Unit = 0.010

 1   20  6
 1   21
(1)  22  0
 1   23  5
```

```
Domain Reference = 31
N  = 19
Leaf Unit = 0.010

 1    20  3
 8    21  0036889
(11)  22  00133356679
```

```
Domain Reference = 41
N  = 5
Leaf Unit = 0.010

 1   20  1
 1   21
(4)  22  0347
```

* NOTE * No data in Domain 42

```
Domain Reference = 43
N  = 4
Leaf Unit = 0.010

 1   20  3
(3)  21  789
```

```
Domain Reference = 51
N  = 3
Leaf Unit = 0.010

(3)  23  017
```

```
Domain Reference = 52
N  = 3
Leaf Unit = 0.010

 1   21  4
(1)  22  9
 1   23
 1   24  1
```

```
Domain Reference = 53
N  = 2
Leaf Unit = 0.010

 1  23  5
 1  24  5
```

Stem-and-Leaf Displays: Bulk Density

```
Domain Reference = 61
N  = 5
Leaf Unit = 0.010

 1   18  0
 2   19  9
(1)  20  9
 2   21  3
 1   22  1


Domain Reference = 62
N  = 18
Leaf Unit = 0.010

 5  19  04889
 9  20  0146
 9  21  3455
 5  22  00145


Domain Reference = 63
N  = 5
Leaf Unit = 0.010

 1   18  7
(2)  19  45
 2   20
 2   21  3
 1   22  2


Domain Reference = 64
N  = 7
Leaf Unit = 0.010

 3   20  059
(2)  21  19
 2   22  08


Domain Reference = 65
N  = 6
Leaf Unit = 0.010

 3  20  159
 3  21  226


Domain Reference = 71
N  = 4
Leaf Unit = 0.010

(4)  22  4667


Domain Reference = 72
N  = 4
Leaf Unit = 0.010

 1   20  0
 1   21
(3)  22  448
```

Results for: Upper Till

Stem-and-Leaf Displays: Dry Density

```
Domain Reference = 11
N  = 12
Leaf Unit = 0.010

 2   16  04
 2   17
 4   18  25
 5   19  6
(5)  20  56888
 2   21  24


Domain Reference = 12
N  = 2
Leaf Unit = 0.010

 1  15  4
 1  16
 1  17
 1  18
 1  19  4


Domain Reference = 13
N  = 1
Leaf Unit = 0.010

(1)  19  6


Domain Reference = 14
N  = 29
Leaf Unit = 0.010

 3    19  459
 11   20  11134566
(15)  21  123334566677889
 3    22  013


Domain Reference = 21
N  = 3
Leaf Unit = 0.010

 1   16  2
 1   17
(1)  18  6
 1   19
 1   20  6


Domain Reference = 31
N  = 19
Leaf Unit = 0.010

 2    16  29
 5    17  378
(10)  18  2333457889
 4    19  4569
```

```
Domain Reference = 41
N  = 5
Leaf Unit = 0.010

 1   17  3
 2   18  8
(3)  19  227


* NOTE * No data in Domain 42


Domain Reference = 43
N  = 4
Leaf Unit = 0.010

 1   16  9
 1   17
(3)  18  399


Domain Reference = 51
N  = 3
Leaf Unit = 0.010

(2)  21  35
 1   22  0


Domain Reference = 52
N  = 3
Leaf Unit = 0.010

 1   19  3
(1)  20  8
 1   21  9


Domain Reference = 53
N  = 2
Leaf Unit = 0.010

 1  21  2
 1  22
 1  23  3


Domain Reference = 61
N  = 5
Leaf Unit = 0.010

 1   14  3
 2   15  2
 2   16
(2)  17  69
 1   18
 1   19  5
```

Stem-and-Leaf Displays: Dry Density

```
Domain Reference = 62
N  = 18
Leaf Unit = 0.010

 2   14  47
 5   15  289
 7   16  08
(3)  17  135
 8   18  5689
 4   19  388
 1   20  1


Domain Reference = 63
N  = 5
Leaf Unit = 0.010

 1   15  0
(2)  16  38
 2   17
 2   18  4
 1   19  3


Domain Reference = 64
N  = 7
Leaf Unit = 0.010

 1   16  9
 2   17  5
(2)  18  07
 3   19  055


Domain Reference = 65
N  = 6
Leaf Unit = 0.010

 1   16  0
 2   17  2
(3)  18  124
 1   19  1


Domain Reference = 71
N  = 4
Leaf Unit = 0.010

 2  19  69
 2  20  03


Domain Reference = 72
N  = 4
Leaf Unit = 0.010

 1   16  0
 1   17
 1   18
(2)  19  48
 1   20  1
```

Results for: Lower Till

Stem-and-Leaf Displays: w (%)

```
Domain Reference = 11
N  = 48
Leaf Unit = 1.0

 13   0  7788888899999
(32)  1  00000000000111111111111112222334
 3    1  589


Domain Reference = 12
N  = 75
Leaf Unit = 1.0

 17   0  77788888999999999
(43)  1  0000000000000000111111112222222223333333334
 15   1  555666677888899


Domain Reference = 13
N  = 3
Leaf Unit = 1.0

(3)  1  022


Domain Reference = 14
N  = 29
Leaf Unit = 1.0

 10   0  7788889999
(11)  1  01111144444
 8    1  56666789


Domain Reference = 21
N  = 74
Leaf Unit = 1.0

 2    0  56
(54)  1  000000000111111111112222222222222222222333333333344444
 18   1  555555566677779
 3    2  0
 2    2  8
 1    3
 1    3  7


Domain Reference = 31
N  = 73
Leaf Unit = 1.0

 5    1  33444
(52)  1  5566666666667777777777778888888888888888999999999999999
 16   2  0000000001112233
```

Results for: Lower Till

Stem-and-Leaf Displays: w (%)

```
Domain Reference = 41
N  = 22
Leaf Unit = 1.0

 6    1  224444
(11)  1  55666666778
 5    2  11
 3    2
 3    3  2
 2    3
 2    4  3
 1    4
 1    5
 1    5
 1    6
 1    6
 1    7  0
```

```
Domain Reference = 42
N  = 3
Leaf Unit = 1.0

 1   0  9
(2)  1  03
```

```
Domain Reference = 43
N  = 28
Leaf Unit = 1.0

 10   1  0222344444
(16)  1  5566666677777789
 2    2  2
 1    2  7
```

```
Domain Reference = 51
N  = 5
Leaf Unit = 1.0

 1   0  6
 2   1  3
(1)  1  7
 2   2
 2   2  7
 1   3  1
```

```
Domain Reference = 52
N  = 7
Leaf Unit = 1.0

 1   0  3
(5)  0  67778
 1   1  0
```

* NOTE * No data in Domain 53

```
Domain Reference = 61
N  = 4
Leaf Unit = 1.0

(3)  1  011
 1   1  6
```

```
Domain Reference = 62
N  = 42
Leaf Unit = 1.0

 4    0  8999
(21)  1  012222223333444444444
 17   1  55555555566666678
 1    2
 1    2  5
```

```
Domain Reference = 63
N  = 31
Leaf Unit = 1.0

 1    0  9
(16)  1  0002222233333444
 14   1  55557778899999
 1    2  1
```

```
Domain Reference = 64
N  = 11
Leaf Unit = 1.0

(6)  1  112234
 5   1  5578
 1   2  0
```

```
Domain Reference = 65
N  = 1
Leaf Unit = 1.0

(1)  1  9
```

```
Domain Reference = 71
N  = 28
Leaf Unit = 1.0

(17)  1  00011122333333334
 11   1  55678888
 3    2  11
 1    2
 1    3
 1    3
 1    4
 1    4  7
```

Results for: Lower Till

Stem-and-Leaf Displays: w (%)

```
Domain Reference = 72
N  = 9
Leaf Unit = 1.0

(8)  1  12222334
 1   1  7
```

Stem-and-Leaf Displays: wL (%)

```
Domain Reference = 11
N  = 26
Leaf Unit = 1.0

 2    2  34
(19)  2  6667778888889999999
 5    3  00002


Domain Reference = 12
N  = 46
Leaf Unit = 1.0

 4    2  6899
(42)  3  000000000111111111111111112222222333333444


Domain Reference = 13
N  = 2
Leaf Unit = 1.0

(2)  2  89


Domain Reference = 14
N  = 26
Leaf Unit = 1.0

 8    2  12224444
(14)  2  55555667777899
 4    3  0111


Domain Reference = 21
N  = 24
Leaf Unit = 1.0

 4    2  2344
(10)  2  6677778889
 10   3  000234
 4    3  56
 2    4  1
 1    4  5


Domain Reference = 31
N  = 64
Leaf Unit = 1.0

 2    2  34
 12   2  6667788899
(30)  3  112222233333333333344444444444
 22   3  555555555666666677777
 1    4  4
```

Results for: Lower Till

Stem-and-Leaf Displays: wL (%)

```
Domain Reference = 41
N  = 9
Leaf Unit = 1.0

 2   3  24
 3   3  7
(3)  4  112
 3   4
 3   5  4
 2   5  5
 1   6
 1   6  8
```

```
* NOTE * No data in Domain 42
```

```
Domain Reference = 43
N  = 10
Leaf Unit = 1.0

 1   2  7
(5)  3  00114
 4   3  99
 2   4  34
```

```
Domain Reference = 51
N  = 5
Leaf Unit = 1.0

 1   2  2
 2   2  8
(3)  3  012
```

```
Domain Reference = 52
N  = 7
Leaf Unit = 1.0

 3   2  123
(4)  2  5567
```

```
* NOTE * No data in Domains 53 and 61
```

```
Domain Reference = 62
N  = 39
Leaf Unit = 1.0

 2    2  33
 5    2  789
(25)  3  0000111122333333334444444
 9    3  55556677
 1    4  0
```

```
Domain Reference = 63
N  = 31
Leaf Unit = 1.0

 2    2  79
(24)  3  000111112222223333444444
 5    3  6668
 1    4  4
```

```
Domain Reference = 64
N  = 11
Leaf Unit = 1.0

(6)  3  122244
 5   3  55688
```

```
Domain Reference = 65
N  = 1
Leaf Unit = 1.0

(1)  4  0
```

```
Domain Reference = 71
N  = 11
Leaf Unit = 1.0

 2   2  79
(9)  3  000222447
```

```
Domain Reference = 72
N  = 3
Leaf Unit = 1.0

 1   2  7
(2)  3  23
```

Results for: Lower Till

Stem-and-Leaf Displays: wP (%)

```
Domain Reference = 11
N  = 26
Leaf Unit = 1.0

 1    1  1
 12   1  22222333333
(12)  1  444444455555
 2    1  66


Domain Reference = 12
N  = 46
Leaf Unit = 1.0

 14   1  2333333333333
(32)  1
44444444444444444444444444455555


Domain Reference = 13
N  = 2
Leaf Unit = 1.0

 1  1  1
 1  1
 1  1  4


Domain Reference = 14
N  = 26
Leaf Unit = 1.0

 5    1  11111
(17)  1  22222222223333333
 4    1  45
 2    1  66


Domain Reference = 21
N  = 24
Leaf Unit = 1.0

 1   1  0
 4   1  233
 7   1  455
(8)  1  66677777
 9   1  899
 6   2  0011
 2   2
 2   2  45
```

```
Domain Reference = 31
N  = 64
Leaf Unit = 1.0

 1    1  1
 9    1  22333333
 31   1  4444455555555555555555
(31)  1
6666666666666666666667777777777
 2    1  88


Domain Reference = 41
N  = 9
Leaf Unit = 1.0

 1   1  7
 4   1  999
(1)  2  0
 4   2  2
 3   2  5
 2   2  6
 1   2
 1   3
 1   3  3


* NOTE * No data in Domain 42


Domain Reference = 43
N  = 10
Leaf Unit = 1.0

 1  1  5
 5  1  6667
 5  1  89
 3  2  0
 2  2  3
 1  2  4


Domain Reference = 51
N  = 5
Leaf Unit = 1.0

 1   1  5
 2   1  7
(1)  1  9
 2   2  00


Domain Reference = 52
N  = 7
Leaf Unit = 1.0

(4)  1  5555
 3   1  66
 1   1  8
```

Stem-and-Leaf Displays: wP (%)

```
* NOTE * No data in Domains 53 and 61


Domain Reference = 62
N  = 39
Leaf Unit = 1.0

 3    1  333
 9    1  445555
(18)  1  666666666666777777
 12   1  8888888899
 2    2  00

Domain Reference = 63
N  = 31
Leaf Unit = 1.0

 2   1  22
 13  1  44455555555
(8)  1  66666777
 10  1  88888889
 2   2  0
 1   2  2


Domain Reference = 64
N  = 11
Leaf Unit = 1.0

 1   1  3
 3   1  55
(6)  1  677777
 2   1  9
 1   2  0


Domain Reference = 65
N  = 1
Leaf Unit = 1.0

(1)  1  9


Domain Reference = 71
N  = 11
Leaf Unit = 1.0

 1   1  1
 1   1
(5)  1  44555
 5   1  66777


Domain Reference = 72
N  = 3
Leaf Unit = 1.0

(2)  1  55
 1   1  6
```

Results for: Lower Till

Stem-and-Leaf Displays: IP (%)

```
Domain Reference = 11
N  = 26
Leaf Unit = 1.0

 1    1  0
 5    1  2333
(16)  1  4444444555555555
 5    1  66667
```

```
Domain Reference = 12
N  = 46
Leaf Unit = 1.0

 1    1  2
 4    1  555
(21)  1  666667777777777777777
 21   1  8888888888899999999
 2    2  00
```

```
SDomain Reference = 13
N  = 2
Leaf Unit = 1.0

 1  1  4
 1  1
 1  1  8
```

```
Domain Reference = 14
N  = 26
Leaf Unit = 1.0

 1   0  9
 5   1  0011
(9)  1  222233333
 12  1  4444445
 5   1  67
 3   1  888
```

```
Domain Reference = 21
N  = 24
Leaf Unit = 1.0

 3   0  667
 5   0  88
 9   1  0111
(9)  1  222223333
 6   1  5
 5   1  667
 2   1
 2   2  1
 1   2
 1   2  5
```

```
Domain Reference = 31
N  = 64
Leaf Unit = 1.0

 1    1  0
 3    1  22
 11   1  44444555
 27   1  6666677777777777
(26)  1  88888888888899999999999999
 11   2  0000000001
 1    2
 1    2
 1    2
 1    2  9
```

```
Domain Reference = 41
N  = 9
Leaf Unit = 1.0

 1   1  2
 2   1  5
 3   1  7
 3   1
 3   2
(3)  2  223
 3   2
 3   2
 3   2  99
 1   3
 1   3
 1   3  5
```

```
* NOTE * No data in Domain 42
```

```
Domain Reference = 43
N  = 10
Leaf Unit = 1.0

 1   1  1
 2   1  3
 4   1  45
(3)  1  666
 3   1  9
 2   2  0
 1   2
 1   2  4
```

```
Domain Reference = 51
N  = 5
Leaf Unit = 1.0

 1   0  7
 1   0
(2)  1  01
 2   1  22
```

Results for: Lower Till

Stem-and-Leaf Displays: IP (%)

```
Domain Reference = 52
N  = 7
Leaf Unit = 1.0

 2   0  66
(3)  0  899
 2   1  01


* NOTE * No data in Domains 53 and 61


Domain Reference = 62
N  = 39
Leaf Unit = 1.0

 2    0  89
 2    1
 6    1  2233
(14)  1  44445555555555
 19   1  6666777
 12   1  8888899
 5    2  00
 3    2  223


Domain Reference = 63
N  = 31
Leaf Unit = 1.0

 2    1  23
 9    1  4445555
(12)  1  666666666777
 10   1  8888999
 3    2  11
 1    2  2


Domain Reference = 64
N  = 11
Leaf Unit = 1.0

 2   1  55
(4)  1  6777
 5   1  88
 3   2  001


Domain Reference = 65
N  = 1
Leaf Unit = 1.0

(1)  2  1
```

```
Domain Reference = 71
N  = 11
Leaf Unit = 1.0

 1   1  2
 2   1  5
(7)  1  6666777
 2   1  8
 1   2  0


Domain Reference = 72
N  = 3
Leaf Unit = 1.0

 1   1  2
 1   1
(1)  1  6
 1   1  8
```

Results for: Lower Till

Stem-and-Leaf Displays: % Gravel

```
Domain Reference = 11
N  = 8
Leaf Unit = 1.0

 1   2  3
(4)  2  5678
 3   3  3
 2   3  56
```

```
Domain Reference = 12
N  = 4
Leaf Unit = 1.0

(3)  2  689
 1   3  3
```

```
Domain Reference = 13
N  = 2
Leaf Unit = 1.0

 1  2  3
 1  2
 1  3  1
```

```
Domain Reference = 14
N  = 12
Leaf Unit = 1.0

 2   1  57
(7)  2  0001113
 3   2  677
```

```
Domain Reference = 21
N  = 10
Leaf Unit = 1.0

 3   2  555
 4   3  0
(5)  3  55668
 1   4
 1   4
 1   5  0
```

```
Domain Reference = 31
N  = 19
Leaf Unit = 1.0

(10)  0  1222233344
 9    0  556899
 3    1  0
 2    1  68
```

```
Domain Reference = 41
N  = 5
Leaf Unit = 1.0

 2   0  69
 2   1
(1)  1  7
 2   2
 2   2
 2   3  4
 1   3  8
```

* NOTE * No data in Domain 42

```
Domain Reference = 43
N  = 10
Leaf Unit = 1.0

 1   1  4
 1   1
 2   2  3
 2   2
 4   3  23
 4   3
(3)  4  134
 3   4
 3   5  04
 1   5  8
```

```
Domain Reference = 51
N  = 2
Leaf Unit = 1.0
N* = 11

 1  1  7
 1  2
 1  2
 1  3
 1  3
 1  4
 1  4  7
```

```
Domain Reference = 52
N  = 5
Leaf Unit = 1.0

 1   2  7
 2   3  0
 2   3
 2   4
 2   4
(2)  5  23
 1   5  9
```

* NOTE * No data in Domains 53 and 61

Results for: Lower Till

Stem-and-Leaf Displays: % Gravel

```
Domain Reference = 62
N  = 19
Leaf Unit = 1.0

 1   0  9
 4   1  033
 5   1  5
 9   2  0344
(6)  2  566799
 4   3  2
 3   3  8
 2   4
 2   4
 2   5  1
 1   5  7


Domain Reference = 63
N  = 11
Leaf Unit = 1.0

 1   1  0
 3   1  78
(3)  2  222
 5   2  7
 4   3  14
 2   3
 2   4
 2   4  6
 1   5
 1   5  5


Domain Reference = 64
N  = 1
Leaf Unit = 1.0

(1)  1  1


* NOTE * No data in Domain 65


Domain Reference = 71
N  = 9
Leaf Unit = 1.0

 1   1  2
 4   1  688
(3)  2  014
 2   2  5
 1   3
 1   3
 1   4  2


Domain Reference = 72
N  = 3
Leaf Unit = 1.0

 1   1  4
(2)  1  67
```

Results for: Lower Till

Stem-and-Leaf Displays: % Sand

```
Domain Reference = 11
N  = 8
Leaf Unit = 1.0

 3   2  568
(3)  3  013
 2   3  57
```

```
Domain Reference = 12
N  = 4
Leaf Unit = 1.0

 2  2  78
 2  3
 2  3  55
```

```
Domain Reference = 13
N  = 2
Leaf Unit = 1.0

 1  2  4
 1  2  9
```

```
Domain Reference = 14
N  = 12
Leaf Unit = 1.0

 1   3  2
 3   3  67
(4)  4  2333
 5   4  788
 2   5  00
```

```
Domain Reference = 21
N  = 10
Leaf Unit = 1.0

 2   1  88
(4)  2  0444
 4   2  666
 1   3  1
```

```
Domain Reference = 31
N  = 19
Leaf Unit = 1.0

 1   1  0
 7   1  567999
(5)  2  02233
 7   2  6689
 3   3
 3   3  8
 2   4  0
 1   4  8
```

```
Domain Reference = 41
N  = 5
Leaf Unit = 1.0

 1   1  7
 2   2  2
(2)  2  69
 1   3  1
```

* NOTE * No data in Domain 42

```
Domain Reference = 43
N  = 10
Leaf Unit = 1.0

 3   2  568
(3)  3  033
 4   3  589
 1   4
 1   4
 1   5  0
```

```
Domain Reference = 51
N  = 2
Leaf Unit = 1.0

(2)  1  03
```

```
Domain Reference = 52
N  = 5
Leaf Unit = 1.0

 1   0  7
 1   1
(3)  1  899
 1   2  0
```

* NOTE * No data in Domains 53 and 61

```
Domain Reference = 62
N  = 19
Leaf Unit = 1.0

 5   2  33344
(7)  2  5557788
 7   3  0022
 3   3  668
```

Stem-and-Leaf Displays: % Sand

```
Domain Reference = 63
N  = 11
Leaf Unit = 1.0

 3   2  113
(4)  2  6689
 4   3  014
 1   3  6
```

```
Domain Reference = 64
N  = 1
Leaf Unit = 1.0

(1)  2  9
```

```
* NOTE * No data in Domain 65
```

```
Domain Reference = 71
N  = 9
Leaf Unit = 1.0

 4   1  5777
(2)  2  11
 3   2  6
 2   3  02
```

```
Domain Reference = 72
N  = 3
Leaf Unit = 1.0

(2)  2  23
 1   2
 1   3  1
```

Results for: Lower Till

Stem-and-Leaf Displays: % Fines (SILT/CLAY)

```
Domain Reference = 11
N  = 8
Leaf Unit = 1.0

 4  3  5799
 4  4  003
 1  4  7
```

```
Domain Reference = 12
N  = 4
Leaf Unit = 1.0

 1  3  2
 2  3  6
 2  4  3
 1  4  6
```

```
Domain Reference = 13
N  = 2
Leaf Unit = 1.0

 1  4  4
 1  4  8
```

```
Domain Reference = 14
N  = 12
Leaf Unit = 1.0

2   2  59
 5   3  014
(4)  3  6667
 3   4  013
```

```
Domain Reference = 21
N  = 10
Leaf Unit = 1.0

 1   1  9
 1   2
 1   2
 1   3
 1   3
 4   4  002
(6)  4  677999
```

```
Domain Reference = 31
N  = 19
Leaf Unit = 1.0

 1   4  9
 2   5  2
 3   5  8
 5   6  23
(5)  6  59999
 9   7  24
 7   7  6678
 3   8  03
 1   8  7
```

```
Domain Reference = 41
N  = 5
Leaf Unit = 1.0

 2   4  00
 2   4
(1)  5  2
 2   5
 2   6
 2   6  5
 1   7  4
```

* NOTE * No data in Domain 42

```
Domain Reference = 43
N  = 10
Leaf Unit = 1.0

 3   1  778
(3)  2  002
 4   2  7
 3   3
 3   3  7
 2   4  0
 1   4
 1   5  3
```

```
Domain Reference = 51
N  = 2
Leaf Unit = 1.0

 1  3  8
 1  4
 1  4
 1  5
 1  5
 1  6
 1  6  6
```

Stem-and-Leaf Displays: % Fines (SILT/CLAY)

```
Domain Reference = 52
N  = 5
Leaf Unit = 1.0

 1   2  0
(2)  2  59
 2   3
 2   3
 2   4
 2   4  9
 1   5  0
```

* NOTE * No data in Domains 53 and 61

```
Domain Reference = 62
N  = 19
Leaf Unit = 1.0

 1   1  9
 2   2  4
 3   2  6
 4   3  0
 4   3
 5   4  4
(7)  4  5668999
 7   5  0123
 3   5  8
 2   6  12
```

```
Domain Reference = 63
N  = 11
Leaf Unit = 1.0

 1   2  4
 1   2
 3   3  01
 3   3
 4   4  4
(3)  4  778
 4   5  03
 2   5  7
 1   6  0
```

```
Domain Reference = 64
N  = 1
Leaf Unit = 1.0

(1)  6  0
```

* NOTE * No data in Domain 65

```
Domain Reference = 71
N  = 9
Leaf Unit = 1.0

 1   4  1
(5)  5  02469
 3   6  12
 1   7  3
```

```
Domain Reference = 72
N  = 3
Leaf Unit = 1.0

 1   5  5
(2)  6  11
```

Stem-and-Leaf Displays: Bulk Density

```
Domain Reference = 11
N  = 36
Leaf Unit = 0.010

 1    15  9
 1    16
 1    17
 2    18  3
 2    19
 5    20  379
 14   21  223445789
(14)  22  13444566777788
 8    23  01112335
```

```
Domain Reference = 12
N  = 30
Leaf Unit = 0.010

 2    21  89
 11   22  034677999
(19)  23  0001112233444555557
```

```
* NOTE * No data in Domain 13
```

```
Domain Reference = 14
N  = 7
Leaf Unit = 0.010

 1   19  0
 3   20  04
(1)  21  7
 3   22  06
 1   23  7
```

```
Domain Reference = 21
N  = 45
Leaf Unit = 0.010

 2    19  14
 3    20  8
 7    21  4779
 21   22  22445555667899
(15)  23  012233445555689
 9    24  122678
 3    25  004
```

```
Domain Reference = 31
N  = 24
Leaf Unit = 0.010

 3    21  389
(18)  22  022334556778899999
 3    23  222
```

```
Domain Reference = 41
N  = 3
Leaf Unit = 0.010

 1   21  9
(2)  22  24
```

```
* NOTE * No data in Domain 42
```

```
Domain Reference = 43
N  = 8
Leaf Unit = 0.010

 1   18  2
 3   19  02
 3   20
(2)  21  34
 3   22  29
 1   23  5
```

```
* NOTE * No data in Domain 51
```

```
Domain Reference = 52
N  = 4
Leaf Unit = 0.010

 1   23  5
(2)  24  11
 1   25  4
```

```
* NOTE * No data in Domain 53
```

```
Domain Reference = 61
N  = 4
Leaf Unit = 0.010

 1   20  8
 1   21
(3)  22  468
```

```
Domain Reference = 62
N  = 11
Leaf Unit = 0.010

 3   20  014
 5   21  59
(6)  22  000233
```

Results for: Lower Till

Stem-and-Leaf Displays: Bulk Density

```
Domain Reference = 63
N  = 6
Leaf Unit = 0.010

 3  20  599
 3  21  1
 2  22  12


Domain Reference = 64
N  = 6
Leaf Unit = 0.010

 1  20  3
 3  21  28
 3  22  023


Domain Reference = 65
N  = 1
Leaf Unit = 0.010

(1)  21  0


Domain Reference = 71
N  = 8
Leaf Unit = 0.010

 1   21  4
(5)  22  33599
 2   23  13


Domain Reference = 72
N  = 3
Leaf Unit = 0.010

(2)  22  45
 1   23  0
```

Results for: Lower Till

Stem-and-Leaf Displays: Dry Density

```
Domain Reference = 11
N  = 36
Leaf Unit = 0.010

 1    14  3
 1    15
 2    16  5
 2    17
 6    18  1368
 13   19  1135566
(16)  20  0122235556667999
 7    21  0000447
```

```
Domain Reference = 12
N  = 30
Leaf Unit = 0.010

 5   19  45678
 15  20  3357888999
 15  21  001122223444569
```

* NOTE * No data in Domain 13

```
Domain Reference = 14
N  = 7
Leaf Unit = 0.010

 1   17  5
 3   18  44
(1)  19  8
 3   20  07
 1   21
 1   22  1
```

```
Domain Reference = 21
N  = 45
Leaf Unit = 0.010

 2    16  38
 4    17  05
 8    18  2567
 17   19  033345569
(14)  20  01112667788999
 14   21  0001125789
 4    22  013
 1    23  0
```

```
Domain Reference = 31
N  = 24
Leaf Unit = 0.010

 7    18  2236899
(15)  19  112222344455566
 2    20  00
```

```
Domain Reference = 41
N  = 3
Leaf Unit = 0.010

 1   18  8
(2)  19  15
```

* NOTE * No data in Domain 42

```
Domain Reference = 43
N  = 8
Leaf Unit = 0.010

 1   15  0
 3   16  03
 3   17
(2)  18  24
 3   19  0
 2   20  3
 1   21  0
```

* NOTE * No data in Domain 51

```
Domain Reference = 52
N  = 4
Leaf Unit = 0.010

 2  22  05
 2  23  39
```

* NOTE * No data in Domain 53

```
Domain Reference = 61
N  = 4
Leaf Unit = 0.010

 1   17  9
 1   18
 1   19
(3)  20  145
```

```
Domain Reference = 62
N  = 11
Leaf Unit = 0.010

 1   16  0
 3   17  59
 4   18  5
(6)  19  335679
 1   20  3
```

Stem-and-Leaf Displays: Dry Density

```
Domain Reference = 63
N  = 6
Leaf Unit = 0.010

(4)  18  1258
 2   19  67


Domain Reference = 64
N  = 6
Leaf Unit = 0.010

 2   18  13
(4)  19  1559


Domain Reference = 65
N  = 1
Leaf Unit = 0.010

(1)  17  6


Domain Reference = 71
N  = 8
Leaf Unit = 0.010

 1   18  1
(4)  19  5799
 3   20  289


Domain Reference = 72
N  = 3
Leaf Unit = 0.010

(3)  20  005
```

Results for: Silty Till

Stem-and-Leaf Displays

Stem-and-Leaf Displays: w (%)

```
Domain Reference = 51
N  = 7
Leaf Unit = 1.0

 1   0  8
(3)  1  122
 3   1
 3   2
 3   2  66
 1   3
 1   3  8
```

```
Domain Reference = 52
N  = 8
Leaf Unit = 1.0

 1   1  0
 1   1
(4)  2  0114
 3   2  6
 2   3  0
 1   3
 1   4
 1   4  8
```

```
Domain Reference = 53
N  = 2
Leaf Unit = 1.0

 1  0  7
 1  1
 1  1  5
```

Stem-and-Leaf Displays: WL (%)

```
Domain Reference = 51
N  = 7
Leaf Unit = 1.0

(4)  2  1111
 3   2
 3   3  3
 2   3
 2   4  1
 1   4  5
```

```
Domain Reference = 52
N  = 7
Leaf Unit = 1.0

 1   1  3
 1   1
 2   2  4
(2)  2  67
 3   3
 3   3
 3   4
 3   4  6
 2   5  0
 1   5
 1   6
 1   6
 1   7  1
```

```
Domain Reference = 53
N  = 2
Leaf Unit = 1.0

 1  2  2
 1  2
 1  3  3
```

Stem-and-Leaf Displays: Wp (%)

```
Domain Reference = 51
N  = 7
Leaf Unit = 1.0

(4)  1  6666
 3   2  4
 2   2
 2   3
 2   3  6
 1   4  0
```

```
Domain Reference = 52
N  = 5
Leaf Unit = 1.0

 1   2  3
 2   2  5
 2   3
(2)  3  78
 1   4
 1   4
 1   5
 1   5
 1   6  1
```

Stem-and-Leaf Displays

```
Domain Reference = 53
N  = 2
Leaf Unit = 1.0

 1  1  9
 1  2
 1  2  8
```

Stem-and-Leaf Displays: Ip (%)

```
Domain Reference = 51
N  = 7
Leaf Unit = 0.10

 1   1  0
 1   2
 1   3
 1   4
(4)  5  0000
 2   6
 2   7
 2   8
 2   9  00
```

```
Domain Reference = 52
N  = 5
Leaf Unit = 0.10

 1   1   0
 1   2
 1   3
 2   4   0
 2   5
 2   6
 2   7
 2   8
(1)  9   0
 2   10  0
 1   11
 1   12  0
```

```
Domain Reference = 53
N  = 2
Leaf Unit = 0.10

 1  3  0
 1  4
 1  5  0
```

Stem-and-Leaf Displays: % GRAVEL

```
Domain Reference = 51
N  = 9
Leaf Unit = 1.0

 1   0  3
 1   0
 1   1
 1   1
 1   2
 2   2  5
(3)  3  111
 4   3
 4   4  3
 3   4  7
 2   5  1
 1   5
 1   6  4
```

```
Domain Reference = 52
N  = 10
Leaf Unit = 1.0

 1   0  0
 1   0
 1   1
 1   1
 1   2
 1   2
 4   3  133
(3)  3  667
 3   4  0
 2   4  9
 1   5
 1   5
 1   6  1
```

```
Domain Reference = 53
N  = 3
Leaf Unit = 1.0

(2)  4  34
 1   4  7
```

Results for: Silty Till

Stem-and-Leaf Displays

Stem-and-Leaf Displays: % SAND

```
Domain Reference = 51
N  = 9
Leaf Unit = 1.0

 1   0  4
 1   0
 2   0  8
 2   1
 2   1
 4   1  55
(1)  1  6
 4   1  9
 3   2  0
 2   2
 2   2
 2   2
 2   2  9
 1   3
 1   3
 1   3  5


Domain Reference = 52
N  = 10
Leaf Unit = 1.0

 2  1  45
 2  1
 2  1
 3  2  0
 5  2  22
 5  2  4
 4  2  6
 3  2  88
 1  3  1


Domain Reference = 53
N  = 3
Leaf Unit = 1.0

 1   1  5
(1)  1  7
 1   1
 1   2  0
```

Stem-and-Leaf Displays: % Fines

```
Domain Reference = 51
N  = 9
Leaf Unit = 1.0

 2   1  68
 2   2
 3   2  8
 3   3
(2)  3  56
 4   4  1
 3   4  6
 2   5
 2   5  9
 1   6
 1   6
 1   7
 1   7
 1   8
 1   8
 1   9  3


Domain Reference = 52
N  = 10
Leaf Unit = 1.0

 1  1  2
 1  1
 1  2
 1  2
 2  3  4
 5  3  566
 5  4  223
 2  4  6
 1  5
 1  5
 1  6
 1  6  9


Domain Reference = 53
N  = 3
Leaf Unit = 1.0

(2)  2  68
 1   3  2
```

Results for: Silty Till

Stem-and-Leaf Displays

Stem-and-Leaf Displays: Bulk Density

* NOTE * No data in Domain 51

```
Domain Reference = 52
N  = 4
Leaf Unit = 0.010

 1   15  9
 1   16
 1   16
 1   17
 1   17
 1   18
 1   18
 1   19
 1   19
 1   20
(3)  20  559
```

* NOTE * No data in Domain 53

Stem-and-Leaf Displays: Dry Density

* NOTE * No data in Domain 51

```
Domain Reference = 52
N  = 4
Leaf Unit = 0.010

 1  12  2
 1  12
 1  13
 1  13
 1  14
 1  14
 1  15
 1  15
 1  16
 2  16  5
 2  17  4
 1  17
 1  18
 1  18  6
```

* NOTE * No data in Domain 53

Results for: Hillwash

Stem-and-Leaf Displays

Stem-and-Leaf Display: w (%)

```
Domain Reference = 21
N  = 49
Leaf Unit = 1.0

 7   0  8889999
 13  1  001111
 23  1  2223333333
(9)  1  444444445
 17  1  66677
 12  1  88999
 7   2  001
 4   2  22
 2   2  5
 1   2
 1   2
 1   3
 1   3  2
```

Stem-and-Leaf Display: WL (%)

```
Domain Reference = 21
N  = 21
Leaf Unit = 1.0

 2   2  59
 6   3  3444
 9   3  678
(3)  4  012
 9   4  99
 7   5  04
 5   5  789
 2   6  1
 1   6  9
```

Stem-and-Leaf Display: Wp (%)

```
Domain Reference = 21
N  = 21
Leaf Unit = 1.0

 1   1  7
 3   1  89
 5   2  01
 7   2  22
(4)  2  4555
 10  2  6
 9   2  889
 6   3  01
 4   3  23
 2   3
 2   3  7
 1   3
 1   4
 1   4
 1   4  4
```

Stem-and-Leaf Display: Ip (%)

```
Domain Reference = 21
N  = 21
Leaf Unit = 1.0

 1   0  4
 2   0  6
 2   0
 4   1  01
 6   1  23
 7   1  5
(5)  1  66677
 9   1
 9   2  01
 7   2  2
 6   2  4445
 2   2  7
 1   2
 1   3
 1   3  3
```

Stem-and-Leaf Display: % GRAVEL

```
Domain Reference = 21
N  = 17
Leaf Unit = 1.0

 1   3  4
 1   3
 3   4  14
 7   4  5566
(4)  5  0022
 6   5
 6   6  1
 5   6  79
 3   7  002
```

Stem-and-Leaf Display: % SAND

```
Domain Reference = 21
N  = 17
Leaf Unit = 1.0

 1   1  6
 5   1  8899
 8   2  001
 8   2
(1)  2  4
 8   2  6
 7   2  88
 5   3  1
 4   3  2
 3   3  5
 2   3
 2   3  8
 1   4
 1   4
 1   4  5
```

Stem-and-Leaf Displays

Stem-and-Leaf Display: % Fines

Domain Reference = 21
N = 17
Leaf Unit = 1.0

```
 1   0  9
 3   1  00
 5   1  23
 7   1  45
 7   1
 8   1  9
(1)  2  1
 8   2  23
 6   2  4
 5   2  77
 3   2
 3   3  000
```

Stem-and-Leaf Display: Bulk Density

Domain Reference = 21
N = 16
Leaf Unit = 0.010

```
 1  15  9
 1  16
 2  17  5
 3  18  6
 4  19  6
 8  20  3345
 8  21  2459
 4  22  8
 3  23  5
 2  24
 2  25  14
```

Stem-and-Leaf Display: Dry Density

Domain Reference = 21
N = 16
Leaf Unit = 0.010

```
 1  14  0
 2  14  5
 2  15
 2  15
 2  16
 2  16
 4  17  02
 7  17  889
 8  18  3
 8  18  7
 7  19  3
 6  19  67
 4  20  4
 3  20  5
 2  21
 2  21  9
 1  22  2
```

Appendix C.5: Graphs and Charts

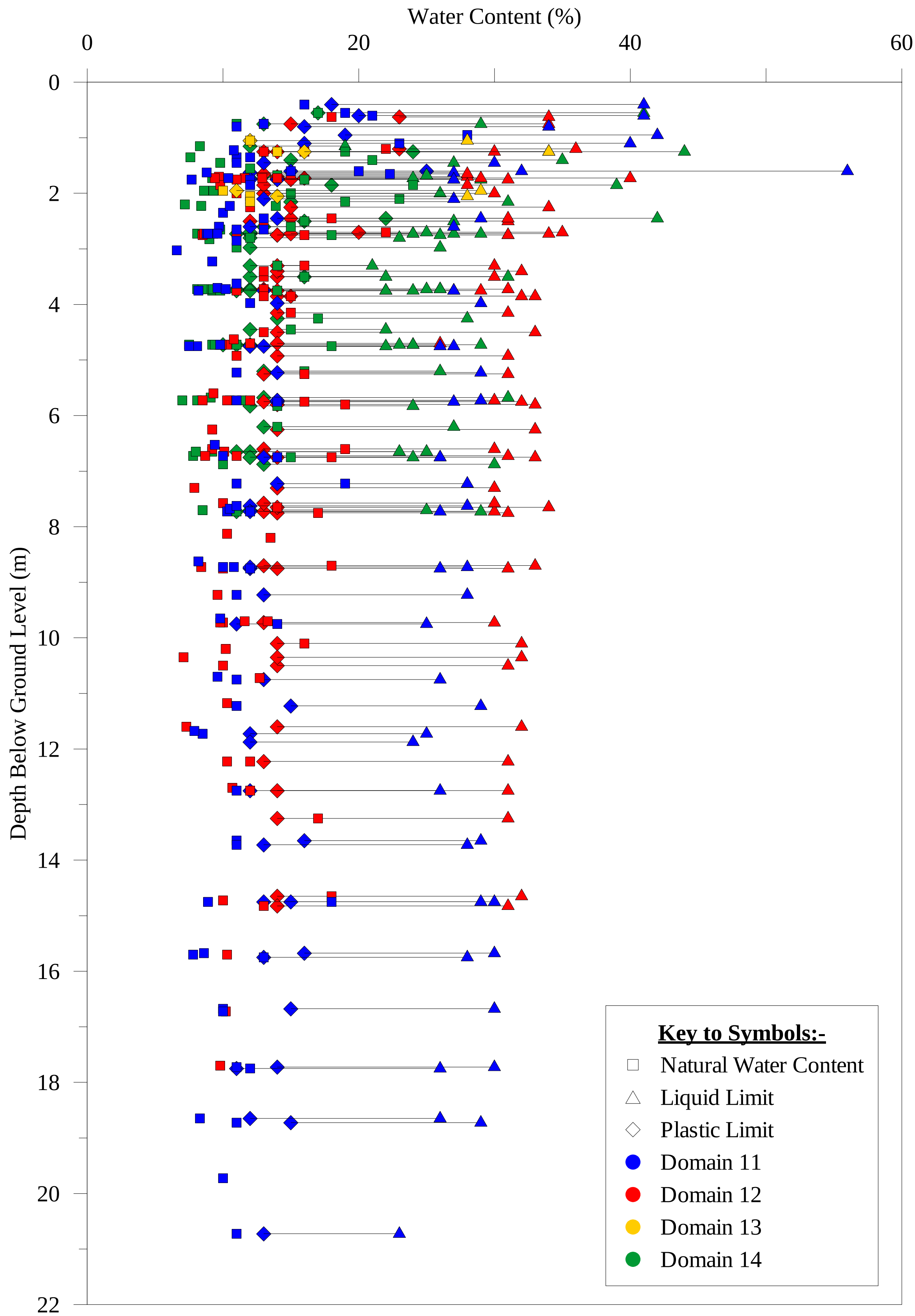
APPENDIX C.5: PARAMETER PLOTS

The following parameter plots are included in this Appendix:

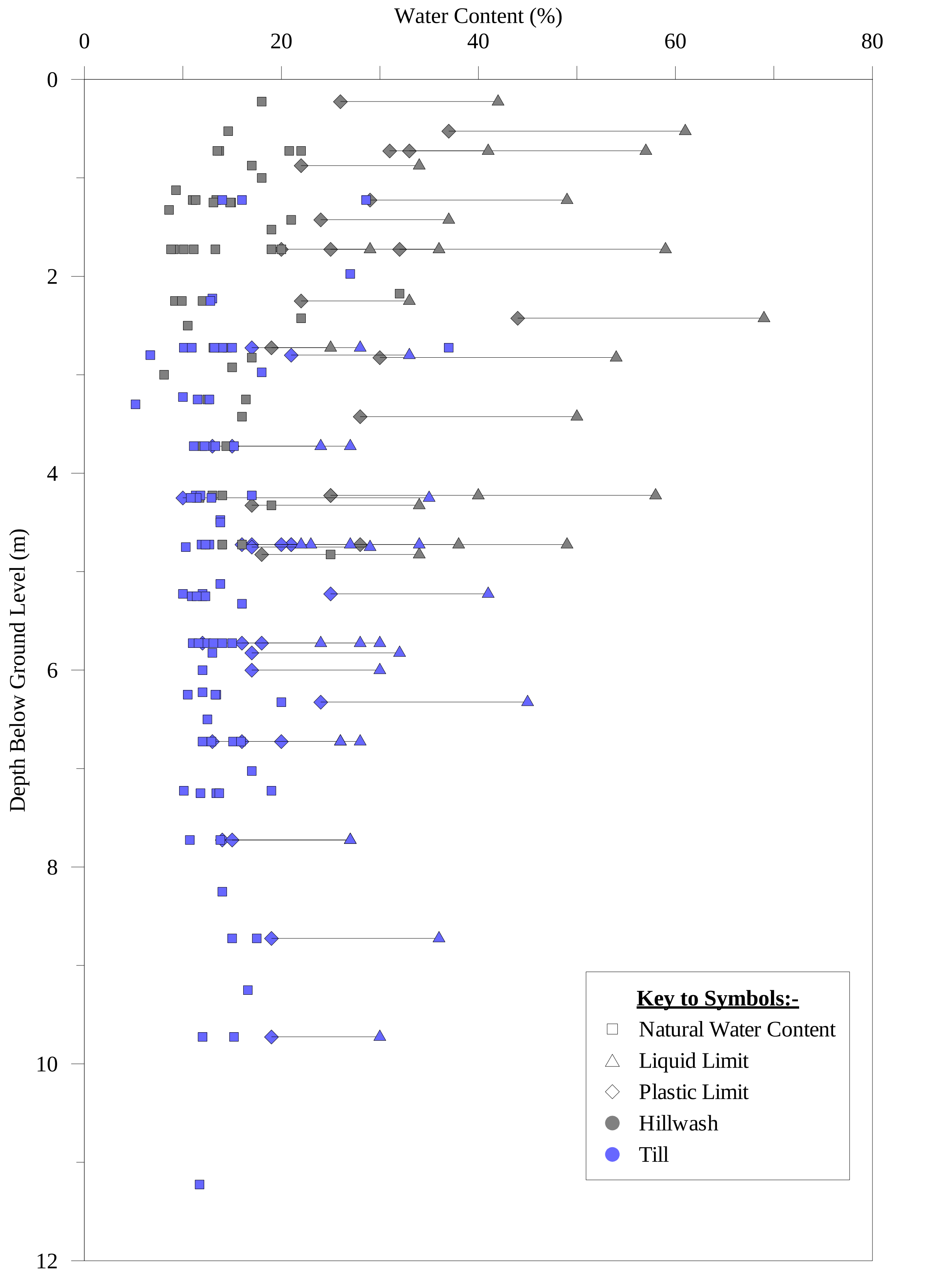
Plasticity and grading charts (Figures 02 to 32) are presented as one site per sheet, with domains differentiated but not upper and lower tills, with the exception of the hillwash at Site 2 (Wythop Wood) and silty till at Site 5 (High and Low Newton).

SPT and shear strength plots (Figures 33 to 89) are presented in groups by Domain reference, firstly as upper and lower tills per sheet, then as aggregated data. It should be noted that some domains contained data from only one till horizon; these Domains therefore have only one associated plot.

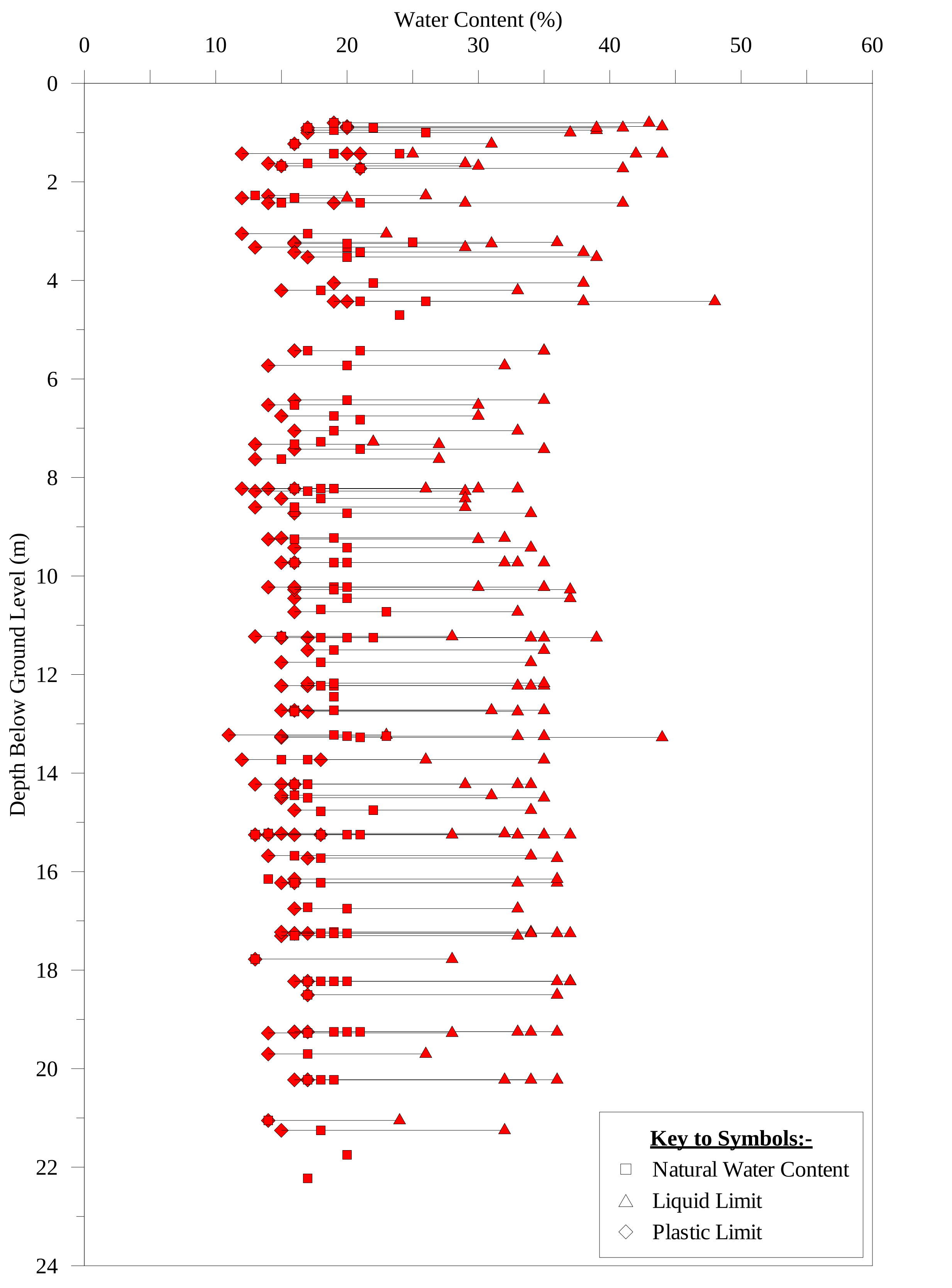
Since the majority of triaxial testing was multistage compression of 100mm specimens, the critical state or 20% strain was only achieved for the final loading stage, so there were fewer data points available. For this reason the 'critical state' failure envelopes are only plotted for the aggregated data from within a Domain. In many cases the pore water pressure was still falling when the tests were discontinued at 20% strain, so true critical state conditions were not realised.



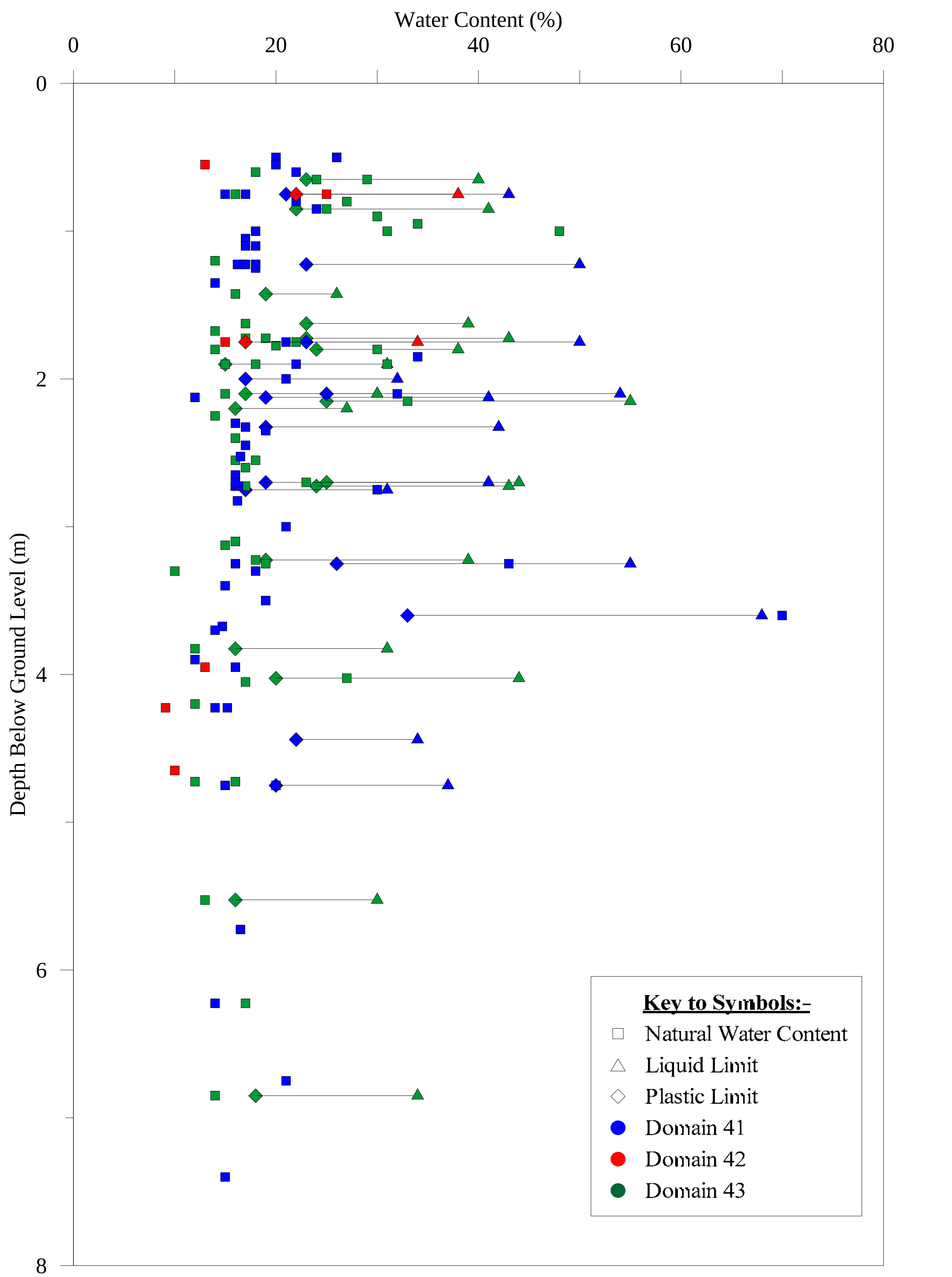
Appendix C.5	Atterberg Limits versus Depth: Site 1, Kirkby Stephen	Fig. 2



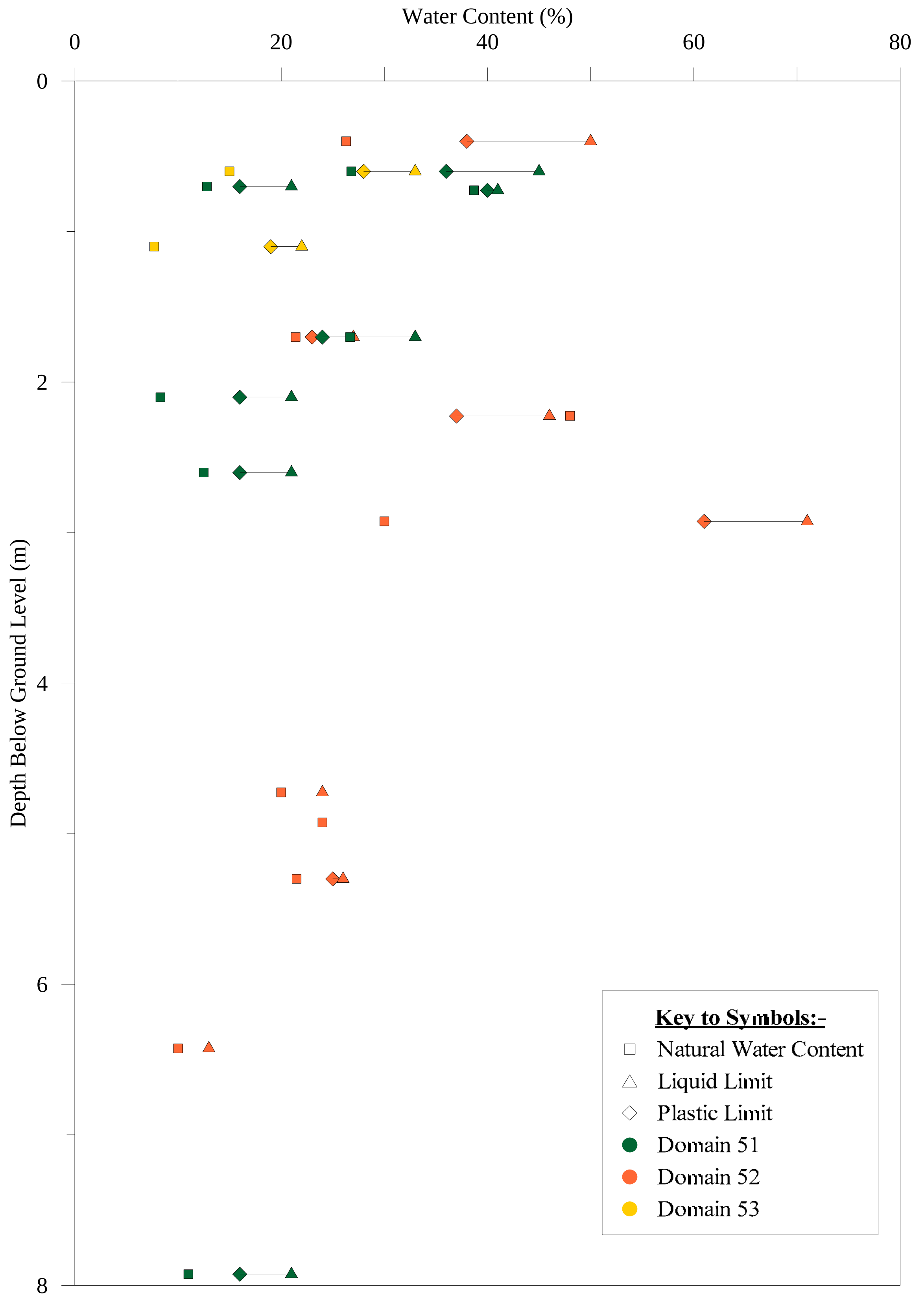
Appendix C.5	Atterberg Limits versus Depth: Site 2, Wythop Wood	Fig. 3



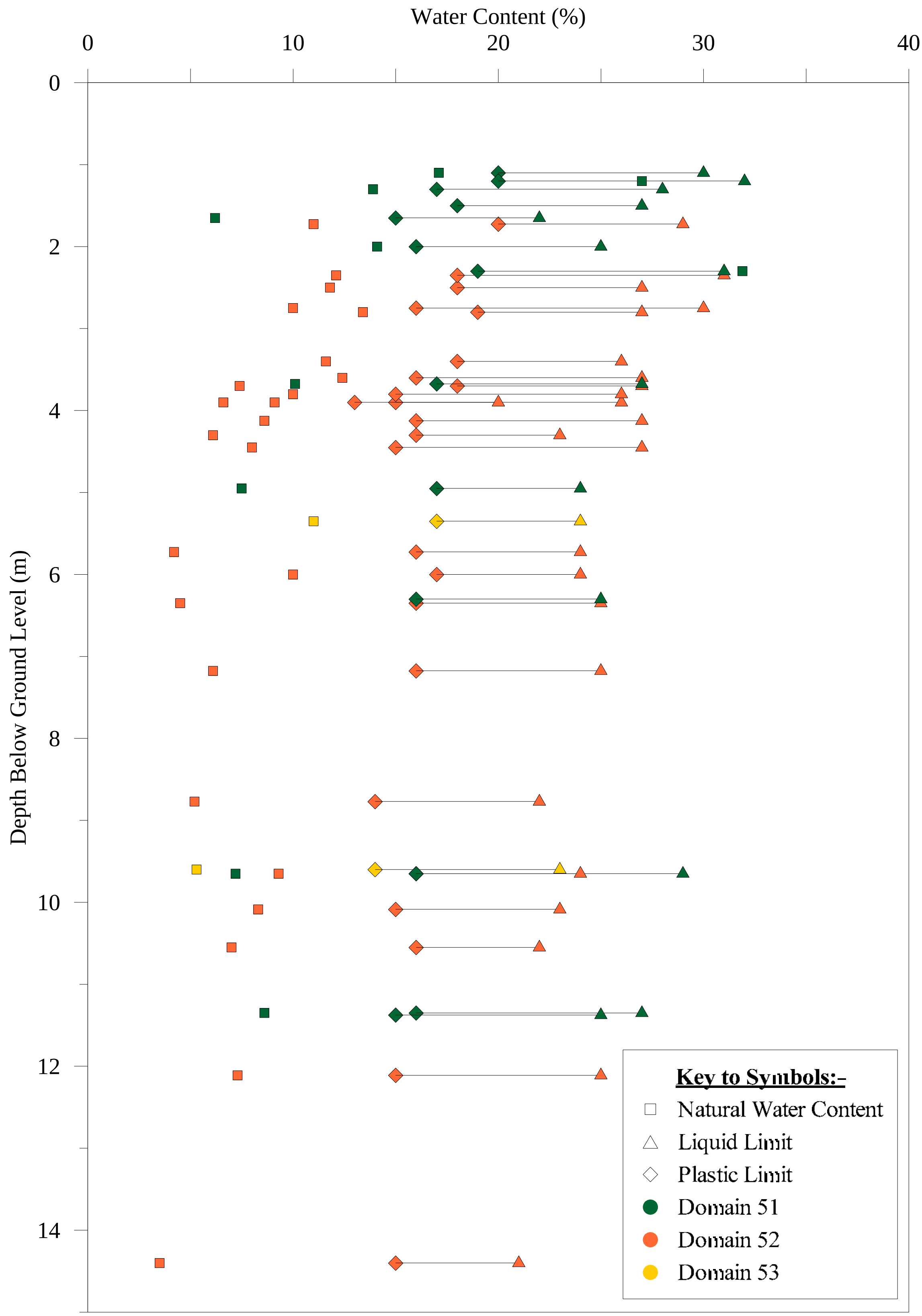
Appendix C.5	Atterberg Limits versus Depth: Site 3, Sowerby Wood	Fig. 4



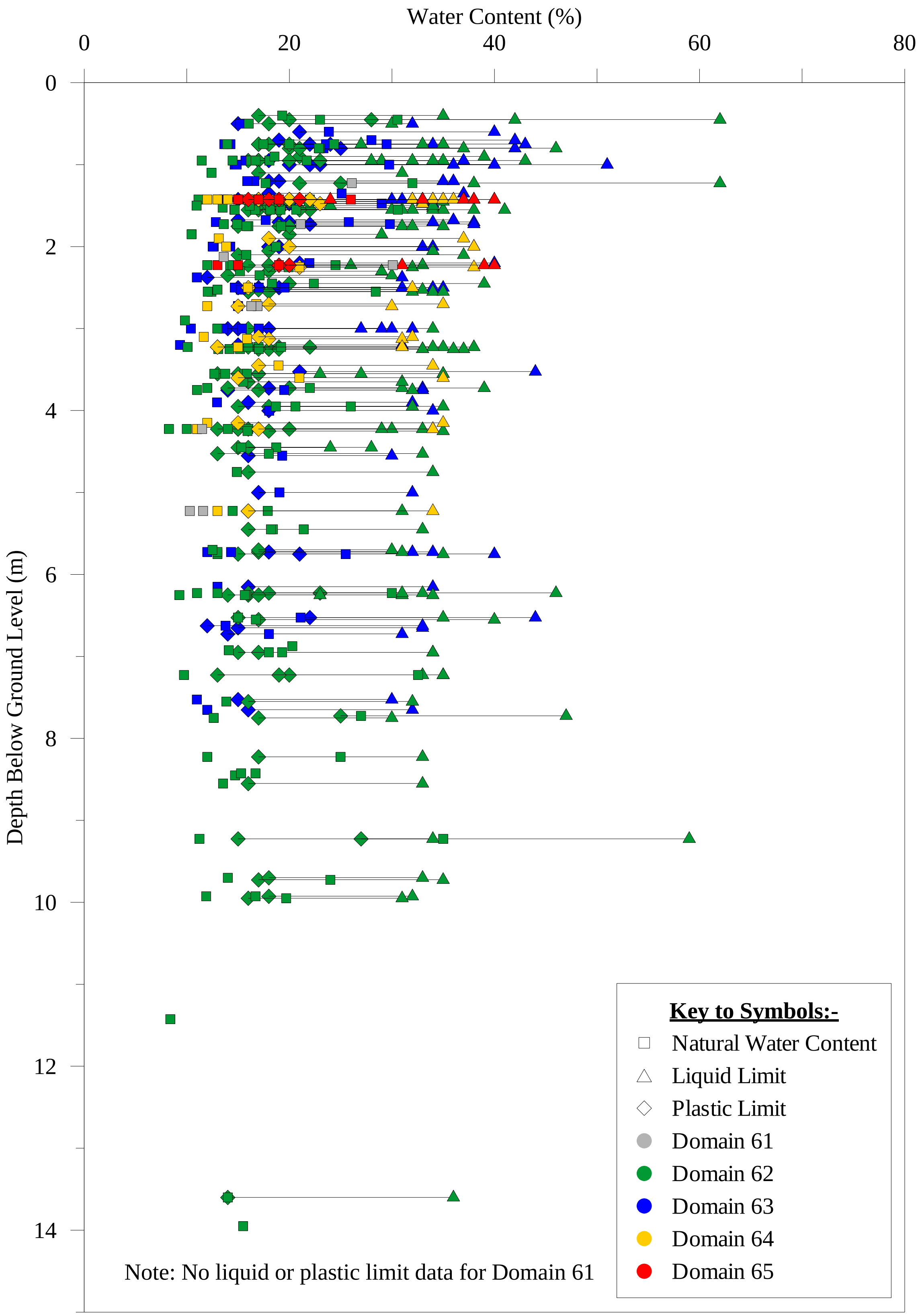
Appendix C.5	Atterberg Limits versus Depth: Site 4, Askam-in-Furness	Fig. 5



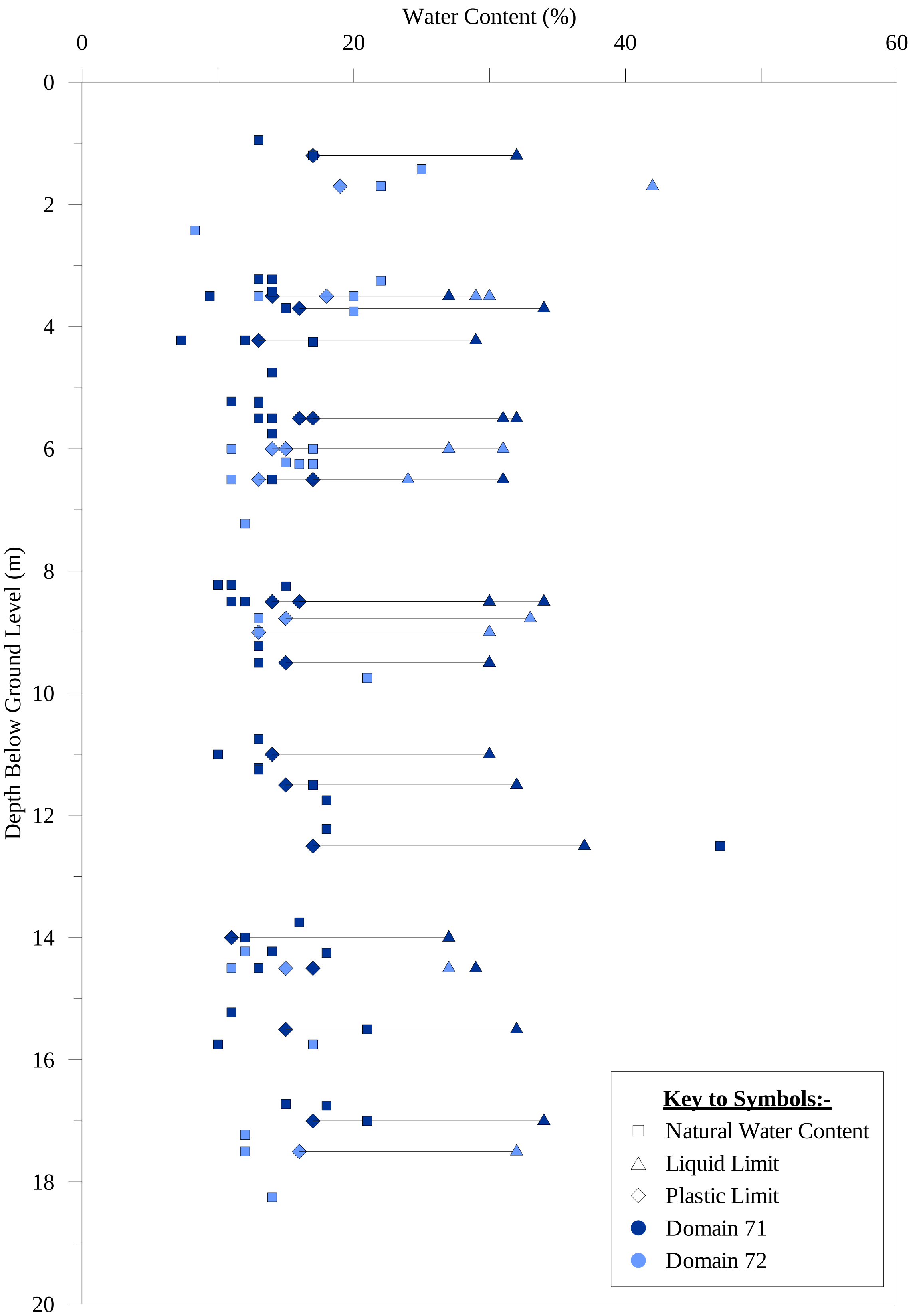
Appendix C.5	Atterberg Limits versus Depth: Silty Till Site 5, High and Low Newton	Fig. 6



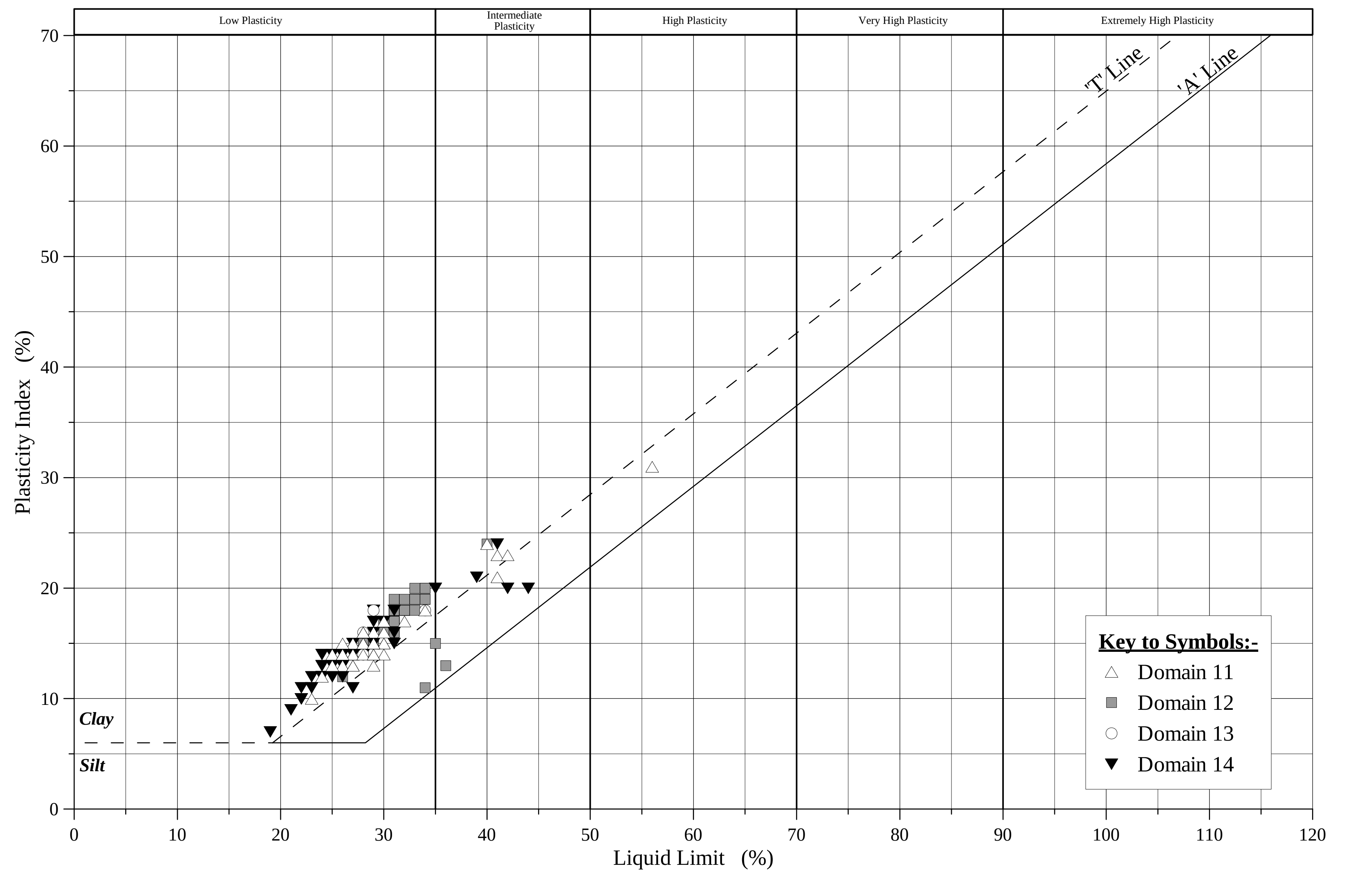
Appendix C.5	Atterberg Limits versus Depth: Clay Till Site 5, High and Low Newton	Fig. 7



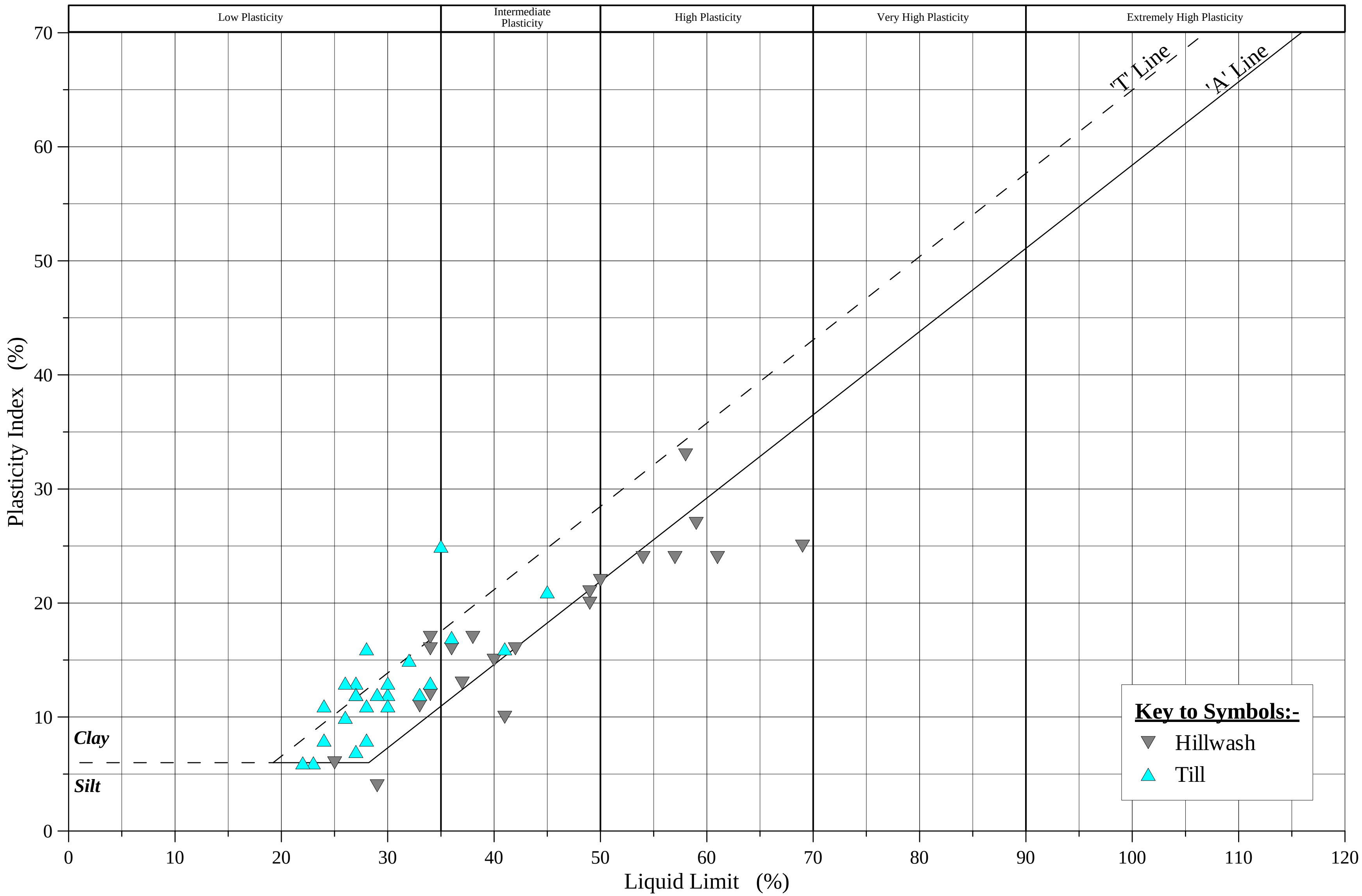
Appendix C.5	Atterberg Limits versus Depth: Site 6, Parton to Lillyhall	Fig. 8



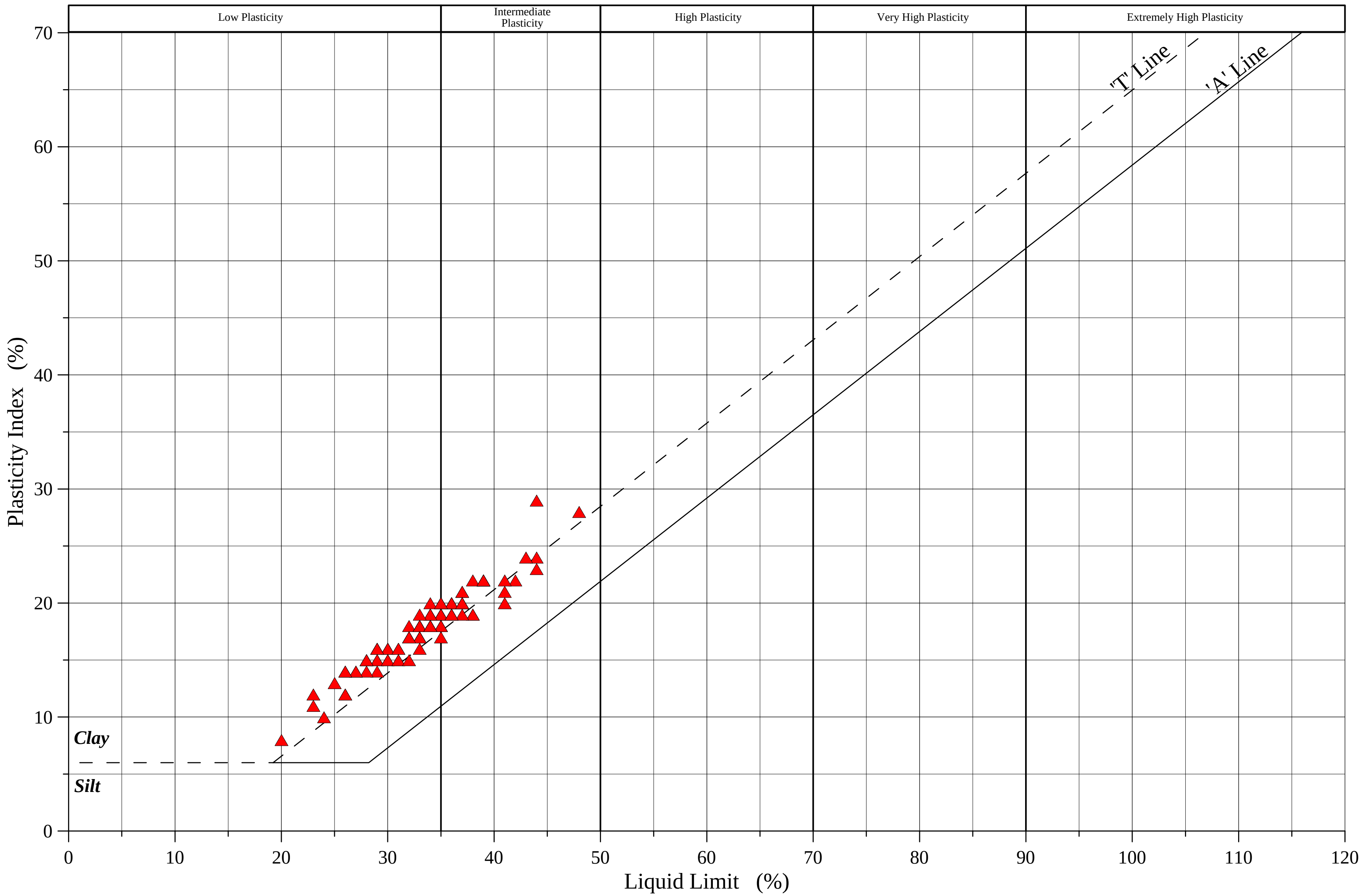
Appendix C.5	Atterberg Limits versus Depth: Site 7, Cleator Moor	Fig. 9



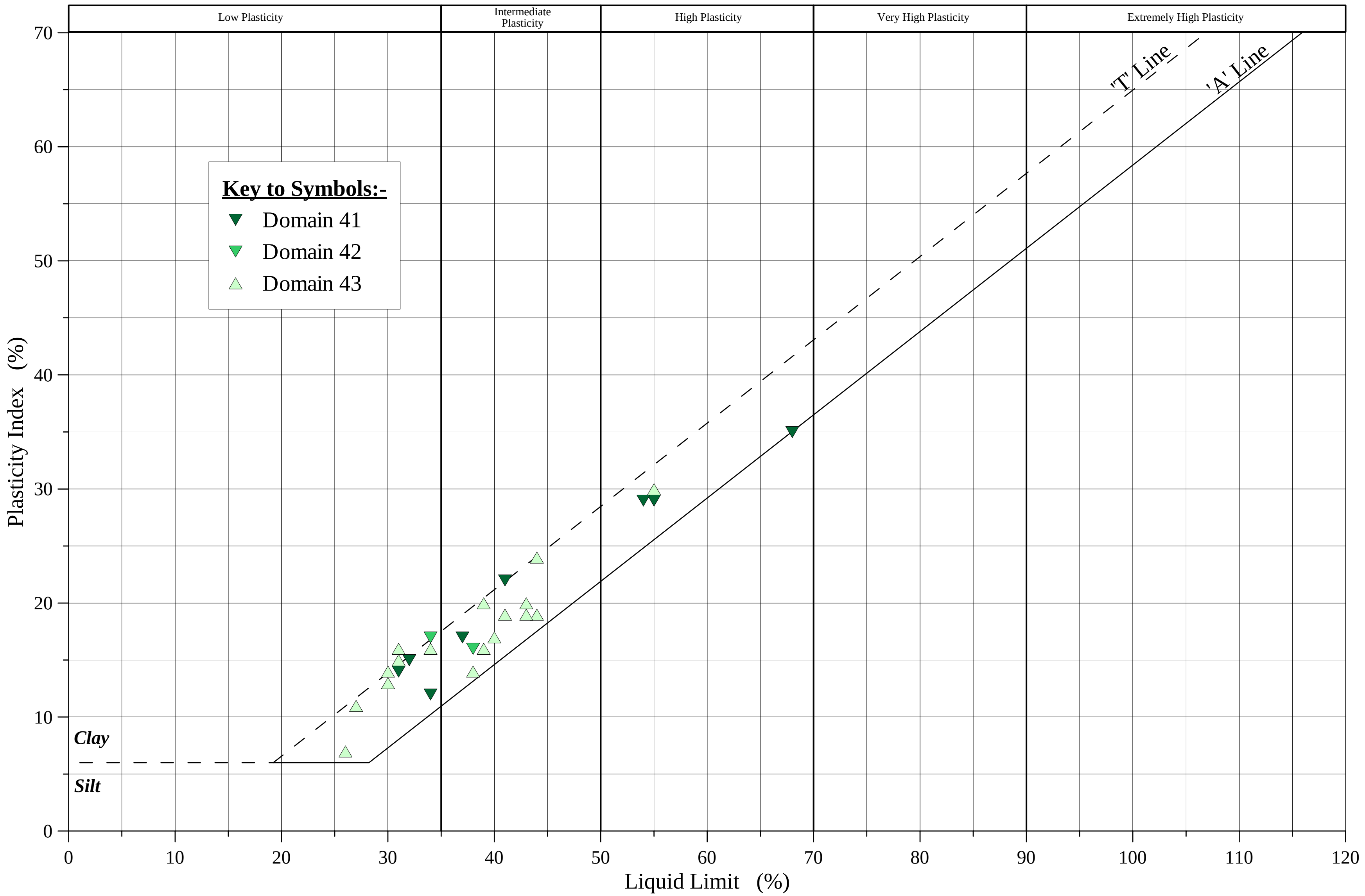
Appendix C.5	Casagrande Plasticity Chart: Site 1, Kirkby Stephen	Figure No.: 10



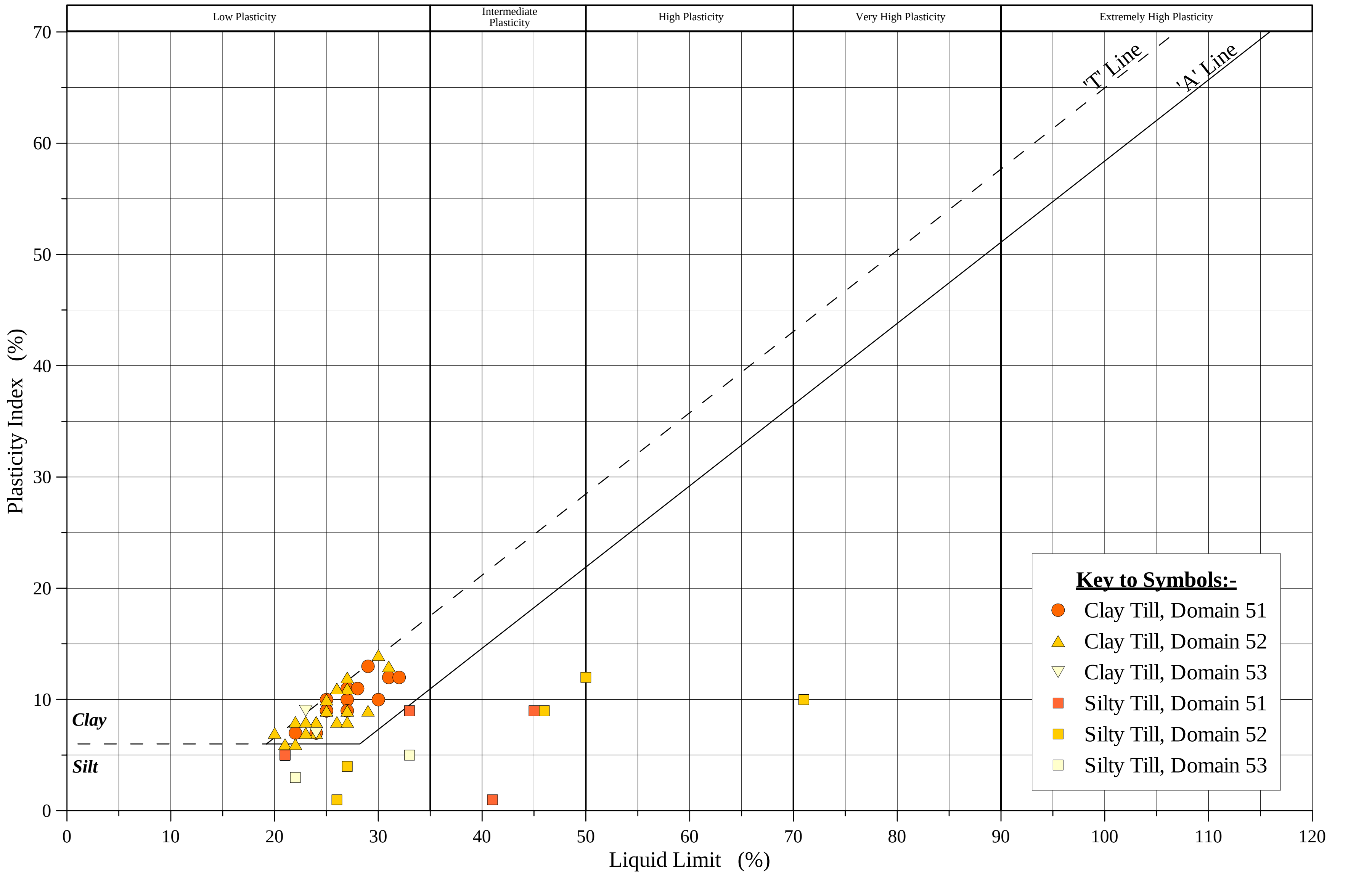
Appendix C.5	Casagrande Plasticity Chart: Site 2, Wythoop Wood	Figure No.: 11



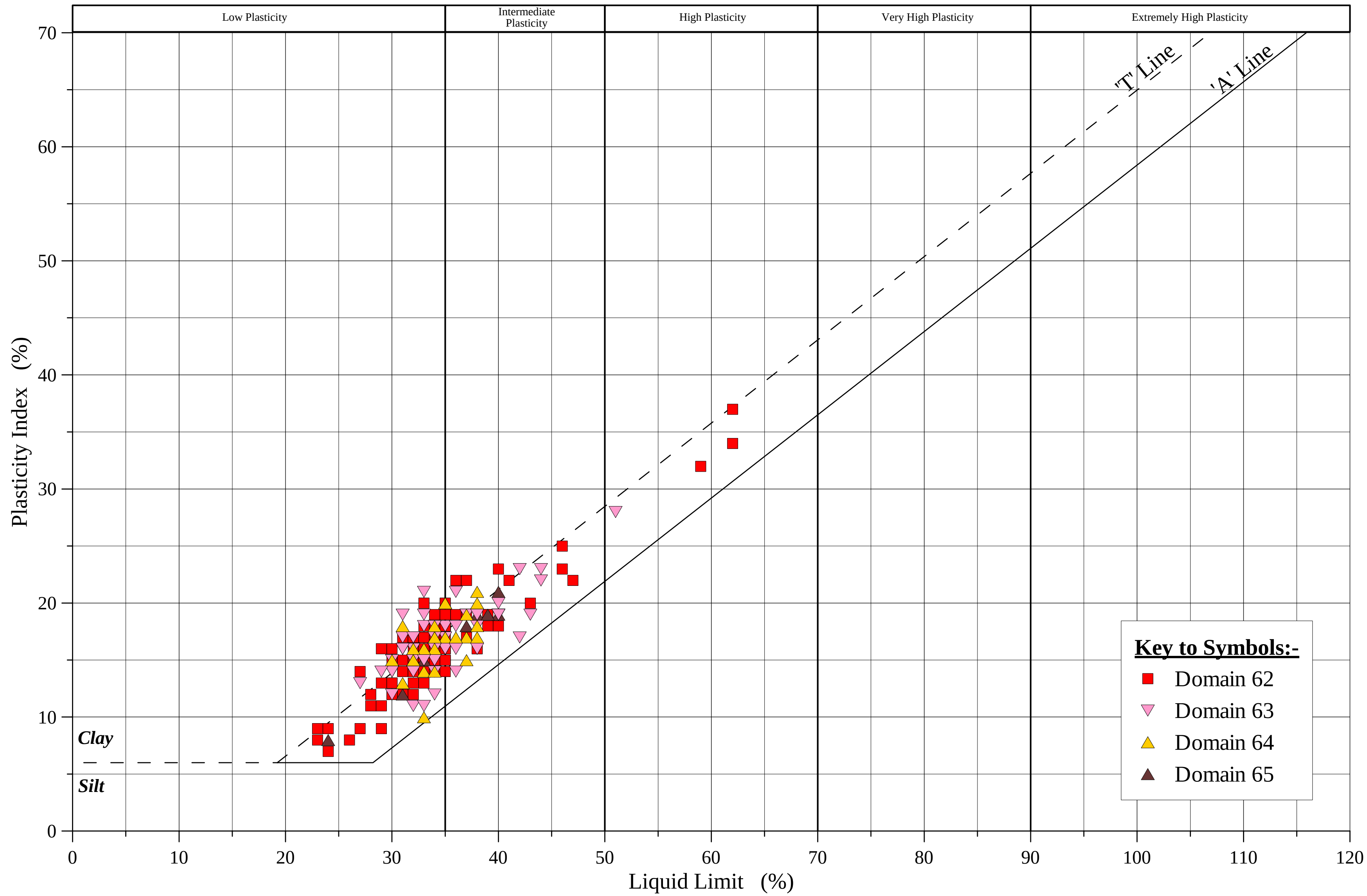
Appendix C.5	Casagrande Plasticity Chart: Site 3, Sowerby Wood	Figure No.: 12



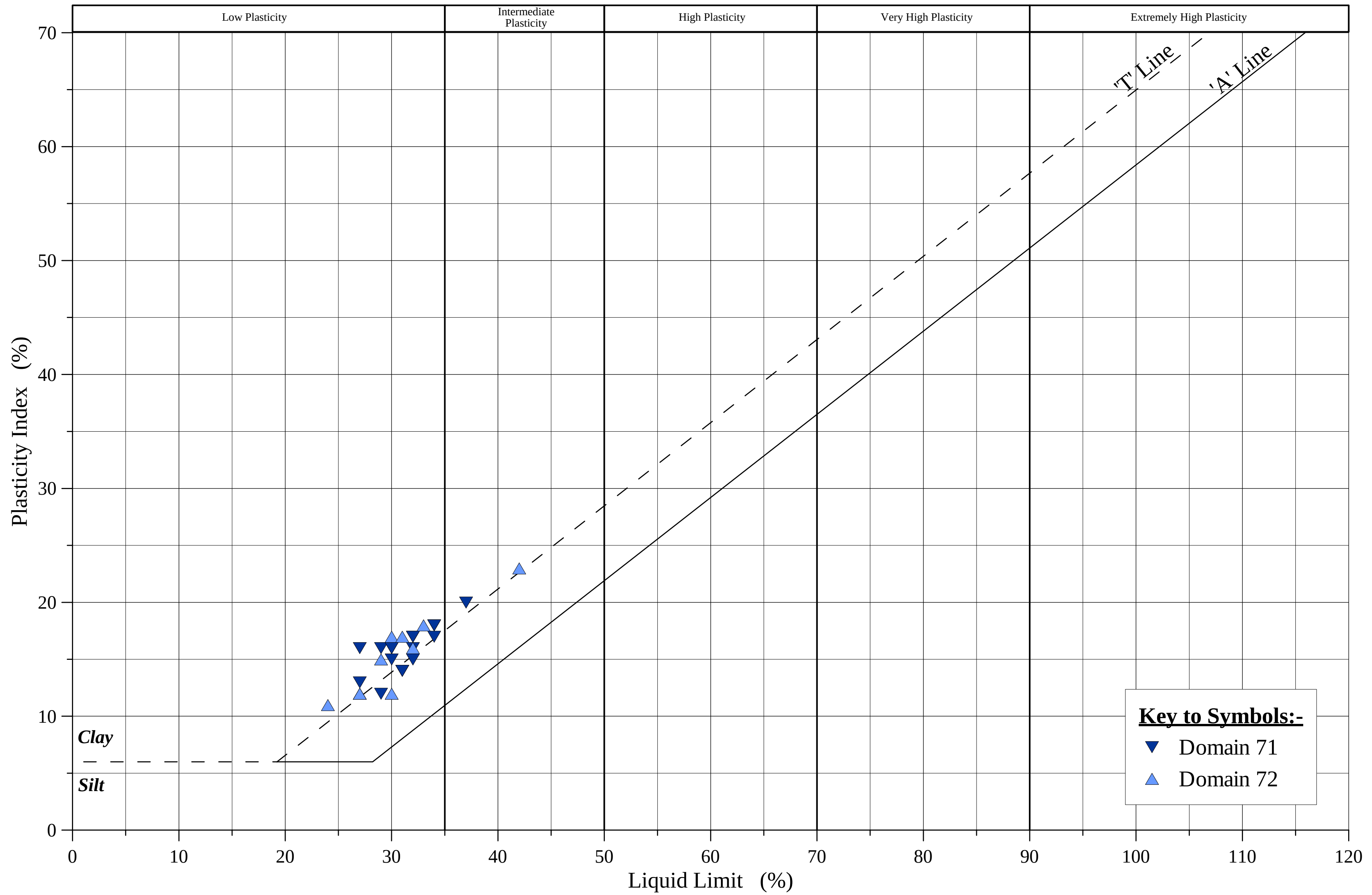
Appendix C.5	Casagrande Plasticity Chart: Site 4, Askam-in-Furness	Figure No.: 13



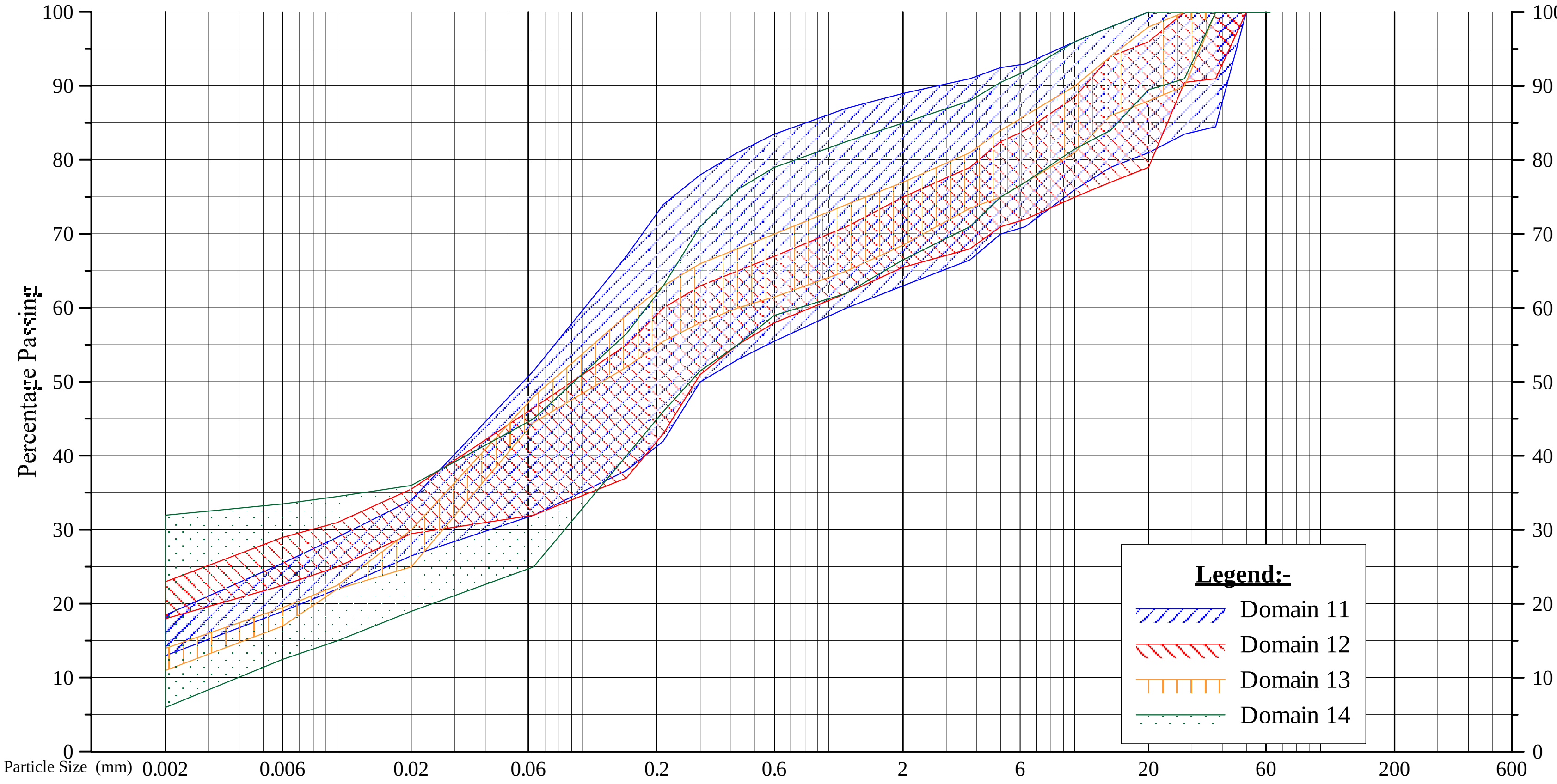
Appendix C.5	Casagrande Plasticity Chart: Site 5, High and Low Newton	Figure No.: 14



Appendix C.5	Casagrande Plasticity Chart: Site 6, High and Low Newton	Figure No.: 15



Appendix C.5	Casagrande Plasticity Chart: Site 7, Cleator Moor	Figure No.: 16

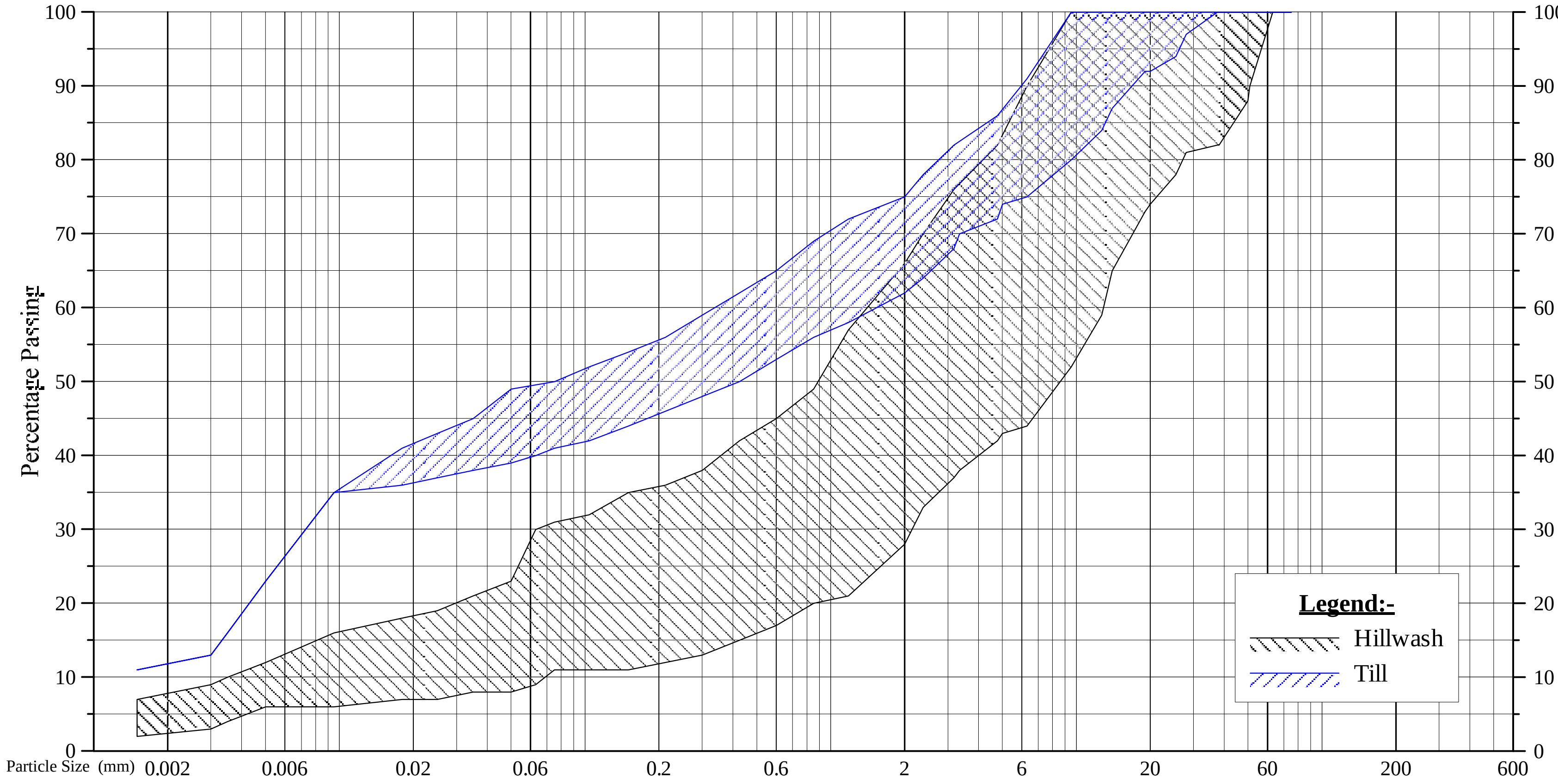


	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		
CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS

Appendix C.5

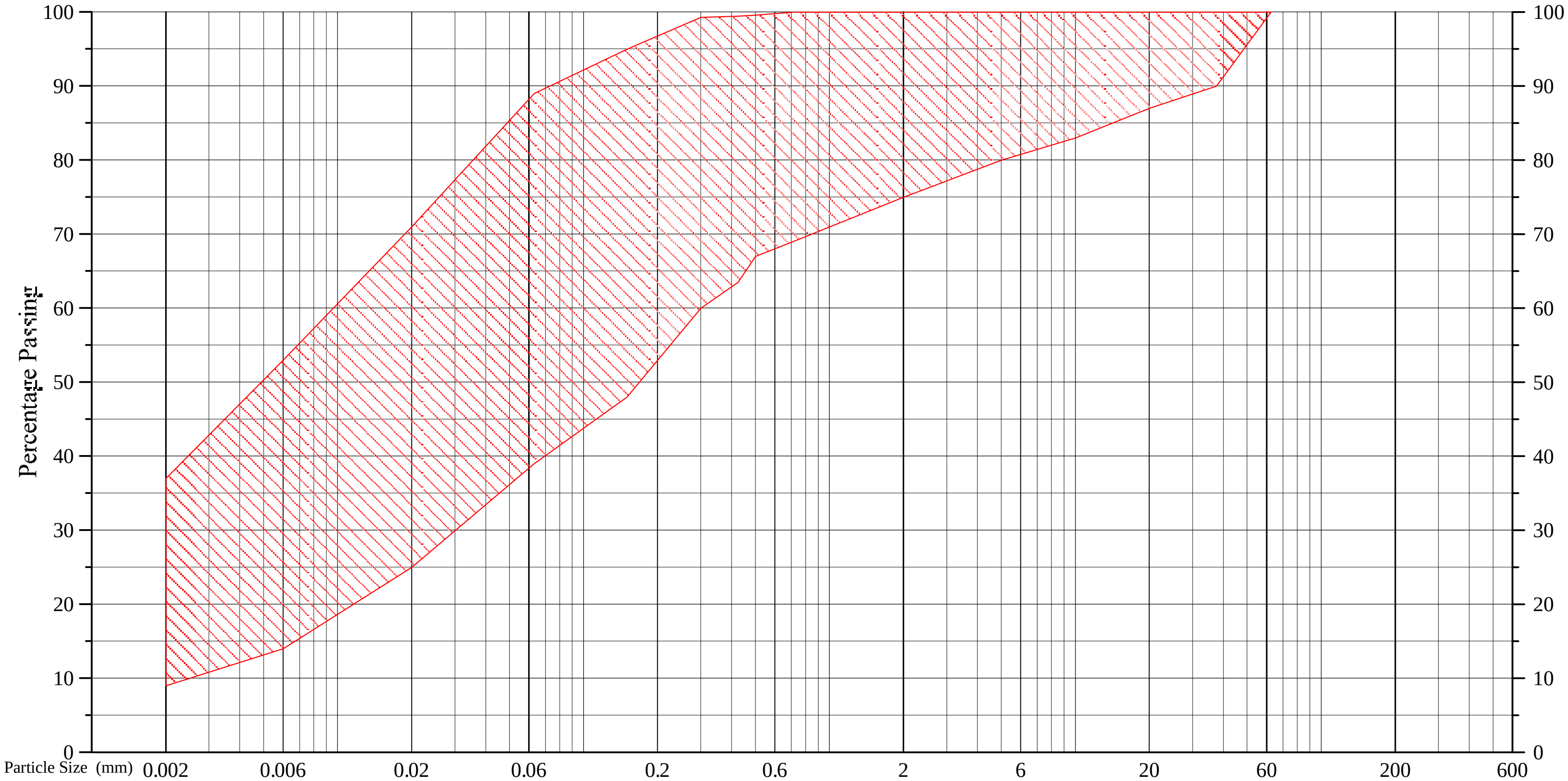
Grading Envelopes: Site 1, Kirkby Stephen

Figure No.: 17



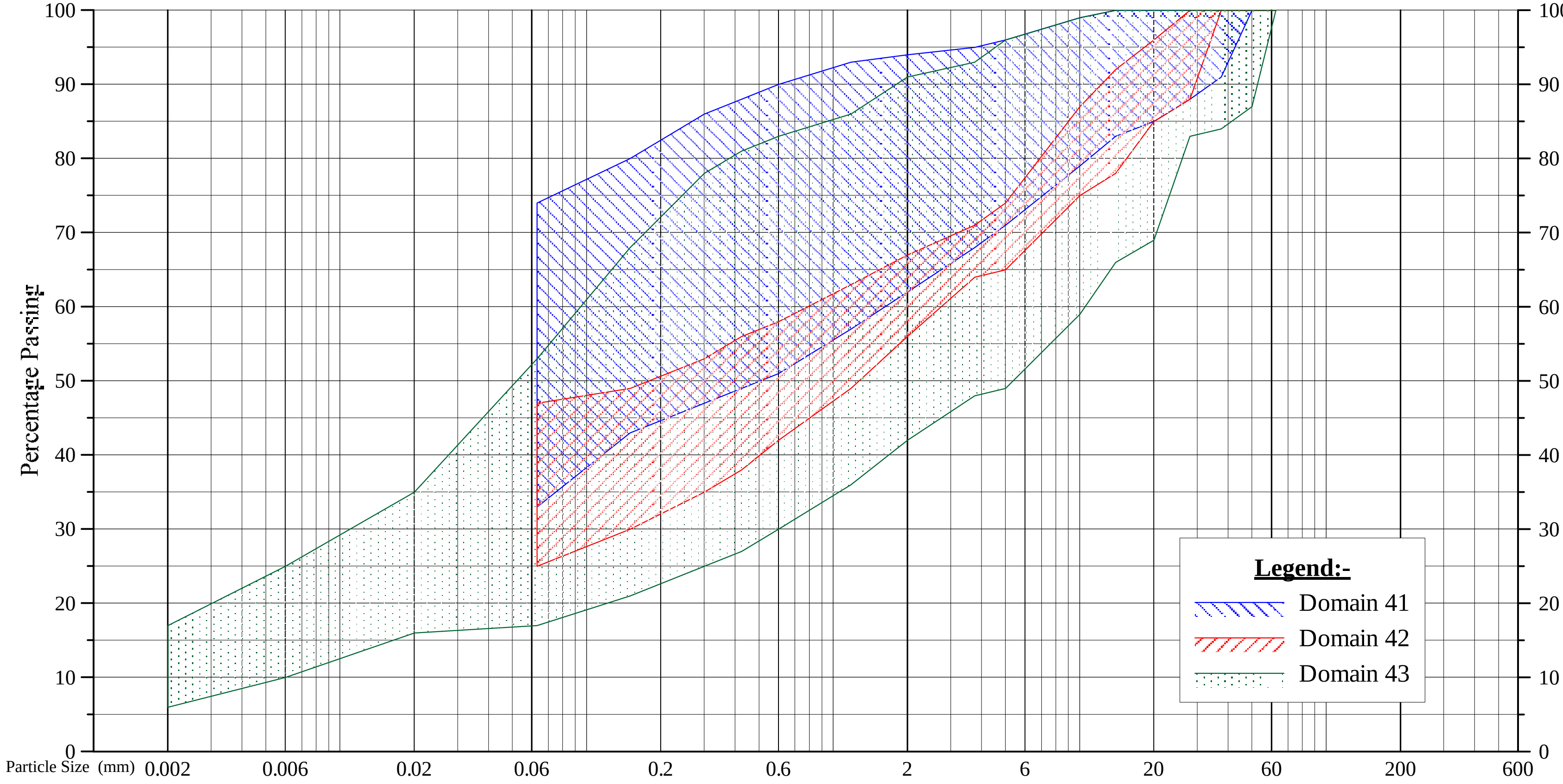
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		
CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS

Appendix C.5	Grading Envelopes: Site 2, Wythop Wood	Figure No.: 18



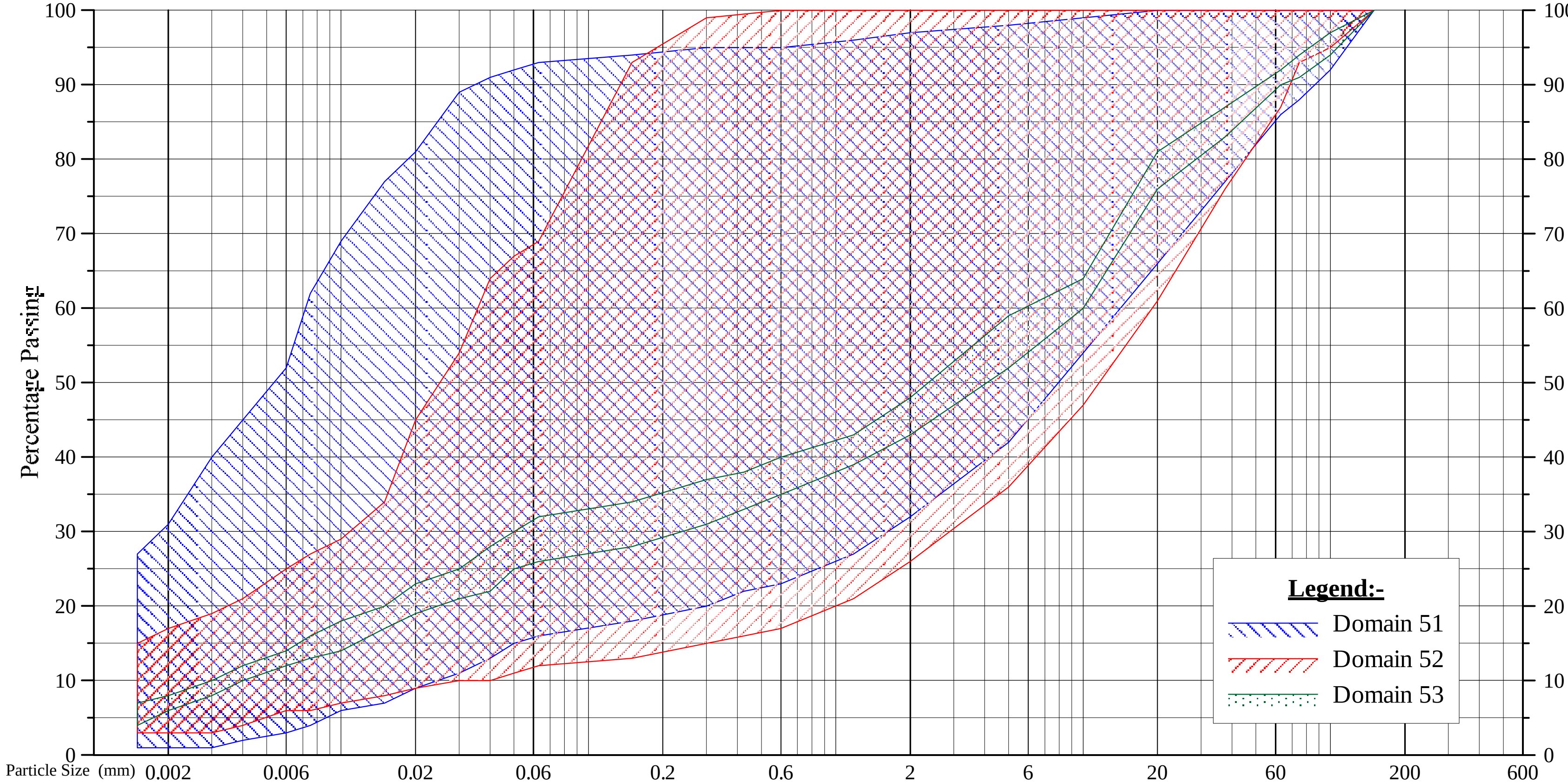
CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		

Appendix C.5	Grading Envelope: Site 3, Sowerby Wood	Figure No.: 19



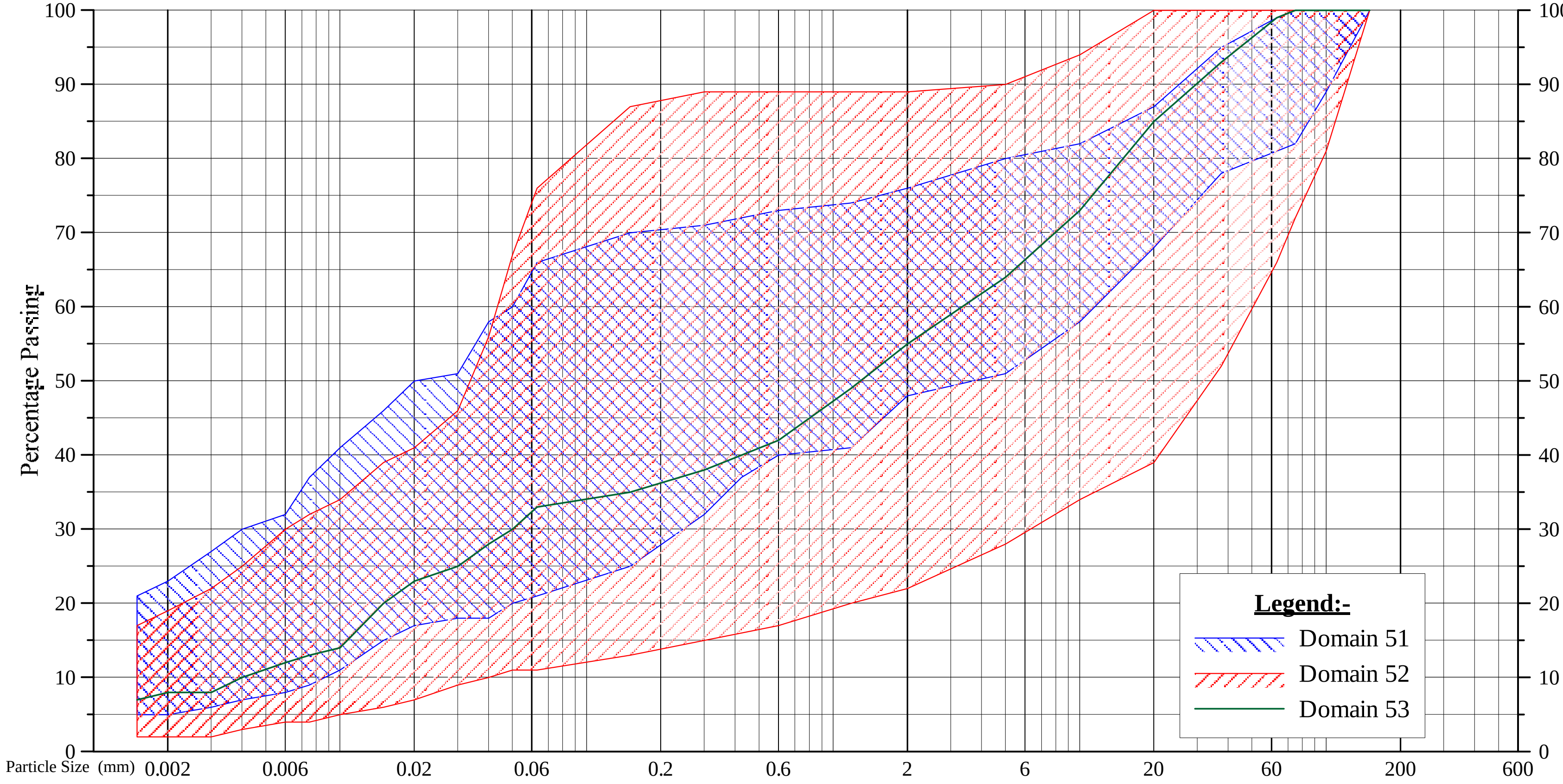
CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Appendix C.5	Grading Envelopes: Site 4, Askam-in-Furness	Figure No.: 20



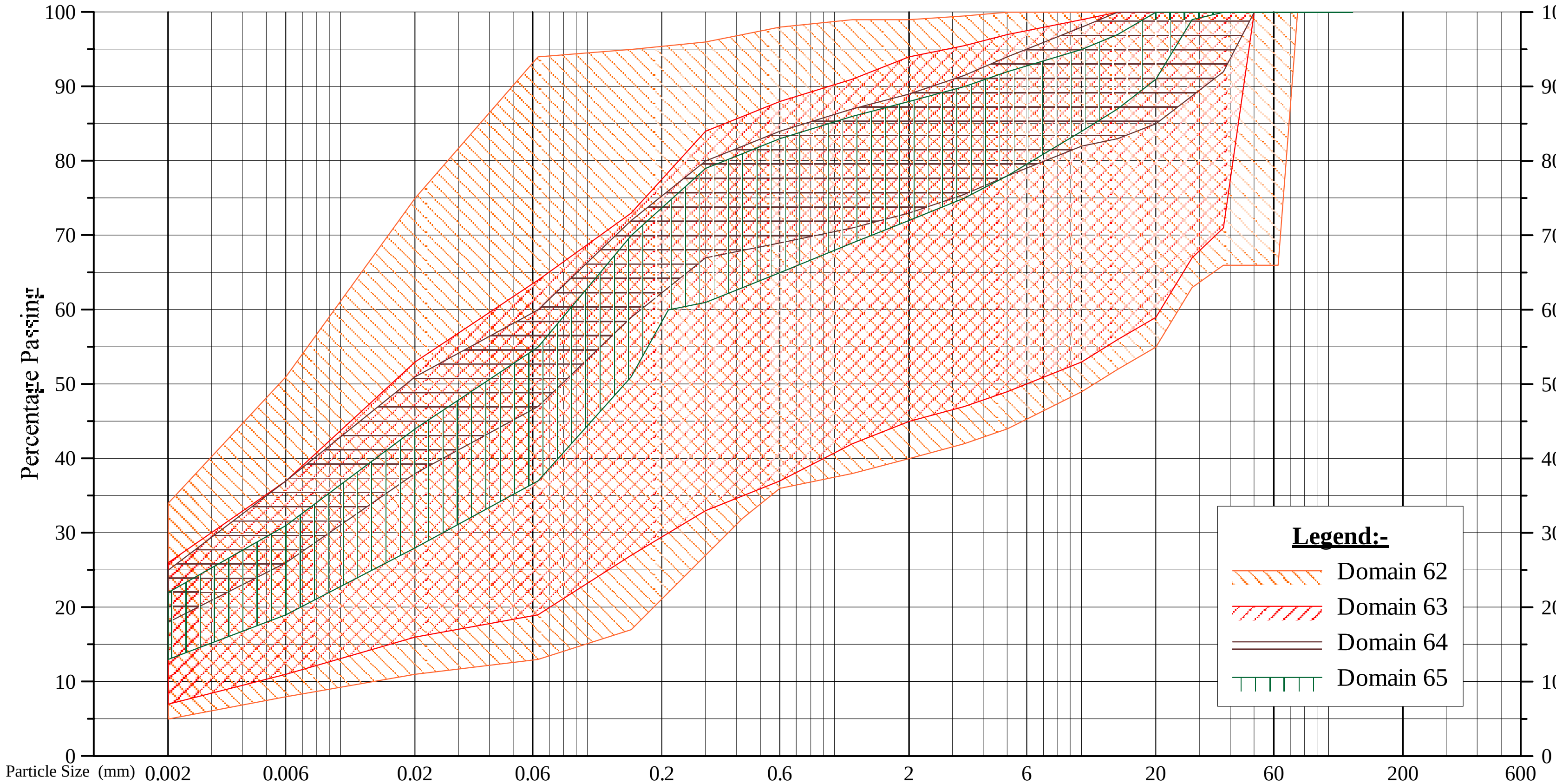
CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		

Appendix C.5	Grading Envelopes: Silty Till, Site 5, High and Low Newton	Figure No.: 21



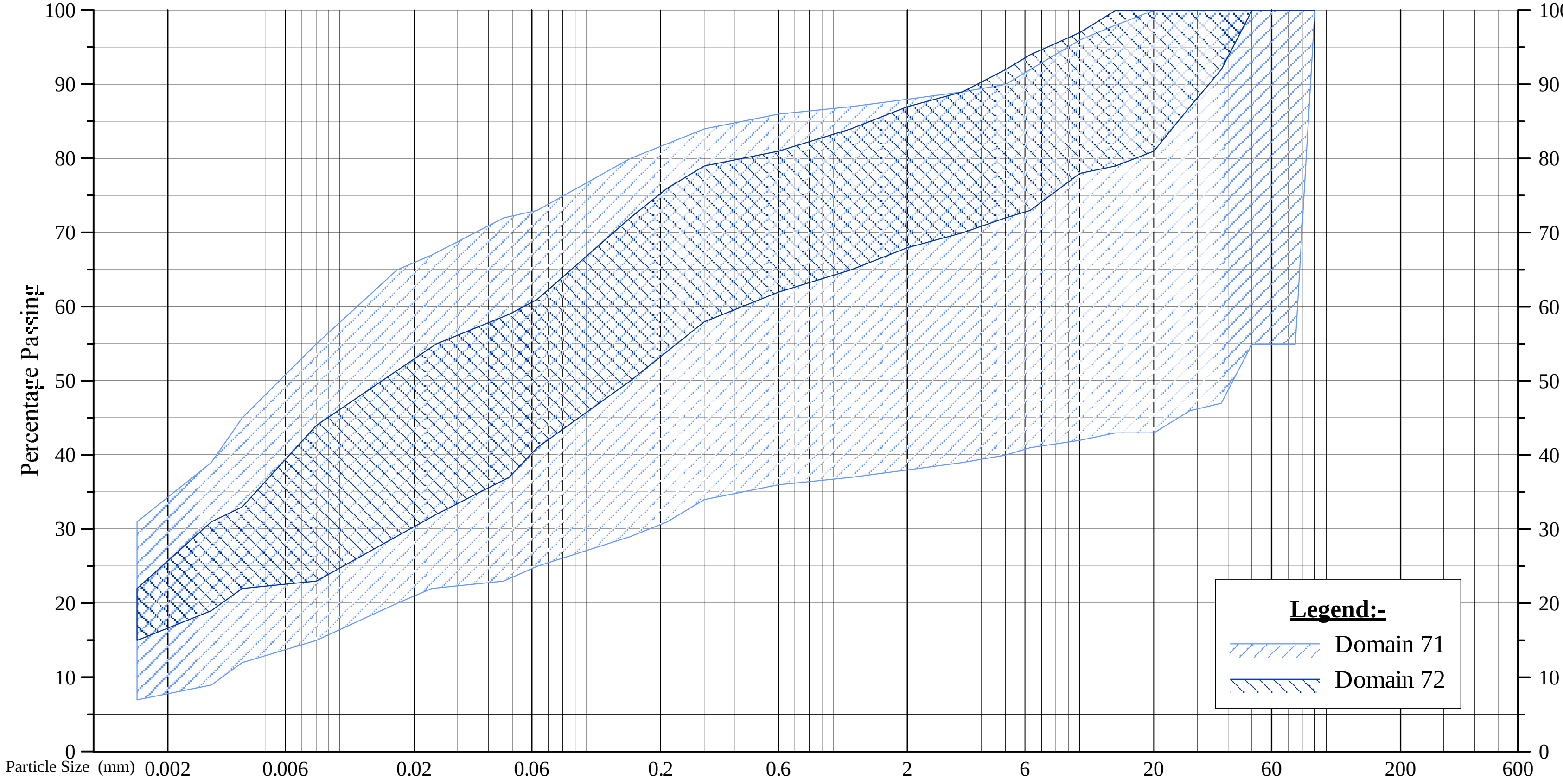
CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Appendix C.5	Grading Envelopes: Clay Till, Site 5, High and Low Newton	Figure No.: 22



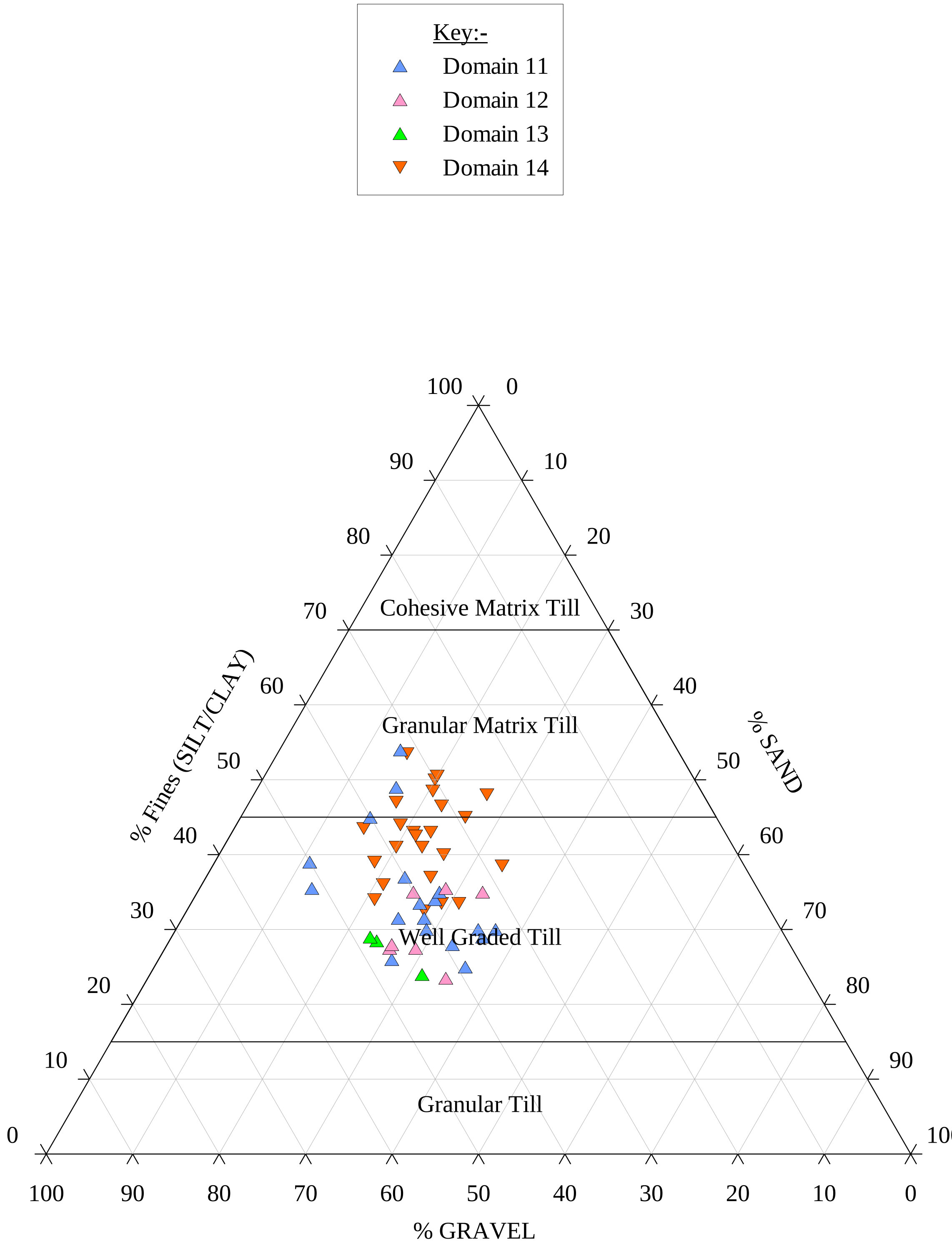
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		
CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS

Appendix C.5	Grading Envelopes: Site 6, Parton to Lillyhall	Figure No.: 23



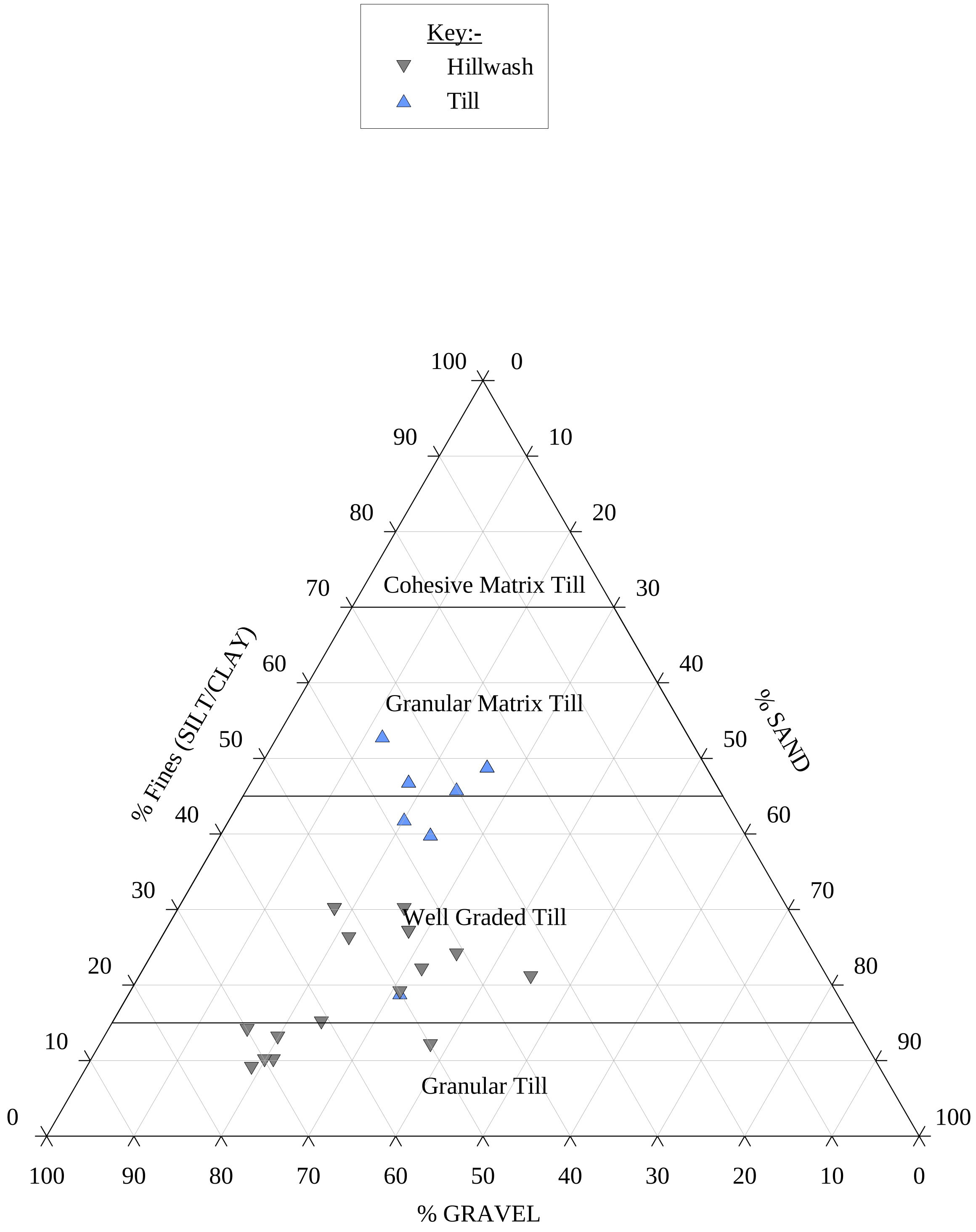
CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Appendix C.5	Grading Envelopes: Site 7, Cleator Moor	Figure No.: 24



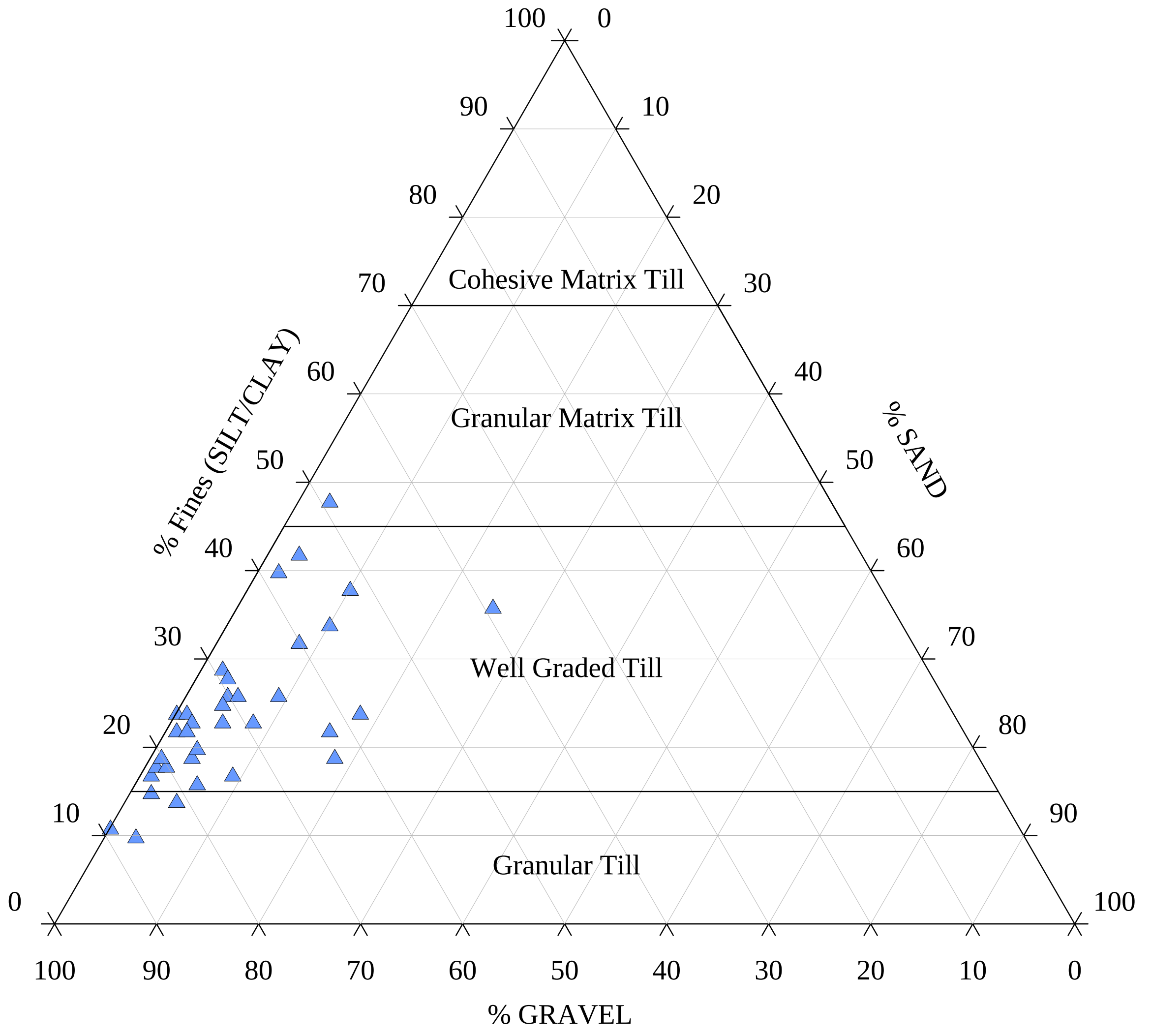
Note:- data normalised to 100% where necessary

Appendix C.5	Ternary Grading Chart: Site 1, Kirkby Stephen	Fig. 25



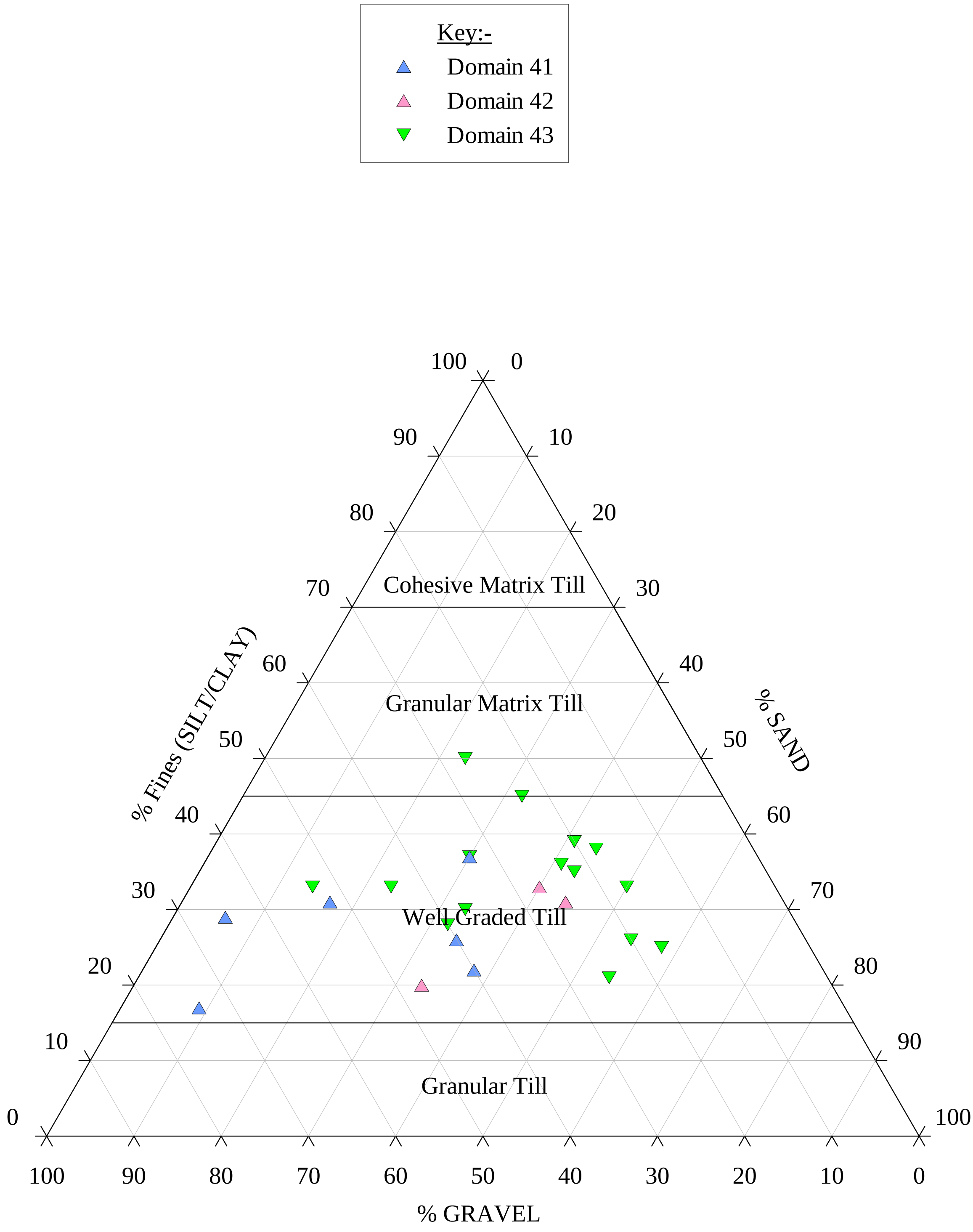
Note:- data normalised to 100% where necessary

Appendix C.5	Ternary Grading Chart: Site 2, Wythop Wood	Fig. 26



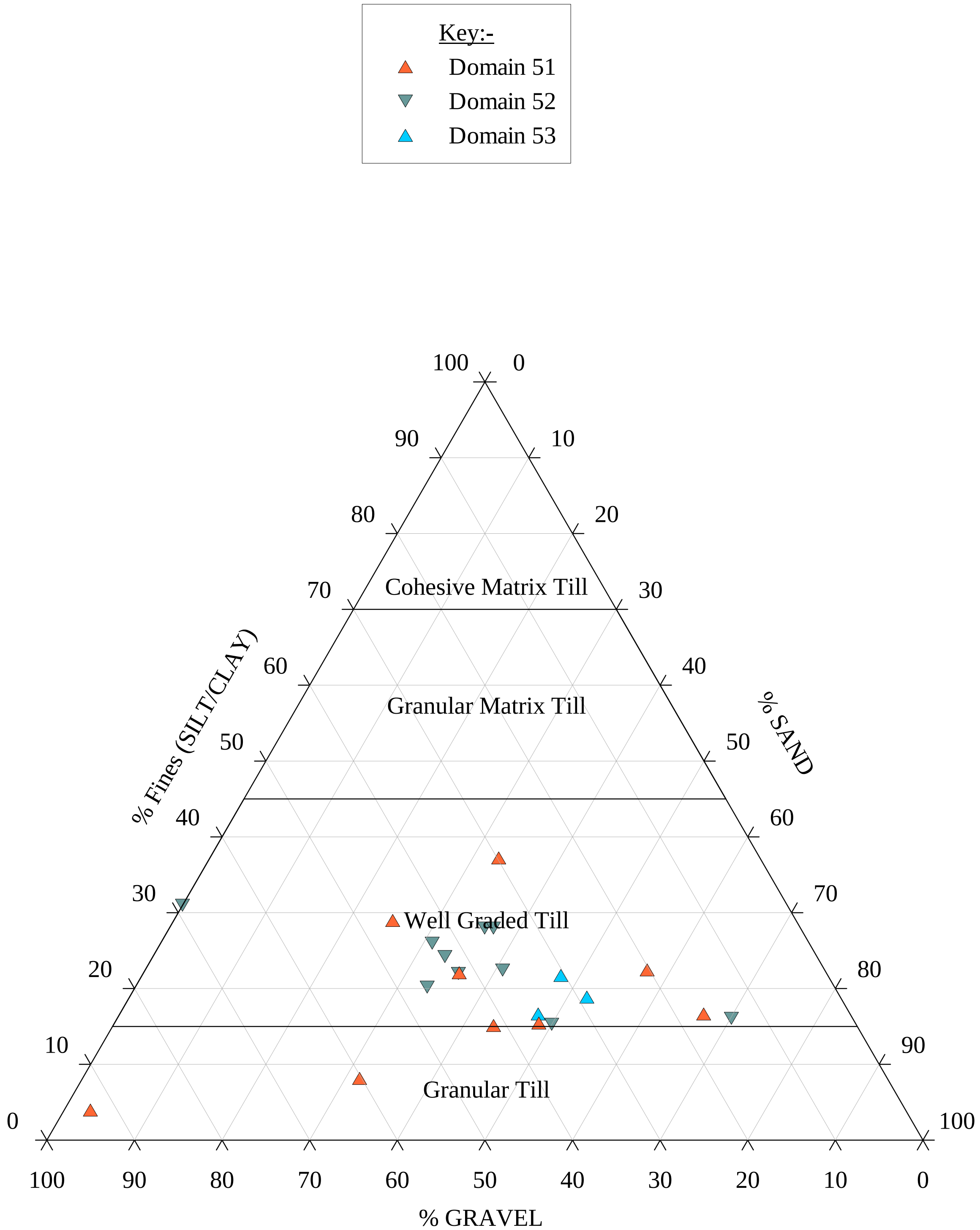
Note:- data normalised to 100% where necessary

Appendix C.5	Ternary Grading Chart: Site 3, Sowerby Wood	Fig. 27



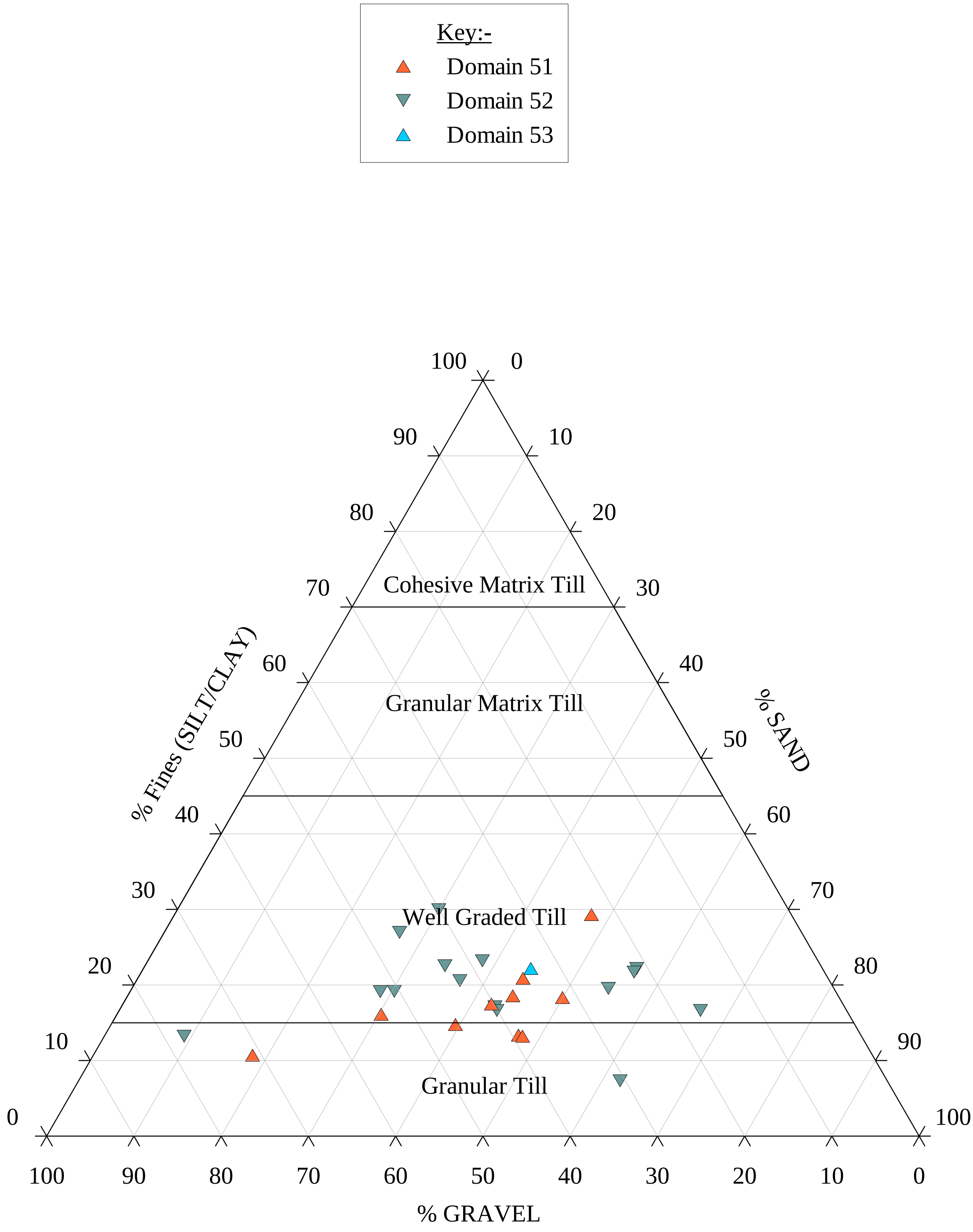
Note:- data normalised to 100% where necessary

Appendix C.5	Ternary Grading Chart: Site 4, Askam-in-Furness	Fig. 28



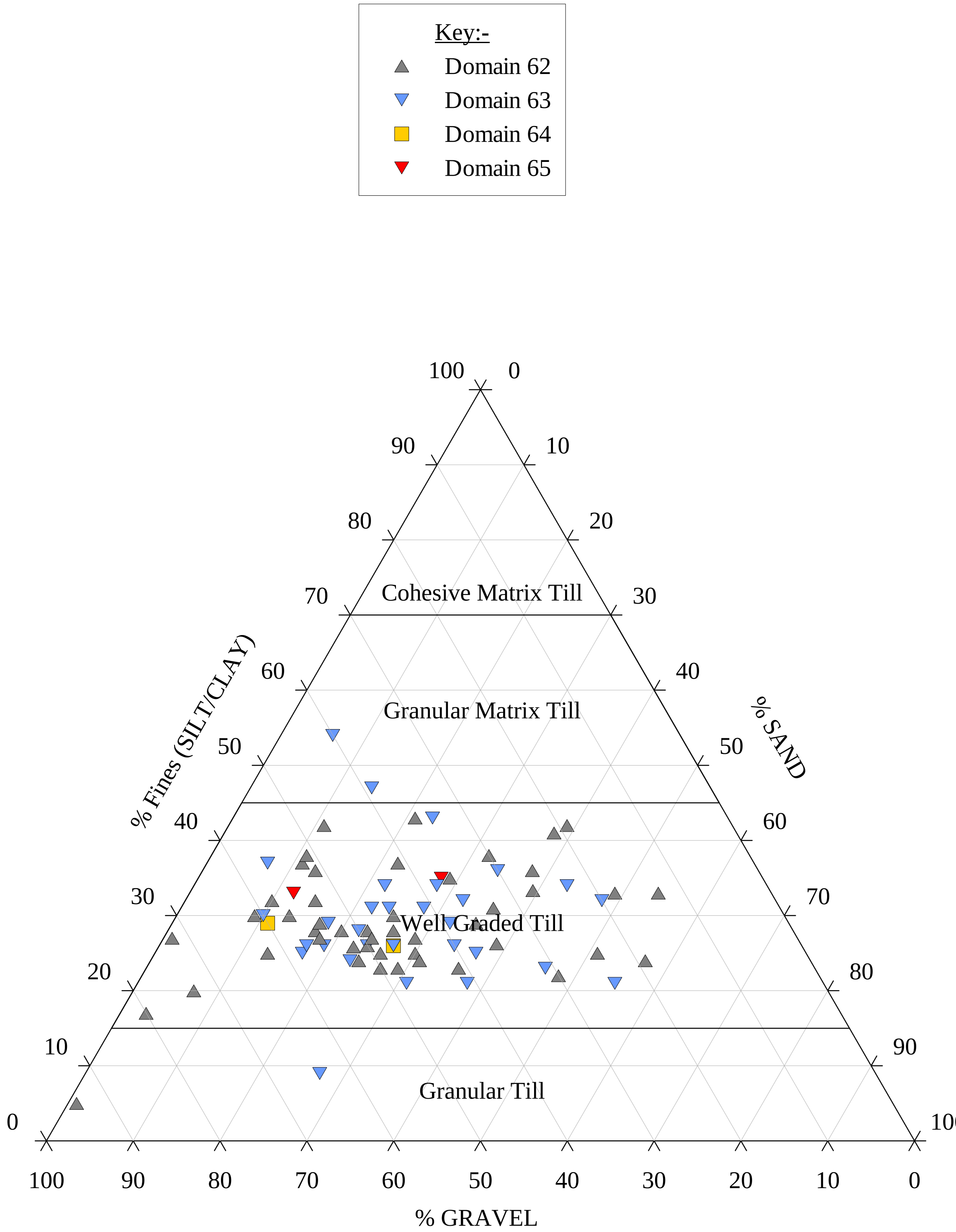
Note:- data normalised to 100% where necessary

Appendix C.5	Ternary Grading Chart: Silty Till Site 5, High and Low Newton	Fig. 29



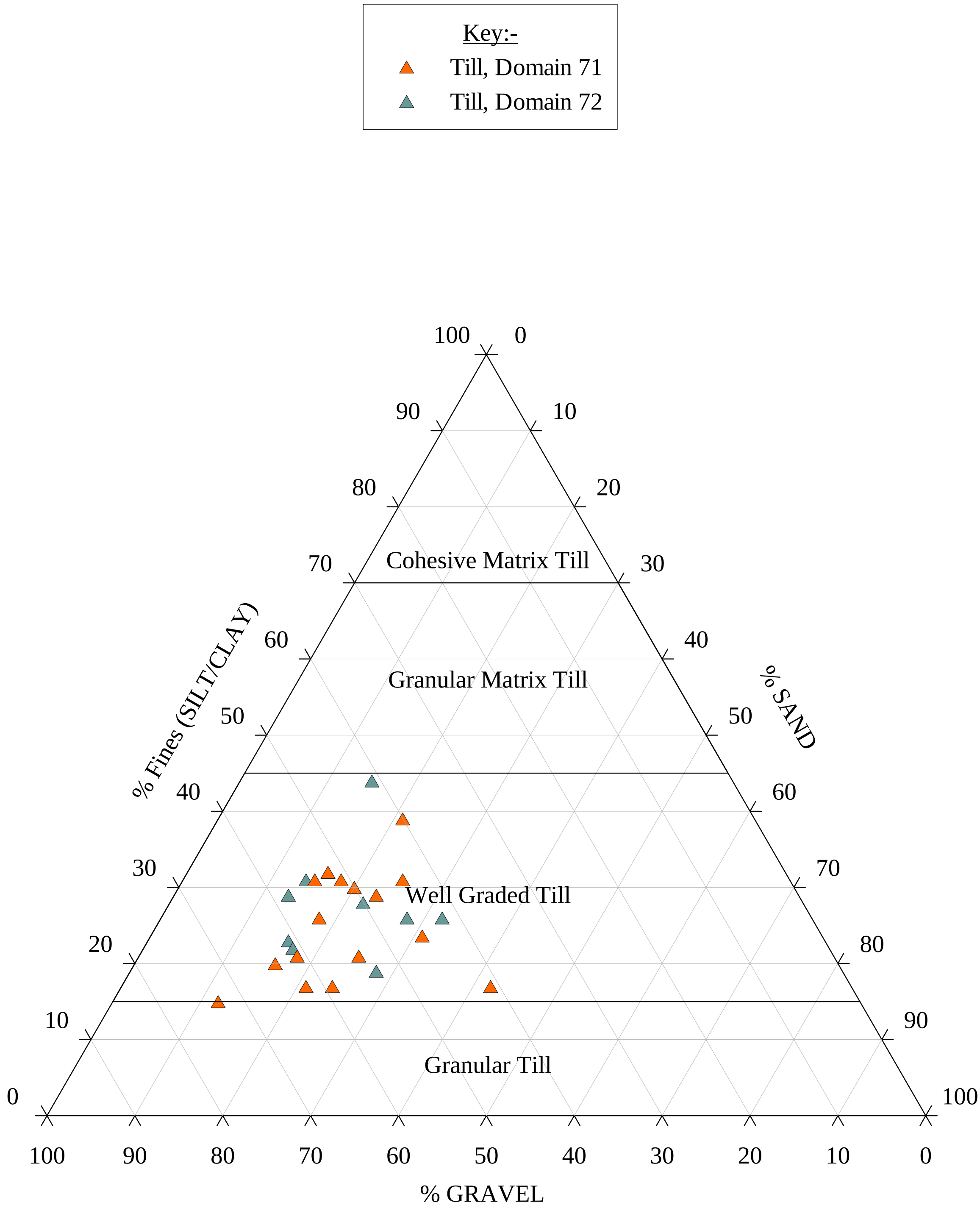
Note:- data normalised to 100% where necessary

Appendix C.5	Ternary Grading Chart: Clay Till Site 5, High and Low Newton	Fig. 30



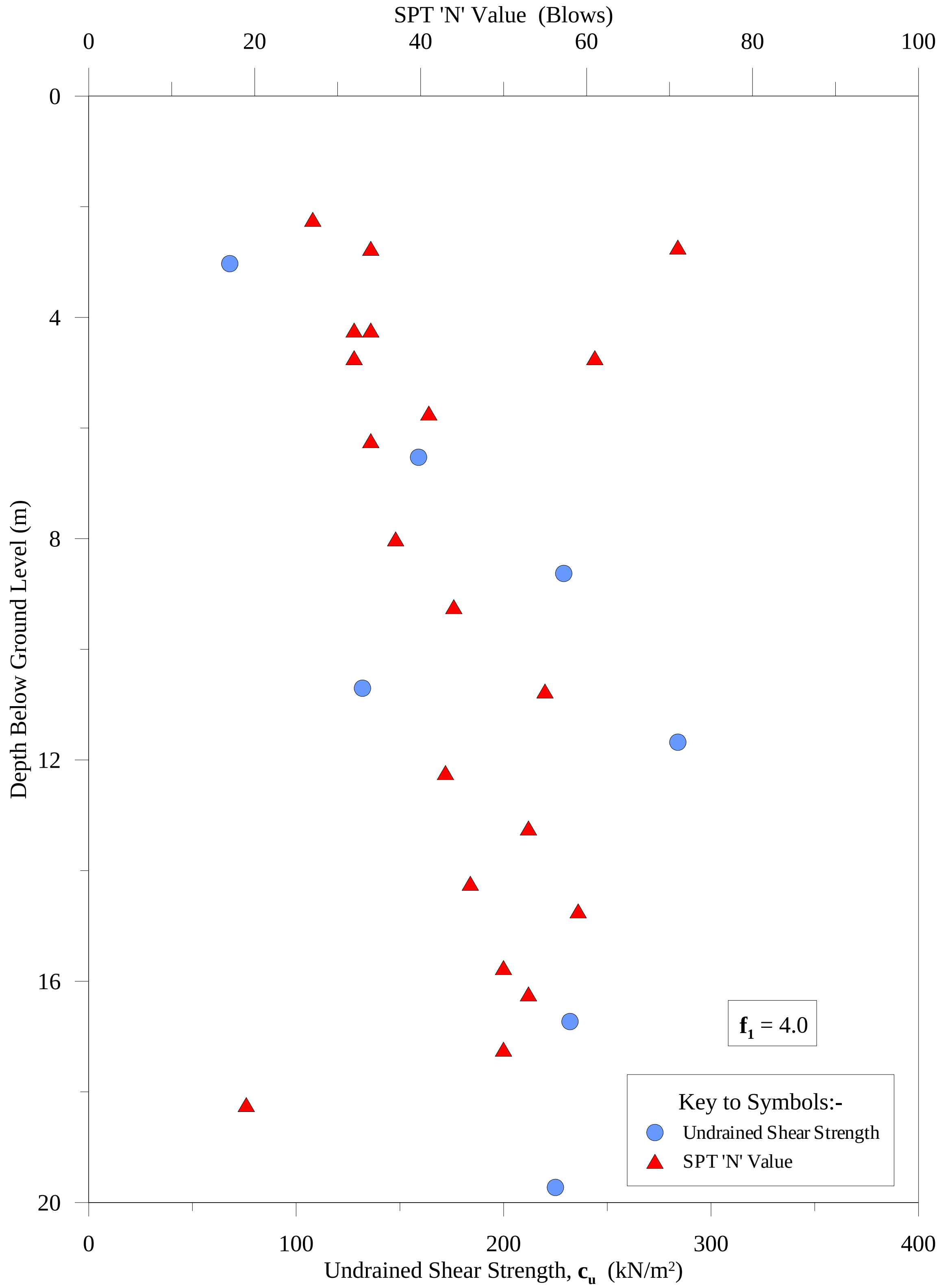
Note:- data normalised to 100% where necessary

Appendix C.5	Ternary Grading Chart: Site 6, Parton to Lillyhall	Fig. 31

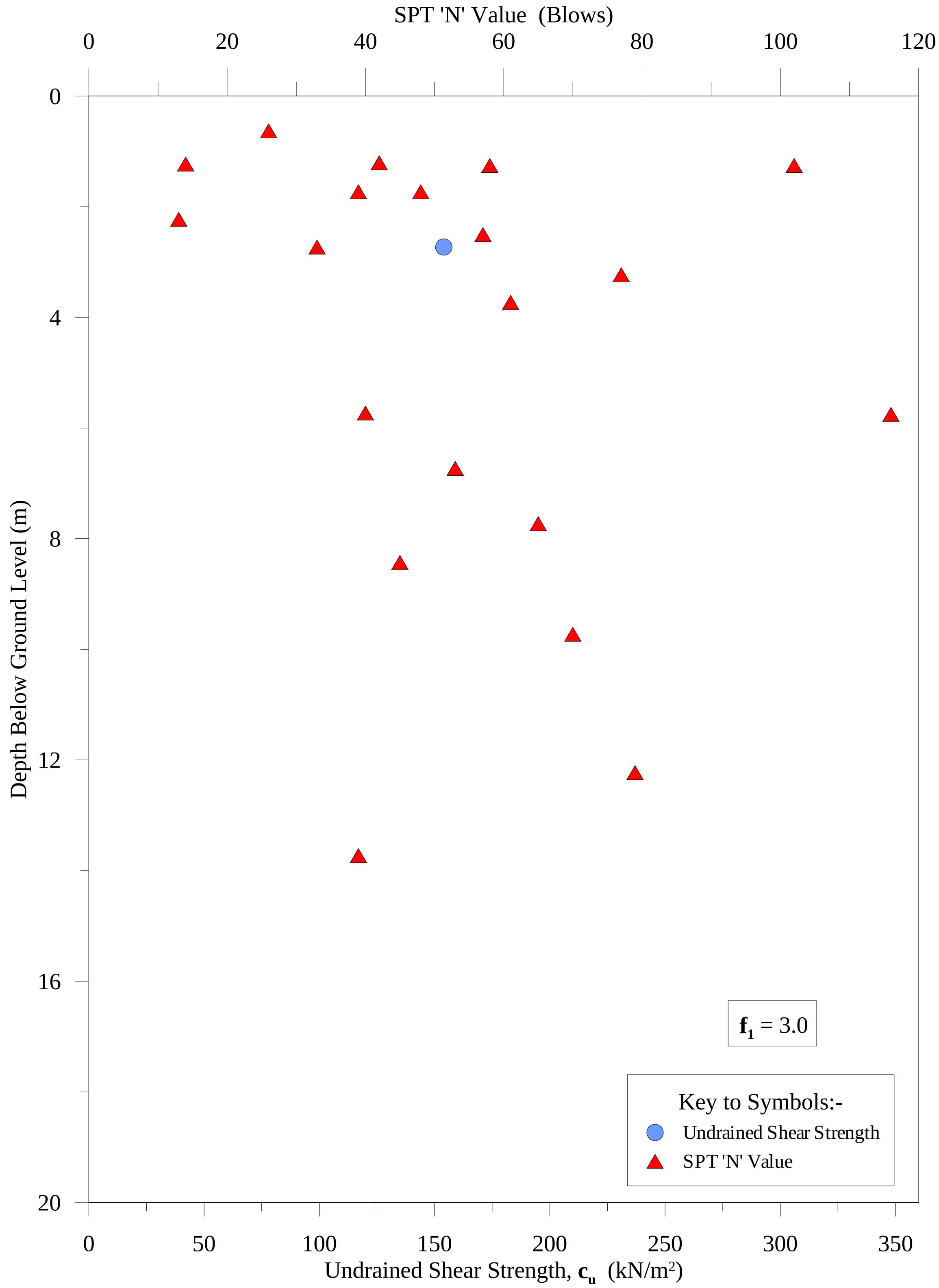


Note:- data normalised to 100% where necessary

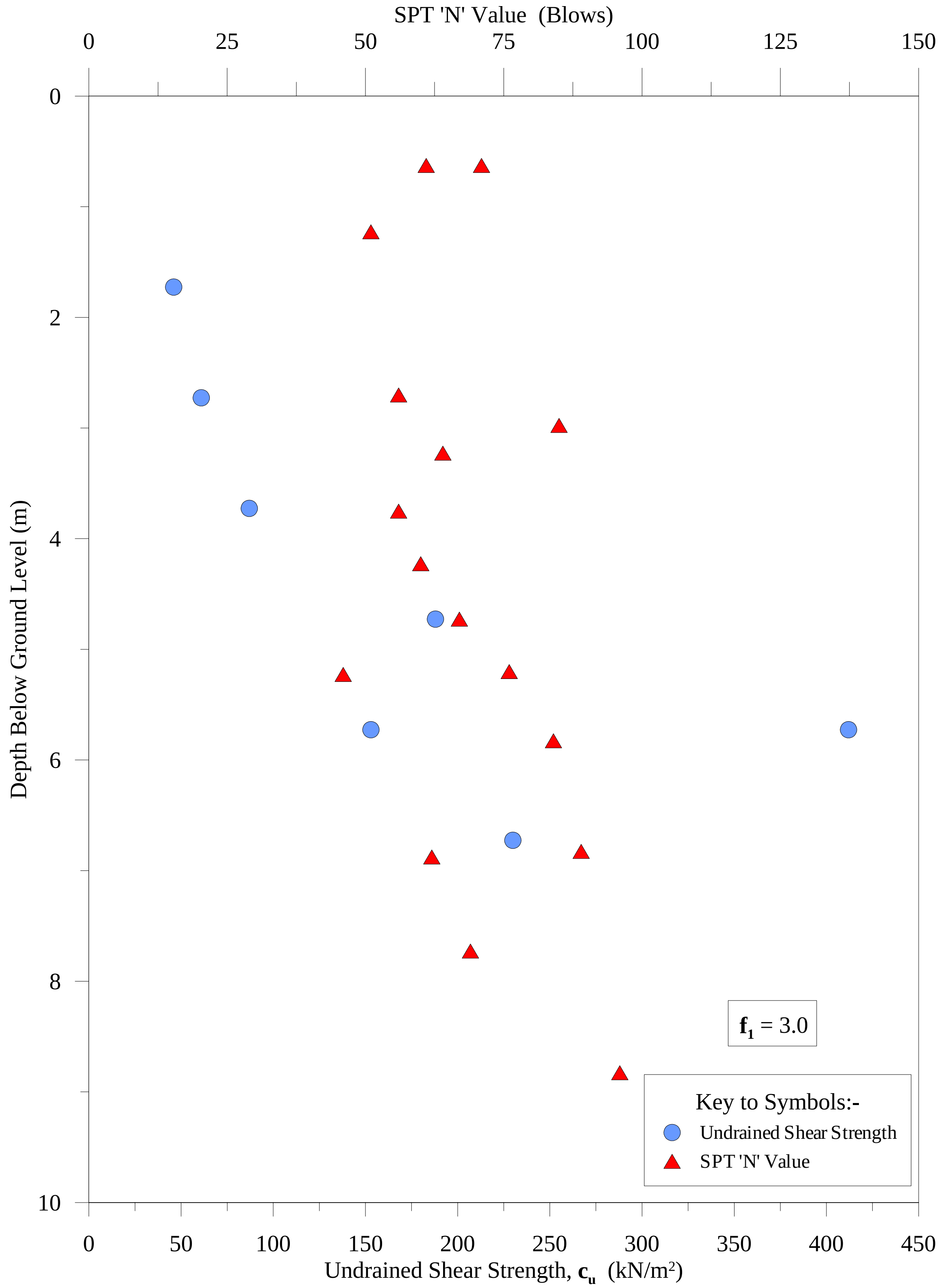
Appendix C.5	Ternary Grading Chart: Site 7, Cleator Moor	Fig. 32



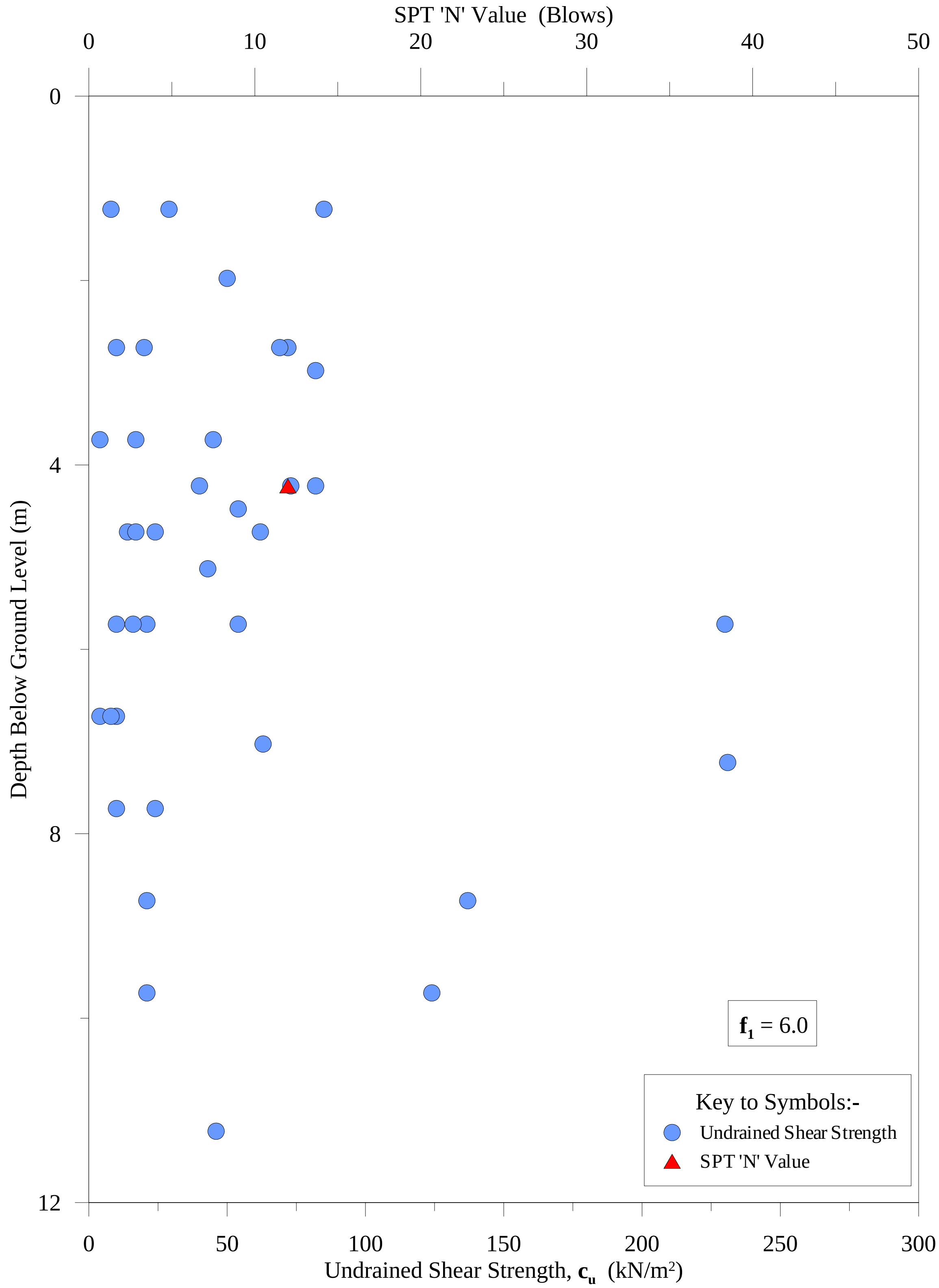
Appendix C.5	SPT and Undrained Shear vs Depth Domain 11	Fig. 33



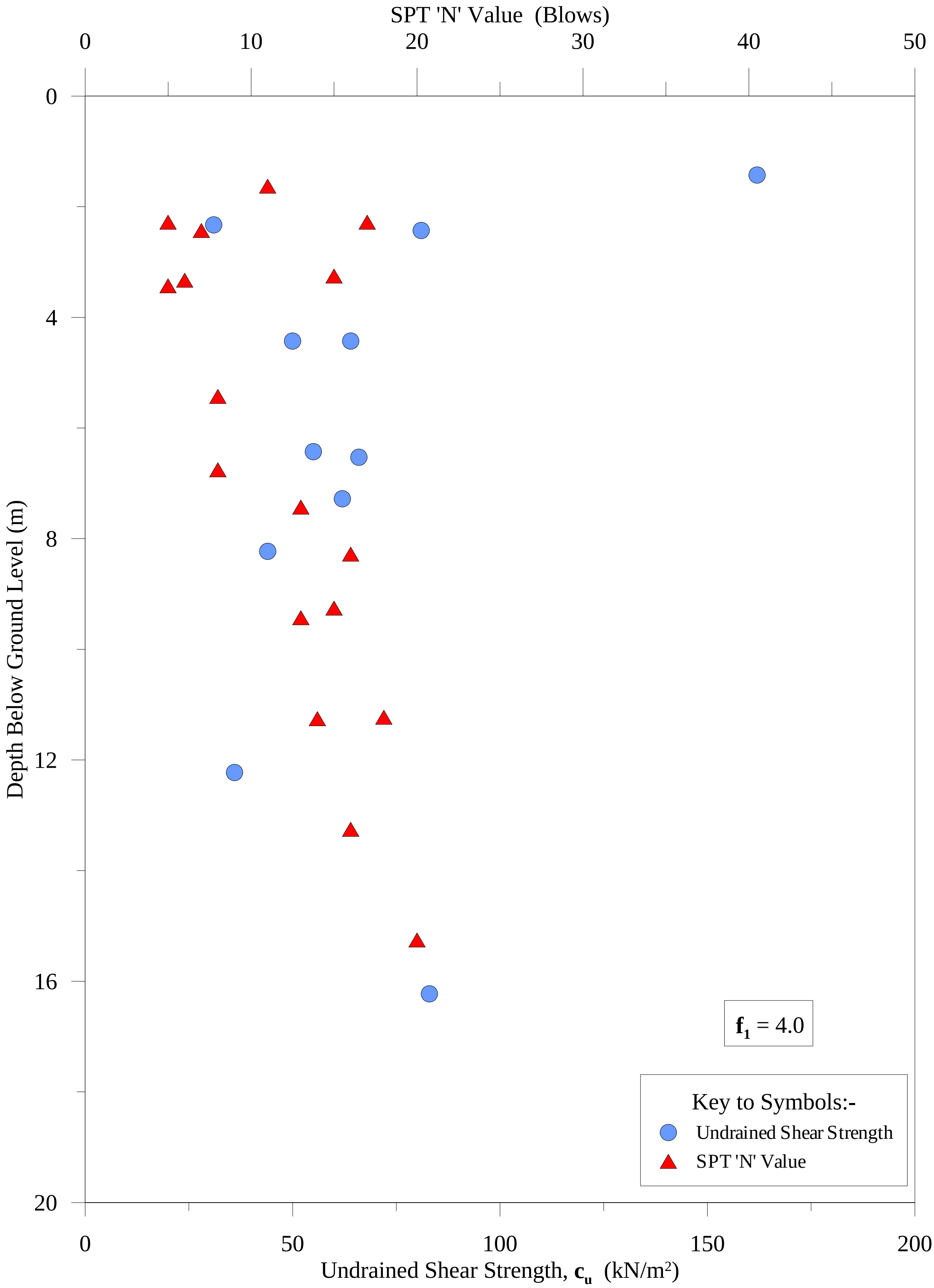
Appendix C.5	SPT and Undrained Shear vs Depth Domain 12	Fig. 34



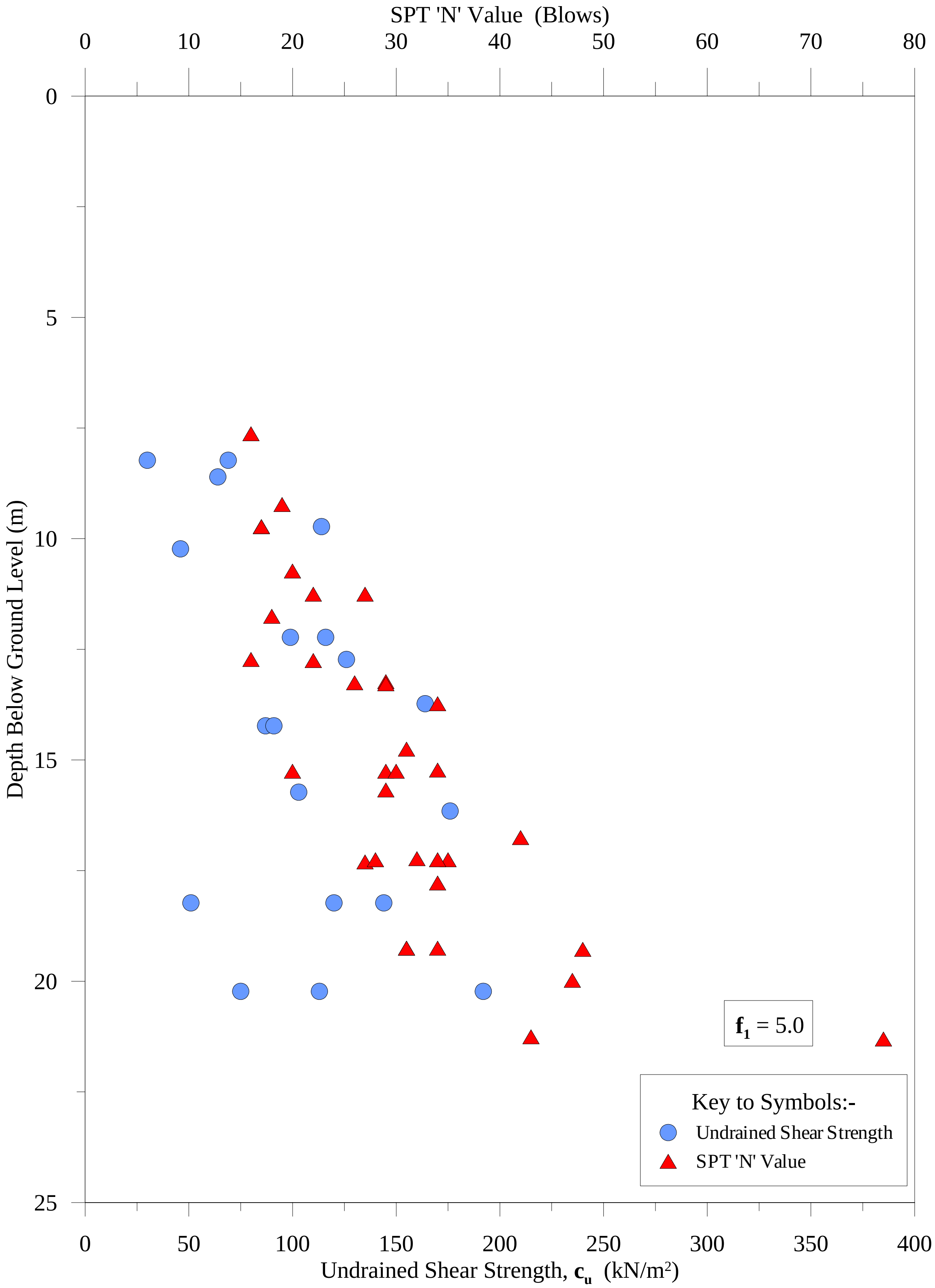
Appendix C.5	SPT and Undrained Shear vs Depth Domain 14	Fig. 35



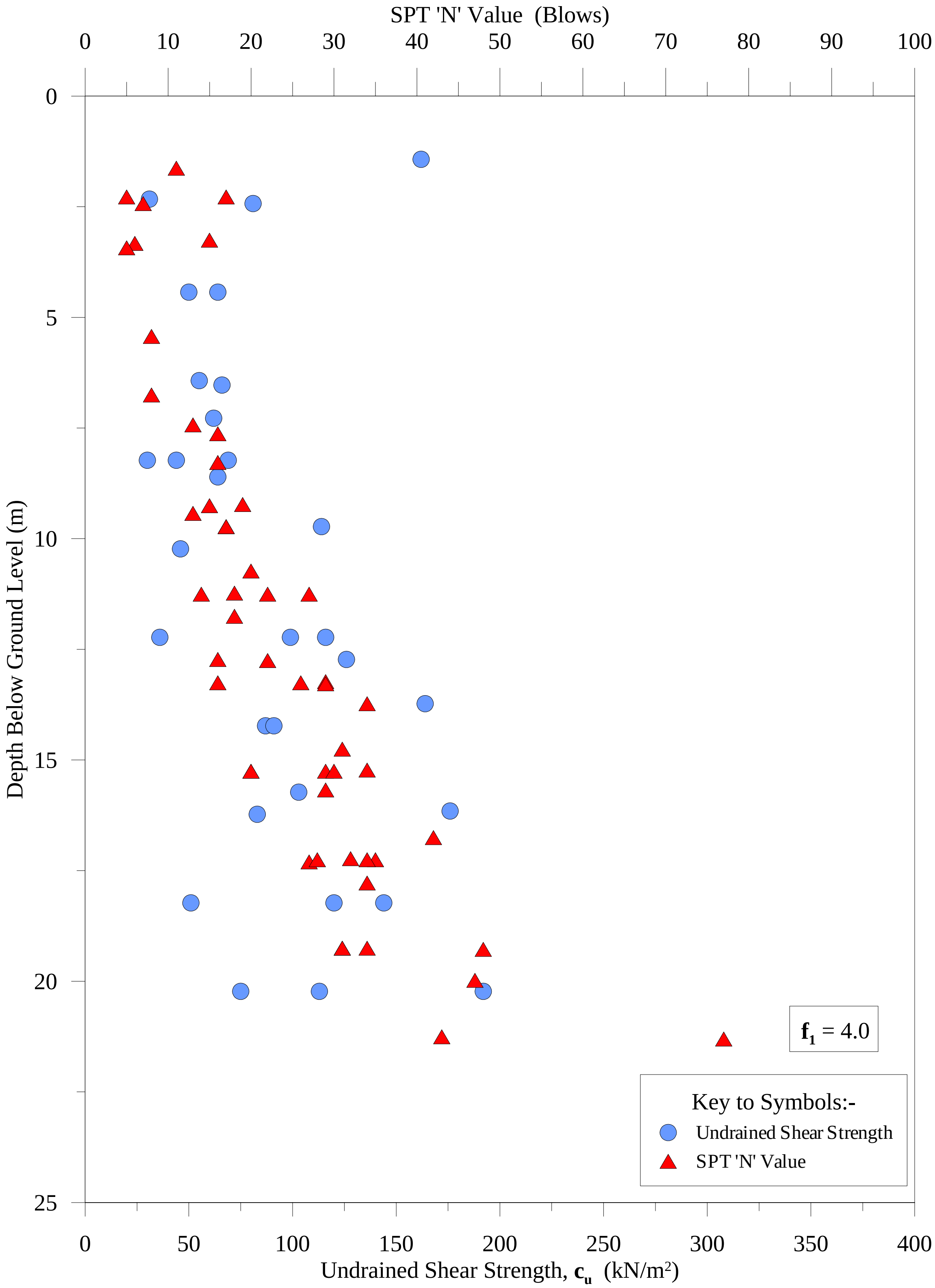
Appendix C.5	SPT and Undrained Shear vs Depth for Till Site 2, Wythop Wood	Fig. 36



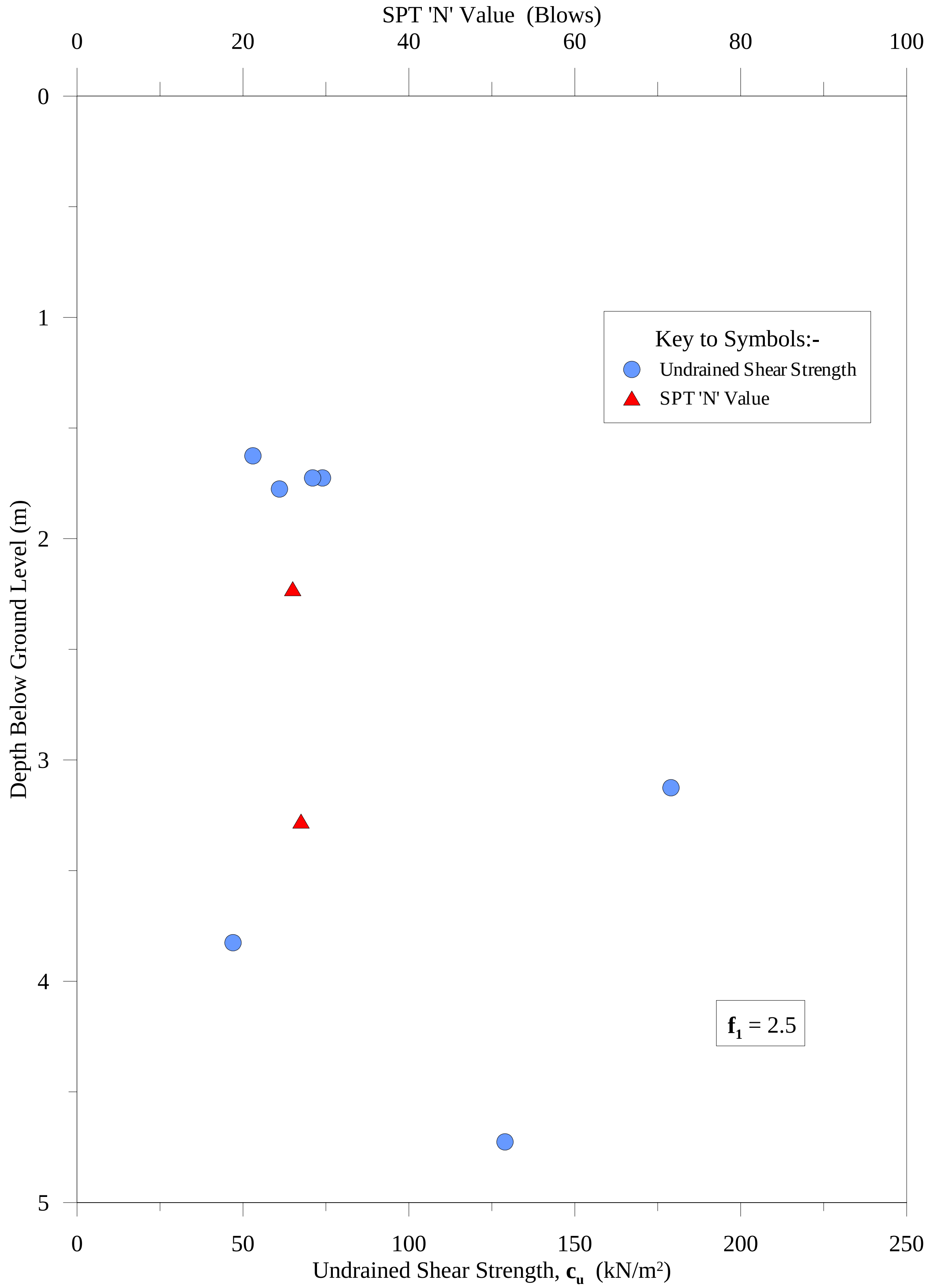
Appendix C.5	SPT and Undrained Shear vs Depth Upper Till: Site 3, Sowerby Wood	Fig. 37



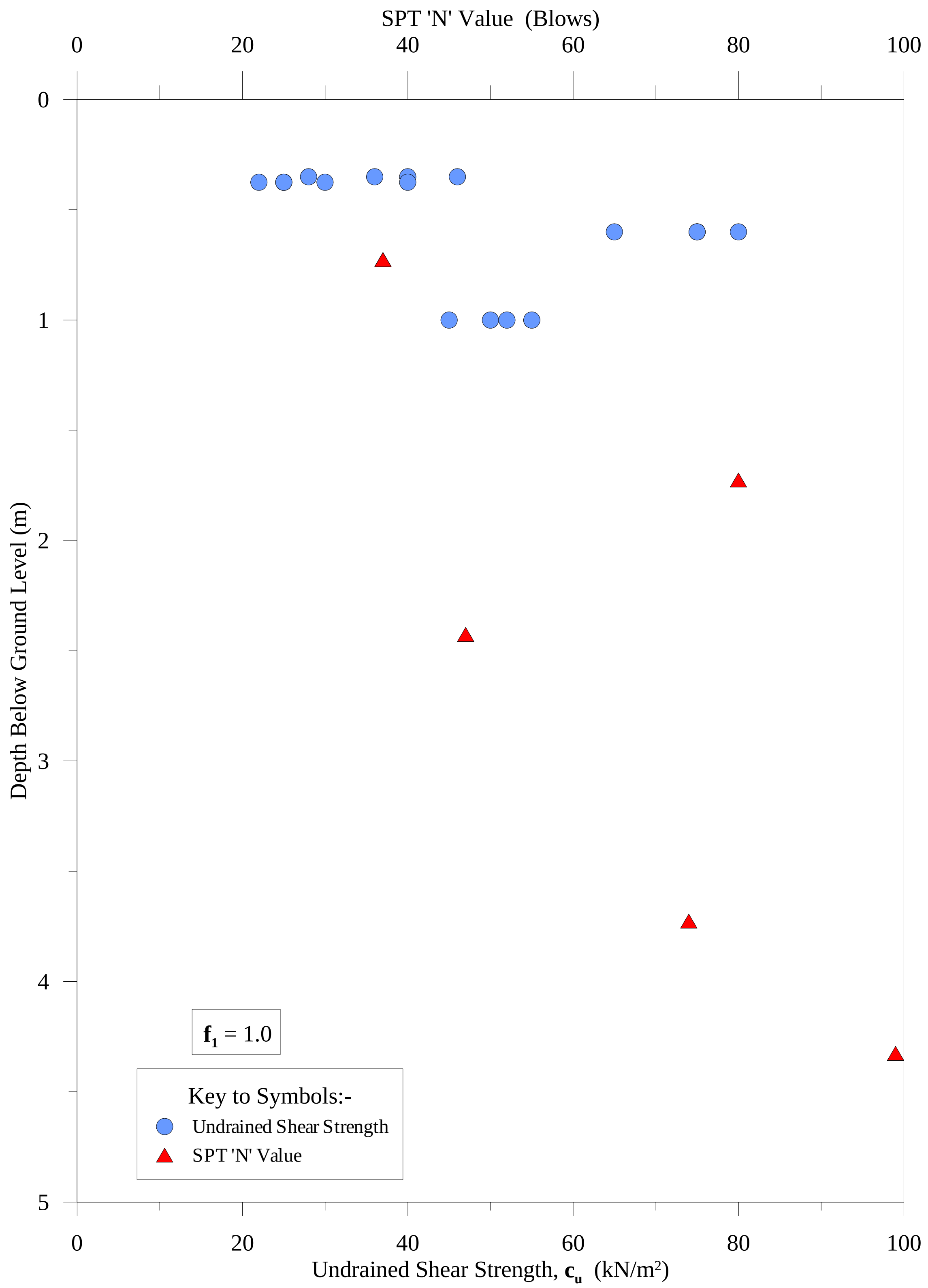
Appendix C.5	SPT and Undrained Shear vs Depth Lower Till: Site 3, Sowerby Wood	Fig. 38



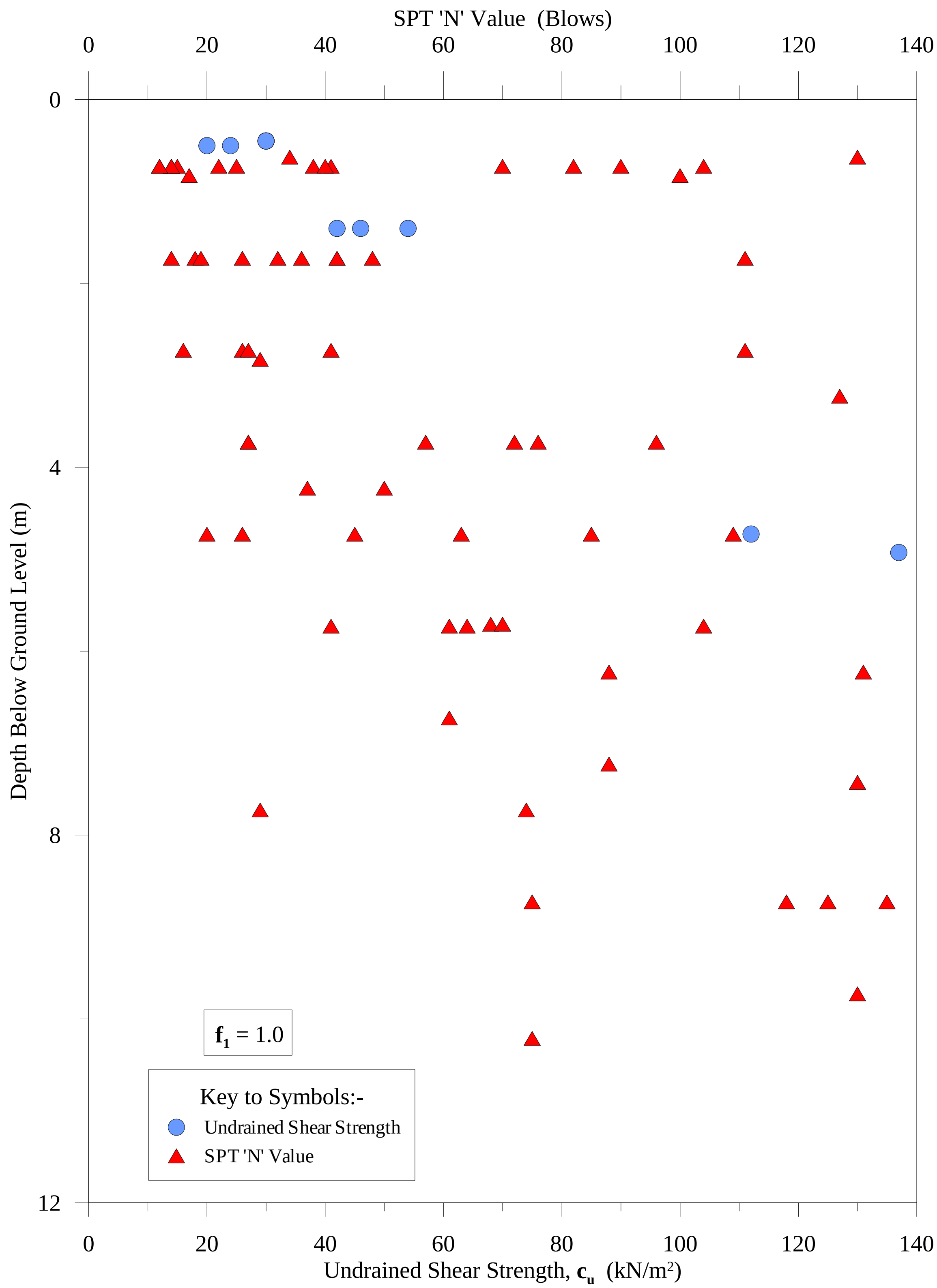
Appendix C.5	SPT and Undrained Shear vs Depth Site 3, Sowerby Wood	Fig. 39



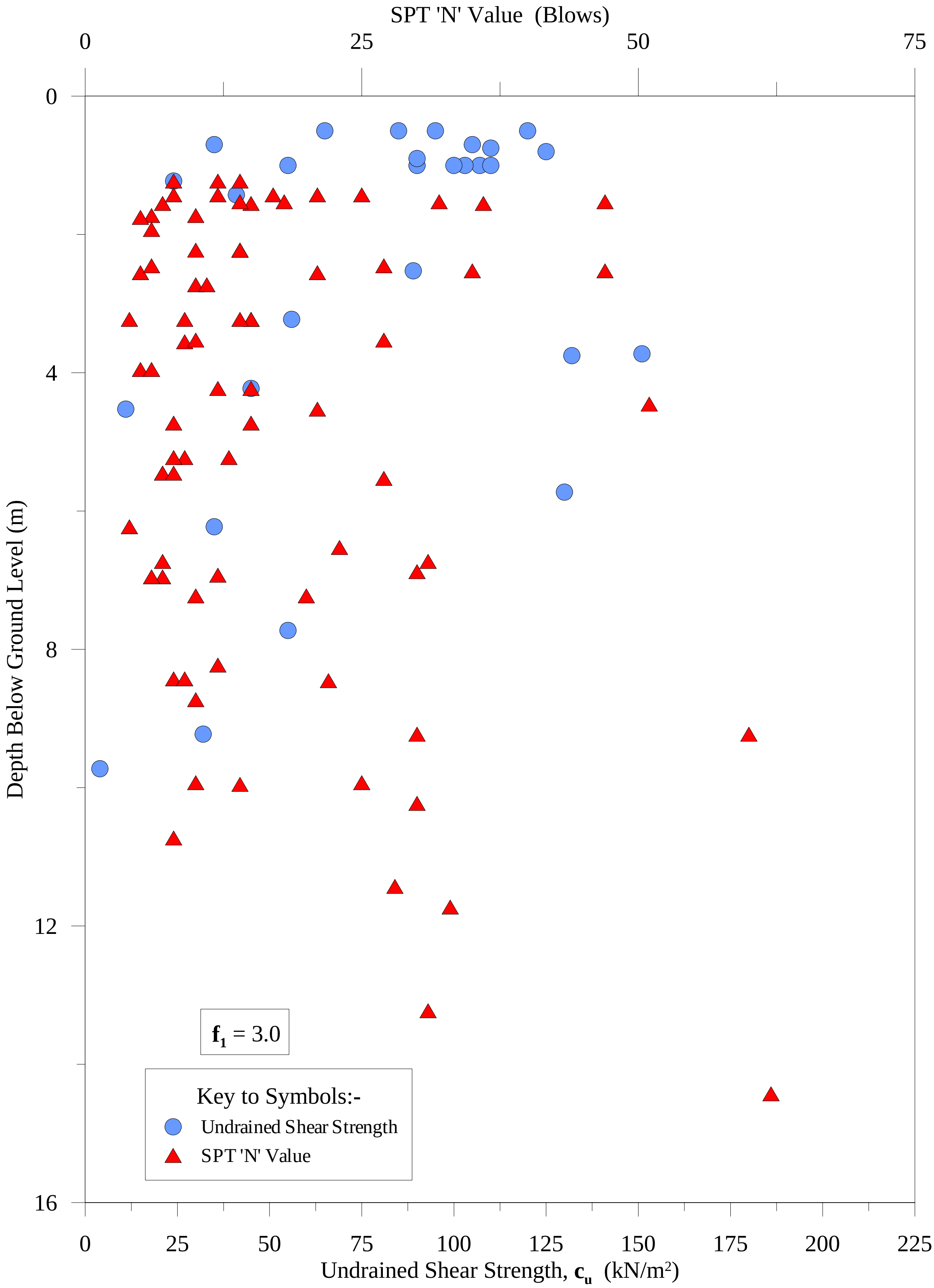
Appendix C.5	SPT and Undrained Shear vs Depth Domain 43	Fig. 40



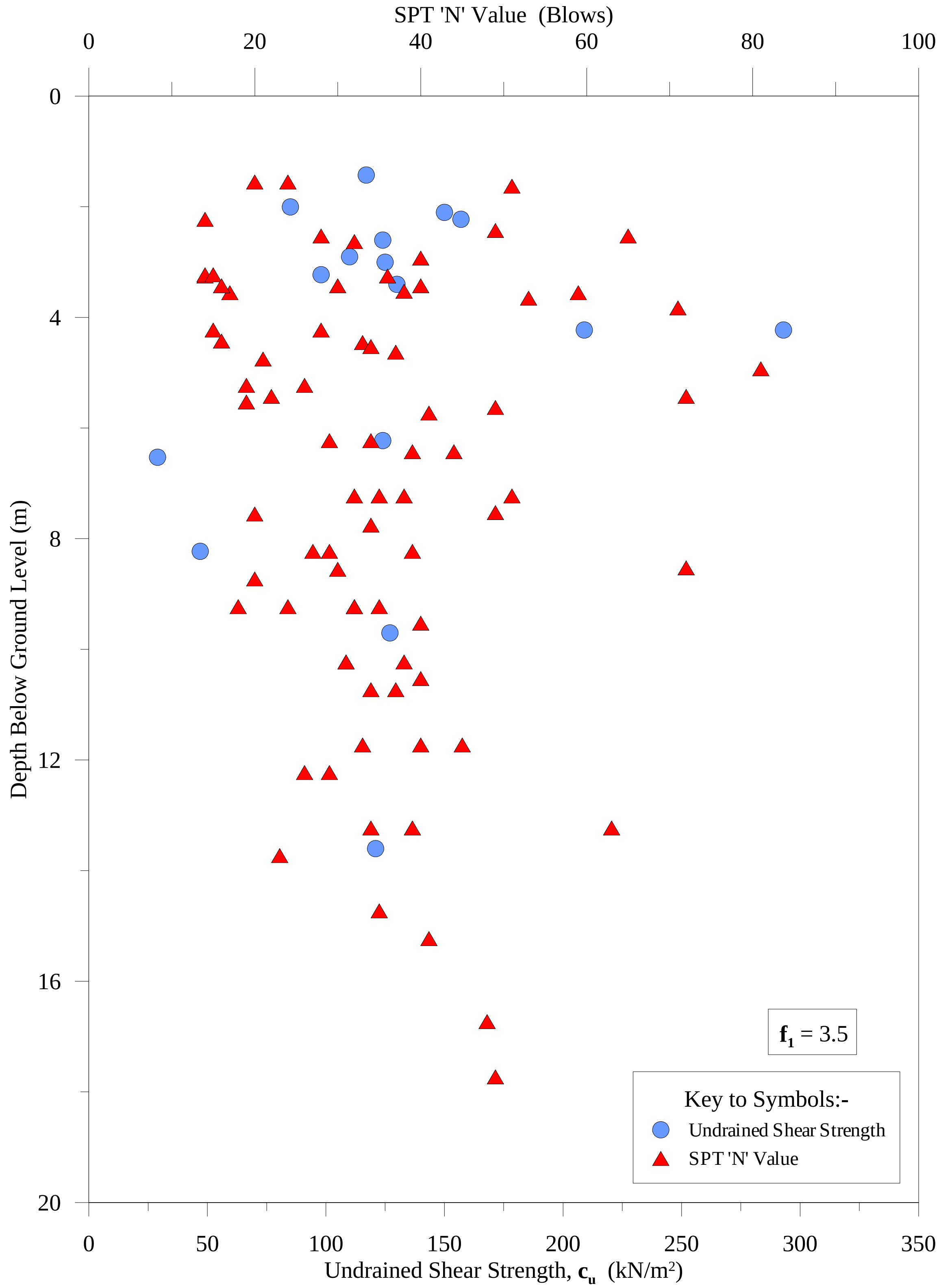
Appendix C.5	SPT and Undrained Shear vs Depth Domain 51, Silty Till	Fig. 41



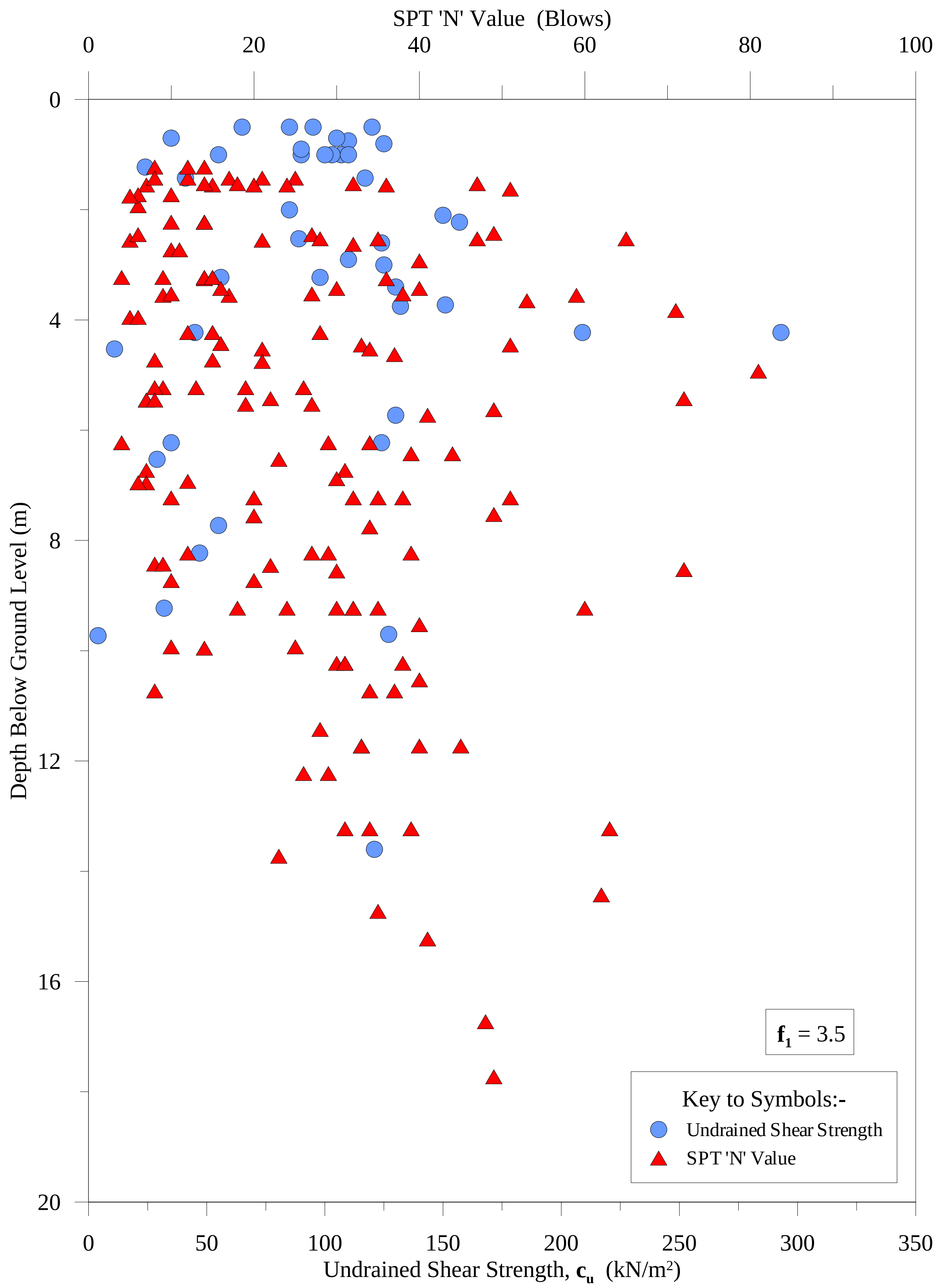
Appendix C.5	SPT and Undrained Shear vs Depth Domain 52, Silty Till	Fig. 42



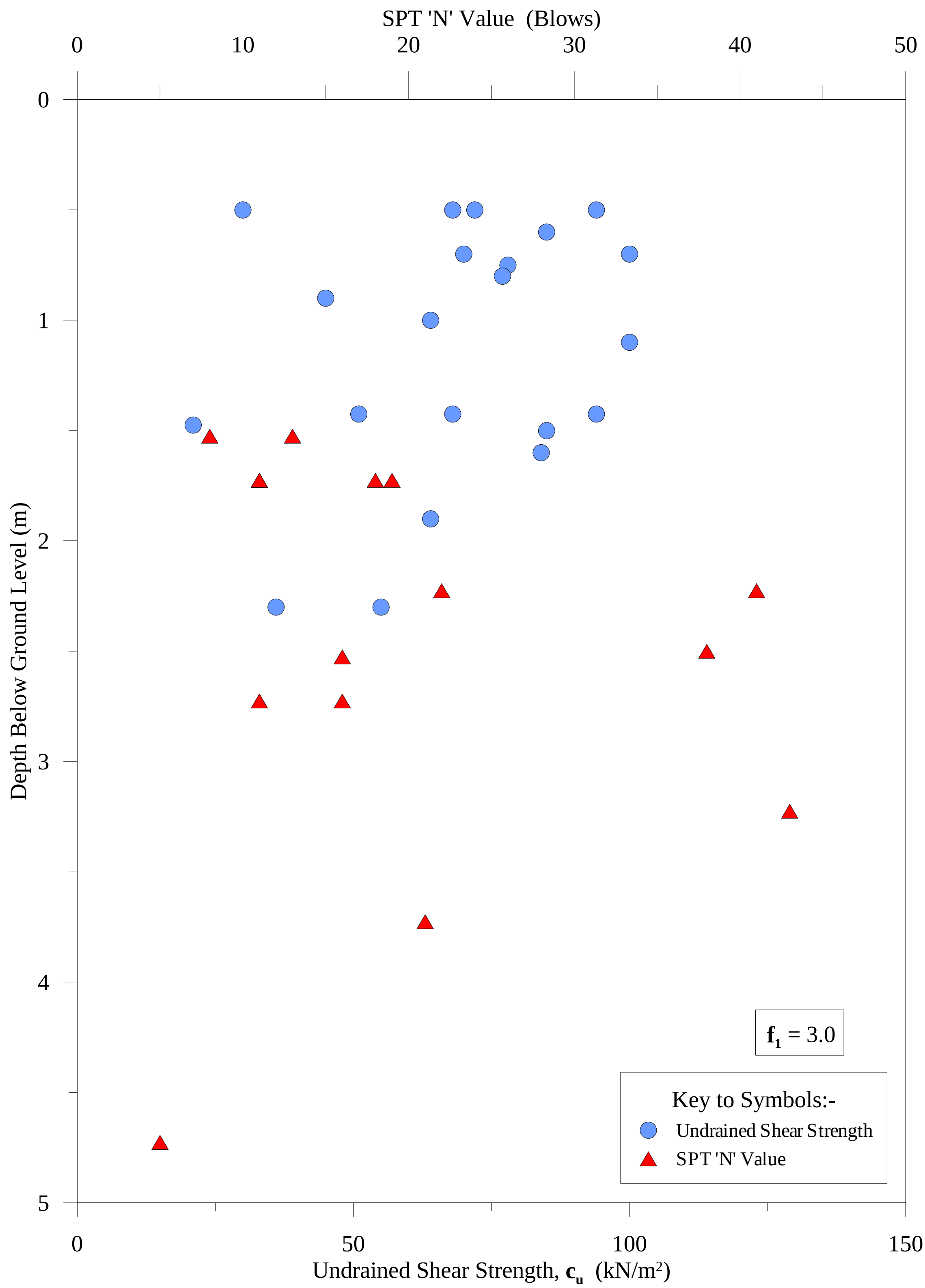
Appendix C.5	SPT and Undrained Shear vs Depth Upper Till: Domain 62	Fig. 43



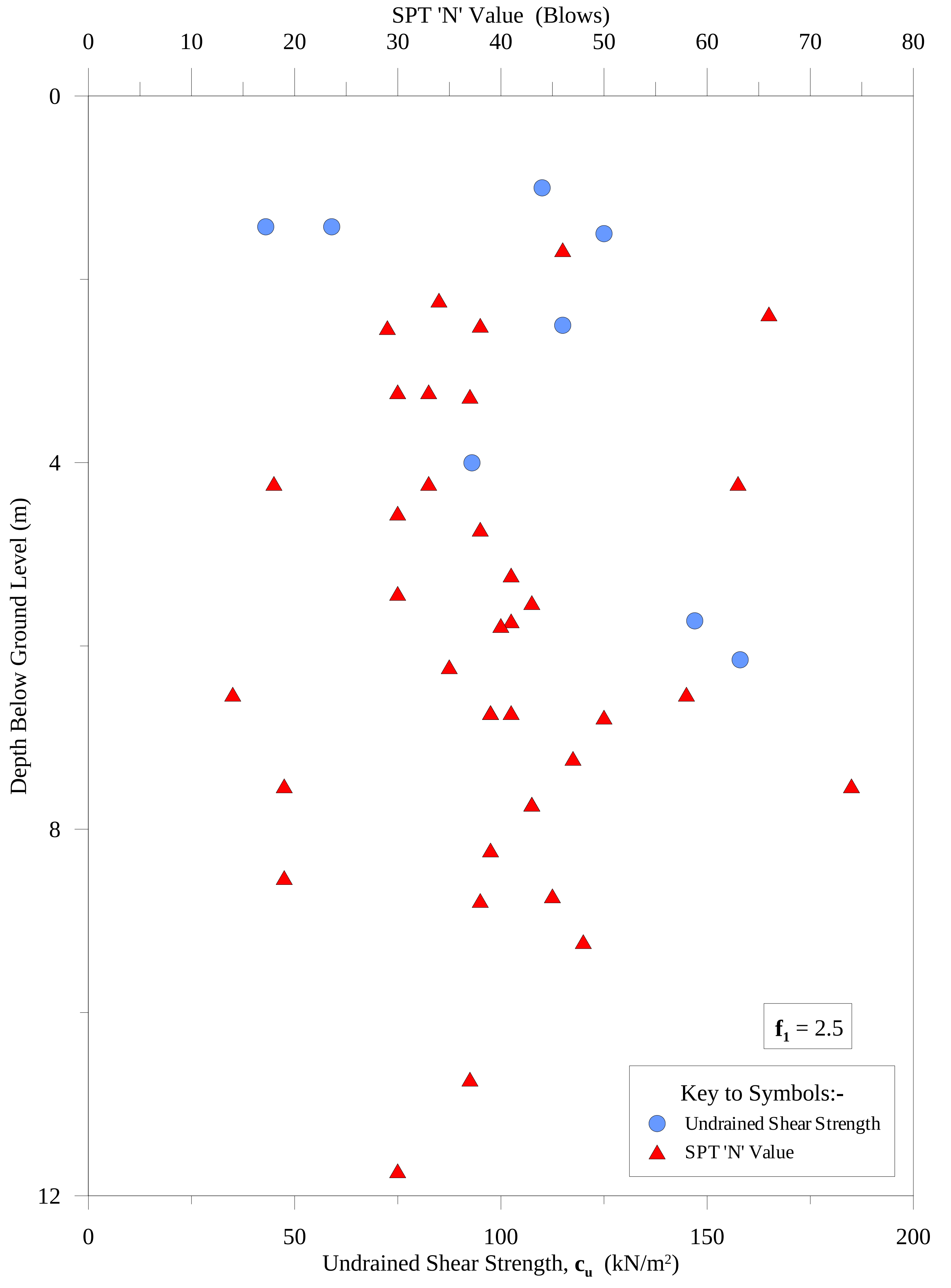
Appendix C.5	SPT and Undrained Shear vs Depth Lower Till: Domain 62	Fig. 44



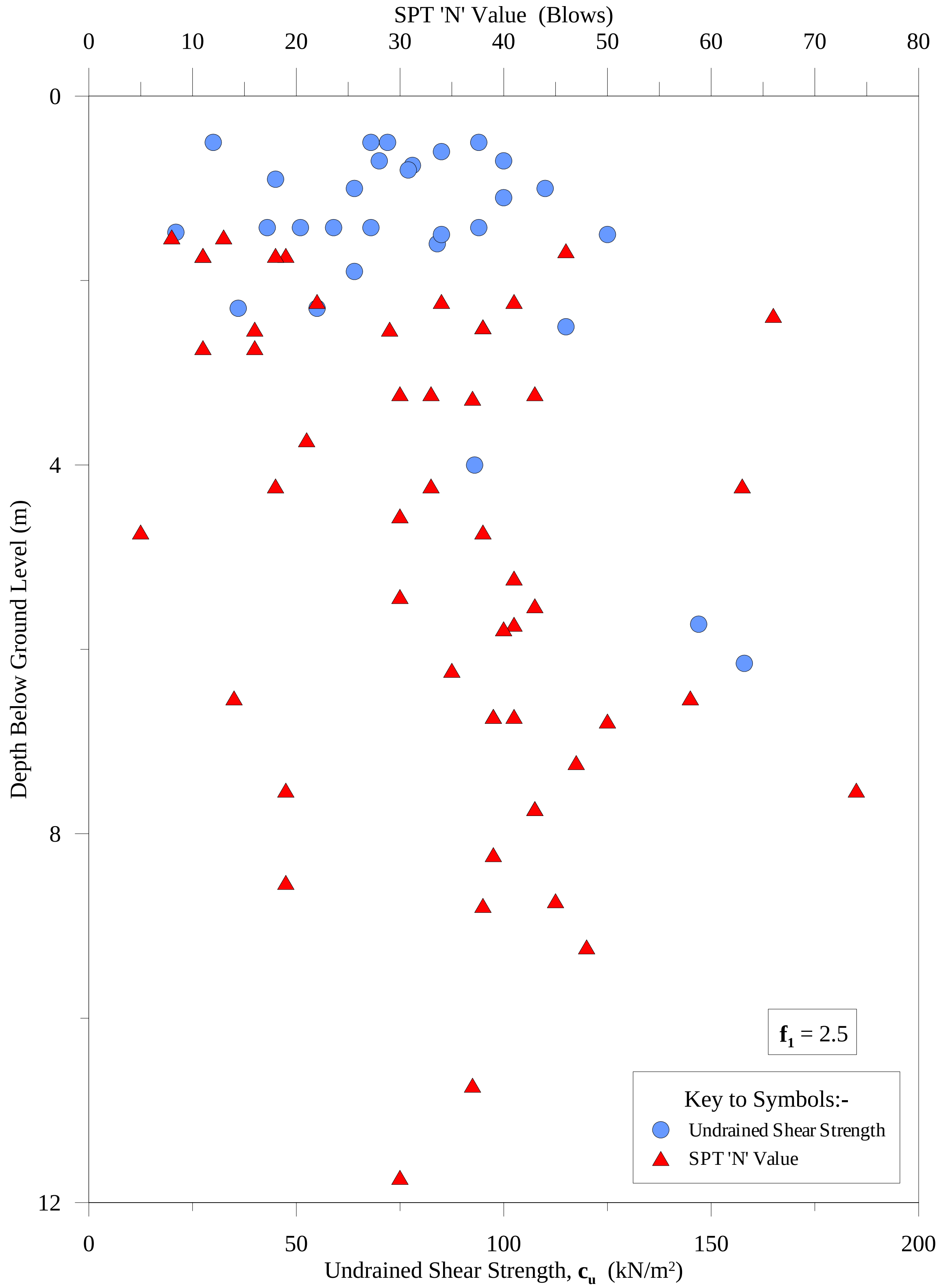
Appendix C.5	SPT and Undrained Shear vs Depth Domain 62	Fig. 45



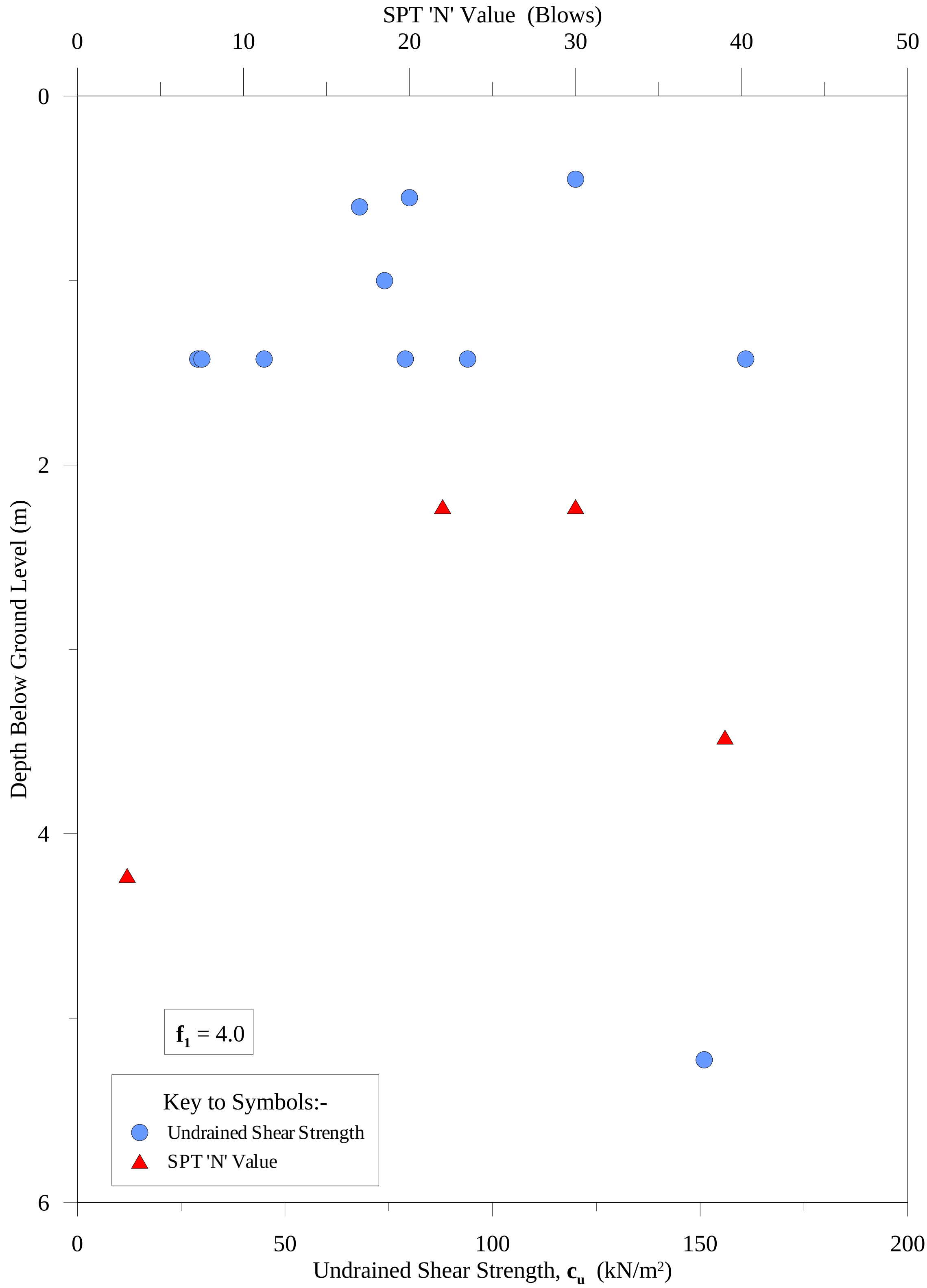
Appendix C.5	SPT and Undrained Shear vs Depth Upper Till: Domain 63	Fig. 46



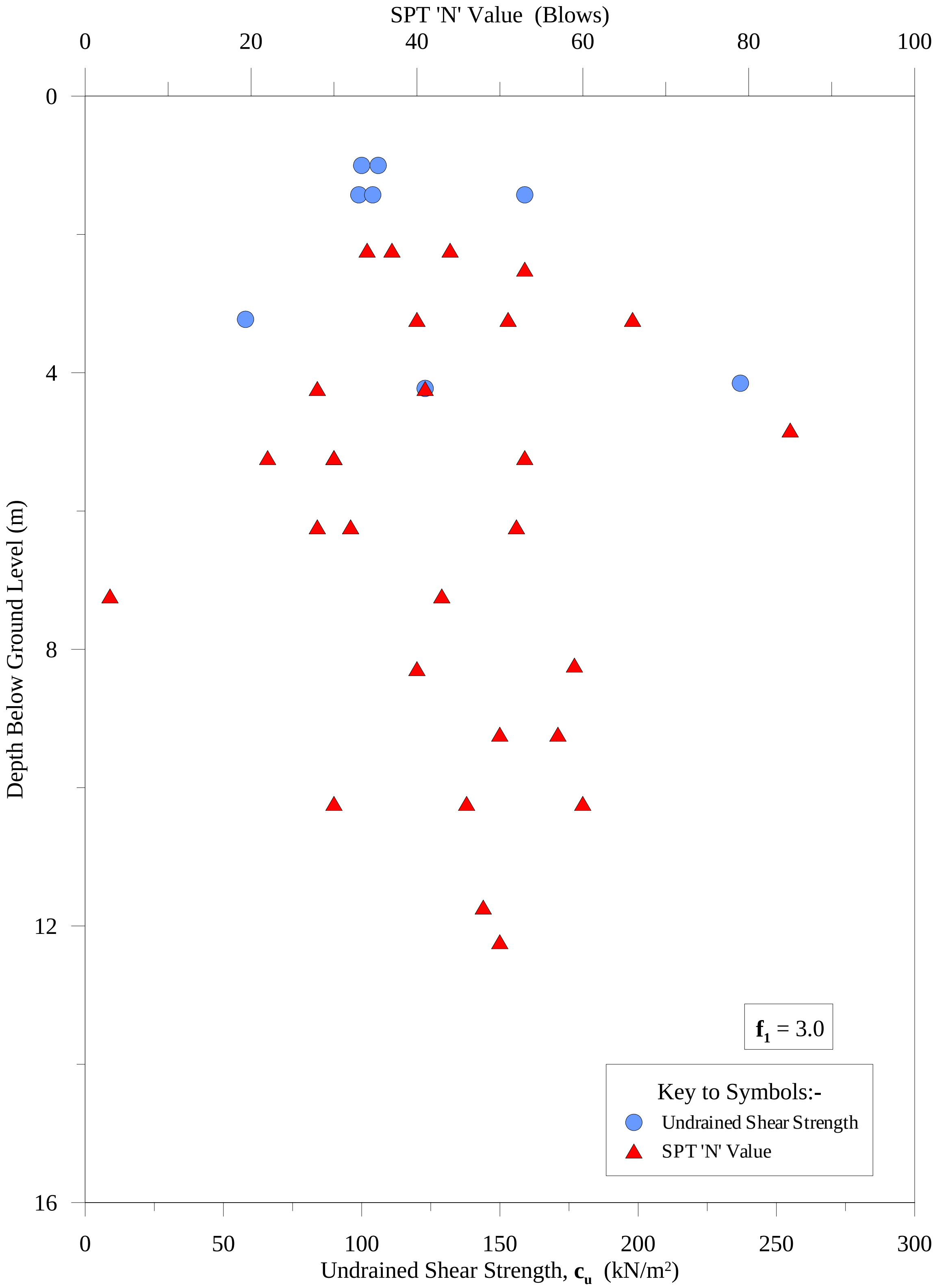
Appendix C.5	SPT and Undrained Shear vs Depth Lower Till: Domain 63	Fig. 47



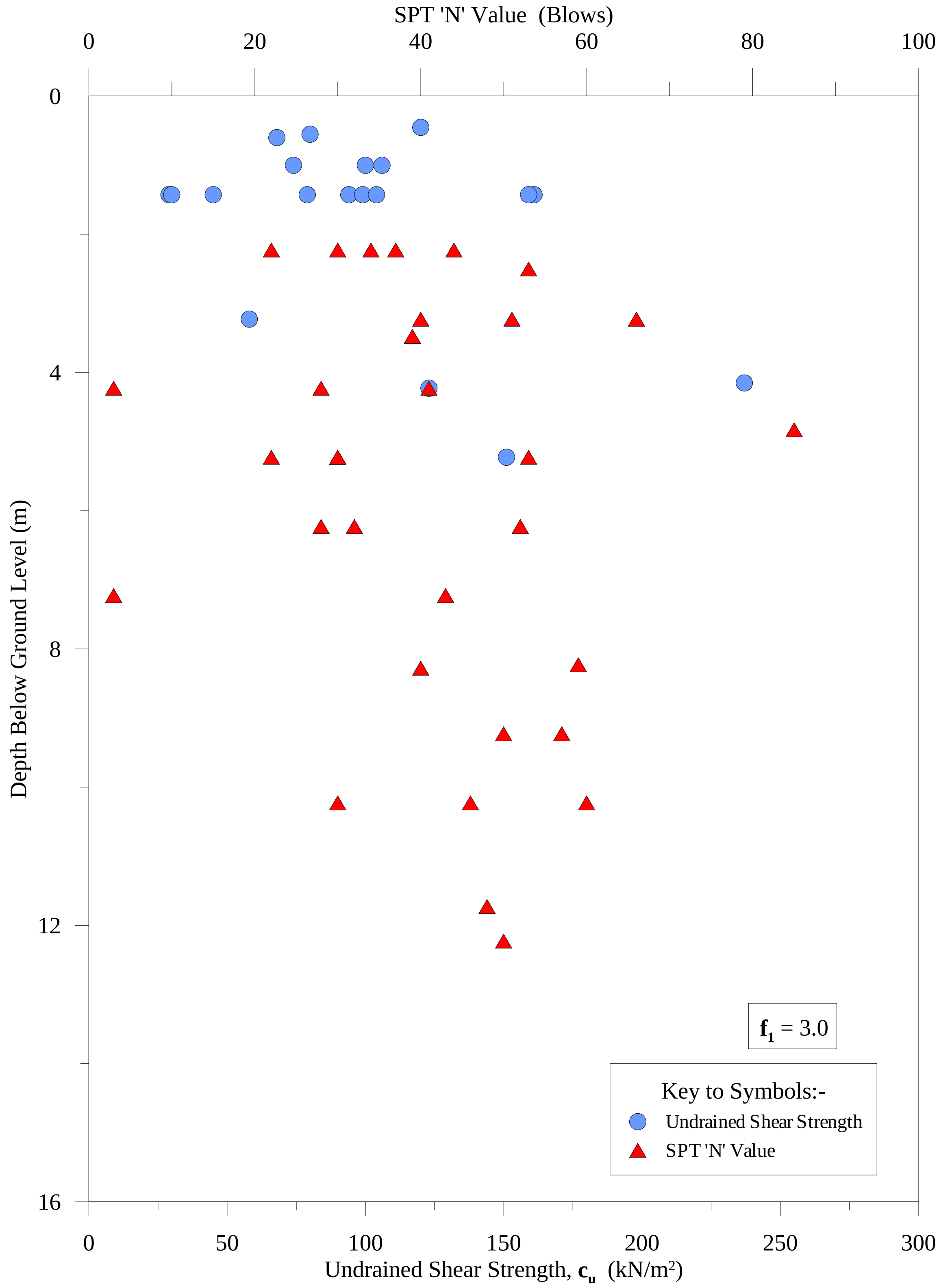
Appendix C.5	SPT and Undrained Shear vs Depth Domain 63	Fig. 48



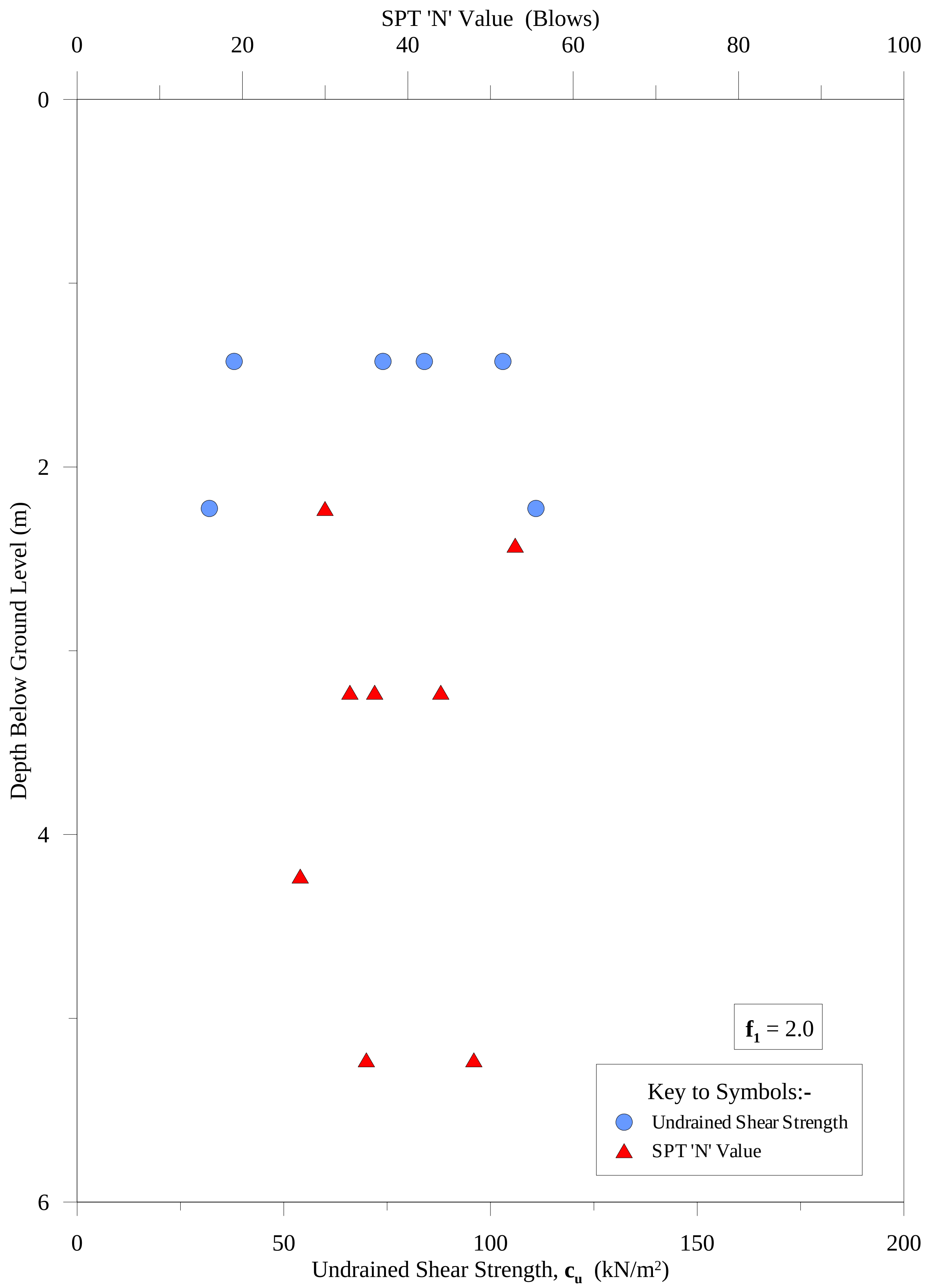
Appendix C.5	SPT and Undrained Shear vs Depth Upper Till: Domain 64	Fig. 49



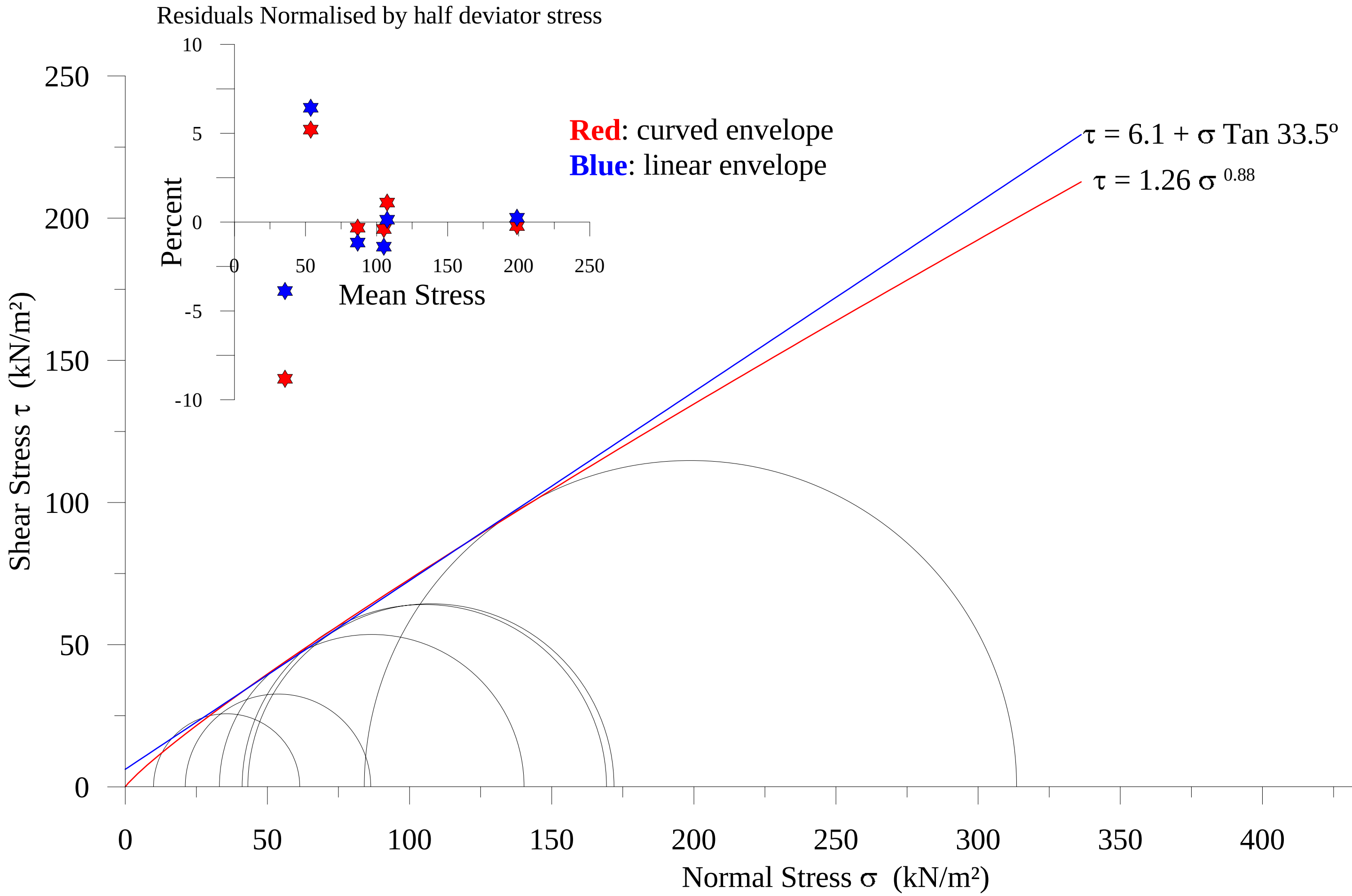
Appendix C.5	SPT and Undrained Shear vs Depth Lower Till: Domain 64	Fig. 50



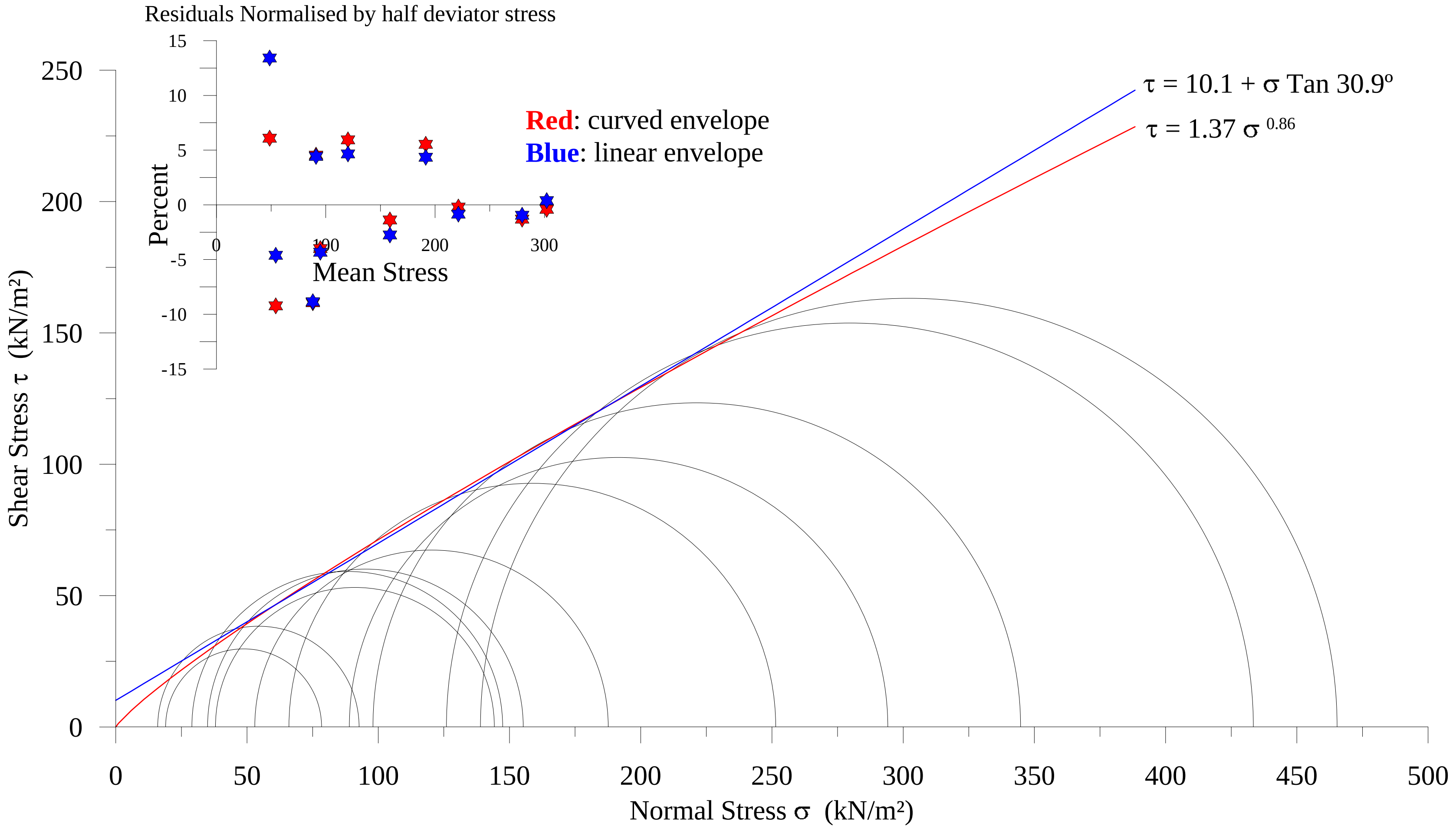
Appendix C.5	SPT and Undrained Shear vs Depth Domain 64	Fig. 51



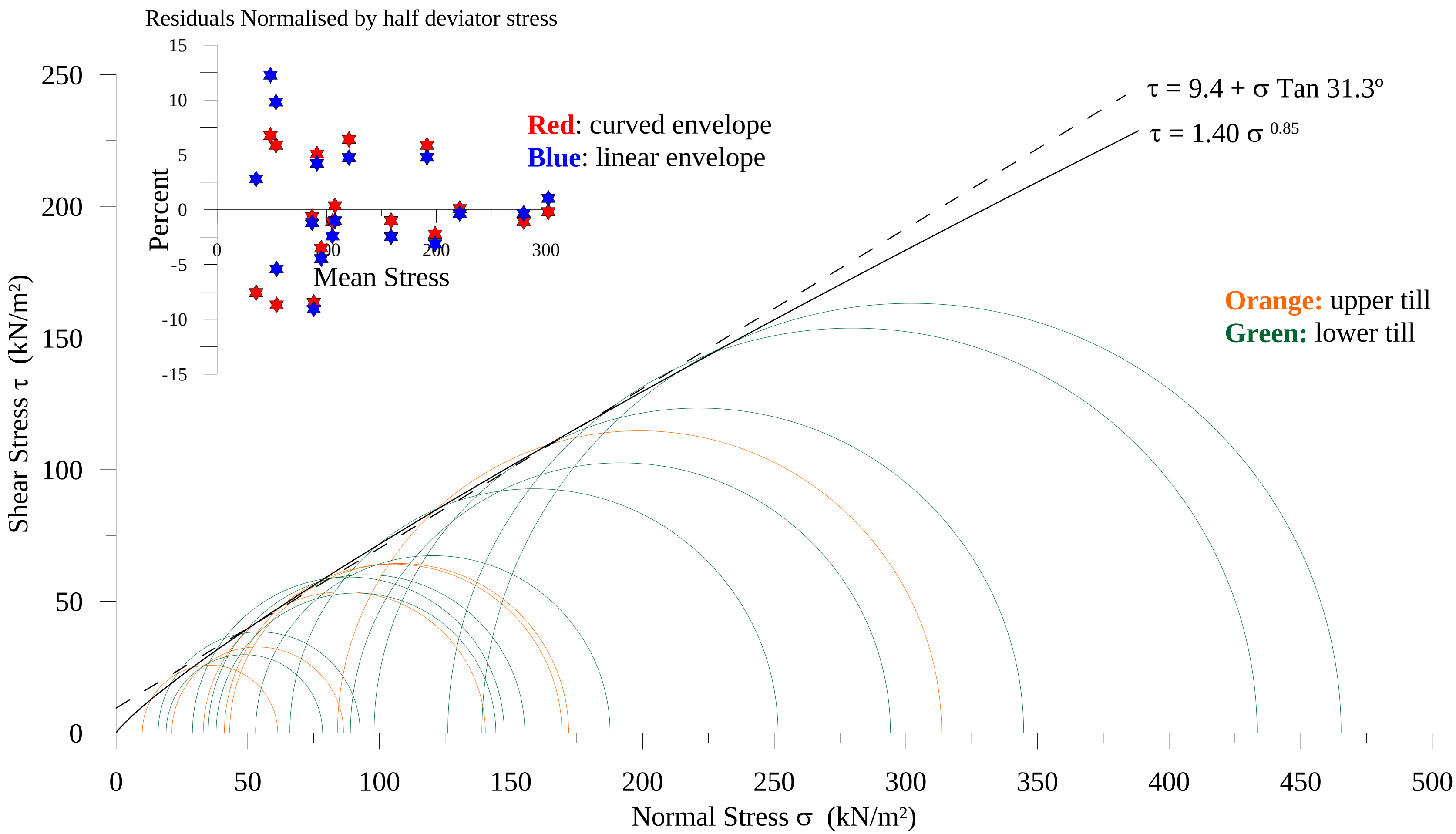
Appendix C.5	SPT and Undrained Shear vs Depth Domain 65	Fig. 52



Appendix C.5	Peak Effective Stress Failure Envelope Domain 11, Upper Till	Figure No.: 53



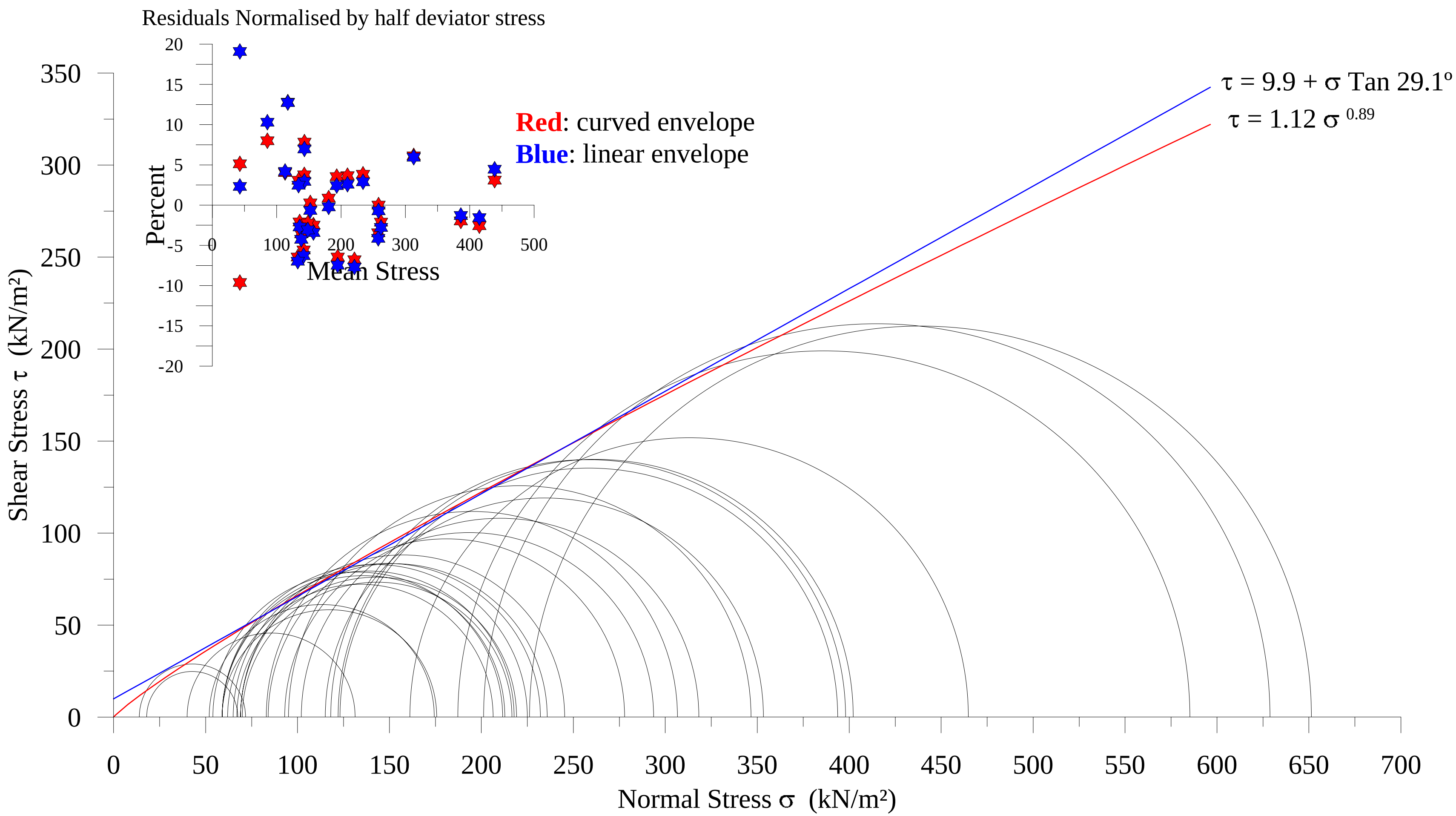
Appendix C.5	Peak Effective Stress Failure Envelope Domain 11, Lower Till	Figure No.: 54



Appendix C.5

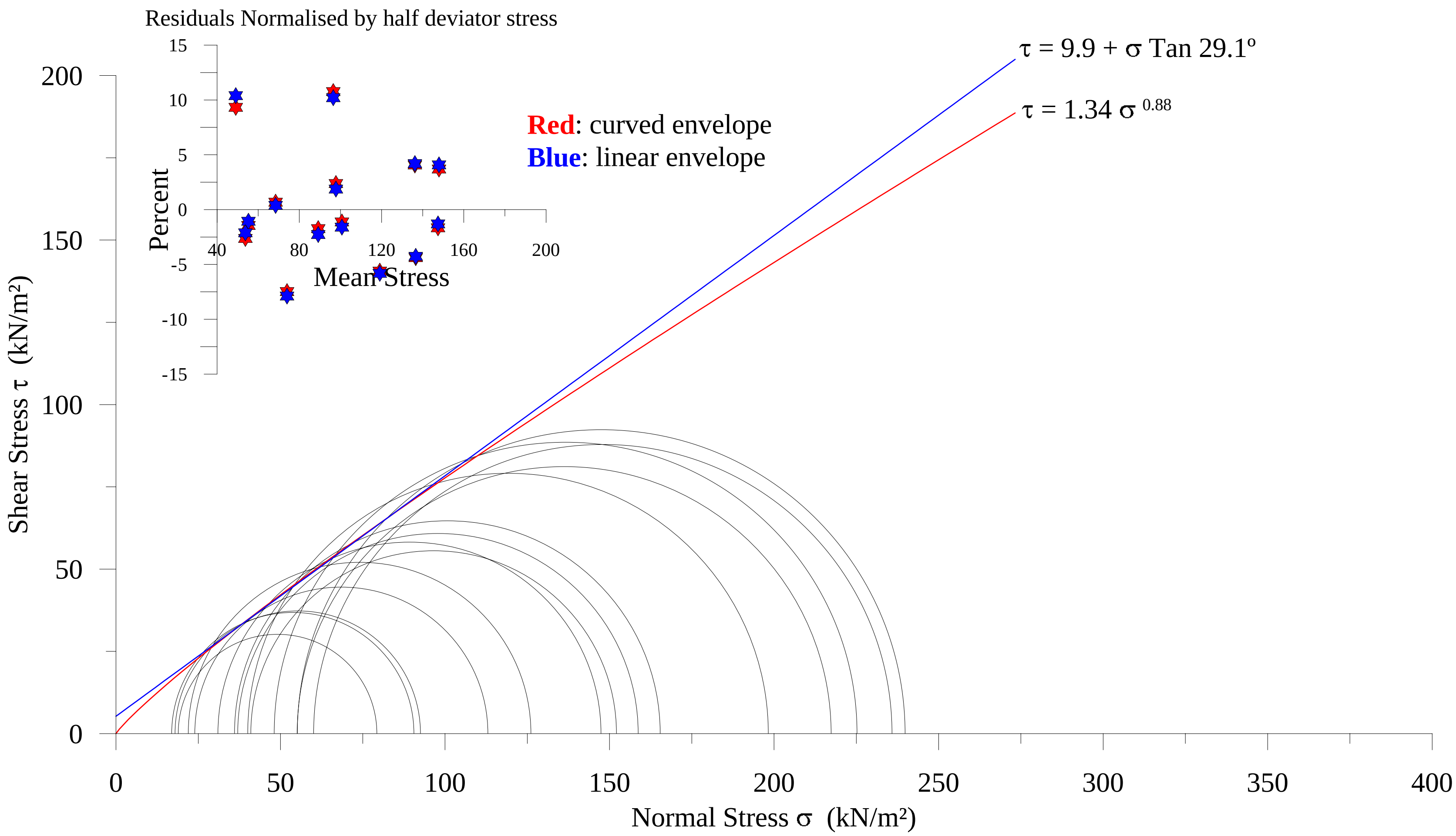
Peak Effective Stress Failure Envelope
Domain 11, All Till

Figure No.: 55



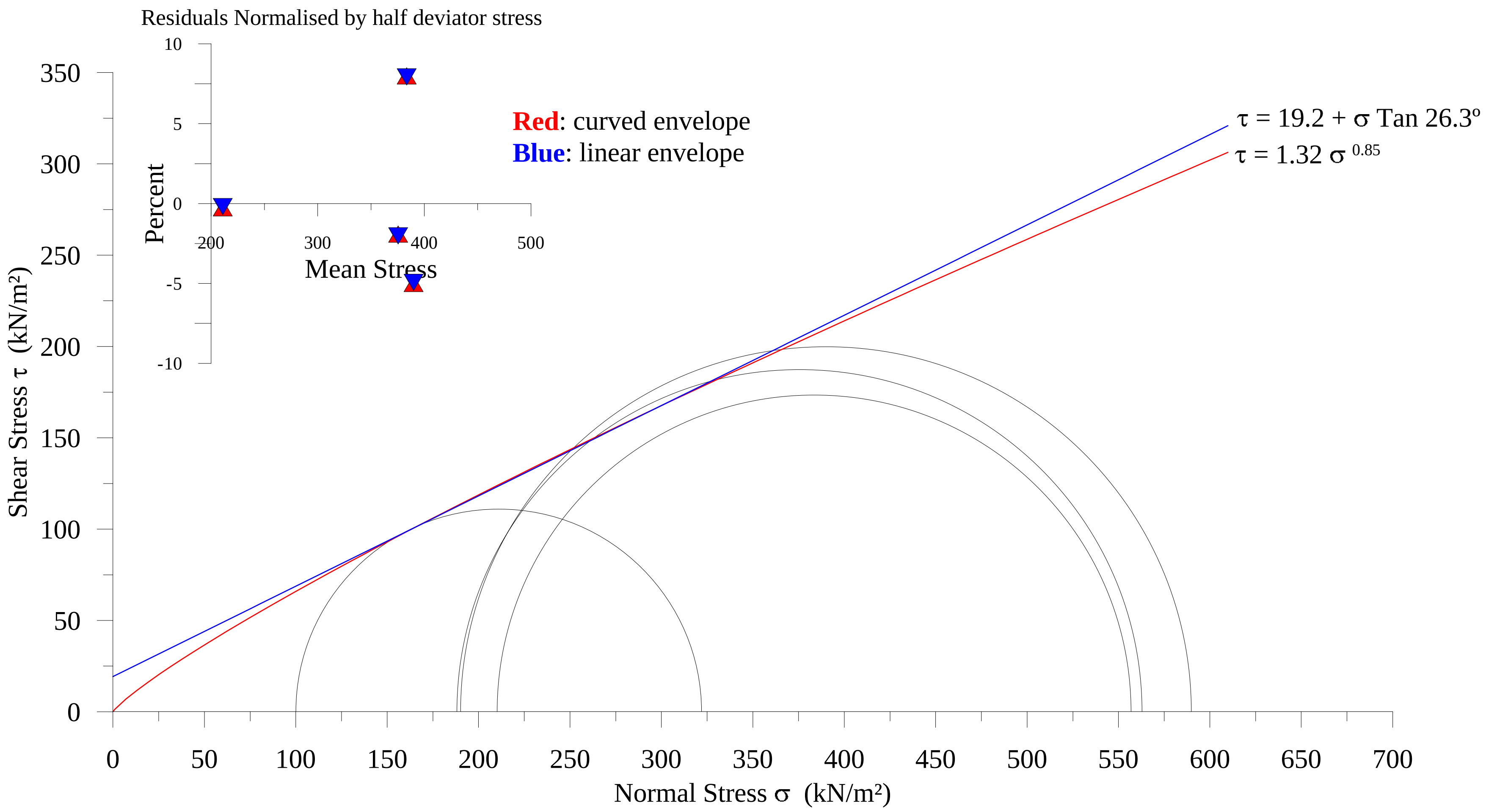
Note: no data from lower till in Domain 12

Appendix C.5	Peak Effective Stress Failure Envelope Domain 12, Upper Till	Figure No.: 56

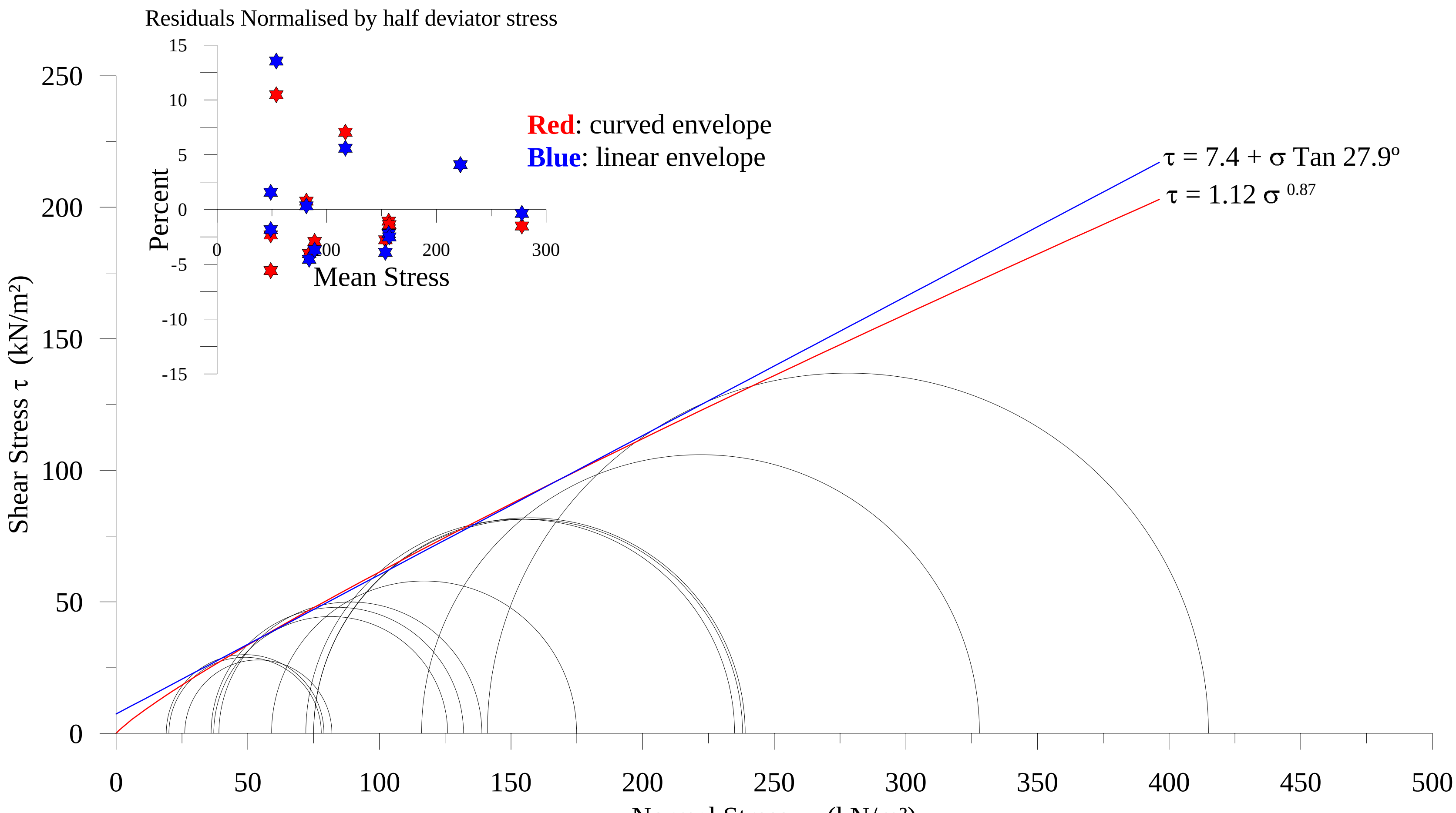


Note: no data from lower till in Domain 14

Appendix C.5	Peak Effective Stress Failure Envelope Domain 14, Upper Till	Figure No.: 57

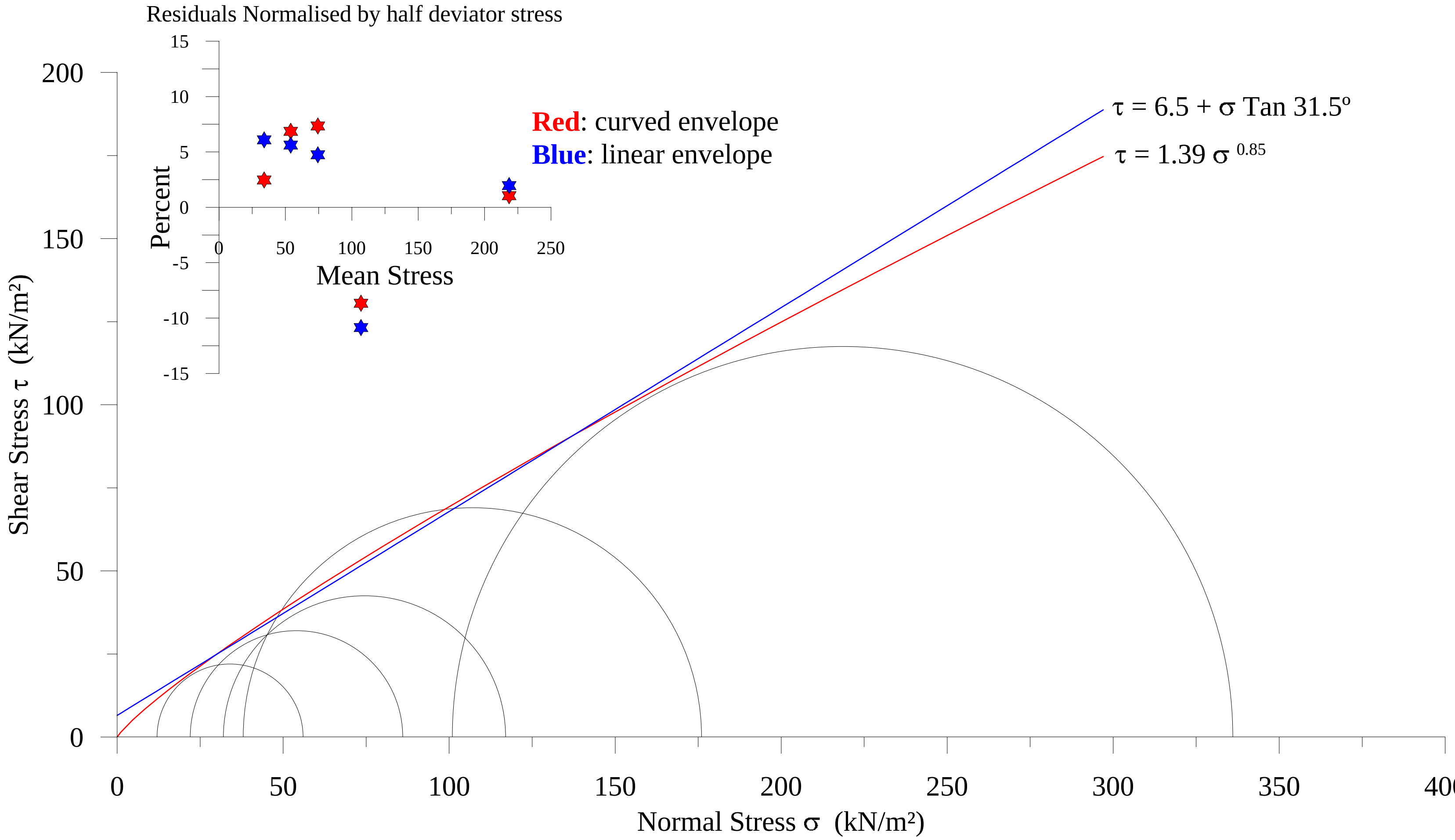


Appendix C.5	Peak Effective Stress Failure Envelope Domain 21, Till	Figure No.:	58

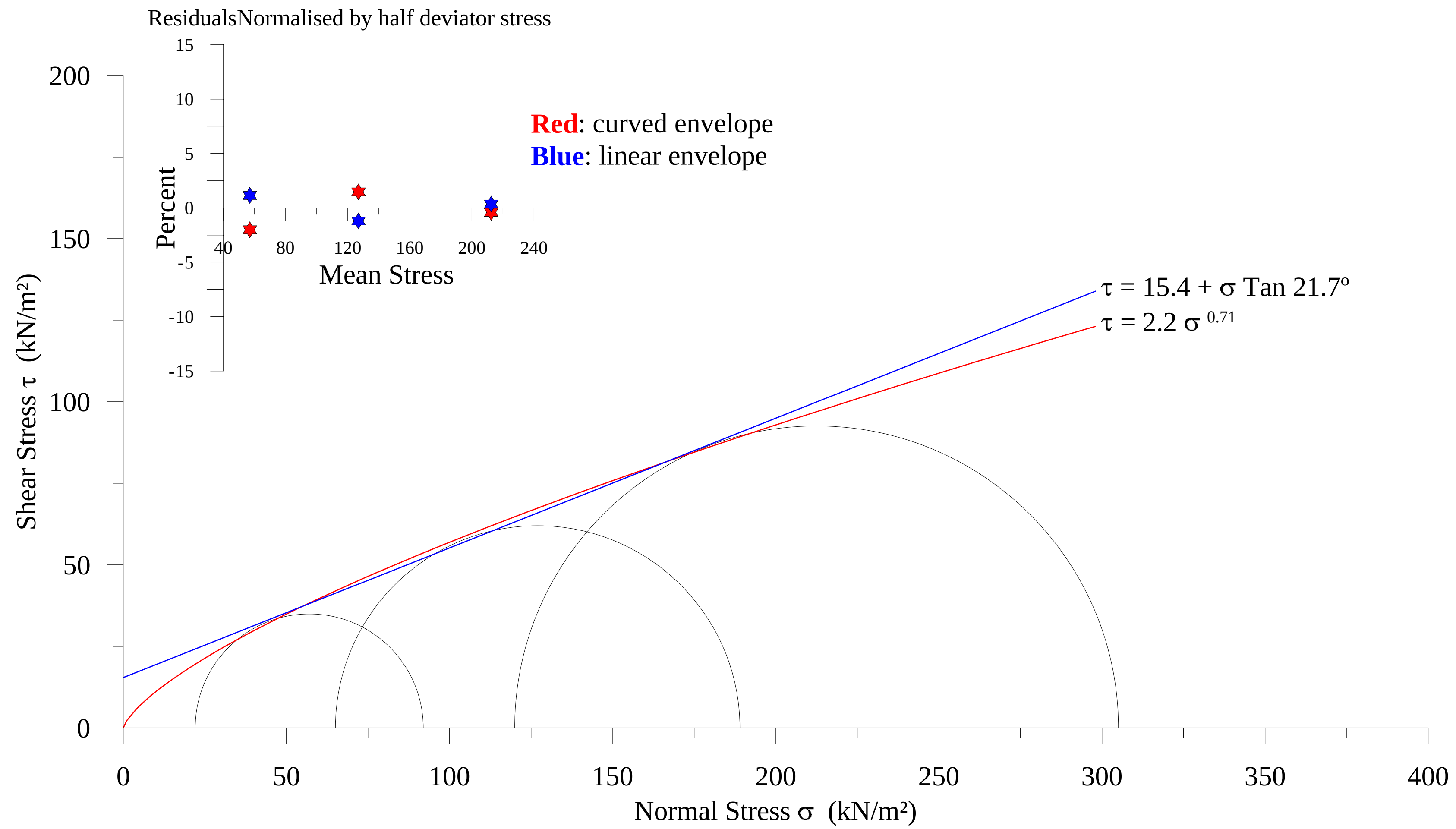


Note: no data from lower till in Domain 31

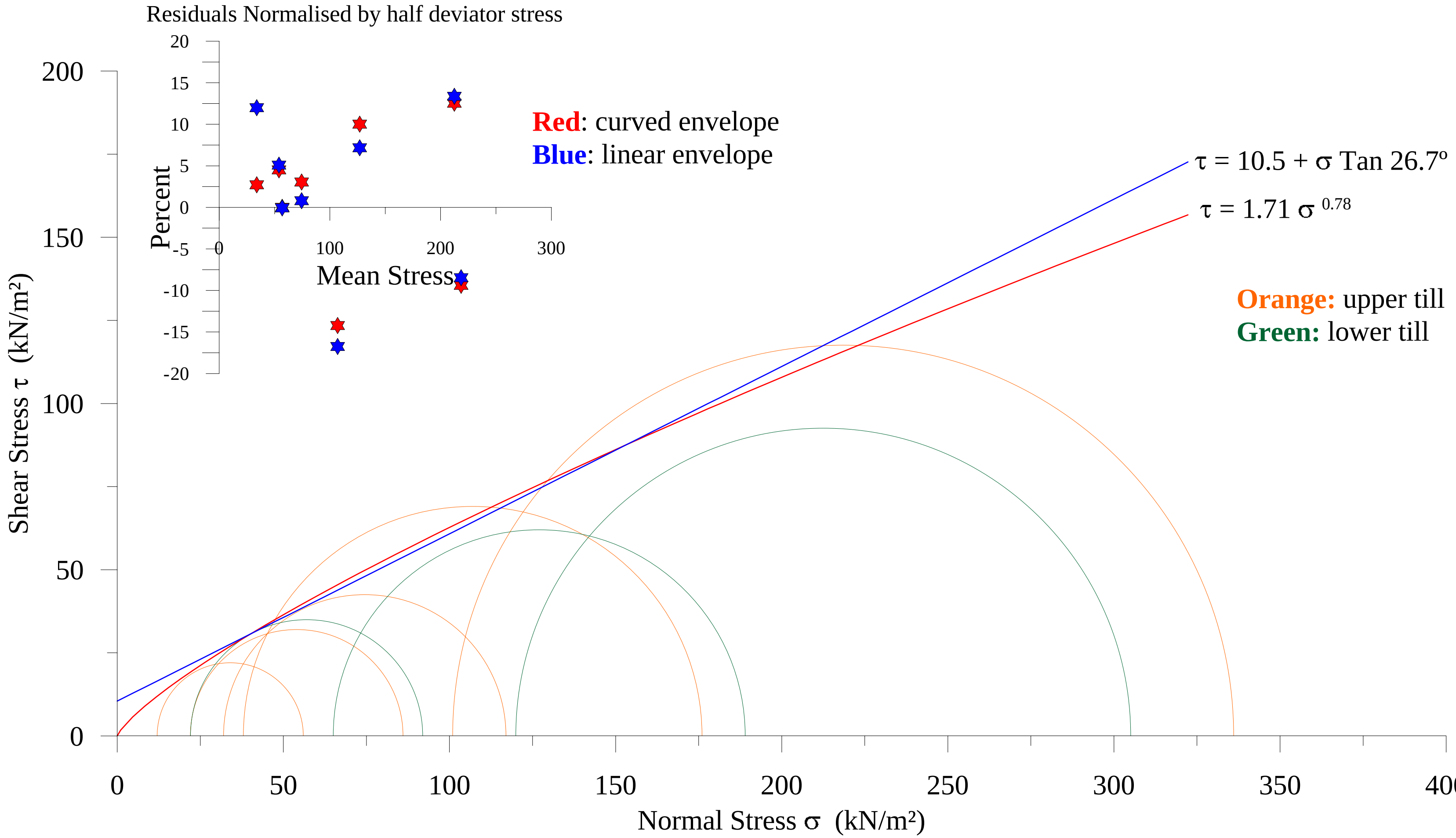
Appendix C.5	Peak Effective Stress Failure Envelope Domain 31, Upper Till	Figure No.: 59



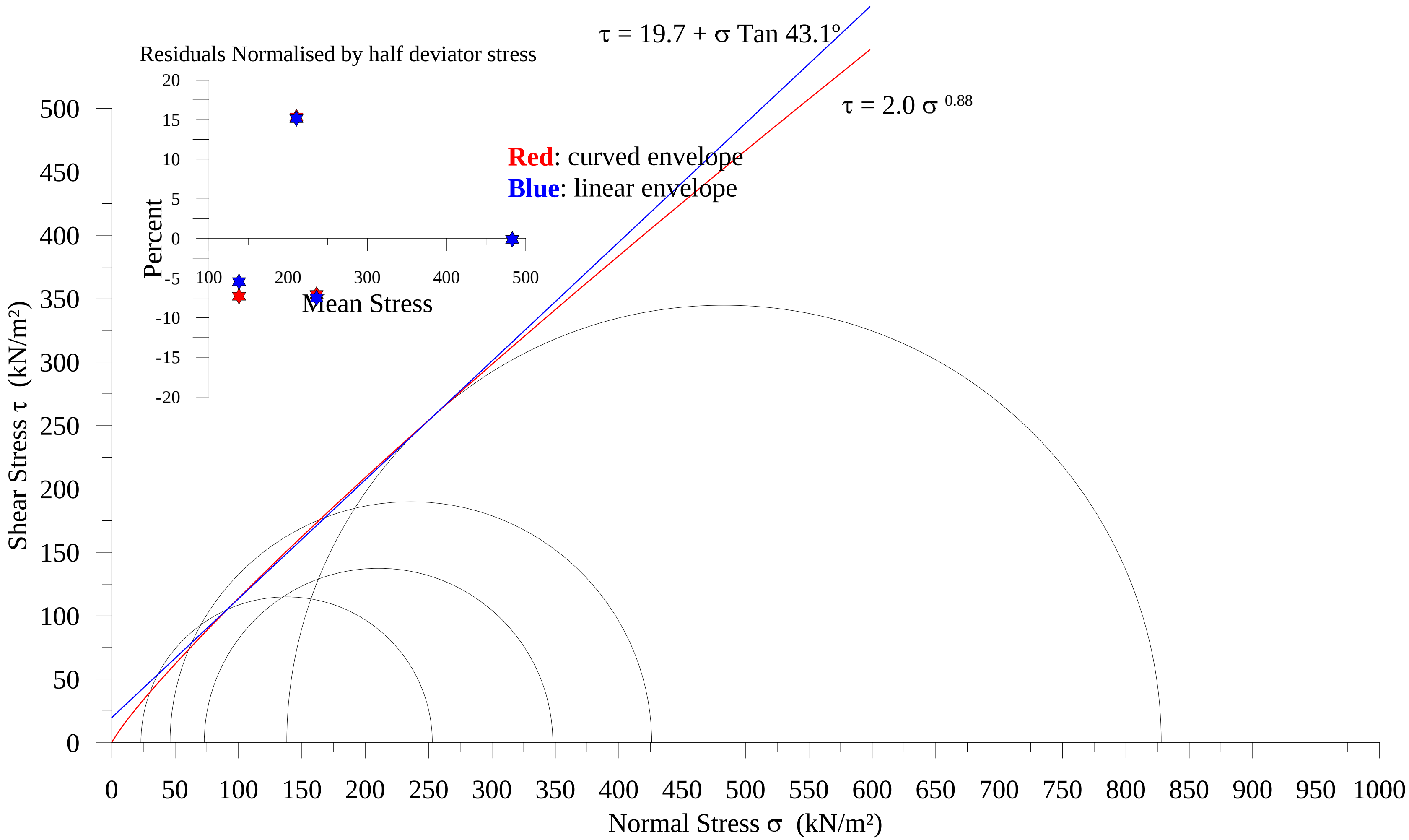
Appendix C.5	Peak Effective Stress Failure Envelope Domain 41, Upper Till	Figure No.: 60



Appendix C.5	Peak Effective Stress Failure Envelope Domain 41, Lower Till	Figure No.: 61

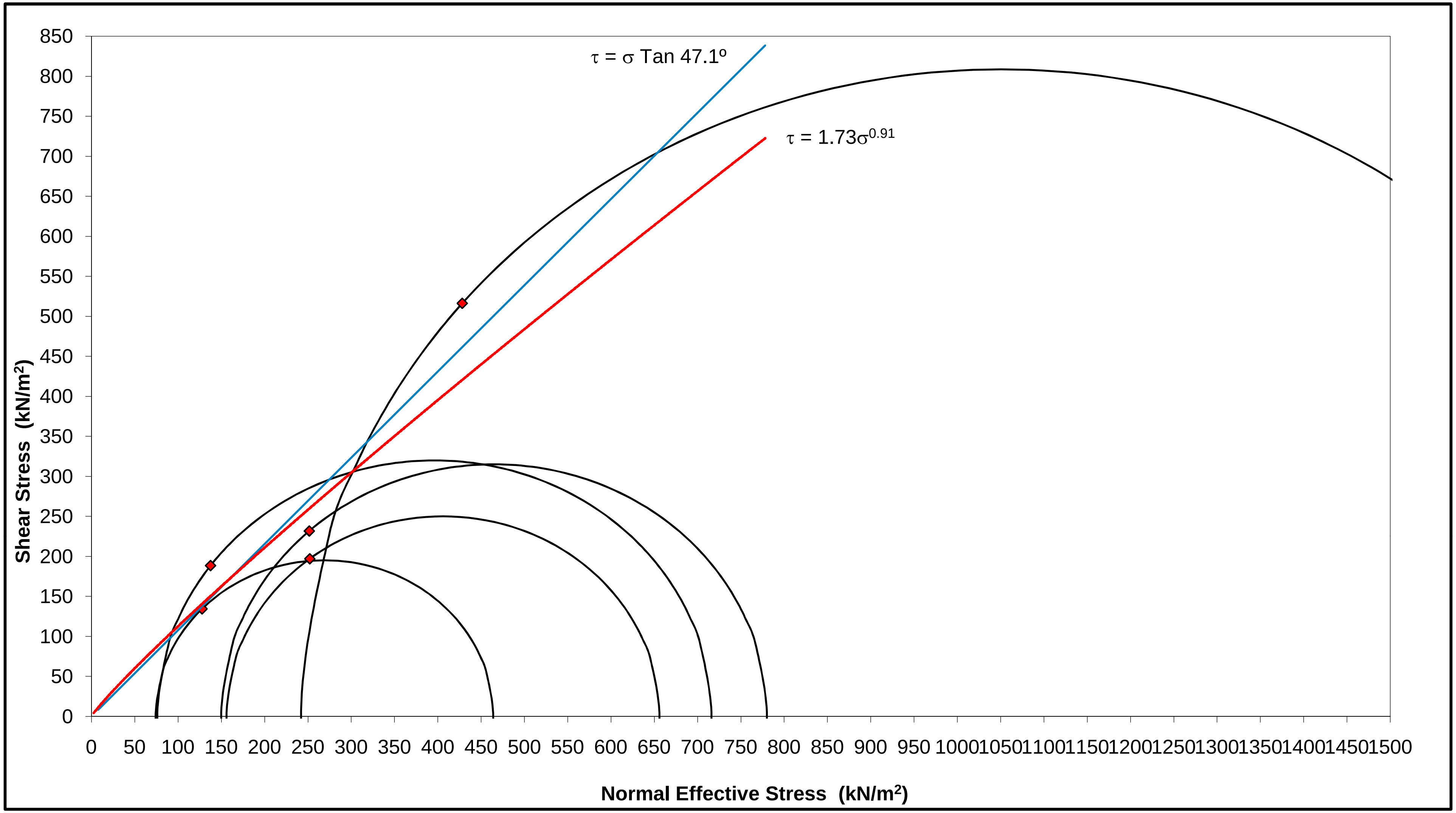


Appendix C.5	Peak Effective Stress Failure Envelope Domain 41, All Till	Figure No.: 62



Note: no data from lower till in Domain 51

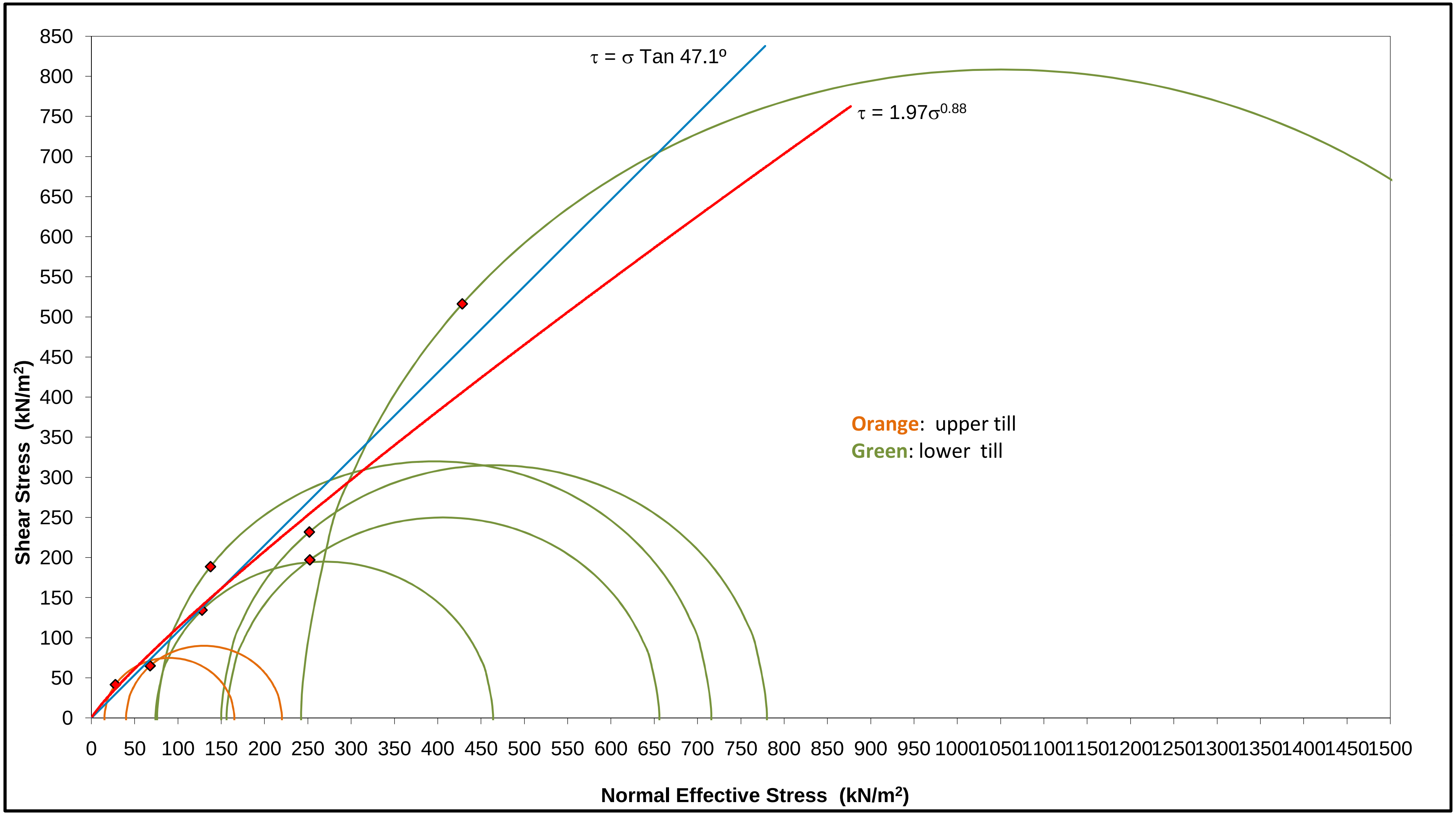
Appendix C.5	Peak Effective Stress Failure Envelope Domain 51, Upper Till	Figure No.: 63



Peak Effective Stress Failure Envelope

Domain 52, Lower Till

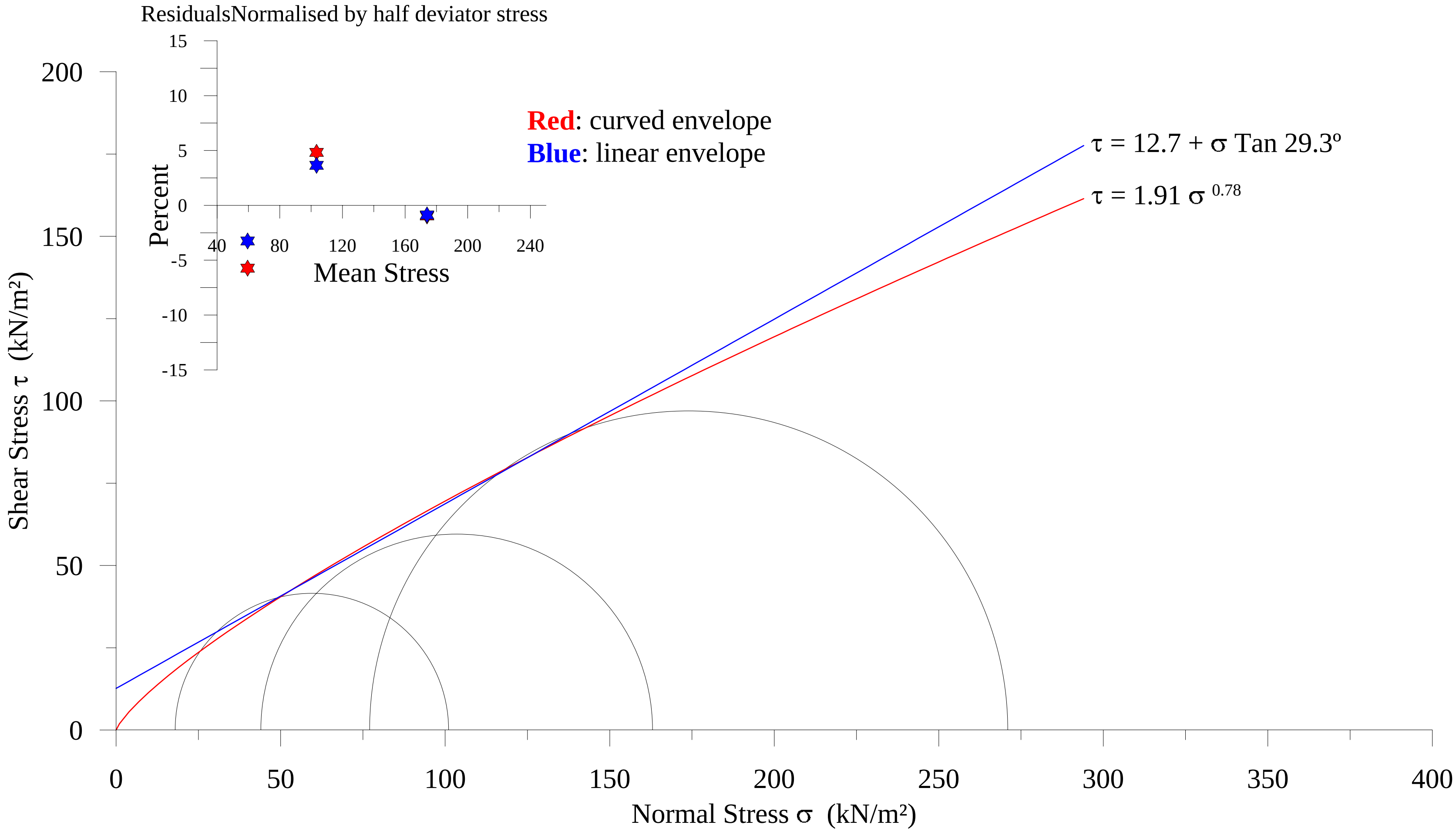
Figure 64



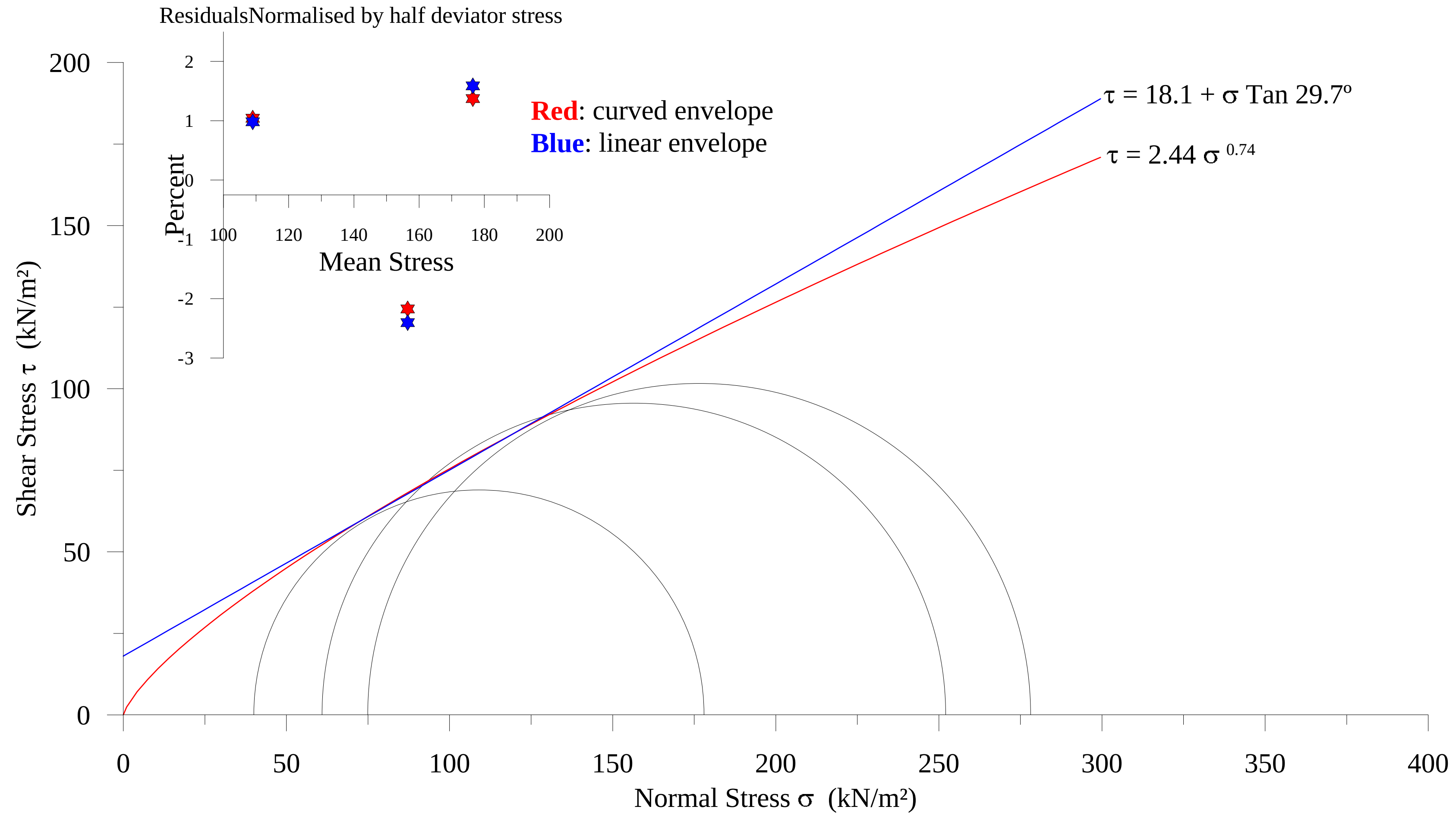
Peak Effective Stress Failure Envelope
Domain 52, All Till

Appendix C.5

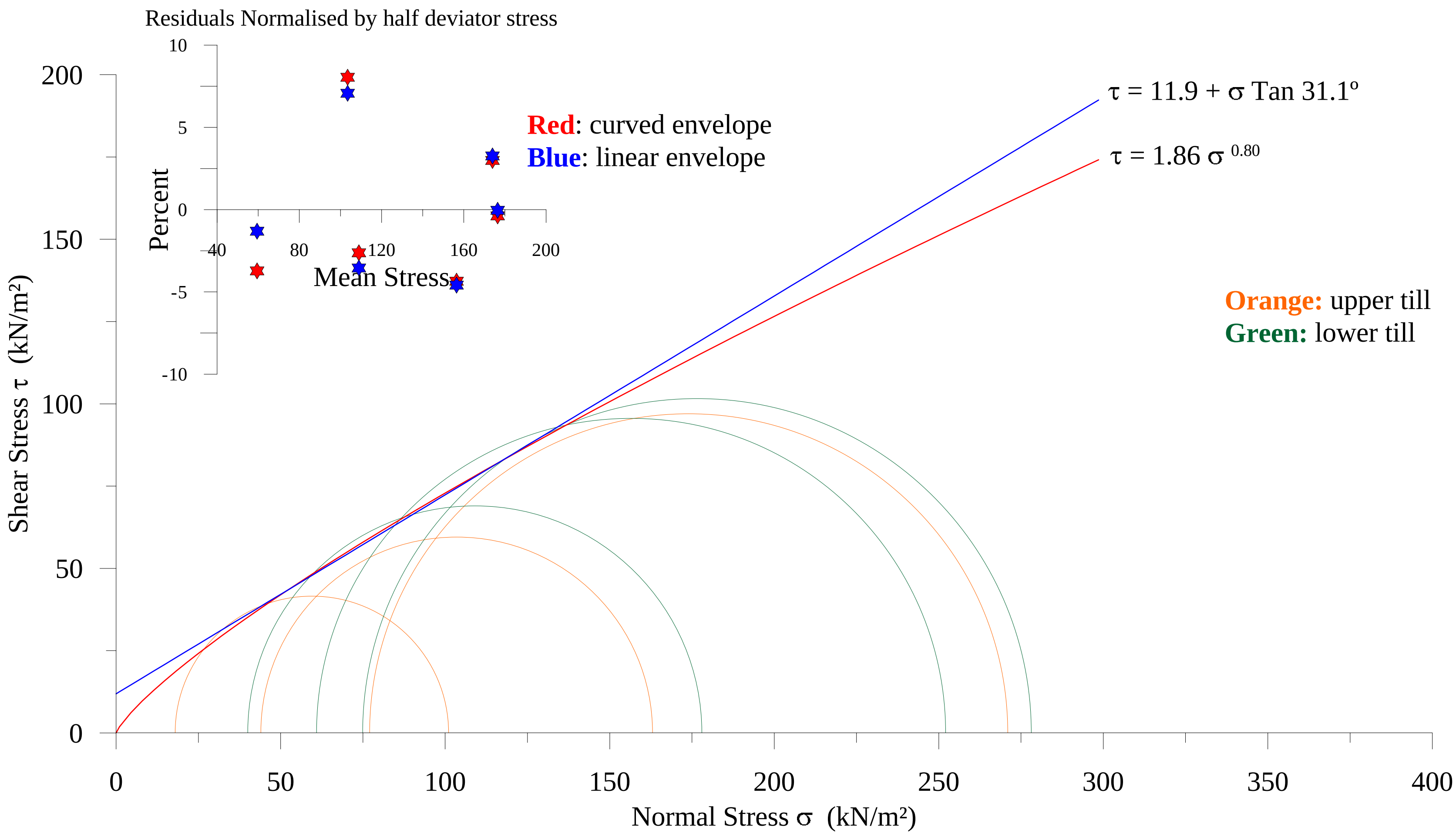
Figure 65



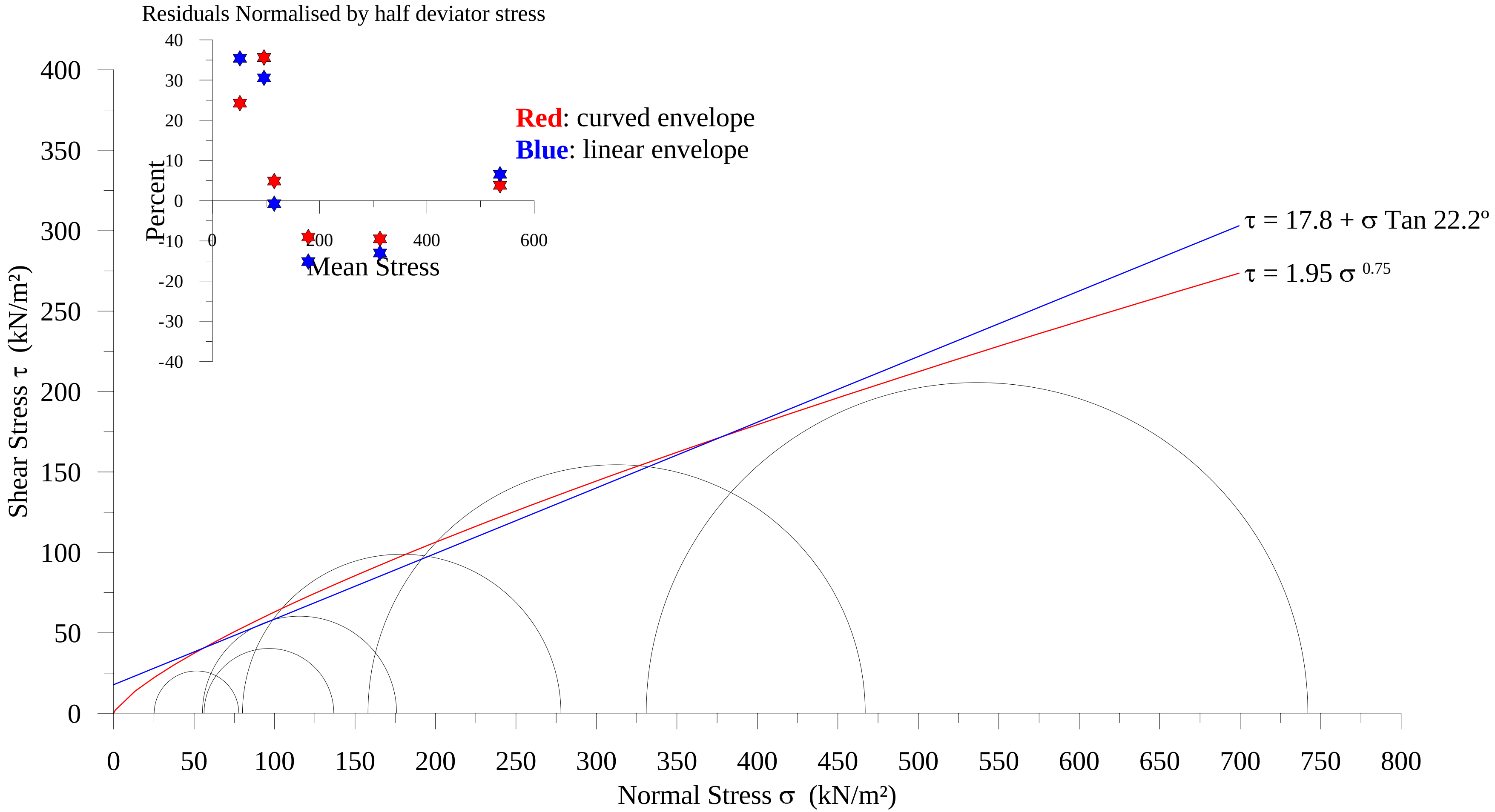
Appendix C.5	Peak Effective Stress Failure Envelope Domain 61, Upper Till	Figure No.: 66



Appendix C.5	Peak Effective Stress Failure Envelope Domain 61, Lower Till	Figure No.: 67

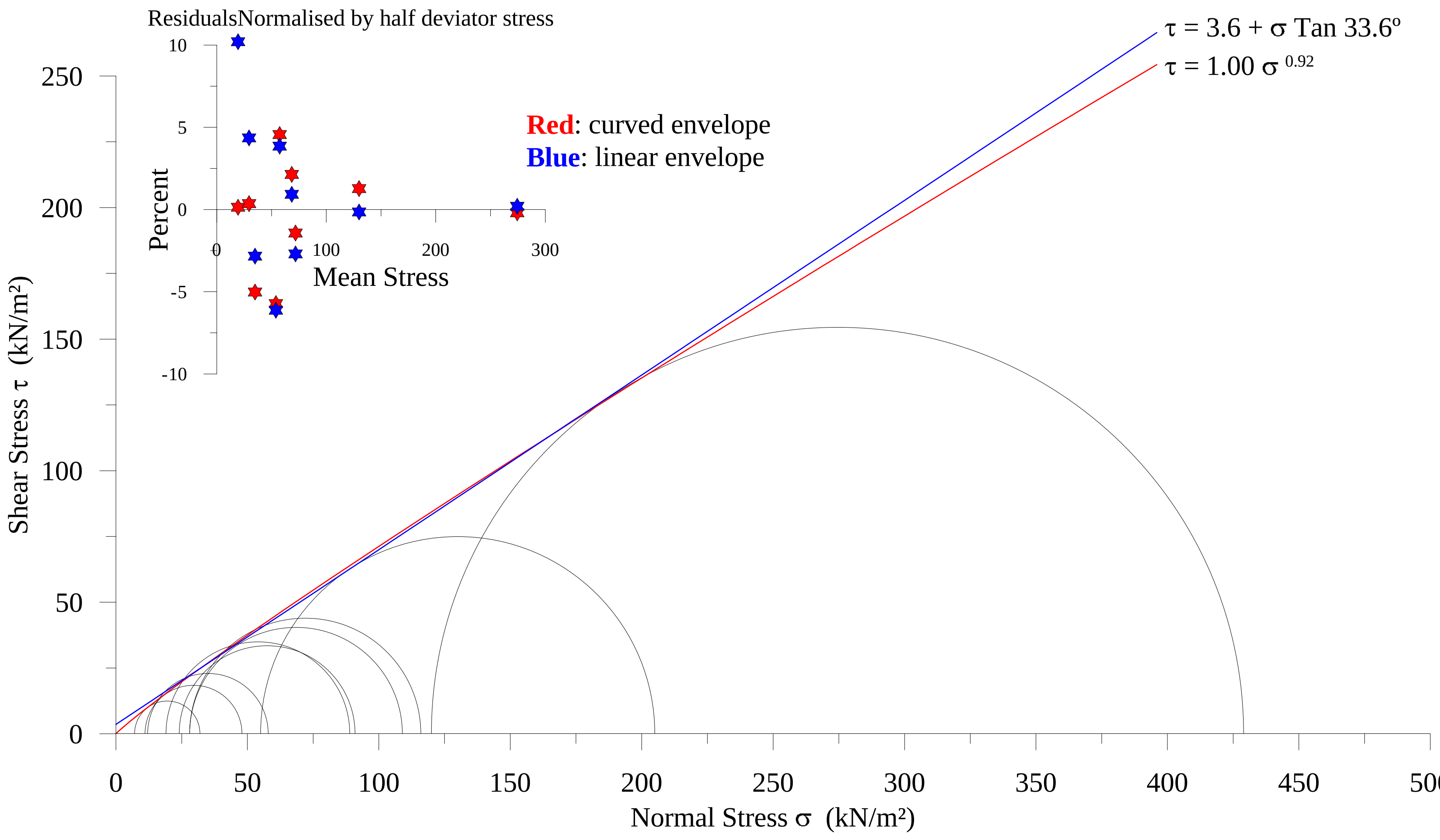


Appendix C.5	Peak Effective Stress Failure Envelope Domain 61, All Till	Figure No.: 68

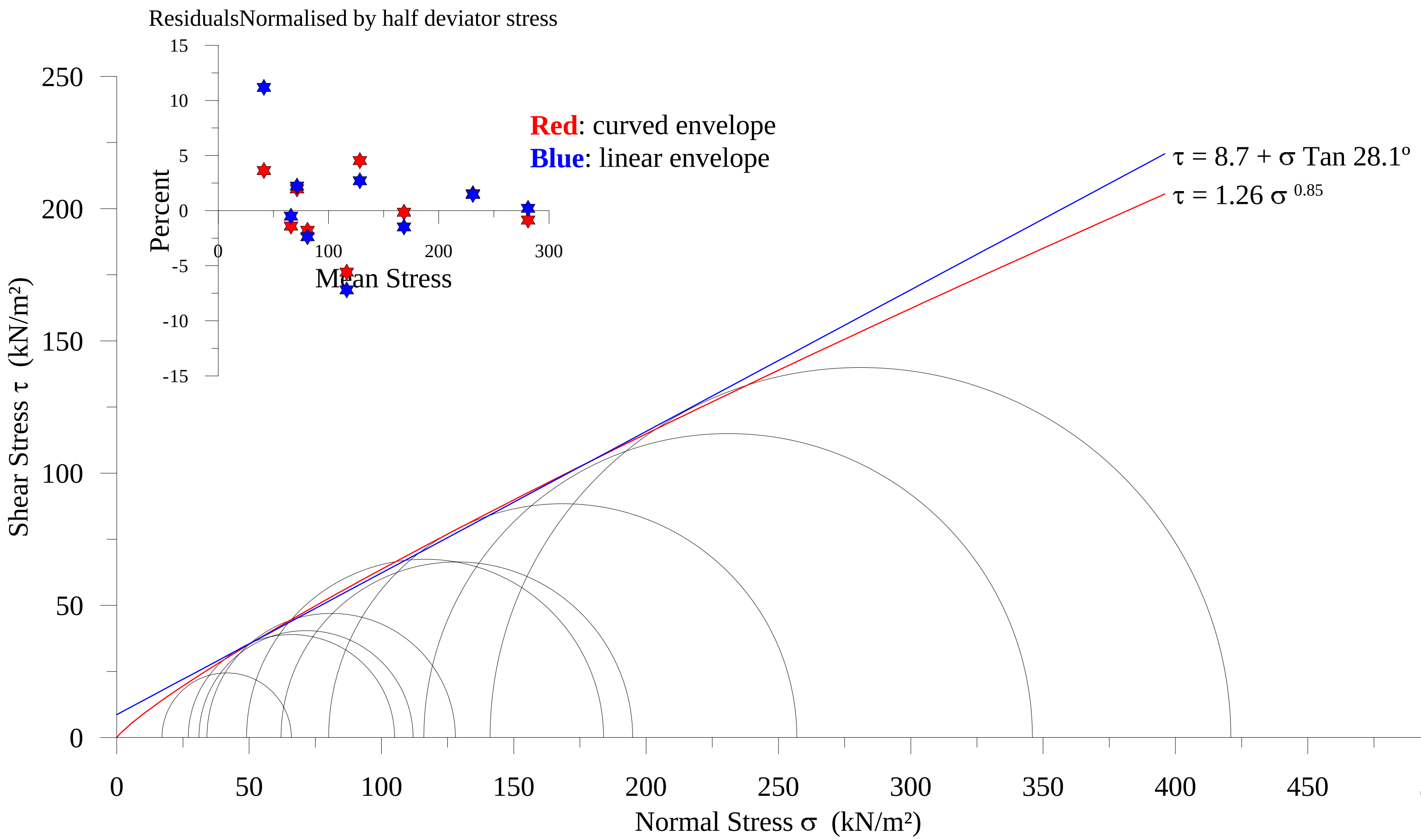


Note: no data from lower till in Domain 64

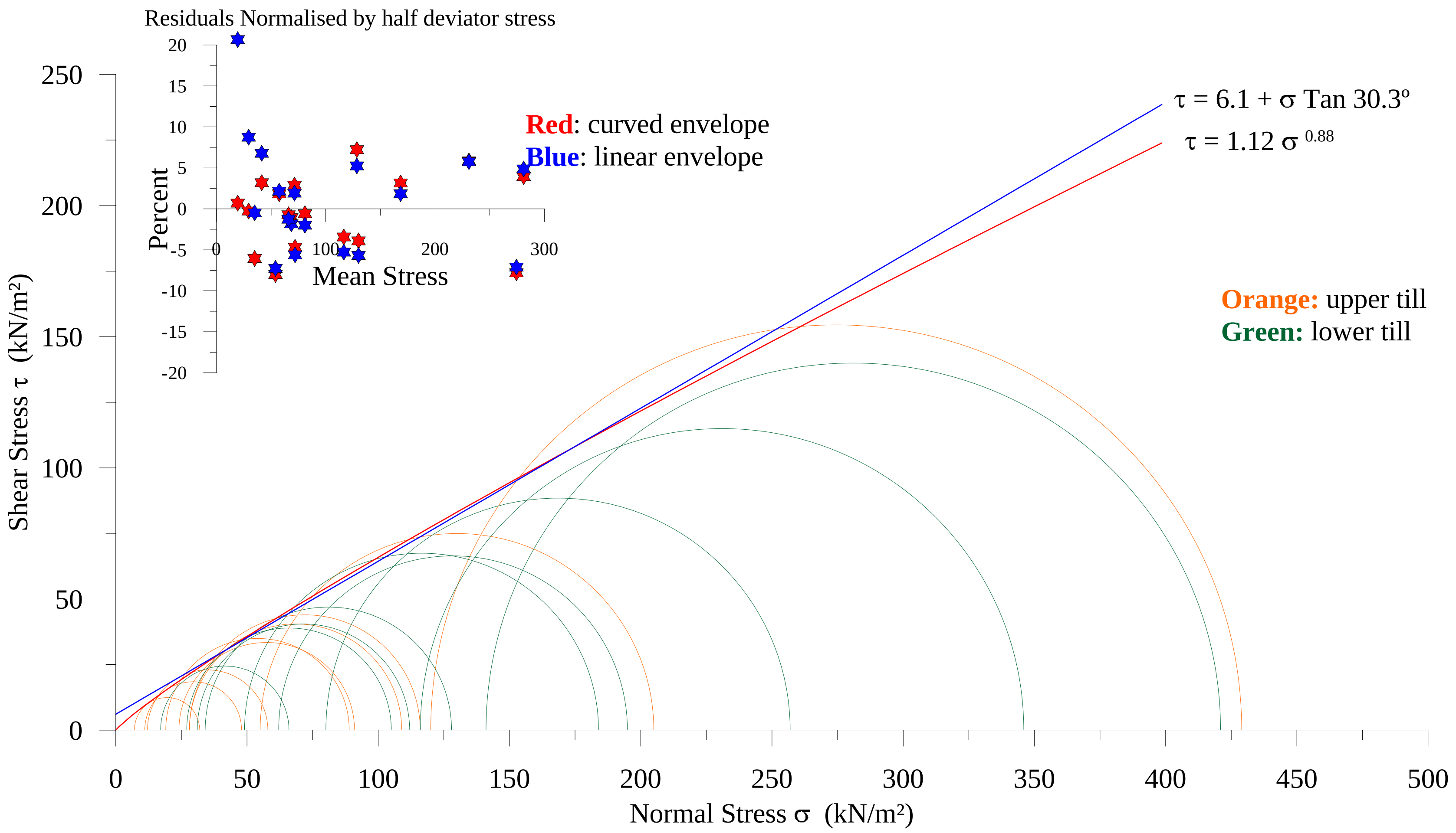
Appendix C.5	Peak Effective Stress Failure Envelope Domain 64, Upper Till	Figure No.: 69



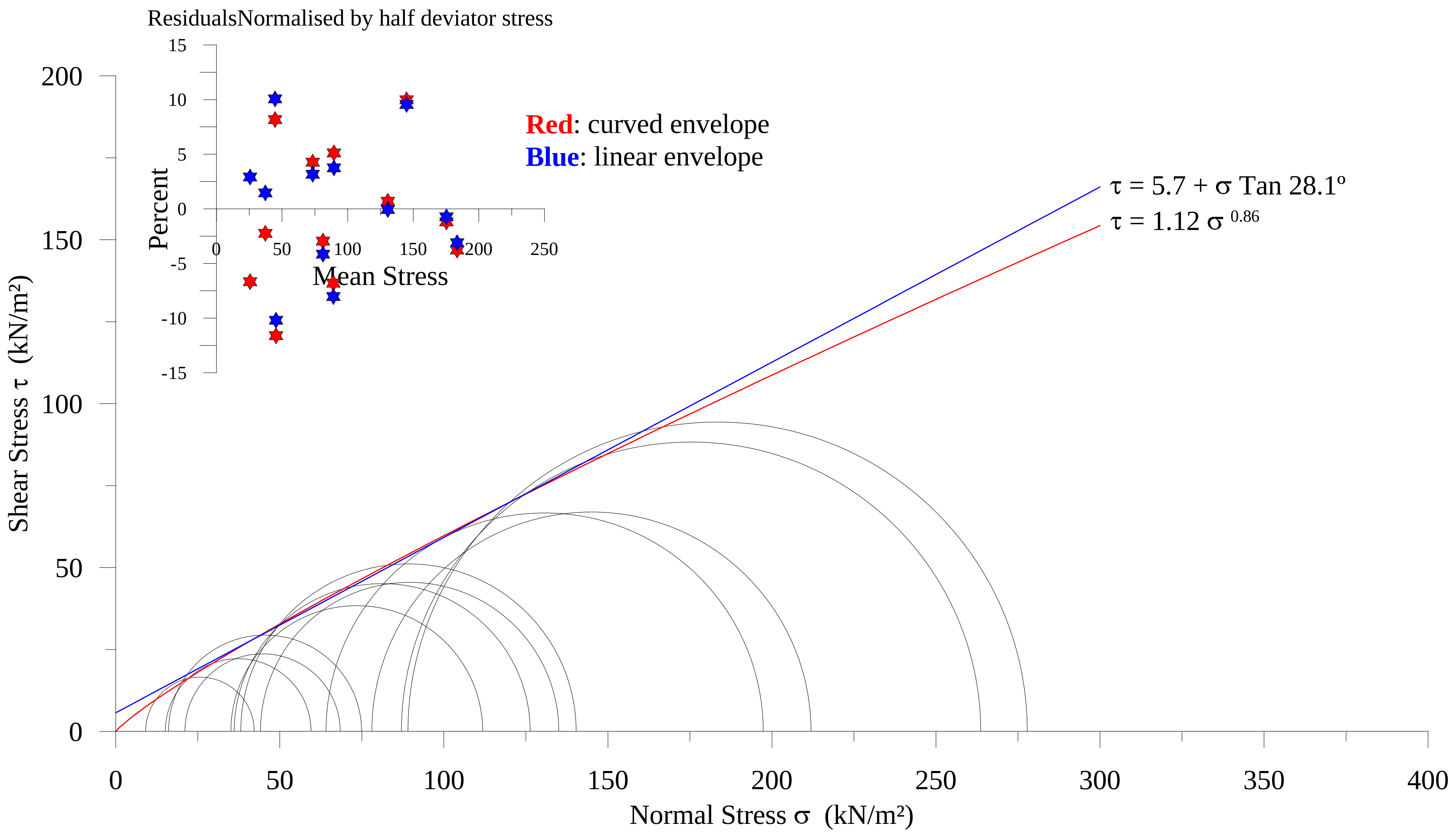
Appendix C.5	Peak Effective Stress Failure Envelope Domain 65, Upper Till	Figure No.: 70



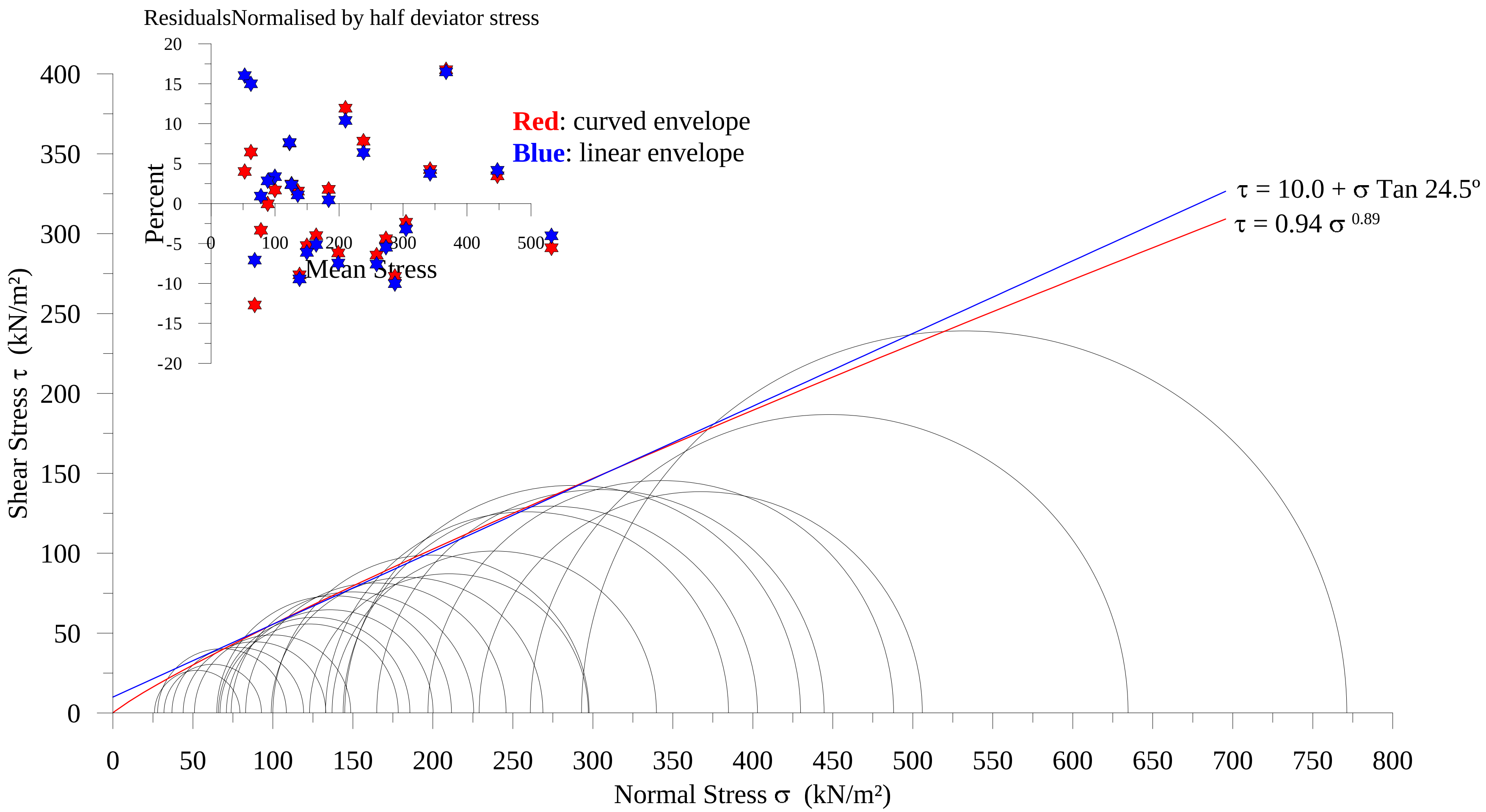
Appendix C.5	Peak Effective Stress Failure Envelope Domain 65, Lower Till	Figure No.: 71



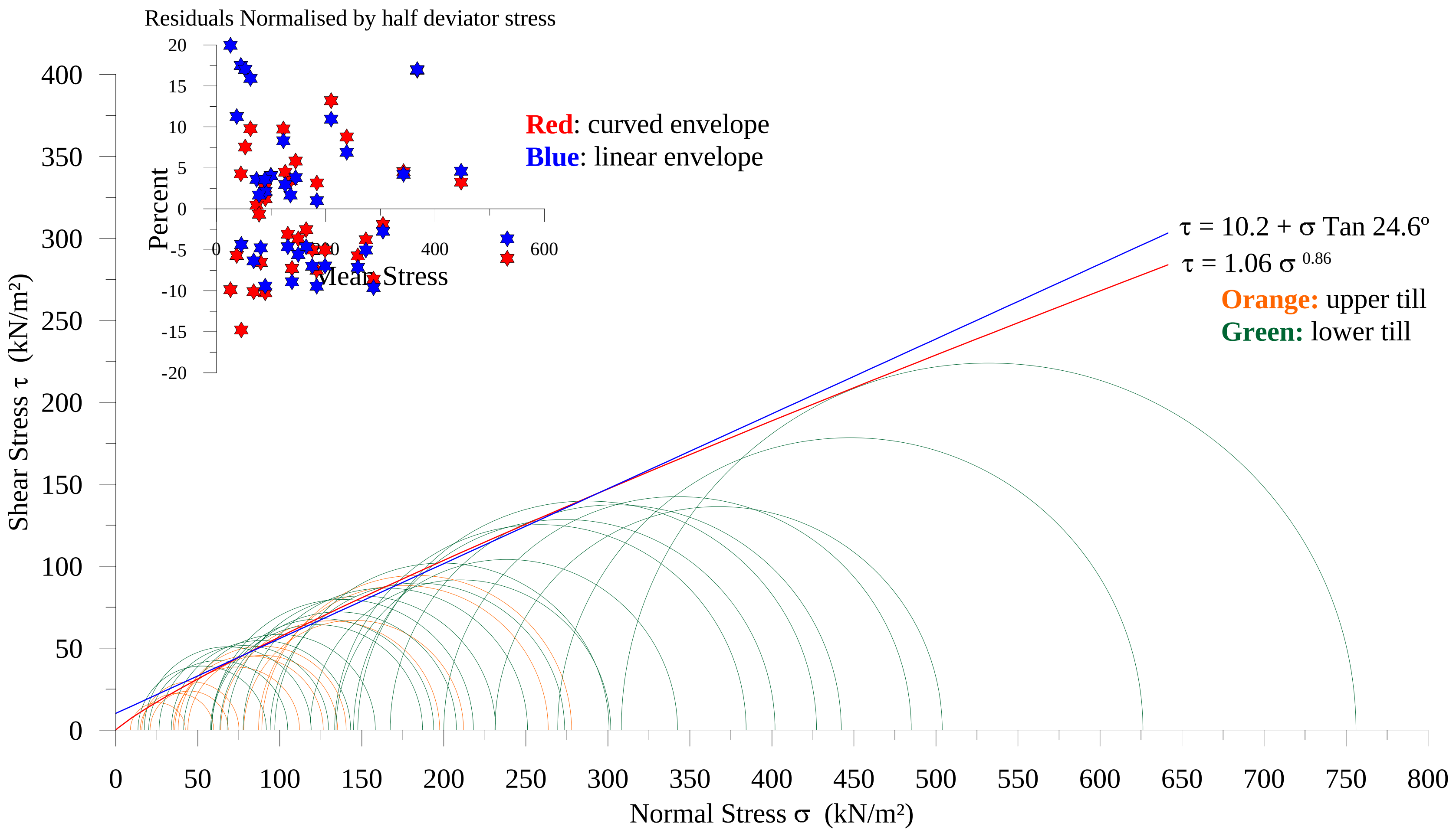
Appendix C.5	Peak Effective Stress Failure Envelope Domain 65, All Till	Figure No.: 72



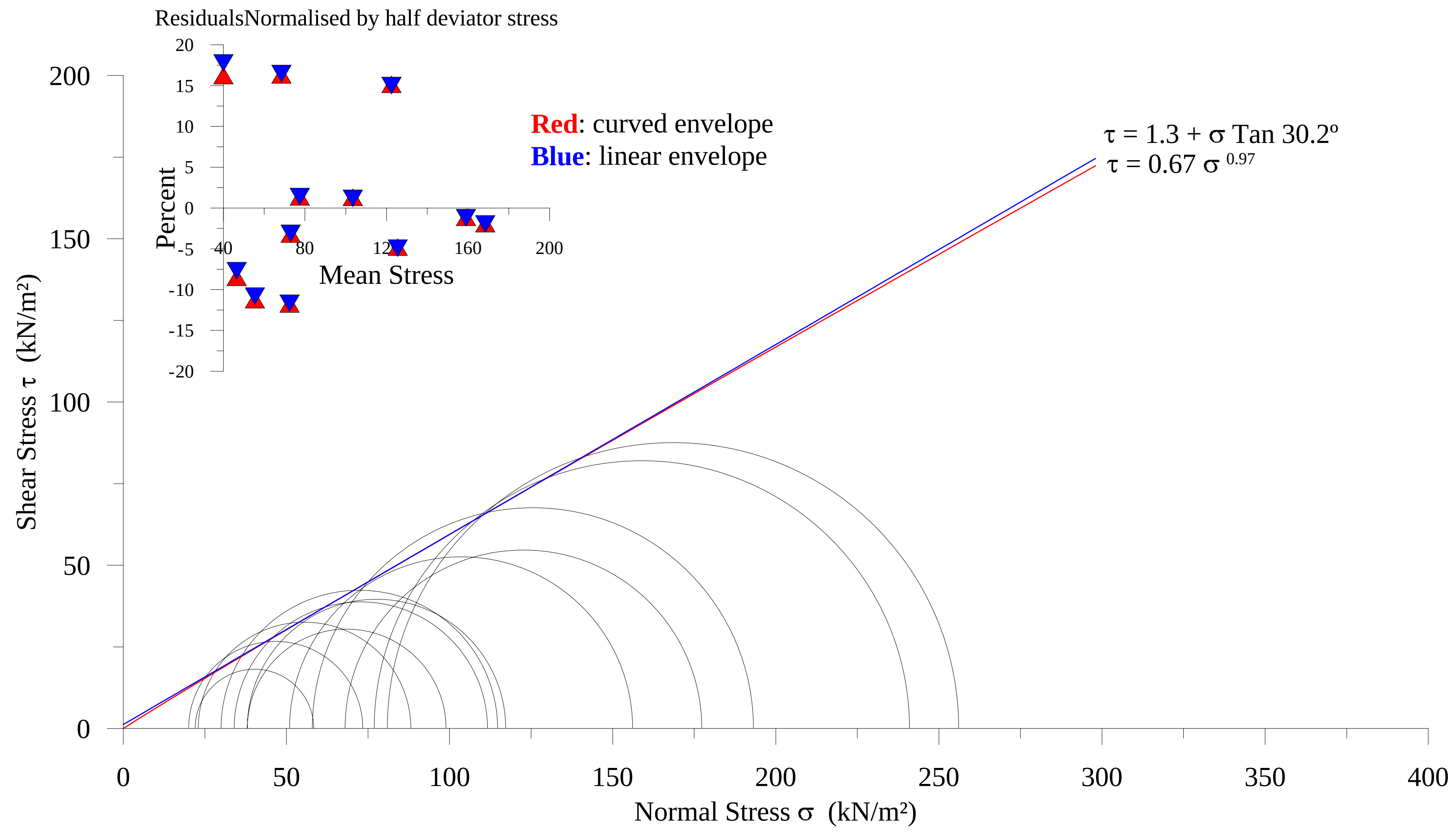
Appendix C.5	Peak Effective Stress Failure Envelope Domain 71, Upper Till	Figure No.: 73



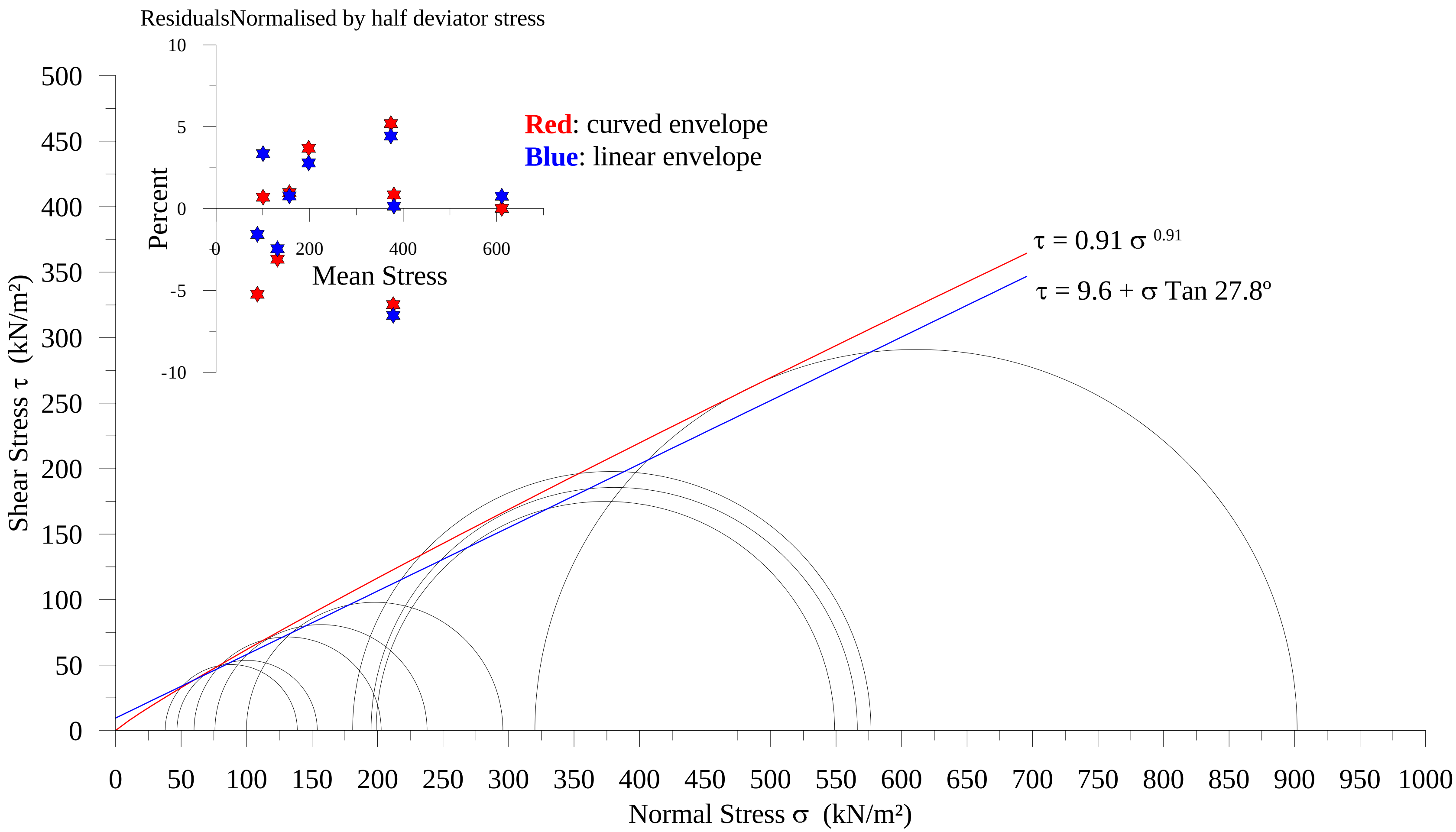
Appendix C.5	Peak Effective Stress Failure Envelope Domain 71, Lower Till	Figure No.: 74



Appendix C.5	Peak Effective Stress Failure Envelope Domain 71, All Till	Figure No.: 75



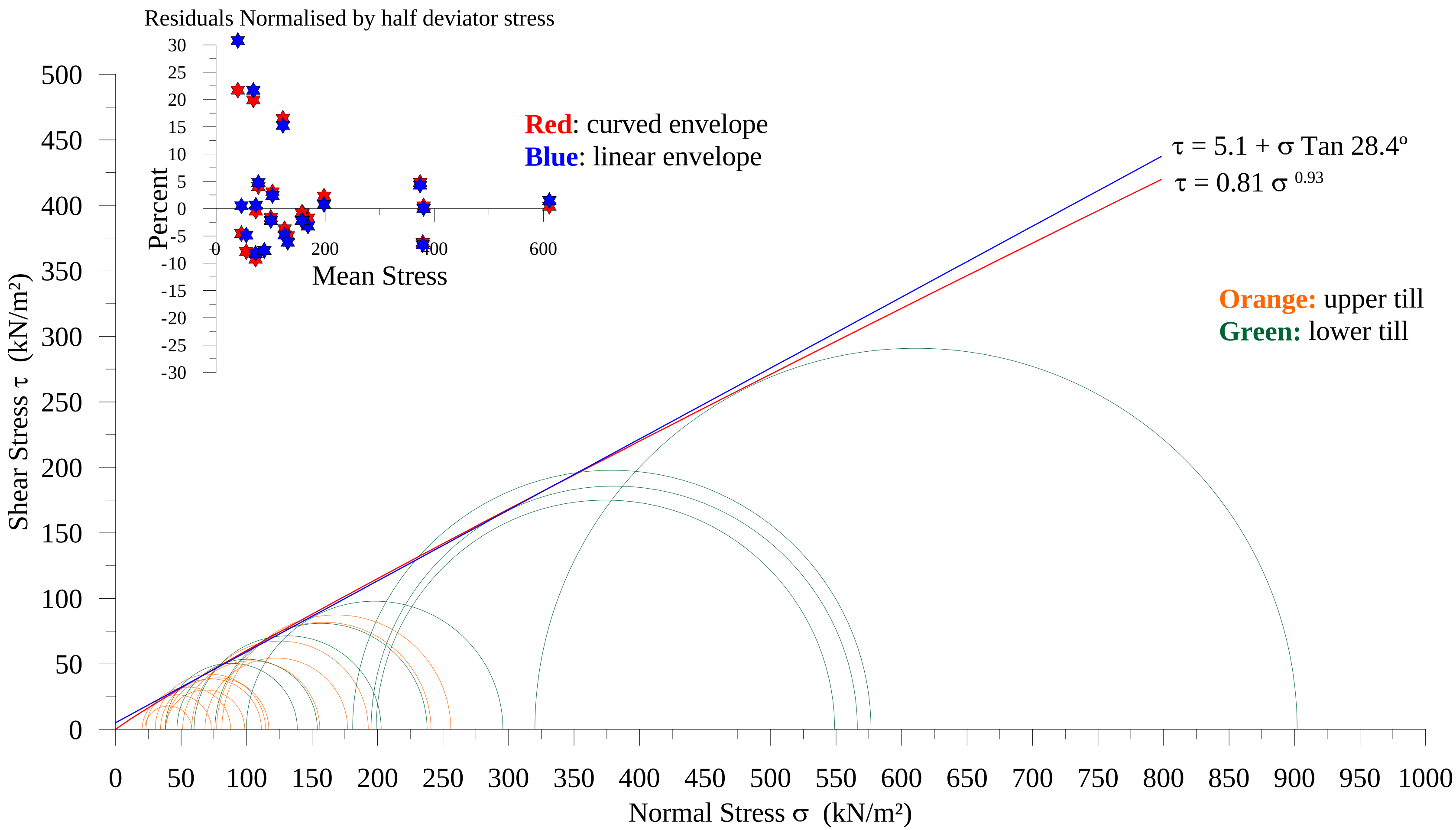
Appendix C.5	Peak Effective Stress Failure Envelope Domain 71, Upper Till	Figure No.: 76



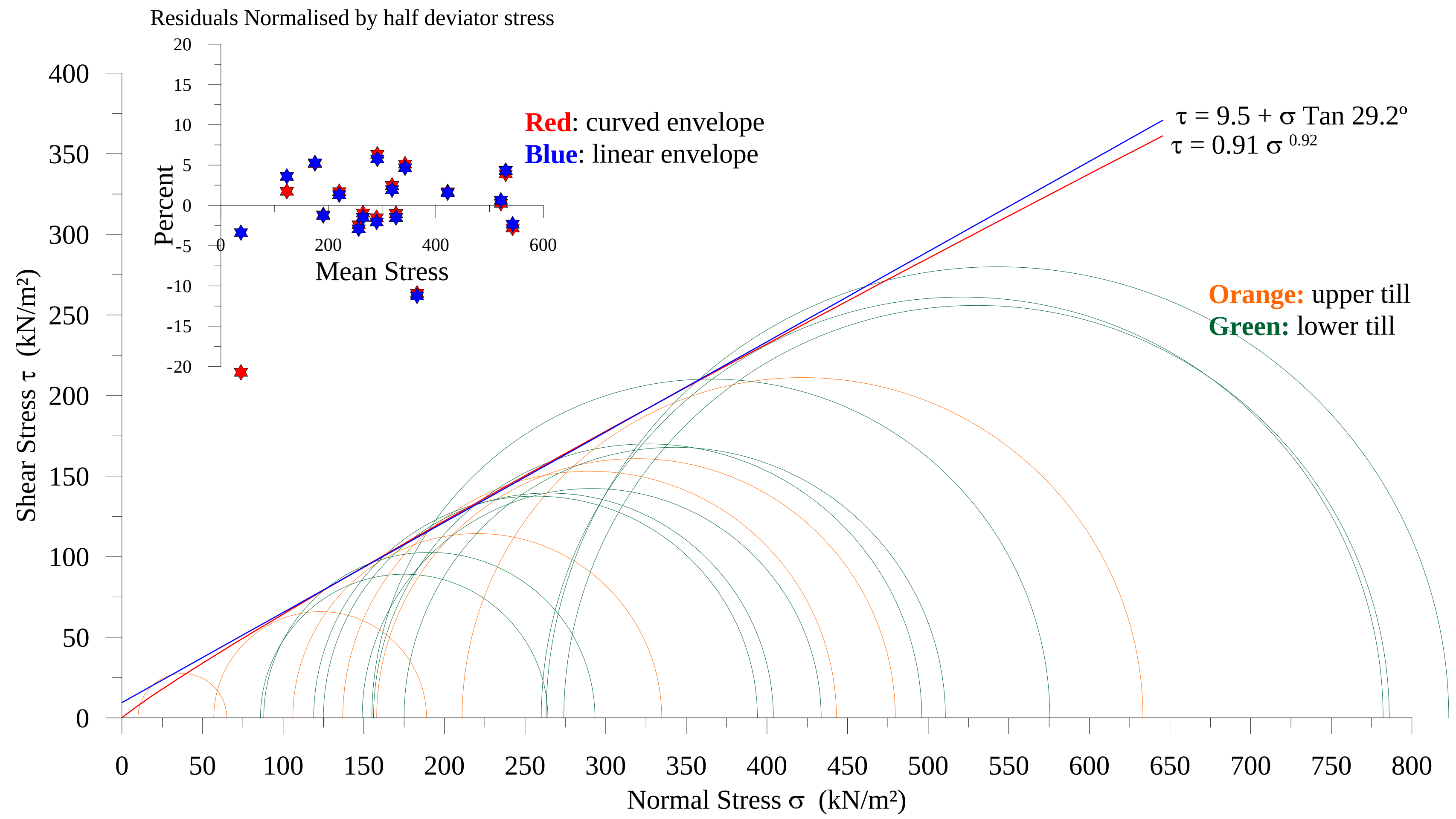
Appendix C.5

Peak Effective Stress Failure Envelope
Domain 72, Lower Till

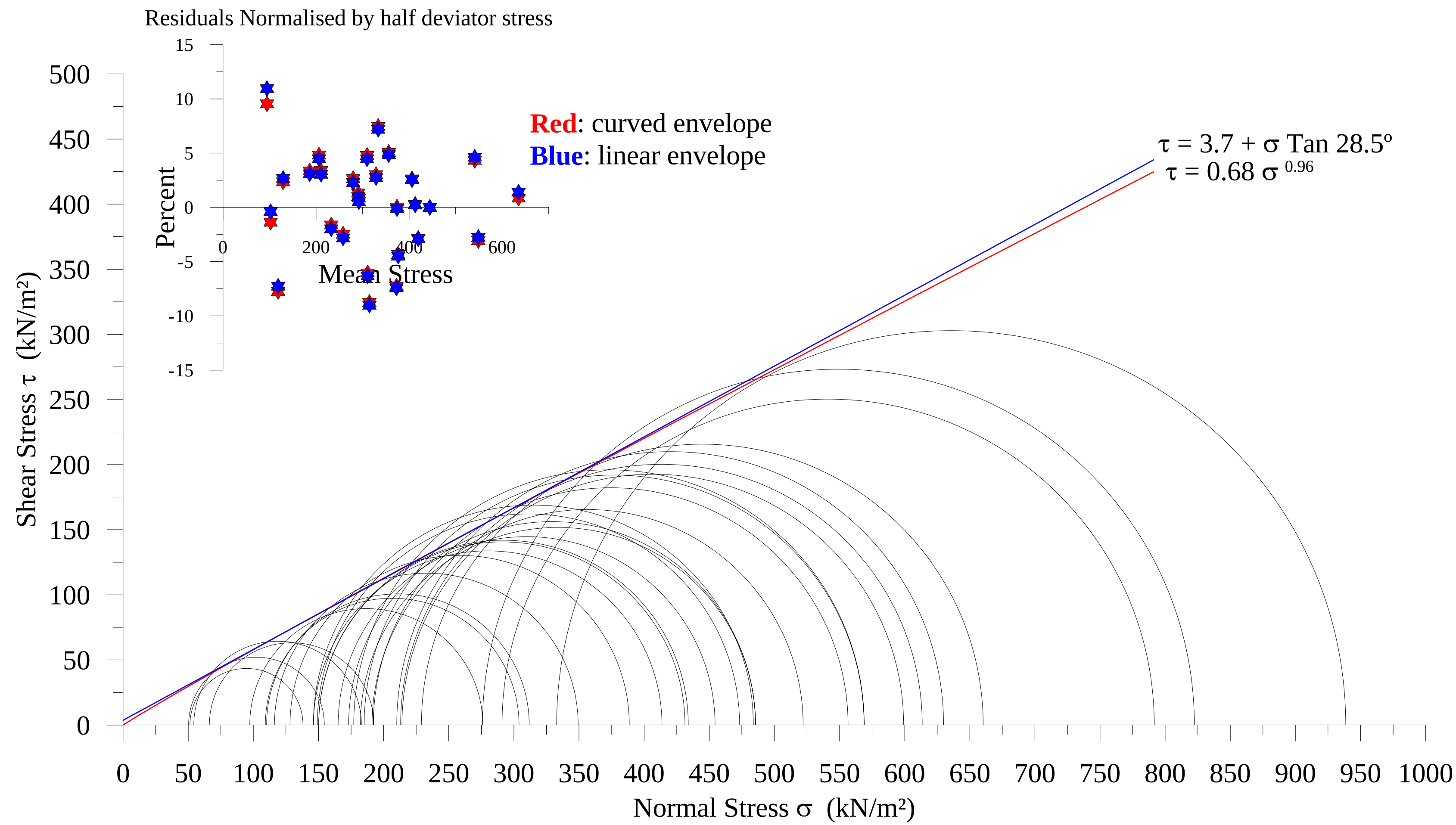
Figure No.: 77



Appendix C.5	Peak Effective Stress Failure Envelope Domain 72, All Till	Figure No.: 78

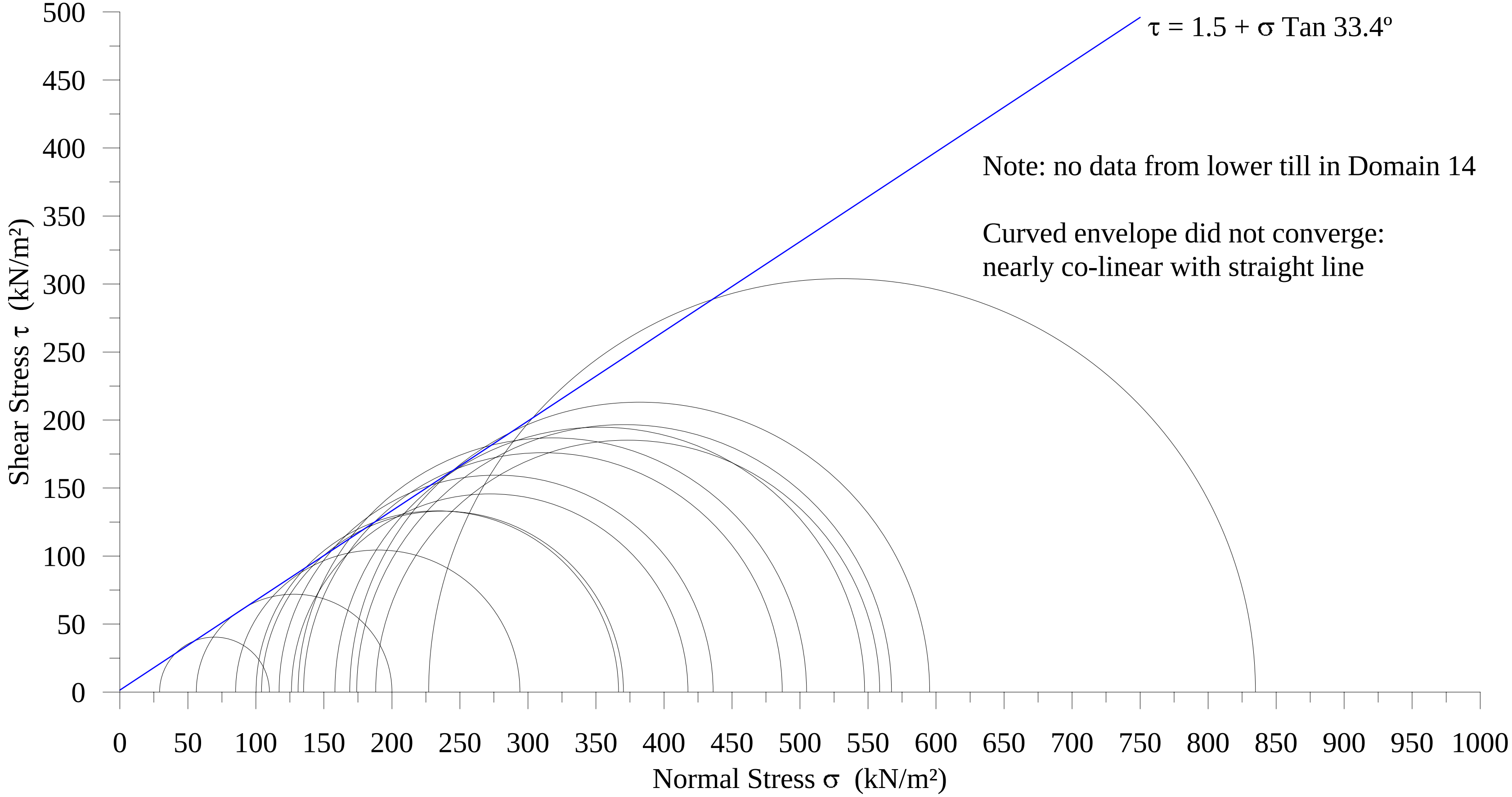


Appendix C.5	Effective Stress Failure Envelope for Critical State or 20% Strain Domain 11, All Till	Figure No.: 79

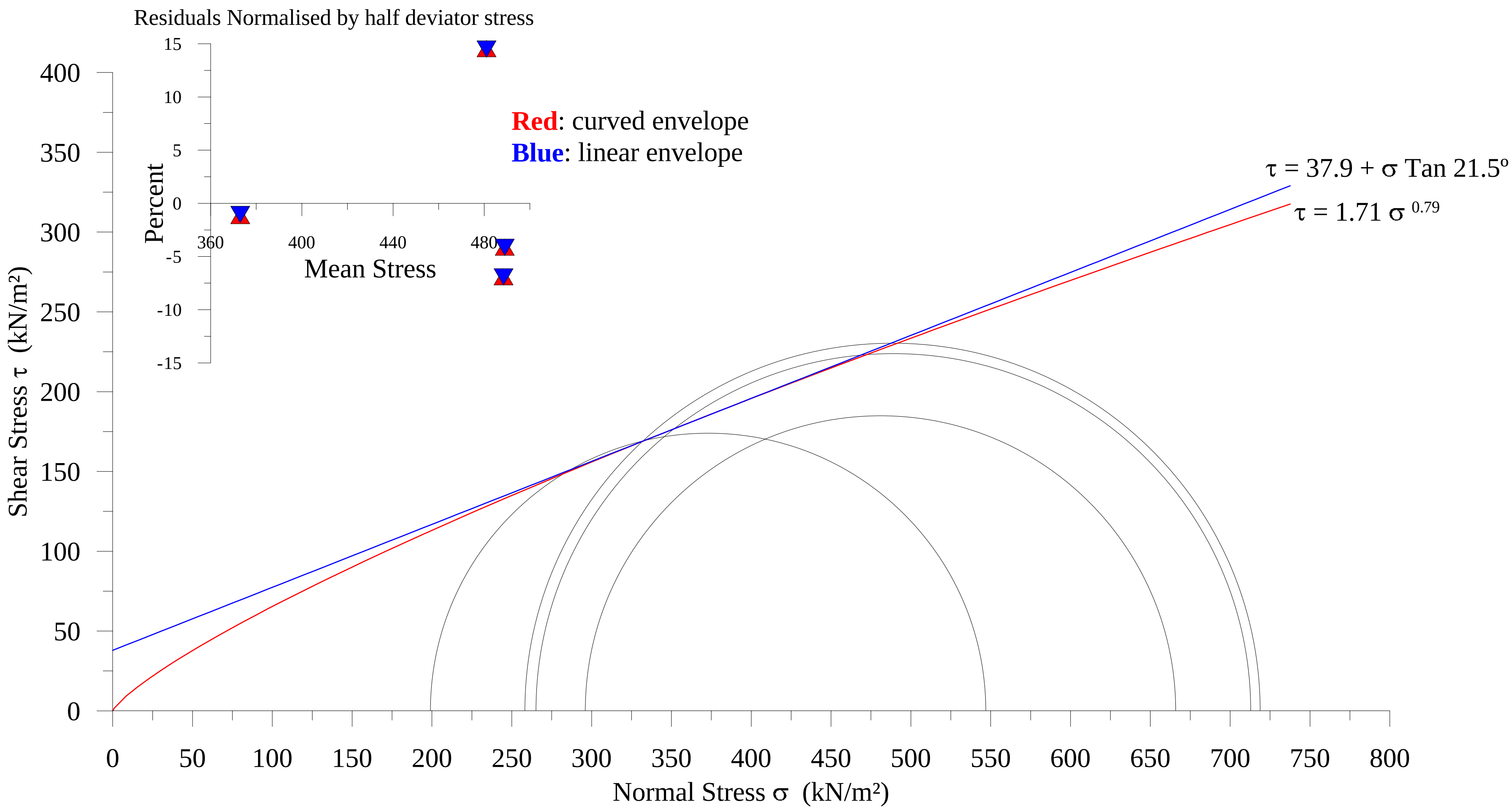


Note: no data from lower till in Domain 12

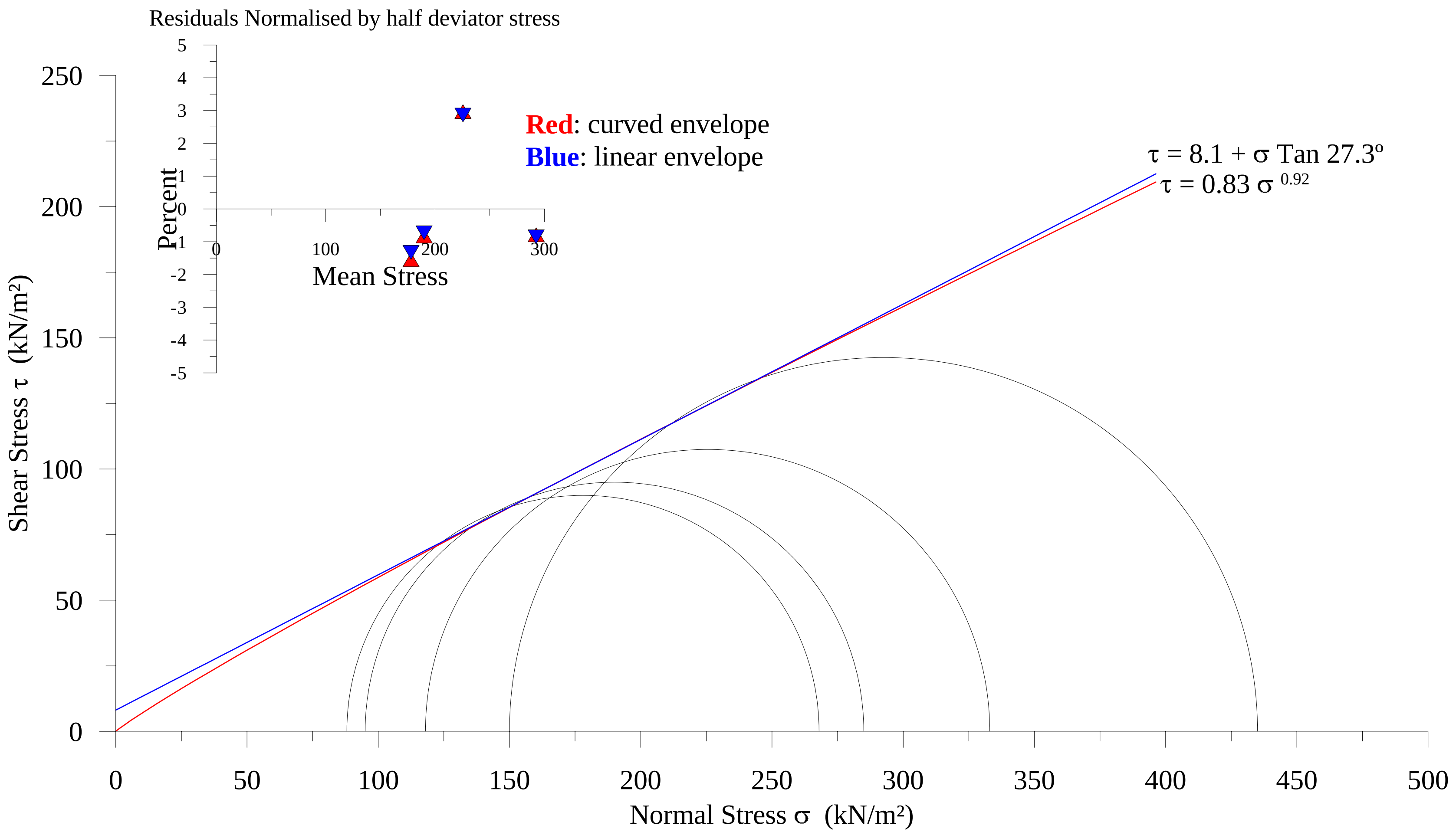
Appendix C.5	Effective Stress Failure Envelope for Critical State or 20% Strain Domain 12, Upper Till	Figure No.: 80



Appendix C.5	Effective Stress Failure Envelope for Critical State or 20% Strain Domain 14, Upper Till	Figure No.: 81

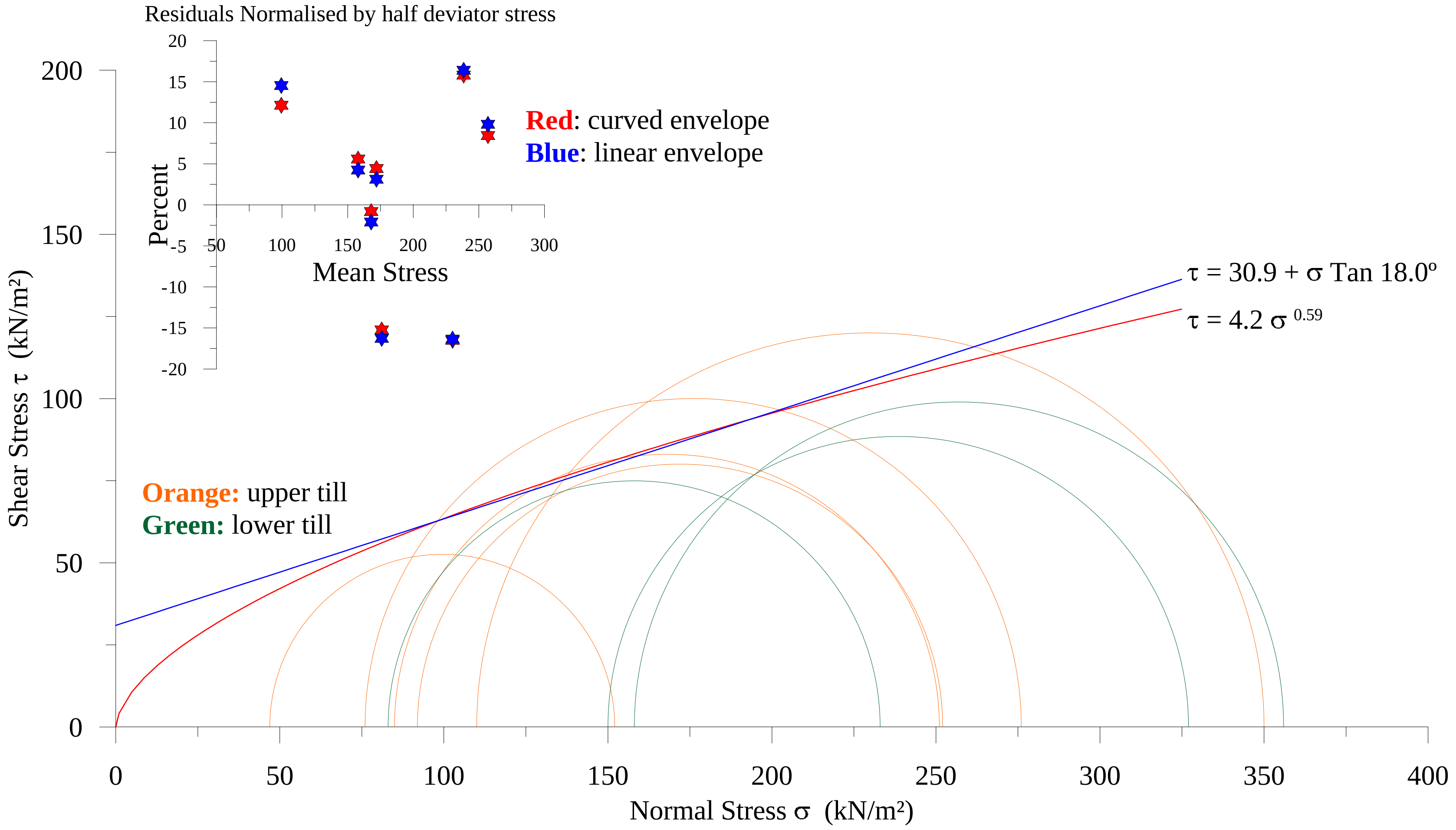


Appendix C.5	Effective Stress Failure Envelope for Critical State or 20% Strain Domain 21, Till	Figure No.: 82

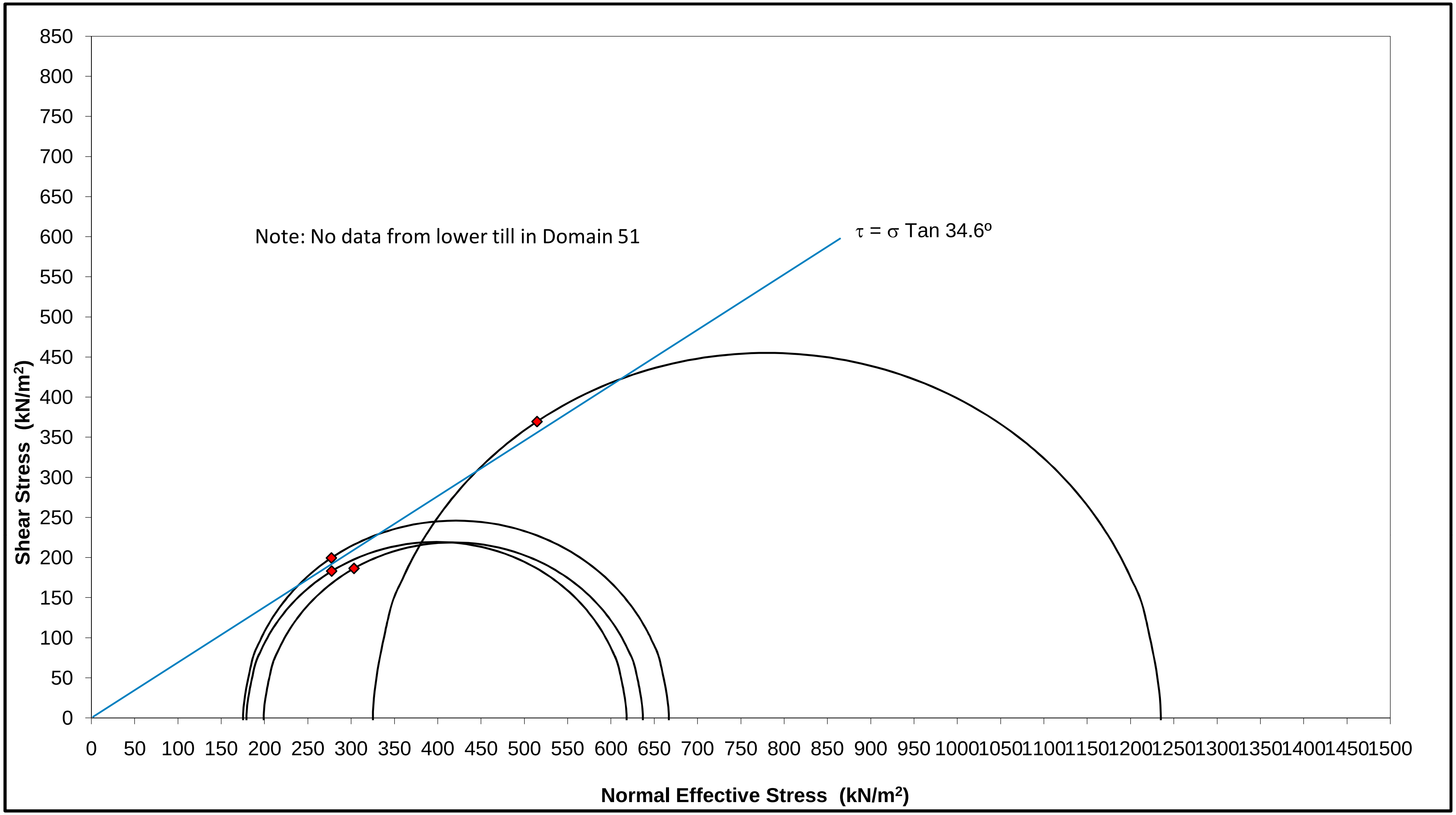


Note: no data from lower till in Domain 31

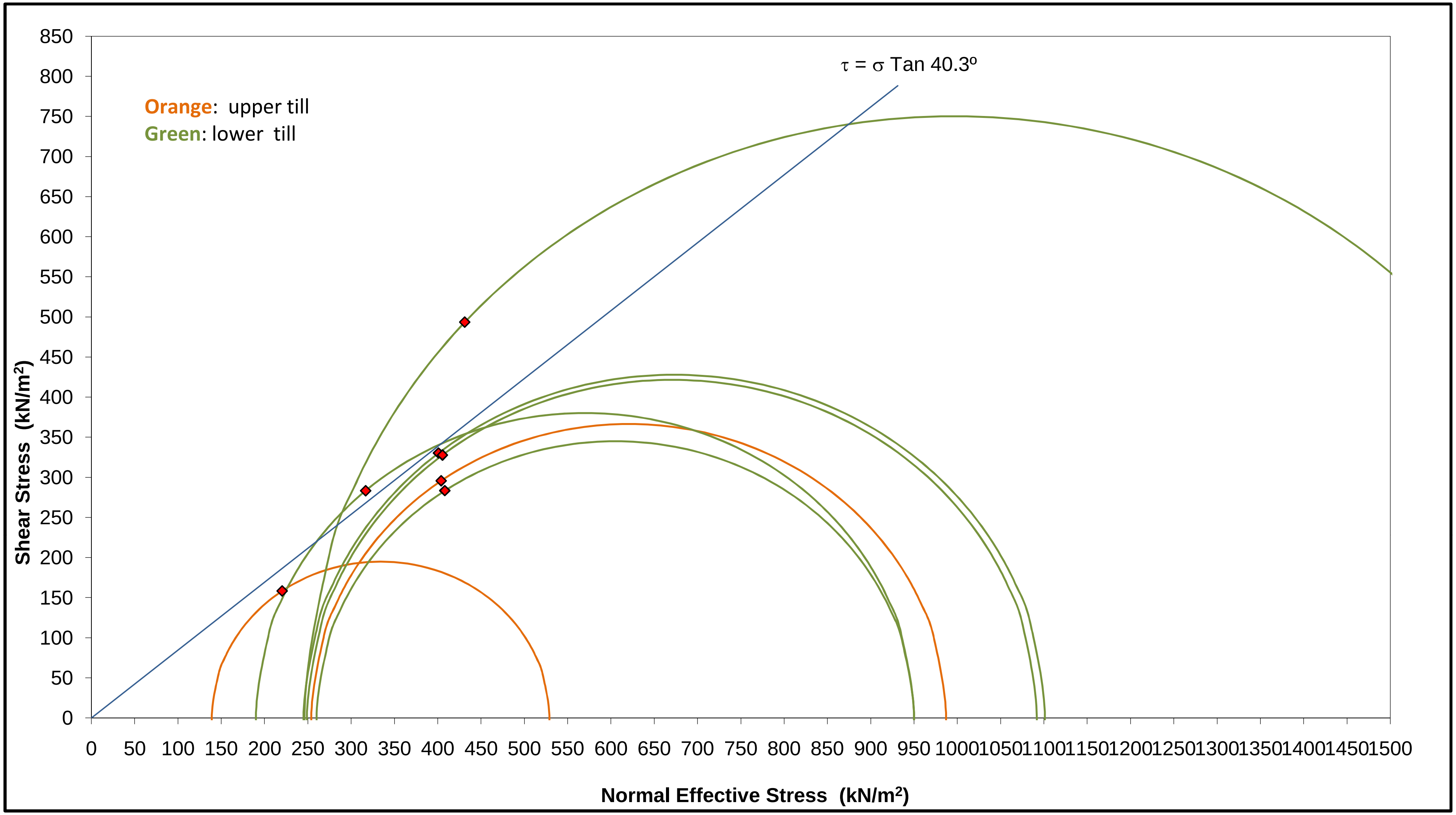
Appendix C.5	Effective Stress Failure Envelope for Critical State or 20% Strain Domain 31, Upper Till	Figure No.: 83



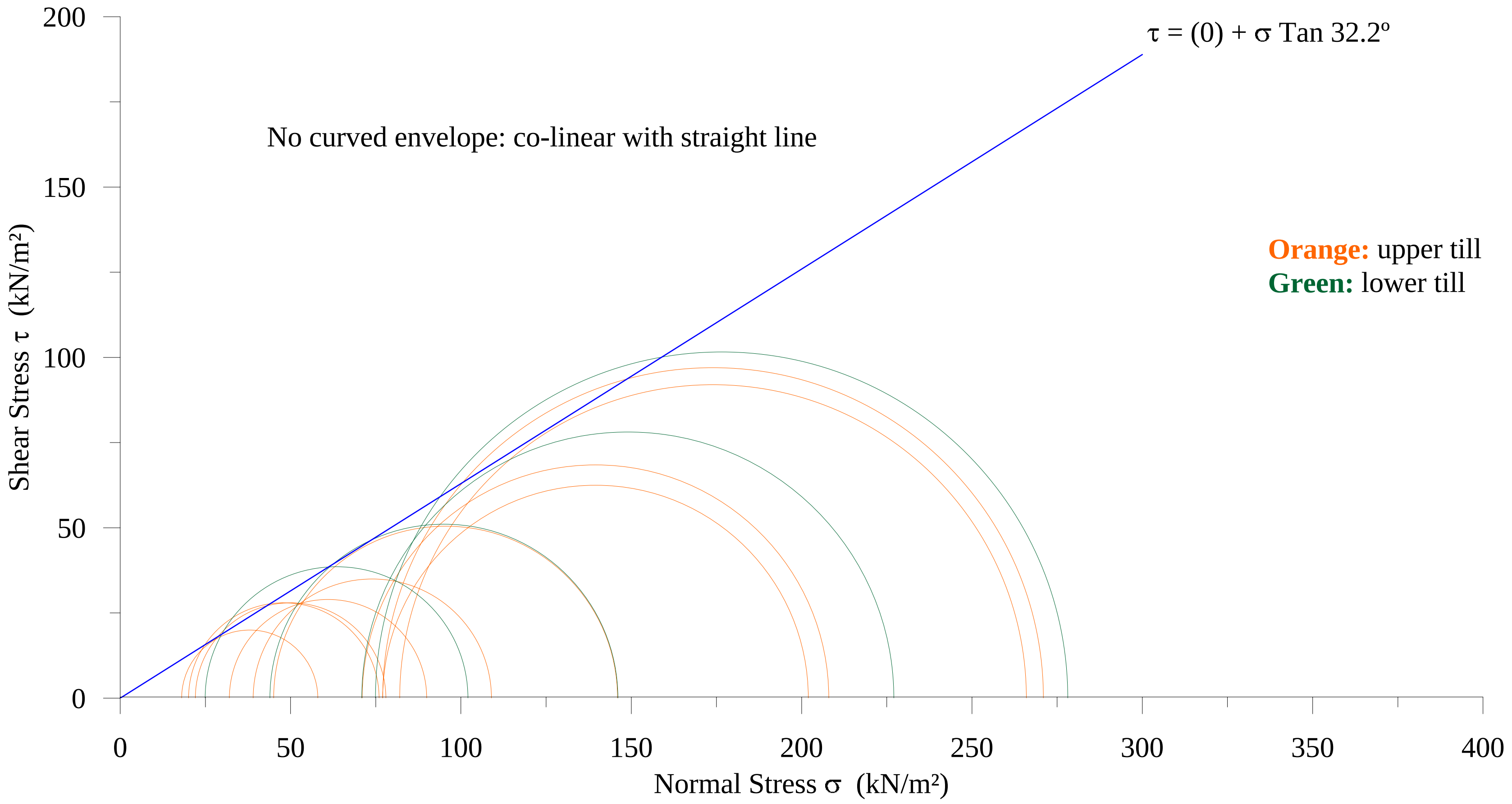
Appendix C.5	Effective Stress Failure Envelope for Critical State or 20% Strain Domain 41, All Till	Figure No.: 84



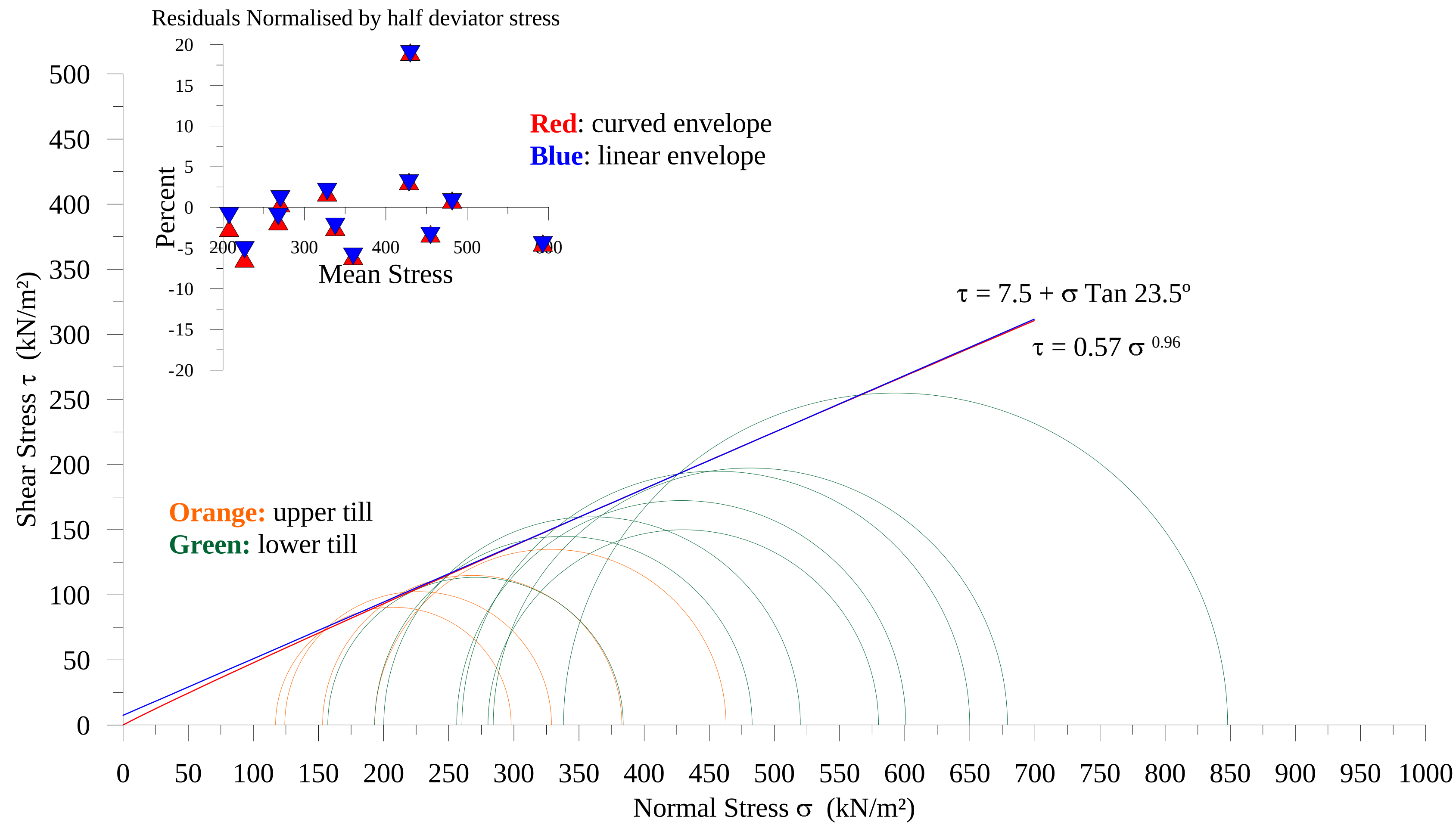
Effective Stress Failure Envelope for Critical State or 20% Strain
Domain 51, Upper Till



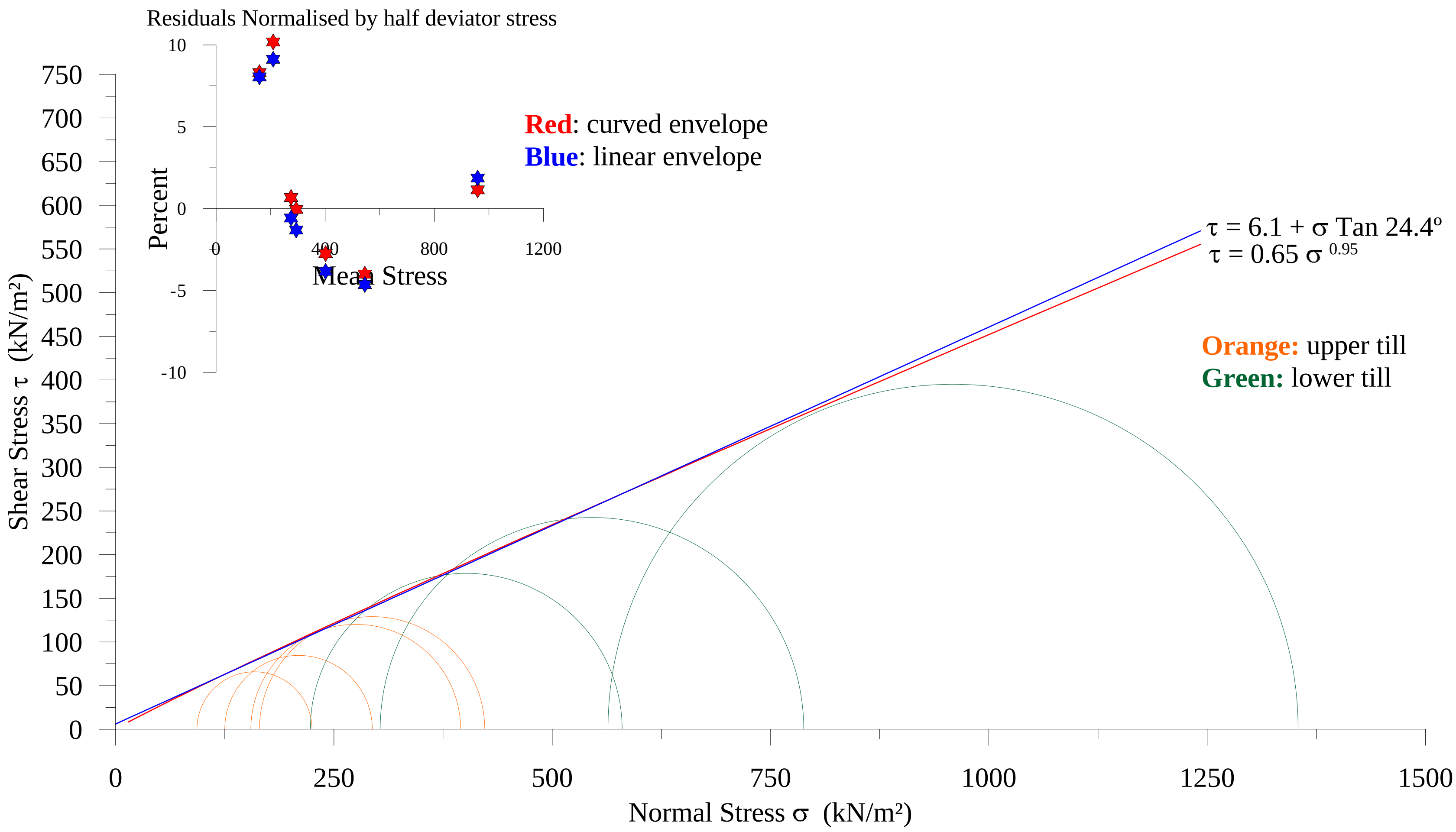
Effective Stress Failure Envelope for Critical State or 20% Strain
Domain 52, All Till



Appendix C.5	Effective Stress Failure Envelope for Critical State or 20% Strain Domain 61, All Till	Figure No.: 87



Appendix C.5	Effective Stress Failure Envelope for Critical State or 20% Strain Domain 71, All Till	Figure No.: 88



Appendix C.5	Effective Stress Failure Envelope for Critical State or 20% Strain Domain 72, All Till	Figure No.: 89

APPENDIX D: CALCULATIONS

Appendix D.1: Comparisons within Domains

Appendix D.2: Comparisons between Domains

Appendix D.3: Kolmogorov – Smirnov tests

(Inside Rear Cover)

Appendix D.1

Minitab Project Report

Comparisons Within Domains

Site 1: Kirkby Stephen

(Note: insufficient data in Domain 13)

Results for: Domain 11

Two-Sample T-Test and CI: (Parameter) versus Soil Type

```
Two-sample T for w (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  48  10.87   2.18     0.32
Upper Till  32  12.87   5.15     0.91

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -1.999
95% CI for difference:  (-3.950, -0.048)
T-Test of difference = 0 (vs not =): T-Value = -2.07  P-Value = 0.045  DF = 38


Two-sample T for Liquid Limit

Soil Type    N   Mean  StDev  SE Mean
Lower Till  26  28.04   1.95     0.38
Upper Till  20  31.40   8.32      1.9

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -3.36
95% CI for difference:  (-7.32, 0.60)
T-Test of difference = 0 (vs not =): T-Value = -1.77  P-Value = 0.092  DF = 20


Two-sample T for Plastic Limit

Soil Type    N   Mean  StDev  SE Mean
Lower Till  26  13.62   1.33     0.26
Upper Till  20  14.40   3.59     0.80

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -0.785
95% CI for difference:  (-2.530, 0.961)
T-Test of difference = 0 (vs not =): T-Value = -0.93  P-Value = 0.362  DF = 23


Two-sample T for Plasticity Index

Soil Type    N   Mean  StDev  SE Mean
Lower Till  26  14.42   1.45     0.28
Upper Till  20  17.00   4.88      1.1


Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -2.58
95% CI for difference:  (-4.92, -0.23)
T-Test of difference = 0 (vs not =): T-Value = -2.29  P-Value = 0.033  DF = 21
```

Two-sample T for % GRAVEL

Soil Type	N	Mean	StDev	SE Mean
Lower Till	8	29.19	4.84	1.7
Upper Till	10	22.70	9.93	3.1

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 6.49
95% CI for difference: (-1.24, 14.22)
T-Test of difference = 0 (vs not =): T-Value = 1.81 P-Value = 0.093 DF = 13

Two-sample T for % SAND

Soil Type	N	Mean	StDev	SE Mean
Lower Till	8	30.75	4.29	1.5
Upper Till	10	37.70	8.82	2.8

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -6.95
95% CI for difference: (-13.81, -0.09)
T-Test of difference = 0 (vs not =): T-Value = -2.19 P-Value = 0.047 DF = 13

Two-sample T for % Fines (SILT/CLAY)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	8	40.06	3.73	1.3
Upper Till	10	39.60	6.66	2.1

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.46
95% CI for difference: (-4.86, 5.79)
T-Test of difference = 0 (vs not =): T-Value = 0.19 P-Value = 0.855 DF = 14

Two-sample T for Bulk Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	36	2.197	0.147	0.025
Upper Till	12	2.176	0.145	0.042

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.0208
95% CI for difference: (-0.0807, 0.1224)
T-Test of difference = 0 (vs not =): T-Value = 0.43 P-Value = 0.672 DF = 19

Two-sample T for Dry Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	36	1.990	0.144	0.024
Upper Till	12	1.957	0.187	0.054

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.0336
95% CI for difference: (-0.0921, 0.1593)
T-Test of difference = 0 (vs not =): T-Value = 0.57 P-Value = 0.577 DF = 15

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	48	10.90	37.5	-1.42
Upper Till	32	11.00	45.0	1.42
Overall	80		40.5	

H = 2.01 DF = 1 P = 0.156
H = 2.04 DF = 1 P = 0.153 (adjusted for ties)

Kruskal-Wallis Test on Liquid Limit

Soil Type	N	Median	Ave Rank	Z
Lower Till	26	28.00	23.9	0.21
Upper Till	20	27.00	23.0	-0.21
Overall	46		23.5	

H = 0.04 DF = 1 P = 0.833
H = 0.05 DF = 1 P = 0.832 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit

Soil Type	N	Median	Ave Rank	Z
Lower Till	26	14.00	24.3	0.45
Upper Till	20	13.00	22.5	-0.45
Overall	46		23.5	

H = 0.21 DF = 1 P = 0.650
H = 0.21 DF = 1 P = 0.643 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index

Soil Type	N	Median	Ave Rank	Z
Lower Till	26	15.00	21.6	-1.09
Upper Till	20	15.00	25.9	1.09
Overall	46		23.5	

H = 1.18 DF = 1 P = 0.278
H = 1.24 DF = 1 P = 0.266 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Till	8	27.50	10.8	0.93
Upper Till	10	22.00	8.4	-0.93
Overall	18		9.5	

H = 0.87 DF = 1 P = 0.351
H = 0.87 DF = 1 P = 0.350 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Till	8	30.75	7.1	-1.73
Upper Till	10	34.75	11.4	1.73
Overall	18		9.5	

H = 3.00 DF = 1 P = 0.083
H = 3.02 DF = 1 P = 0.082 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type    N  Median  Ave Rank      Z
Lower Till   8   39.50      10.0   0.36
Upper Till  10   39.00       9.1  -0.36
Overall     18               9.5

H = 0.13  DF = 1  P = 0.722
H = 0.13  DF = 1  P = 0.721  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Soil Type    N  Median  Ave Rank      Z
Lower Till  36   2.240      24.8   0.27
Upper Till  12   2.255      23.5  -0.27
Overall     48              24.5

H = 0.07  DF = 1  P = 0.784
H = 0.08  DF = 1  P = 0.784  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Soil Type    N  Median  Ave Rank      Z
Lower Till  36   2.025      24.7   0.14
Upper Till  12   2.055      24.0  -0.14
Overall     48              24.5

H = 0.02  DF = 1  P = 0.886
H = 0.02  DF = 1  P = 0.886  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 1.21    DF = 1    P = 0.271

                                    Individual 95.0% CIs
Soil Type   N<  N>=  Median  Q3-Q1     +---------+---------+---------+------
Lower Till  24   24   10.90   1.20     (--------*)
Upper Till  12   20   11.00   4.40       (-------*------------------)
                                       +---------+---------+---------+------
                                    10.0      11.0      12.0      13.0

Overall median = 11.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-1.60,0.70)


Mood median test for Liquid Limit

Chi-Square = 0.17    DF = 1    P = 0.676

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   14  12   28.00   2.00             (-*----)
Upper Till   12   8   27.00  12.50     (----*----------------------------)
                                       +---------+---------+---------+------
                                    26.0      28.0      30.0      32.0

Overall median = 28.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.00,3.00)
```

```
Mood median test for Plastic Limit

Chi-Square = 1.62    DF = 1    P = 0.203

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   12  14   14.00   2.25               (---------*
Upper Till   13   7   13.00   4.00     (---------*-----------------------)
                                       +---------+---------+---------+------
                                    12.0      13.0      14.0      15.0

Overall median = 13.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-1.00,2.00)


Mood median test for Plasticity Index

Chi-Square = 0.01    DF = 1    P = 0.938

                                    Individual 95.0% CIs
Soil Type   N<  N>=  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till  12   14   15.00   1.00  (-------*
Upper Till   9   11   15.00   6.25  (-------*---------------------)
                                    ---+---------+---------+---------+---
                                    14.4      15.6      16.8      18.0

Overall median = 15.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-3.00,1.00)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till    4   4    27.5    9.1                   (----*-----------)
Upper Till    5   5    22.0   17.0  (-------------*--------------)
                                    -------+---------+---------+---------
                                        18.0      24.0      30.0

Overall median = 27.5

A 95.0% CI for median(Lower Till) - median(Upper Till): (-4.0,21.0)


Mood median test for % SAND

Chi-Square = 0.90    DF = 1    P = 0.343

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till    5   3    30.8    8.1  (-------*-------)
Upper Till    4   6    34.8   16.0         (-------*-----------------)
                                    -------+---------+---------+---------
                                        30.0      36.0      42.0

Overall median = 32.5

A 95.0% CI for median(Lower Till) - median(Upper Till): (-19.0,5.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Lower Till    4   4   39.50   5.13           (--------*-------------)
Upper Till    5   5   39.00   8.75  (---------------*---------------)
                                    ------+---------+---------+---------+
                                       36.0      39.0      42.0      45.0

Overall median = 39.50

A 95.0% CI for median(Lower Till) - median(Upper Till): (-4.00,8.50)
```

```
Mood median test for Bulk Density

Chi-Square = 0.03    DF = 1    P = 0.868

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
Lower Till   19  17   2.240  0.140                      (-------*---)
Upper Till    6   6   2.255  0.272  (-----------------------------*---)
                                    --------+---------+---------+--------
                                          2.080     2.160     2.240

Overall median = 2.240

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.068,0.228)
```

```
Mood median test for Dry Density

Chi-Square = 0.44    DF = 1    P = 0.505

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Lower Till   19  17   2.025  0.155                     (--------*----)
Upper Till    5   7   2.055  0.252  (-------------------------------*--)
                                    ---------+---------+---------+-------
                                           1.890     1.960     2.030

Overall median = 2.040

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.064,0.208)
```

Results for: Domain 12

Two-Sample T-Test and CI: (Parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	75	11.97	2.95	0.34
Upper Till	9	15.86	4.16	1.4

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -3.88
95% CI for difference: (-7.18, -0.59)
T-Test of difference = 0 (vs not =): T-Value = -2.72 P-Value = 0.026 DF = 8

Two-sample T for Liquid Limit

Soil Type	N	Mean	StDev	SE Mean
Lower Till	46	31.15	1.55	0.23
Upper Till	9	33.22	3.93	1.3

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -2.07
95% CI for difference: (-5.14, 1.00)
T-Test of difference = 0 (vs not =): T-Value = -1.56 P-Value = 0.158 DF = 8

Two-sample T for Plastic Limit

Soil Type	N	Mean	StDev	SE Mean
Lower Till	46	13.783	0.664	0.098
Upper Till	9	16.89	4.01	1.3

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -3.11
95% CI for difference: (-6.20, -0.01)
T-Test of difference = 0 (vs not =): T-Value = -2.32 P-Value = 0.049 DF = 8

Two-sample T for Plasticity Index

Soil Type	N	Mean	StDev	SE Mean
Lower Till	46	17.37	1.47	0.22
Upper Till	9	16.33	4.00	1.3

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 1.04
95% CI for difference: (-2.08, 4.15)
T-Test of difference = 0 (vs not =): T-Value = 0.77 P-Value = 0.465 DF = 8

Two-sample T for % GRAVEL

Soil Type	N	Mean	StDev	SE Mean
Lower Till	4	29.13	2.90	1.4
Upper Till	3	28.50	5.22	3.0

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.63
95% CI for difference: (-13.76, 15.01)
T-Test of difference = 0 (vs not =): T-Value = 0.19 P-Value = 0.869 DF = 2

```
Two-sample T for % SAND

Soil Type   N   Mean  StDev  SE Mean
Lower Till  4  31.50   4.34      2.2
Upper Till  3  28.67   5.84      3.4

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  2.83
95% CI for difference:  (-9.92, 15.59)
T-Test of difference = 0 (vs not =): T-Value = 0.71  P-Value = 0.531  DF = 3


Two-sample T for % Fines (SILT/CLAY)

Soil Type   N   Mean  StDev  SE Mean
Lower Till  4  39.38   6.50      3.2
Upper Till  3  42.83   3.33      1.9

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -3.46
95% CI for difference:  (-13.94, 7.02)
T-Test of difference = 0 (vs not =): T-Value = -0.92  P-Value = 0.411  DF = 4


Two-sample T for Bulk Density

Soil Type    N    Mean   StDev  SE Mean
Lower Till  30  2.2993  0.0504   0.0092
Upper Till   2   1.980   0.297     0.21

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  0.319
95% CI for difference:  (-2.352, 2.990)
T-Test of difference = 0 (vs not =): T-Value = 1.52  P-Value = 0.371  DF = 1


Two-sample T for Dry Density

Soil Type    N    Mean   StDev  SE Mean
Lower Till  30  2.0813  0.0656    0.012
Upper Till   2   1.740   0.283     0.20

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  0.341
95% CI for difference:  (-2.204, 2.887)
T-Test of difference = 0 (vs not =): T-Value = 1.70  P-Value = 0.338  DF = 1
```

Kruskal-Wallis Test: (Parameter) versus Soil Type

```
Kruskal-Wallis Test on w (%)

Soil Type    N  Median  Ave Rank      Z
Lower Till  75   11.00      40.0  -2.73
Upper Till   9   15.00      63.4   2.73
Overall     84              42.5

H = 7.43  DF = 1  P = 0.006
H = 7.46  DF = 1  P = 0.006  (adjusted for ties)
```

Kruskal-Wallis Test on Liquid Limit

Soil Type	N	Median	Ave Rank	Z
Lower Till	46	31.00	26.3	-1.73
Upper Till	9	34.00	36.4	1.73
Overall	55		28.0	

H = 2.99 DF = 1 P = 0.084
H = 3.11 DF = 1 P = 0.078 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit

Soil Type	N	Median	Ave Rank	Z
Lower Till	46	14.00	25.6	-2.51
Upper Till	9	15.00	40.3	2.51
Overall	55		28.0	

H = 6.32 DF = 1 P = 0.012
H = 7.71 DF = 1 P = 0.006 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index

Soil Type	N	Median	Ave Rank	Z
Lower Till	46	17.00	29.4	1.42
Upper Till	9	15.00	21.1	-1.42
Overall	55		28.0	

H = 2.02 DF = 1 P = 0.155
H = 2.10 DF = 1 P = 0.147 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Till	4	28.75	4.4	0.53
Upper Till	3	26.00	3.5	-0.53
Overall	7		4.0	

H = 0.28 DF = 1 P = 0.596
H = 0.29 DF = 1 P = 0.593 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Till	4	31.50	4.8	1.06
Upper Till	3	27.50	3.0	-1.06
Overall	7		4.0	

H = 1.13 DF = 1 P = 0.289
H = 1.17 DF = 1 P = 0.280 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lower Till	4	39.75	3.5	-0.71
Upper Till	3	42.00	4.7	0.71
Overall	7		4.0	

H = 0.50 DF = 1 P = 0.480

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Soil Type	N	Median	Ave Rank	Z
Lower Till	30	2.310	17.4	2.22
Upper Till	2	1.980	2.3	-2.22
Overall	32		16.5	

H = 4.92 DF = 1 P = 0.027
H = 4.96 DF = 1 P = 0.026 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Dry Density

Soil Type	N	Median	Ave Rank	Z
Lower Till	30	2.095	17.5	2.30
Upper Till	2	1.740	1.8	-2.30
Overall	32		16.5	

H = 5.27 DF = 1 P = 0.022
H = 5.30 DF = 1 P = 0.021 (adjusted for ties)

* NOTE * One or more small samples

Mood Median Test: (Parameter) versus Soil Type

Mood median test for w (%)

Chi-Square = 6.48   DF = 1   P = 0.011

```
                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Lower Till   42  33    11.0    3.0  (--*--)
Upper Till    1   8    15.0    7.0           (------*------------------)
                                    ------+---------+---------+---------+
                                       12.0      15.0      18.0      21.0
```

Overall median = 11.6

A 95.0% CI for median(Lower Till) - median(Upper Till): (-11.0,-1.4)

```
Mood median test for Liquid Limit

Chi-Square = 3.19    DF = 1    P = 0.074

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
Lower Till   30  16   31.00   2.00               *
Upper Till    3   6   34.00   6.50  (---------------------------*--------)
                                    --------+---------+---------+--------
                                         30.0      32.0      34.0

Overall median = 31.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-5.00,3.00)
```

```
Mood median test for Plastic Limit

Chi-Square = 1.42    DF = 1    P = 0.234

                                    Individual 95.0% CIs
Soil Type   N<  N>=  Median  Q3-Q1  ----+---------+---------+---------+--
Lower Till  14   32   14.00   1.00  *
Upper Till   1    8   15.00   7.50  (---*----------------------------)
                                    ----+---------+---------+---------+--
                                     15.0      17.5      20.0      22.5

Overall median = 14.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-9.00,0.00)
```

```
Mood median test for Plasticity Index

Chi-Square = 0.46    DF = 1    P = 0.496

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
Lower Till   25  21   17.00   1.00                     *----)
Upper Till    6   3   15.00   6.00  (--------*-----------------------)
                                    ----+---------+---------+---------+--
                                     14.0      16.0      18.0      20.0

Overall median = 17.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-3.00,5.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 0.19    DF = 1    P = 0.659

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till    2   2   28.75   5.38      (--------*--------------)
Upper Till    2   1   26.00   9.50  (---*---------------------------)
                                    -------+---------+---------+---------
                                        27.0      30.0      33.0

Overall median = 28.50
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.6% CI for median(Lower Till) - median(Upper Till): (-8.50,8.00)
```

```
Mood median test for % SAND

Chi-Square = 0.19    DF = 1    P = 0.659

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    2   2    31.5    7.8              (----------*----------)
Upper Till    2   1    27.5   11.5  (-----------*--------------------)
                                    ---+---------+---------+---------+---
                                    24.5      28.0      31.5      35.0

Overall median = 28.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.6% CI for median(Lower Till) - median(Upper Till): (-7.5,12.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.19    DF = 1    P = 0.659

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till    2   2    39.8   12.4     (------------------*---------------)
Upper Till    2   1    42.0    6.5                         (----*----------)
                                       +---------+---------+---------+------
                                    32.0      36.0      40.0      44.0

Overall median = 42.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.6% CI for median(Lower Till) - median(Upper Till): (-14.5,6.0)


Mood median test for Bulk Density

Chi-Square = 2.13    DF = 1    P = 0.144

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Lower Till   14  16   2.310  0.070                                  (*-)
Upper Till    2   0   1.980  0.420  (------------*------------)
                                    ---------+---------+---------+-------
                                           1.92      2.08      2.24

Overall median = 2.305
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (0.000,0.580)


Mood median test for Dry Density

Chi-Square = 1.88    DF = 1    P = 0.170

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
Lower Till   15  15   2.095  0.078                                    (*-)
Upper Till    2   0   1.740  0.400  (------------*-----------)
                                    ----+---------+---------+---------+--
                                      1.60      1.76      1.92      2.08

Overall median = 2.090
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (0.010,0.620)
```

Results for: Domain 14

Two-Sample T-Test and CI: (Parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	29	12.22	3.43	0.64
Upper Till	49	11.70	4.52	0.65

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.523
95% CI for difference: (-1.287, 2.332)
T-Test of difference = 0 (vs not =): T-Value = 0.58 P-Value = 0.566 DF = 71

Two-sample T for Liquid Limit

Soil Type	N	Mean	StDev	SE Mean
Lower Till	26	26.04	2.90	0.57
Upper Till	25	28.00	6.79	1.4

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -1.96
95% CI for difference: (-4.96, 1.04)
T-Test of difference = 0 (vs not =): T-Value = -1.33 P-Value = 0.193 DF = 32

Two-sample T for Plastic Limit

Soil Type	N	Mean	StDev	SE Mean
Lower Till	26	12.58	1.39	0.27
Upper Till	25	13.52	3.37	0.67

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -0.943
95% CI for difference: (-2.425, 0.539)
T-Test of difference = 0 (vs not =): T-Value = -1.30 P-Value = 0.204 DF = 31

Two-sample T for Plasticity Index

Soil Type	N	Mean	StDev	SE Mean
Lower Till	26	13.46	2.45	0.48
Upper Till	25	14.48	4.00	0.80

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -1.018
95% CI for difference: (-2.907, 0.870)
T-Test of difference = 0 (vs not =): T-Value = -1.09 P-Value = 0.282 DF = 39

Two-sample T for % GRAVEL

Soil Type	N	Mean	StDev	SE Mean
Lower Till	12	21.62	3.78	1.1
Upper Till	12	23.71	5.52	1.6

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -2.08
95% CI for difference: (-6.13, 1.96)
T-Test of difference = 0 (vs not =): T-Value = -1.08 P-Value = 0.294 DF = 19

```
Two-sample T for % SAND

Soil Type    N   Mean  StDev  SE Mean
Lower Till  12  43.46   5.80      1.7
Upper Till  12  40.79   5.91      1.7

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  2.67
95% CI for difference:  (-2.30, 7.64)
T-Test of difference = 0 (vs not =): T-Value = 1.12  P-Value = 0.277  DF = 21


Two-sample T for % Fines (SILT/CLAY)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  12  34.92   5.31      1.5
Upper Till  12  35.50   5.18      1.5

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -0.58
95% CI for difference:  (-5.04, 3.87)
T-Test of difference = 0 (vs not =): T-Value = -0.27  P-Value = 0.788  DF = 21


Two-sample T for Bulk Density

Soil Type    N    Mean   StDev  SE Mean
Lower Till   7   2.134   0.163    0.061
Upper Till  29  2.2979  0.0725    0.013


Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -0.1636
95% CI for difference:  (-0.3177, -0.0096)
T-Test of difference = 0 (vs not =): T-Value = -2.60  P-Value = 0.041  DF = 6


Two-sample T for Dry Density

Soil Type    N    Mean   StDev  SE Mean
Lower Till   7   1.956   0.158    0.060
Upper Till  29  2.1059  0.0814    0.015

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -0.1501
95% CI for difference:  (-0.3007, 0.0004)
T-Test of difference = 0 (vs not =): T-Value = -2.44  P-Value = 0.050  DF = 6
```

Kruskal-Wallis Test: (Parameter) versus Soil Type

```
Kruskal-Wallis Test on w (%)

Soil Type    N  Median  Ave Rank      Z
Lower Till  29  11.000      43.8   1.29
Upper Till  49   9.400      36.9  -1.29
Overall     78              39.5

H = 1.67  DF = 1  P = 0.196
H = 1.67  DF = 1  P = 0.196  (adjusted for ties)
```

Kruskal-Wallis Test on Liquid Limit

Soil Type	N	Median	Ave Rank	Z
Lower Till	26	25.50	25.5	-0.24
Upper Till	25	26.00	26.5	0.24
Overall	51		26.0	

H = 0.06 DF = 1 P = 0.806
H = 0.06 DF = 1 P = 0.805 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit

Soil Type	N	Median	Ave Rank	Z
Lower Till	26	12.00	25.3	-0.37
Upper Till	25	12.00	26.8	0.37
Overall	51		26.0	

H = 0.14 DF = 1 P = 0.713
H = 0.15 DF = 1 P = 0.699 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index

Soil Type	N	Median	Ave Rank	Z
Lower Till	26	13.00	24.4	-0.78
Upper Till	25	14.00	27.7	0.78
Overall	51		26.0	

H = 0.61 DF = 1 P = 0.434
H = 0.62 DF = 1 P = 0.431 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Till	12	21.00	11.4	-0.75
Upper Till	12	22.75	13.6	0.75
Overall	24		12.5	

H = 0.56 DF = 1 P = 0.453
H = 0.57 DF = 1 P = 0.452 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Till	12	43.25	14.3	1.21
Upper Till	12	40.50	10.8	-1.21
Overall	24		12.5	

H = 1.47 DF = 1 P = 0.225
H = 1.47 DF = 1 P = 0.225 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lower Till	12	36.00	12.3	-0.17
Upper Till	12	35.75	12.8	0.17
Overall	24		12.5	

H = 0.03 DF = 1 P = 0.862
H = 0.03 DF = 1 P = 0.862 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Soil Type	N	Median	Ave Rank	Z
Lower Till	7	2.170	9.4	-2.56
Upper Till	29	2.330	20.7	2.56
Overall	36		18.5	

H = 6.54 DF = 1 P = 0.011
H = 6.58 DF = 1 P = 0.010 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Soil Type	N	Median	Ave Rank	Z
Lower Till	7	1.980	10.2	-2.32
Upper Till	29	2.130	20.5	2.32
Overall	36		18.5	

H = 5.37 DF = 1 P = 0.020
H = 5.39 DF = 1 P = 0.020 (adjusted for ties)

Mood Median Test: (Parameter) versus Soil Type

Mood median test for w (%)

Chi-Square = 4.45   DF = 1   P = 0.035

```
                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Lower Till   10  19   11.00   6.35      (-------*-------------------)
Upper Till   29  20    9.40   5.95  (-*--------)
                                    ---------+---------+---------+-------
                                         10.5      12.0      13.5
```

Overall median = 9.85

A 95.0% CI for median(Lower Till) - median(Upper Till): (0.16,4.72)

Mood median test for Liquid Limit

Chi-Square = 0.03   DF = 1   P = 0.867

```
                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   15  11   25.50   4.25         (-----*---------)
Upper Till   15  10   26.00   5.50     (------------*-----------------)
                                       +---------+---------+---------+------
                                    24.0      25.5      27.0      28.5
```

Overall median = 26.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.00,3.00)

```
Mood median test for Plastic Limit

Chi-Square = 0.21    DF = 1    P = 0.645

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   15  11   12.00   1.00     *--------------------------------)
Upper Till   16   9   12.00   2.00     *--------------------------------)
                                       +---------+---------+---------+------
                                    12.00     12.30     12.60     12.90

Overall median = 12.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.41,1.00)


Mood median test for Plasticity Index

Chi-Square = 0.49    DF = 1    P = 0.482

                                    Individual 95.0% CIs
Soil Type   N<  N>=  Median  Q3-Q1     +---------+---------+---------+------
Lower Till  14   12   13.00   2.25     (---------*---------)
Upper Till  11   14   14.00   4.50     (-------------------*---------)
                                       +---------+---------+---------+------
                                    12.0      13.0      14.0      15.0

Overall median = 14.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.00,1.41)


Mood median test for % GRAVEL

Chi-Square = 0.67    DF = 1    P = 0.414

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    7   5   21.00   5.25     (---*----------------)
Upper Till    5   7   22.75   9.00  (-------------*---------------------)
                                    ---+---------+---------+---------+---
                                    20.0      22.5      25.0      27.5

Overall median = 21.25

A 95.0% CI for median(Lower Till) - median(Upper Till): (-6.00,3.00)


Mood median test for % SAND

Chi-Square = 2.67    DF = 1    P = 0.102

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
Lower Till    4   8    43.3   10.0           (-----------*------------)
Upper Till    8   4    40.5    9.6   (------------*----------)
                                     --+---------+---------+---------+----
                                    36.0      40.0      44.0      48.0

Overall median = 42.8

A 95.0% CI for median(Lower Till) - median(Upper Till): (-1.5,9.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.18    DF = 1    P = 0.673

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Lower Till    8   4   36.00   9.00  (----------------------*------------)
Upper Till    7   5   35.75   7.50      (-----------------*----------)
                                    ---------+---------+---------+-------
                                          32.5      35.0      37.5

Overall median = 36.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-6.50,5.50)


Mood median test for Bulk Density

Chi-Square = 4.43    DF = 1    P = 0.035

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    6   1   2.170  0.260  (-------------------*-----------)
Upper Till   12  17   2.330  0.135                              (-------*)
                                    ---+---------+---------+---------+---
                                     2.00      2.10      2.20      2.30

Overall median = 2.280

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.351,-0.012)


Mood median test for Dry Density

Chi-Square = 4.43    DF = 1    P = 0.035

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
Lower Till    6   1   1.980  0.230  (---------------*------------)
Upper Till   12  17   2.130  0.135                          (------*--)
                                    --------+---------+---------+--------
                                          1.90      2.00      2.10

Overall median = 2.115

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.313,-0.032)
```

Results for: Domains 11 and 12, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for Natural Moisture Content (%)

Domain Reference	N	Mean	StDev	SE Mean
11	32	12.87	5.15	0.91
12	9	15.86	4.16	1.4

Difference = mu (11) - mu (12)
Estimate for difference: -2.99
95% CI for difference: (-6.53, 0.55)
T-Test of difference = 0 (vs not =): T-Value = -1.80 P-Value = 0.092 DF = 15

Two-sample T for Liquid Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
11	20	31.40	8.32	1.9
12	9	33.22	3.93	1.3

Difference = mu (11) - mu (12)
Estimate for difference: -1.82
95% CI for difference: (-6.50, 2.85)
T-Test of difference = 0 (vs not =): T-Value = -0.80 P-Value = 0.430 DF = 26

Two-sample T for Plastic Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
11	20	14.40	3.59	0.80
12	9	16.89	4.01	1.3

Difference = mu (11) - mu (12)
Estimate for difference: -2.49
95% CI for difference: (-5.84, 0.86)
T-Test of difference = 0 (vs not =): T-Value = -1.60 P-Value = 0.133 DF = 14

Two-sample T for Plasticity Index (%)

Domain Reference	N	Mean	StDev	SE Mean
11	20	17.00	4.88	1.1
12	9	16.33	4.00	1.3

Difference = mu (11) - mu (12)
Estimate for difference: 0.67
95% CI for difference: (-2.95, 4.29)
T-Test of difference = 0 (vs not =): T-Value = 0.39 P-Value = 0.703 DF = 18

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	10	22.70	9.93	3.1
12	3	28.50	5.22	3.0

Difference = mu (11) - mu (12)
Estimate for difference: -5.80
95% CI for difference: (-16.45, 4.85)
T-Test of difference = 0 (vs not =): T-Value = -1.33 P-Value = 0.231 DF = 6

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	10	37.70	8.82	2.8
12	3	28.67	5.84	3.4

Difference = mu (11) - mu (12)
Estimate for difference: 9.03
95% CI for difference: (-2.21, 20.28)
T-Test of difference = 0 (vs not =): T-Value = 2.07 P-Value = 0.094 DF = 5

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	10	39.60	6.66	2.1
12	3	42.83	3.33	1.9

Difference = mu (11) - mu (12)
Estimate for difference: -3.23
95% CI for difference: (-9.97, 3.51)
T-Test of difference = 0 (vs not =): T-Value = -1.13 P-Value = 0.294 DF = 7

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	12	2.176	0.145	0.042
12	2	1.980	0.297	0.21

Difference = mu (11) - mu (12)
Estimate for difference: 0.196
95% CI for difference: (-2.525, 2.917)
T-Test of difference = 0 (vs not =): T-Value = 0.91 P-Value = 0.528 DF = 1

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	12	1.957	0.187	0.054
12	2	1.740	0.283	0.20

Difference = mu (11) - mu (12)
Estimate for difference: 0.217
95% CI for difference: (-2.415, 2.848)
T-Test of difference = 0 (vs not =): T-Value = 1.05 P-Value = 0.486 DF = 1

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on Natural Moisture Content (%)

Domain Reference	N	Median	Ave Rank	Z
11	32	11.00	18.9	-2.14
12	9	15.00	28.6	2.14
Overall	41		21.0	

H = 4.59 DF = 1 P = 0.032
H = 4.61 DF = 1 P = 0.032 (adjusted for ties)

Kruskal-Wallis Test on Liquid Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	20	27.00	13.2	-1.72
12	9	34.00	19.1	1.72
Overall	29		15.0	

H = 2.96 DF = 1 P = 0.085
H = 3.00 DF = 1 P = 0.083 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	20	13.00	12.7	-2.19
12	9	15.00	20.2	2.19
Overall	29		15.0	

H = 4.81 DF = 1 P = 0.028
H = 4.94 DF = 1 P = 0.026 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain Reference	N	Median	Ave Rank	Z
11	20	15.00	14.9	-0.05
12	9	15.00	15.1	0.05
Overall	29		15.0	

H = 0.00 DF = 1 P = 0.962
H = 0.00 DF = 1 P = 0.962 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	10	22.00	6.7	-0.51
12	3	26.00	8.0	0.51
Overall	13		7.0	

H = 0.26 DF = 1 P = 0.612
H = 0.26 DF = 1 P = 0.612 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	10	34.75	8.0	1.69
12	3	27.50	3.7	-1.69
Overall	13		7.0	

H = 2.86 DF = 1 P = 0.091
H = 2.87 DF = 1 P = 0.091 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain                  Ave
Reference   N  Median  Rank      Z
11         10   39.00   6.3  -1.10
12          3   42.00   9.2   1.10
Overall    13           7.0

H = 1.21  DF = 1  P = 0.272
H = 1.21  DF = 1  P = 0.271  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain                  Ave
Reference   N  Median  Rank      Z
11         12   2.255   8.1   1.28
12          2   1.980   4.0  -1.28
Overall    14           7.5

H = 1.63  DF = 1  P = 0.201
H = 1.64  DF = 1  P = 0.200  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain                  Ave
Reference   N  Median  Rank      Z
11         12   2.055   8.2   1.46
12          2   1.740   3.5  -1.46
Overall    14           7.5

H = 2.13  DF = 1  P = 0.144
H = 2.15  DF = 1  P = 0.142  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for Natural Moisture Content  (%)

Chi-Square = 8.39    DF = 1    P = 0.004

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
11          21  11    11.0    4.4  (--*-----)
12           1   8    15.0    7.0           (------*-------------------)
                                   ------+---------+---------+---------+
                                      12.0      15.0      18.0      21.0

Overall median = 12.0

A 95.0% CI for median(11) - median(12): (-11.0,-1.0)
```

```
Mood median test for Liquid Limit (%)

Chi-Square = 4.55    DF = 1    P = 0.033

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          13   7   27.00  12.50  (--*-------------------)
12           2   7   34.00   6.50          (-----------------*-----)
                                   ---+---------+---------+---------+---
                                   27.0      30.0      33.0      36.0

Overall median = 29.00

A 95.0% CI for median(11) - median(12): (-8.25,-0.50)


Mood median test for Plastic Limit (%)

Chi-Square = 1.72    DF = 1    P = 0.189

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          14   6    13.0    4.0     (--*--------)
12           4   5    15.0    7.5            (--*----------------------)
                                      +---------+---------+---------+------
                                   12.0      15.0      18.0      21.0

Overall median = 14.0

A 95.0% CI for median(11) - median(12): (-8.8,-1.0)


Mood median test for Plasticity Index (%)

Chi-Square = 0.24    DF = 1    P = 0.628

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11          13   7   15.00   6.25      (----*-------------)
12           5   4   15.00   6.00  (--------*----------------------)
                                   ----+---------+---------+---------+--
                                    14.0      16.0      18.0      20.0

Overall median = 15.00

A 95.0% CI for median(11) - median(12): (-5.25,1.25)


Mood median test for % GRAVEL

Chi-Square = 0.26    DF = 1    P = 0.612

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11           5   5    22.0   17.0  (-------------*--------------)
12           2   1    26.0    9.5                    (*--------------)
                                   -------+---------+---------+---------
                                       18.0      24.0      30.0

Overall median = 26.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(12): (-21.5,11.0)
```

```
Mood median test for % SAND

Chi-Square = 0.26    DF = 1    P = 0.612

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
11           5   5    34.8   16.0           (------*---------------)
12           2   1    27.5   11.5  (----*----------)
                                   ------+---------+---------+---------+
                                      28.0      35.0      42.0      49.0

Overall median = 34.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(12): (-5.0,25.5)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.66    DF = 1    P = 0.416

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11           6   4    39.0    8.8   (------------*--------------)
12           1   2    42.0    6.5                  (-----*------------)
                                    --+---------+---------+---------+----
                                   35.0      38.5      42.0      45.5

Overall median = 40.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(12): (-13.5,10.0)


Mood median test for Bulk Density

Chi-Square = 2.33    DF = 1    P = 0.127

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
11           5   7   2.255  0.272                   (--------------*--)
12           2   0   1.980  0.420  (-------------*-------------)
                                   --+---------+---------+---------+----
                                   1.80      1.95      2.10      2.25

Overall median = 2.215
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.6% CI for median(11) - median(12): (-0.250,0.560)


Mood median test for Dry Density

Chi-Square = 2.33    DF = 1    P = 0.127

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11           5   7   2.055  0.252                     (--------------*-)
12           2   0   1.740  0.400  (------------*-----------)
                                   -------+---------+---------+---------
                                        1.65      1.80      1.95

Overall median = 2.005
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.6% CI for median(11) - median(12): (-0.340,0.600)
```

Results for: Domains 11 and 12, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for Natural Moisture Content (%)

Domain Reference	N	Mean	StDev	SE Mean
11	48	10.87	2.18	0.32
12	75	11.97	2.95	0.34

Difference = mu (11) - mu (12)
Estimate for difference: -1.105
95% CI for difference: (-2.024, -0.187)
T-Test of difference = 0 (vs not =): T-Value = -2.38 P-Value = 0.019 DF = 118

Two-sample T for Liquid Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
11	26	28.04	1.95	0.38
12	46	31.15	1.55	0.23

Difference = mu (11) - mu (12)
Estimate for difference: -3.114
95% CI for difference: (-4.012, -2.215)
T-Test of difference = 0 (vs not =): T-Value = -6.99 P-Value = 0.000 DF = 42

Two-sample T for Plastic Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
11	26	13.62	1.33	0.26
12	46	13.783	0.664	0.098

Difference = mu (11) - mu (12)
Estimate for difference: -0.167
95% CI for difference: (-0.734, 0.400)
T-Test of difference = 0 (vs not =): T-Value = -0.60 P-Value = 0.552 DF = 32

Two-sample T for Plasticity Index (%)

Domain Reference	N	Mean	StDev	SE Mean
11	26	14.42	1.45	0.28
12	46	17.37	1.47	0.22

Difference = mu (11) - mu (12)
Estimate for difference: -2.946
95% CI for difference: (-3.662, -2.231)
T-Test of difference = 0 (vs not =): T-Value = -8.26 P-Value = 0.000 DF = 52

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	8	29.19	4.84	1.7
12	4	29.13	2.90	1.4

Difference = mu (11) - mu (12)
Estimate for difference: 0.06
95% CI for difference: (-5.01, 5.13)
T-Test of difference = 0 (vs not =): T-Value = 0.03 P-Value = 0.978 DF = 9

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	8	30.75	4.29	1.5
12	4	31.50	4.34	2.2

Difference = mu (11) - mu (12)
Estimate for difference: -0.75
95% CI for difference: (-7.23, 5.73)
T-Test of difference = 0 (vs not =): T-Value = -0.28 P-Value = 0.787 DF = 6

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	8	40.06	3.73	1.3
12	4	39.38	6.50	3.2

Difference = mu (11) - mu (12)
Estimate for difference: 0.69
95% CI for difference: (-9.05, 10.42)
T-Test of difference = 0 (vs not =): T-Value = 0.20 P-Value = 0.854 DF = 4

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	36	2.197	0.147	0.025
12	30	2.2993	0.0504	0.0092

Difference = mu (11) - mu (12)
Estimate for difference: -0.1027
95% CI for difference: (-0.1555, -0.0498)
T-Test of difference = 0 (vs not =): T-Value = -3.91 P-Value = 0.000 DF = 44

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	36	1.990	0.144	0.024
12	30	2.0813	0.0656	0.012

Difference = mu (11) - mu (12)
Estimate for difference: -0.0911
95% CI for difference: (-0.1451, -0.0370)
T-Test of difference = 0 (vs not =): T-Value = -3.39 P-Value = 0.001 DF = 50

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on Natural Moisture Content (%)

Domain Reference	N	Median	Ave Rank	Z
11	48	10.90	54.6	-1.83
12	75	11.00	66.7	1.83
Overall	123		62.0	

H = 3.36 DF = 1 P = 0.067
H = 3.38 DF = 1 P = 0.066 (adjusted for ties)

Kruskal-Wallis Test on Liquid Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	26	28.00	17.4	-5.81
12	46	31.00	47.3	5.81
Overall	72		36.5	

H = 33.81 DF = 1 P = 0.000
H = 34.65 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	26	14.00	34.6	-0.57
12	46	14.00	37.6	0.57
Overall	72		36.5	

H = 0.32 DF = 1 P = 0.570
H = 0.37 DF = 1 P = 0.543 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain Reference	N	Median	Ave Rank	Z
11	26	15.00	16.4	-6.12
12	46	17.00	47.8	6.12
Overall	72		36.5	

H = 37.45 DF = 1 P = 0.000
H = 38.43 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	8	27.50	6.3	-0.25
12	4	28.75	6.9	0.25
Overall	12		6.5	

H = 0.06 DF = 1 P = 0.799
H = 0.07 DF = 1 P = 0.799 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	8	30.75	6.3	-0.34
12	4	31.50	7.0	0.34
Overall	12		6.5	

H = 0.12 DF = 1 P = 0.734
H = 0.12 DF = 1 P = 0.733 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain                  Ave
Reference   N  Median  Rank      Z
11          8   39.50   6.7   0.25
12          4   39.75   6.1  -0.25
Overall    12           6.5

H = 0.06  DF = 1  P = 0.799
H = 0.07  DF = 1  P = 0.798  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
11         36   2.240      24.8  -4.05
12         30   2.310      44.0   4.05
Overall    66              33.5

H = 16.40  DF = 1  P = 0.000
H = 16.46  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
11         36   2.025      26.2  -3.37
12         30   2.095      42.2   3.37
Overall    66              33.5

H = 11.34  DF = 1  P = 0.001
H = 11.37  DF = 1  P = 0.001  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for Natural Moisture Content  (%)

Chi-Square = 8.42    DF = 1    P = 0.004

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          38  10   10.90   1.20  (--------------*)
12          40  35   11.00   3.00       (----------*----------------)
                                   ---+---------+---------+---------+---
                                   10.20     10.80     11.40     12.00

Overall median = 11.00

A 95.0% CI for median(11) - median(12): (-2.00,0.35)
```

```
Mood median test for Liquid Limit (%)

Chi-Square = 30.72    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11          25   1   28.00   2.00  (---*---------)
12          13  33   31.00   2.00                                     *)
                                   ----+---------+---------+---------+--
                                    28.0      29.0      30.0      31.0

Overall median = 30.00

A 95.0% CI for median(11) - median(12): (-3.00,-2.00)
```

```
Mood median test for Plastic Limit (%)

Chi-Square = 1.78    DF = 1    P = 0.182

Domain                                 Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  -------+---------+---------+---------
11         12   14   14.00   2.25  (---------------------------------*
12         14   32   14.00   1.00                                      *
                                   -------+---------+---------+---------
                                       13.20     13.50     13.80

Overall median = 14.00

A 95.0% CI for median(11) - median(12): (-1.00,0.00)
```

```
Mood median test for Plasticity Index (%)

Chi-Square = 39.10    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  ---+---------+---------+---------+---
11         25    1   15.00   1.00  (-------*
12          9   37   17.00   1.00                           *-------)
                                   ---+---------+---------+---------+---
                                   14.4      15.6      16.8      18.0

Overall median = 17.00

A 95.0% CI for median(11) - median(12): (-4.00,-2.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 1.50    DF = 1    P = 0.221

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11           5   3    27.5    9.1  (--------*------------------------)
12           1   3    28.8    5.4      (--------*-------------)
                                   -------+---------+---------+---------
                                       27.0      30.0      33.0

Overall median = 28.3
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(12): (-6.8,7.4)
```

```
Mood median test for % SAND

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11           4   4   30.75   8.13  (----------------*-------------)
12           2   2   31.50   7.75        (------------*------------)
                                   ----+---------+---------+---------+--
                                    27.0      30.0      33.0      36.0

Overall median = 30.75
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(12): (-7.86,6.27)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11           4   4    39.5    5.1                 (------*---------)
12           2   2    39.8   12.4     (------------------*---------------)
                                      +---------+---------+---------+------
                                   32.0      36.0      40.0      44.0

Overall median = 39.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(12): (-7.4,8.6)


Mood median test for Bulk Density

Chi-Square = 13.60    DF = 1    P = 0.000

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          26  10   2.240  0.140  (------------*-----)
12           8  22   2.310  0.070                        (---*---)
                                   -----+---------+---------+---------+-
                                      2.200     2.250     2.300     2.350

Overall median = 2.270

A 95.0% CI for median(11) - median(12): (-0.122,-0.032)


Mood median test for Dry Density

Chi-Square = 11.98    DF = 1    P = 0.001

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          25  11   2.025  0.155  (------------*------)
12           8  22   2.095  0.078                         (--*----)
                                   --------+---------+---------+--------
                                         2.000     2.050     2.100

Overall median = 2.065

A 95.0% CI for median(11) - median(12): (-0.108,-0.026)
```

Results for: Domains 11 and 14, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for Natural Moisture Content  (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         32  12.87   5.15     0.91
14         49  11.70   4.52     0.65

Difference = mu (11) - mu (14)
Estimate for difference:  1.17
95% CI for difference:  (-1.07, 3.40)
T-Test of difference = 0 (vs not =): T-Value = 1.05  P-Value = 0.300  DF = 60


Two-sample T for Liquid Limit (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         20  31.40   8.32      1.9
14         25  28.00   6.79      1.4

Difference = mu (11) - mu (14)
Estimate for difference:  3.40
95% CI for difference:  (-1.27, 8.07)
T-Test of difference = 0 (vs not =): T-Value = 1.48  P-Value = 0.149  DF = 36


Two-sample T for Plastic Limit (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         20  14.40   3.59     0.80
14         25  13.52   3.37     0.67

Difference = mu (11) - mu (14)
Estimate for difference:  0.88
95% CI for difference:  (-1.24, 3.00)
T-Test of difference = 0 (vs not =): T-Value = 0.84  P-Value = 0.406  DF = 39


Two-sample T for Plasticity Index (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         20  17.00   4.88      1.1
14         25  14.48   4.00     0.80

Difference = mu (11) - mu (14)
Estimate for difference:  2.52
95% CI for difference:  (-0.22, 5.26)
T-Test of difference = 0 (vs not =): T-Value = 1.86  P-Value = 0.071  DF = 36


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
11         10  22.70   9.93      3.1
14         12  23.71   5.52      1.6

Difference = mu (11) - mu (14)
Estimate for difference:  -1.01
95% CI for difference:  (-8.62, 6.60)
T-Test of difference = 0 (vs not =): T-Value = -0.29  P-Value = 0.779  DF = 13
```

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
11         10  37.70   8.82      2.8
14         12  40.79   5.91      1.7

Difference = mu (11) - mu (14)
Estimate for difference:  -3.09
95% CI for difference:  (-10.06, 3.87)
T-Test of difference = 0 (vs not =): T-Value = -0.95  P-Value = 0.359  DF = 15


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
11         10  39.60   6.66      2.1
14         12  35.50   5.18      1.5

Difference = mu (11) - mu (14)
Estimate for difference:  4.10
95% CI for difference:  (-1.37, 9.57)
T-Test of difference = 0 (vs not =): T-Value = 1.59  P-Value = 0.132  DF = 16


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
11         12   2.176   0.145    0.042
14         29  2.2979  0.0725    0.013

Difference = mu (11) - mu (14)
Estimate for difference:  -0.1221
95% CI for difference:  (-0.2170, -0.0272)
T-Test of difference = 0 (vs not =): T-Value = -2.78  P-Value = 0.016  DF = 13


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
11         12   1.957   0.187    0.054
14         29  2.1059  0.0814    0.015

Difference = mu (11) - mu (14)
Estimate for difference:  -0.1492
95% CI for difference:  (-0.2711, -0.0273)
T-Test of difference = 0 (vs not =): T-Value = -2.67  P-Value = 0.021  DF = 12
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on Natural Moisture Content  (%)

Domain
Reference   N  Median  Ave Rank      Z
11         32  11.000      45.8   1.49
14         49   9.400      37.9  -1.49
Overall    81              41.0

H = 2.21  DF = 1  P = 0.137
H = 2.22  DF = 1  P = 0.137  (adjusted for ties)
```

Kruskal-Wallis Test on Liquid Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	20	27.00	27.3	1.98
14	25	26.00	19.5	-1.98
Overall	45		23.0	

H = 3.90 DF = 1 P = 0.048
H = 3.97 DF = 1 P = 0.046 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	20	13.00	25.9	1.32
14	25	12.00	20.7	-1.32
Overall	45		23.0	

H = 1.76 DF = 1 P = 0.185
H = 1.93 DF = 1 P = 0.164 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain Reference	N	Median	Ave Rank	Z
11	20	15.00	27.2	1.93
14	25	14.00	19.6	-1.93
Overall	45		23.0	

H = 3.73 DF = 1 P = 0.054
H = 3.79 DF = 1 P = 0.052 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	10	22.00	10.8	-0.46
14	12	22.75	12.1	0.46
Overall	22		11.5	

H = 0.21 DF = 1 P = 0.644
H = 0.21 DF = 1 P = 0.644 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	10	34.75	9.8	-1.15
14	12	40.50	13.0	1.15
Overall	22		11.5	

H = 1.33 DF = 1 P = 0.249
H = 1.34 DF = 1 P = 0.248 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
11         10   39.00      13.6   1.38
14         12   35.75       9.8  -1.38
Overall    22              11.5

H = 1.92  DF = 1  P = 0.166
H = 1.92  DF = 1  P = 0.166  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
11         12   2.255      13.7  -2.52
14         29   2.330      24.0   2.52
Overall    41              21.0

H = 6.36  DF = 1  P = 0.012
H = 6.38  DF = 1  P = 0.012  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
11         12   2.055      13.4  -2.62
14         29   2.130      24.2   2.62
Overall    41              21.0

H = 6.87  DF = 1  P = 0.009
H = 6.89  DF = 1  P = 0.009  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for Natural Moisture Content  (%)

Chi-Square = 7.94    DF = 1    P = 0.005

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          10  22   11.00   4.40          (------*---------------)
14          31  18    9.40   5.95  (*-----------)
                                   ---+---------+---------+---------+---
                                    9.6      10.8      12.0      13.2

Overall median = 10.00

A 95.0% CI for median(11) - median(14): (0.47,2.73)

Mood median test for Liquid Limit (%)

Chi-Square = 0.31    DF = 1    P = 0.577

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11          12   8   27.00  12.50          (---*-----------------------)
14          17   8   26.00   5.50  (-------*---------)
                                   ----+---------+---------+---------+--
                                    25.0      27.5      30.0      32.5

Overall median = 27.00

A 95.0% CI for median(11) - median(14): (-1.00,6.00)
```

Mood median test for Plastic Limit (%)

Chi-Square = 2.57   DF = 1   P = 0.109

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11           8  12   13.00   4.00    (---------*-----------------------)
14          16   9   12.00   2.00    *---------)
                                     +---------+---------+---------+------
                                  12.0      13.0      14.0      15.0
```

Overall median = 12.00

A 95.0% CI for median(11) - median(14): (-0.20,2.00)

Mood median test for Plasticity Index (%)

Chi-Square = 1.00   DF = 1   P = 0.316

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1 -----+---------+---------+---------+-
11           9  11   15.00   6.25              (-----*----------------)
14          15  10   14.00   4.50 (------------*-----)
                                  -----+---------+---------+---------+-
                                    12.8      14.4      16.0      17.6
```

Overall median = 14.00

A 95.0% CI for median(11) - median(14): (-1.00,4.20)

Mood median test for % GRAVEL

Chi-Square = 0.00   DF = 1   P = 1.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1 ---+---------+---------+---------+---
11           5   5    22.0   17.0 (---------------*------------------)
14           6   6    22.8    9.0             (------*---------)
                                  ---+---------+---------+---------+---
                                  15.0      20.0      25.0      30.0
```

Overall median = 22.8

A 95.0% CI for median(11) - median(14): (-12.0,9.0)

Mood median test for % SAND

Chi-Square = 1.77   DF = 1   P = 0.184

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11           7   3    34.8   16.0    (---------*----------------------)
14           5   7    40.5    9.6              (----------*-------)
                                     +---------+---------+---------+------
                                  30.0      35.0      40.0      45.0
```

Overall median = 39.0

A 95.0% CI for median(11) - median(14): (-14.0,6.5)

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.73    DF = 1    P = 0.392

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
11           4   6    39.0    8.8             (------------*-------------)
14           7   5    35.8    7.5    (------------*-------)
                                     -+---------+---------+---------+-----
                                    31.5      35.0      38.5      42.0

Overall median = 36.5

A 95.0% CI for median(11) - median(14): (-2.5,9.5)


Mood median test for Bulk Density

Chi-Square = 5.11    DF = 1    P = 0.024

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --------+---------+---------+--------
11          10   2   2.255  0.272   (----------------------*---)
14          13  16   2.330  0.135                          (-------*)
                                    --------+---------+---------+--------
                                          2.10      2.20      2.30

Overall median = 2.290

A 95.0% CI for median(11) - median(14): (-0.306,0.020)


Mood median test for Dry Density

Chi-Square = 7.00    DF = 1    P = 0.008

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -------+---------+---------+---------
11          10   2   2.055  0.252   (---------------------*--)
14          11  18   2.130  0.135                          (------*--)
                                    -------+---------+---------+---------
                                         1.90      2.00      2.10

Overall median = 2.080

A 95.0% CI for median(11) - median(14): (-0.306,-0.030)
```

Results for: Domains 11 and 14, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for Natural Moisture Content (%)

Domain Reference	N	Mean	StDev	SE Mean
11	48	10.87	2.18	0.32
14	29	12.22	3.43	0.64

Difference = mu (11) - mu (14)
Estimate for difference: -1.354
95% CI for difference: (-2.790, 0.082)
T-Test of difference = 0 (vs not =): T-Value = -1.90 P-Value = 0.064 DF = 41

Two-sample T for Liquid Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
11	26	28.04	1.95	0.38
14	26	26.04	2.90	0.57

Difference = mu (11) - mu (14)
Estimate for difference: 2.000
95% CI for difference: (0.616, 3.384)
T-Test of difference = 0 (vs not =): T-Value = 2.92 P-Value = 0.006 DF = 43

Two-sample T for Plastic Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
11	26	13.62	1.33	0.26
14	26	12.58	1.39	0.27

Difference = mu (11) - mu (14)
Estimate for difference: 1.038
95% CI for difference: (0.280, 1.797)
T-Test of difference = 0 (vs not =): T-Value = 2.75 P-Value = 0.008 DF = 49

Two-sample T for Plasticity Index (%)

Domain Reference	N	Mean	StDev	SE Mean
11	26	14.42	1.45	0.28
14	26	13.46	2.45	0.48

Difference = mu (11) - mu (14)
Estimate for difference: 0.962
95% CI for difference: (-0.167, 2.090)
T-Test of difference = 0 (vs not =): T-Value = 1.72 P-Value = 0.093 DF = 40

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	8	29.19	4.84	1.7
14	12	21.62	3.78	1.1

Difference = mu (11) - mu (14)
Estimate for difference: 7.56
95% CI for difference: (3.14, 11.98)
T-Test of difference = 0 (vs not =): T-Value = 3.73 P-Value = 0.003 DF = 12

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
11          8  30.75   4.29      1.5
14         12  43.46   5.80      1.7

Difference = mu (11) - mu (14)
Estimate for difference:  -12.71
95% CI for difference:  (-17.48, -7.94)
T-Test of difference = 0 (vs not =): T-Value = -5.62  P-Value = 0.000  DF = 17


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
11          8  40.06   3.73      1.3
14         12  34.92   5.31      1.5

Difference = mu (11) - mu (14)
Estimate for difference:  5.15
95% CI for difference:  (0.88, 9.41)
T-Test of difference = 0 (vs not =): T-Value = 2.55  P-Value = 0.021  DF = 17


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
11         36  2.197  0.147    0.025
14          7  2.134  0.163    0.061

Difference = mu (11) - mu (14)
Estimate for difference:  0.0624
95% CI for difference:  (-0.0903, 0.2151)
T-Test of difference = 0 (vs not =): T-Value = 0.94  P-Value = 0.374  DF = 8


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
11         36  1.990  0.144    0.024
14          7  1.956  0.158    0.060

Difference = mu (11) - mu (14)
Estimate for difference:  0.0346
95% CI for difference:  (-0.1137, 0.1829)
T-Test of difference = 0 (vs not =): T-Value = 0.54  P-Value = 0.606  DF = 8
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on Natural Moisture Content  (%)

Domain
Reference   N  Median  Ave Rank      Z
11         48   10.90      36.4  -1.33
14         29   11.00      43.4   1.33
Overall    77              39.0

H = 1.77  DF = 1  P = 0.184
H = 1.80  DF = 1  P = 0.180  (adjusted for ties)
```

Kruskal-Wallis Test on Liquid Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	26	28.00	32.1	2.65
14	26	25.50	20.9	-2.65
Overall	52		26.5	

H = 7.04 DF = 1 P = 0.008
H = 7.14 DF = 1 P = 0.008 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	26	14.00	32.3	2.75
14	26	12.00	20.7	-2.75
Overall	52		26.5	

H = 7.59 DF = 1 P = 0.006
H = 7.96 DF = 1 P = 0.005 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain Reference	N	Median	Ave Rank	Z
11	26	15.00	31.0	2.15
14	26	13.00	22.0	-2.15
Overall	52		26.5	

H = 4.62 DF = 1 P = 0.032
H = 4.76 DF = 1 P = 0.029 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	8	27.50	15.3	2.93
14	12	21.00	7.3	-2.93
Overall	20		10.5	

H = 8.60 DF = 1 P = 0.003
H = 8.62 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	8	30.75	5.1	-3.36
14	12	43.25	14.1	3.36
Overall	20		10.5	

H = 11.26 DF = 1 P = 0.001
H = 11.28 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
11	8	39.50	13.8	2.04
14	12	36.00	8.3	-2.04
Overall	20		10.5	

H = 4.18 DF = 1 P = 0.041
H = 4.21 DF = 1 P = 0.040 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
11	36	2.240	23.0	1.20
14	7	2.170	16.8	-1.20
Overall	43		22.0	

H = 1.44 DF = 1 P = 0.230
H = 1.44 DF = 1 P = 0.229 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
11	36	2.025	22.8	0.92
14	7	1.980	18.0	-0.92
Overall	43		22.0	

H = 0.85 DF = 1 P = 0.357
H = 0.85 DF = 1 P = 0.356 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for Natural Moisture Content (%)

Chi-Square = 1.06   DF = 1   P = 0.303

```
Domain                                 Individual 95.0% CIs
Reference   N<  N>=  Median  Q3-Q1  ---------+---------+---------+-------
11          24   24   10.90   1.20    (-------*)
14          11   18   11.00   6.35  (----------*-----------------------)
                                    ---------+---------+---------+-------
                                          10.8      12.0      13.2
```

Overall median = 11.00

A 95.0% CI for median(11) - median(14): (-3.60,1.02)

Mood median test for Liquid Limit (%)

Chi-Square = 9.32   DF = 1   P = 0.002

```
Domain                                 Individual 95.0% CIs
Reference   N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11            8  18   28.00   2.00                        (--*--------)
14           19   7   25.50   4.25  (-------*-----------)
                                    -----+---------+---------+---------+-
                                      25.2      26.4      27.6      28.8
```

Overall median = 27.00

A 95.0% CI for median(11) - median(14): (1.00,4.00)

```
Mood median test for Plastic Limit (%)

Chi-Square = 8.50    DF = 1    P = 0.004

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11          12  14   14.00   2.25                     (---------------*
14          22   4   12.00   1.00    *----------------)
                                     +---------+---------+---------+------
                                  12.00     12.60     13.20     13.80

Overall median = 13.00

A 95.0% CI for median(11) - median(14): (0.00,2.00)


Mood median test for Plasticity Index (%)

Chi-Square = 5.20    DF = 1    P = 0.023

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11          12  14   15.00   1.00                          (---------*
14          20   6   13.00   2.25    (---------*---------)
                                     +---------+---------+---------+------
                                  12.0      13.0      14.0      15.0

Overall median = 14.00

A 95.0% CI for median(11) - median(14): (0.00,2.02)


Mood median test for % GRAVEL

Chi-Square = 7.50    DF = 1    P = 0.006

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11           1   7    27.5    9.1              (----*--------------)
14           9   3    21.0    5.3    (-*-------)
                                     +---------+---------+---------+------
                                  20.0      25.0      30.0      35.0

Overall median = 24.0

A 95.0% CI for median(11) - median(14): (2.0,15.0)


Mood median test for % SAND

Chi-Square = 10.91    DF = 1    P = 0.001

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11           8   0    30.8    8.1  (------*-----)
14           3   9    43.3   10.0                    (------*------)
                                   ---+---------+---------+---------+---
                                  28.0      35.0      42.0      49.0

Overall median = 37.0

A 95.0% CI for median(11) - median(14): (-22.0,-7.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 4.85    DF = 1    P = 0.028

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11           2   6    39.5    5.1                  (------*---------)
14           9   3    36.0    9.0  (-------------*-------)
                                   ----+---------+---------+---------+--
                                    32.0      36.0      40.0      44.0

Overall median = 37.0

A 95.0% CI for median(11) - median(14): (0.0,12.5)


Mood median test for Bulk Density

Chi-Square = 0.83    DF = 1    P = 0.363

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          19  17   2.240  0.140                      (-----*--)
14           5   2   2.170  0.260  (-------------------*-----------)
                                   ---+---------+---------+---------+---
                                    2.00      2.10      2.20      2.30

Overall median = 2.240

A 95.0% CI for median(11) - median(14): (-0.044,0.273)


Mood median test for Dry Density

Chi-Square = 1.08    DF = 1    P = 0.298

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          18  18   2.025  0.155                    (-------*----)
14           5   2   1.980  0.230  (-------------------*---------------)
                                   ---+---------+---------+---------+---
                                    1.840     1.920     2.000     2.080

Overall median = 2.020

A 95.0% CI for median(11) - median(14): (-0.068,0.222)
```

Results for: Domains 12 and 14, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for Natural Moisture Content (%)

Domain Reference	N	Mean	StDev	SE Mean
12	9	15.86	4.16	1.4
14	49	11.70	4.52	0.65

Difference = mu (12) - mu (14)
Estimate for difference: 4.16
95% CI for difference: (0.79, 7.53)
T-Test of difference = 0 (vs not =): T-Value = 2.72 P-Value = 0.020 DF = 11

Two-sample T for Liquid Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
12	9	33.22	3.93	1.3
14	25	28.00	6.79	1.4

Difference = mu (12) - mu (14)
Estimate for difference: 5.22
95% CI for difference: (1.33, 9.12)
T-Test of difference = 0 (vs not =): T-Value = 2.77 P-Value = 0.011 DF = 24

Two-sample T for Plastic Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
12	9	16.89	4.01	1.3
14	25	13.52	3.37	0.67

Difference = mu (12) - mu (14)
Estimate for difference: 3.37
95% CI for difference: (0.11, 6.63)
T-Test of difference = 0 (vs not =): T-Value = 2.25 P-Value = 0.044 DF = 12

Two-sample T for Plasticity Index (%)

Domain Reference	N	Mean	StDev	SE Mean
12	9	16.33	4.00	1.3
14	25	14.48	4.00	0.80

Difference = mu (12) - mu (14)
Estimate for difference: 1.85
95% CI for difference: (-1.48, 5.19)
T-Test of difference = 0 (vs not =): T-Value = 1.19 P-Value = 0.253 DF = 14

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	3	28.50	5.22	3.0
14	12	23.71	5.52	1.6

Difference = mu (12) - mu (14)
Estimate for difference: 4.79
95% CI for difference: (-6.06, 15.64)
T-Test of difference = 0 (vs not =): T-Value = 1.41 P-Value = 0.255 DF = 3

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
12	3	28.67	5.84	3.4
14	12	40.79	5.91	1.7

Difference = mu (12) - mu (14)
Estimate for difference: -12.12
95% CI for difference: (-24.15, -0.10)
T-Test of difference = 0 (vs not =): T-Value = -3.21 P-Value = 0.049 DF = 3

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
12	3	42.83	3.33	1.9
14	12	35.50	5.18	1.5

Difference = mu (12) - mu (14)
Estimate for difference: 7.33
95% CI for difference: (0.57, 14.09)
T-Test of difference = 0 (vs not =): T-Value = 3.01 P-Value = 0.039 DF = 4

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
12	2	1.980	0.297	0.21
14	29	2.2979	0.0725	0.013

Difference = mu (12) - mu (14)
Estimate for difference: -0.318
95% CI for difference: (-2.992, 2.356)
T-Test of difference = 0 (vs not =): T-Value = -1.51 P-Value = 0.372 DF = 1

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
12	2	1.740	0.283	0.20
14	29	2.1059	0.0814	0.015

Difference = mu (12) - mu (14)
Estimate for difference: -0.366
95% CI for difference: (-2.914, 2.183)
T-Test of difference = 0 (vs not =): T-Value = -1.82 P-Value = 0.319 DF = 1

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on Natural Moisture Content (%)

Domain Reference	N	Median	Ave Rank	Z
12	9	15.000	43.4	2.70
14	49	9.400	26.9	-2.70
Overall	58		29.5	

H = 7.26 DF = 1 P = 0.007
H = 7.28 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on Liquid Limit (%)

Domain Reference	N	Median	Ave Rank	Z
12	9	34.00	24.7	2.54
14	25	26.00	14.9	-2.54
Overall	34		17.5	

H = 6.44 DF = 1 P = 0.011
H = 6.48 DF = 1 P = 0.011 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain Reference	N	Median	Ave Rank	Z
12	9	15.00	25.7	2.89
14	25	12.00	14.5	-2.89
Overall	34		17.5	

H = 8.34 DF = 1 P = 0.004
H = 8.87 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain Reference	N	Median	Ave Rank	Z
12	9	15.00	21.1	1.25
14	25	14.00	16.2	-1.25
Overall	34		17.5	

H = 1.56 DF = 1 P = 0.212
H = 1.58 DF = 1 P = 0.209 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	3	26.00	11.0	1.30
14	12	22.75	7.3	-1.30
Overall	15		8.0	

H = 1.69 DF = 1 P = 0.194
H = 1.70 DF = 1 P = 0.192 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	3	27.50	3.0	-2.17
14	12	40.50	9.3	2.17
Overall	15		8.0	

H = 4.69 DF = 1 P = 0.030
H = 4.70 DF = 1 P = 0.030 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
12	3	42.00	12.7	2.02
14	12	35.75	6.8	-2.02
Overall	15		8.0	

H = 4.08 DF = 1 P = 0.043

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
12	2	1.980	2.3	-2.21
14	29	2.330	16.9	2.21
Overall	31		16.0	

H = 4.89 DF = 1 P = 0.027
H = 4.92 DF = 1 P = 0.027 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
12	2	1.740	1.8	-2.29
14	29	2.130	17.0	2.29
Overall	31		16.0	

H = 5.25 DF = 1 P = 0.022
H = 5.27 DF = 1 P = 0.022 (adjusted for ties)

* NOTE * One or more small samples

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for Natural Moisture Content (%)

Chi-Square = 7.04   DF = 1   P = 0.008

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12           1   8    15.0    7.0            (-----*----------------)
14          29  20     9.4    5.9  (*---)
                                   ----+---------+---------+---------+--
                                    10.5      14.0      17.5      21.0
```

Overall median = 9.8

A 95.0% CI for median(12) - median(14): (3.2,12.7)

```
Mood median test for Liquid Limit (%)

Chi-Square = 12.24    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
12           0   9    34.0    6.5               (---------------*----)
14          17   8    26.0    5.5   (----*-------)
                                    -+---------+---------+---------+-----
                                   24.5      28.0      31.5      35.0

Overall median = 27.5

A 95.0% CI for median(12) - median(14): (1.0,12.0)


Mood median test for Plastic Limit (%)

Chi-Square = 9.95    DF = 1    P = 0.002

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
12           1   8    15.0    7.5          (--*----------------------)
14          18   7    12.0    2.0    *--)
                                     +---------+---------+---------+------
                                   12.0      15.0      18.0      21.0

Overall median = 13.0

A 95.0% CI for median(12) - median(14): (2.0,11.0)


Mood median test for Plasticity Index (%)

Chi-Square = 1.89    DF = 1    P = 0.169

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
12           3   6   15.00   6.00       (------*------------------)
14          15  10   14.00   4.50  (-------*---)
                                   --+---------+---------+---------+----
                                   12.5      15.0      17.5      20.0

Overall median = 14.00

A 95.0% CI for median(12) - median(14): (-2.00,7.00)


Mood median test for % GRAVEL

Chi-Square = 0.60    DF = 1    P = 0.438

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
12           1   2    26.0    9.5              (-*----------------)
14           7   5    22.8    9.0   (------*---------)
                                    -+---------+---------+---------+-----
                                   20.0      25.0      30.0      35.0

Overall median = 25.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(14): (-4.0,15.5)
```

```
Mood median test for % SAND

Chi-Square = 3.28    DF = 1    P = 0.070

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
12           3   0    27.5   11.5   (------*-----------)
14           5   7    40.5    9.6                       (--------*------)
                                    -+---------+---------+---------+-----
                                   24.0      30.0      36.0      42.0

Overall median = 39.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(14): (-21.5,1.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 4.29    DF = 1    P = 0.038

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12           0   3    42.0    6.5                   (---*--------)
14           8   4    35.8    7.5  (---------*----)
                                   --------+---------+---------+--------
                                        35.0      40.0      45.0

Overall median = 37.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(14): (1.0,15.5)


Mood median test for Bulk Density

Chi-Square = 2.00    DF = 1    P = 0.157

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
12           2   0   1.980  0.420  (------------*------------)
14          14  15   2.330  0.135                              (----*
                                   ---------+---------+---------+-------
                                         1.92      2.08      2.24

Overall median = 2.300
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(14): (-0.630,0.070)


Mood median test for Dry Density

Chi-Square = 1.54    DF = 1    P = 0.214

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12           2   0   1.740  0.400  (---------*---------)
14          16  13   2.130  0.135                          (--*-)
                                   ---+---------+---------+---------+---
                                    1.60      1.80      2.00      2.20

Overall median = 2.130
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(14): (-0.690,0.000)
```

Results for: Domains 12 and 14, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for Natural Moisture Content (%)

Domain Reference	N	Mean	StDev	SE Mean
12	75	11.97	2.95	0.34
14	29	12.22	3.43	0.64

Difference = mu (12) - mu (14)
Estimate for difference: -0.249
95% CI for difference: (-1.705, 1.207)
T-Test of difference = 0 (vs not =): T-Value = -0.34 P-Value = 0.732 DF = 44

Two-sample T for Liquid Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
12	46	31.15	1.55	0.23
14	26	26.04	2.90	0.57

Difference = mu (12) - mu (14)
Estimate for difference: 5.114
95% CI for difference: (3.865, 6.362)
T-Test of difference = 0 (vs not =): T-Value = 8.33 P-Value = 0.000 DF = 33

Two-sample T for Plastic Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
12	46	13.783	0.664	0.098
14	26	12.58	1.39	0.27

Difference = mu (12) - mu (14)
Estimate for difference: 1.206
95% CI for difference: (0.615, 1.797)
T-Test of difference = 0 (vs not =): T-Value = 4.16 P-Value = 0.000 DF = 31

Two-sample T for Plasticity Index (%)

Domain Reference	N	Mean	StDev	SE Mean
12	46	17.37	1.47	0.22
14	26	13.46	2.45	0.48

Difference = mu (12) - mu (14)
Estimate for difference: 3.908
95% CI for difference: (2.837, 4.979)
T-Test of difference = 0 (vs not =): T-Value = 7.41 P-Value = 0.000 DF = 35

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	4	29.13	2.90	1.4
14	12	21.62	3.78	1.1

Difference = mu (12) - mu (14)
Estimate for difference: 7.50
95% CI for difference: (3.06, 11.94)
T-Test of difference = 0 (vs not =): T-Value = 4.14 P-Value = 0.006 DF = 6

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
12	4	31.50	4.34	2.2
14	12	43.46	5.80	1.7

Difference = mu (12) - mu (14)
Estimate for difference: -11.96
95% CI for difference: (-18.66, -5.25)
T-Test of difference = 0 (vs not =): T-Value = -4.36 P-Value = 0.005 DF = 6

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
12	4	39.38	6.50	3.2
14	12	34.92	5.31	1.5

Difference = mu (12) - mu (14)
Estimate for difference: 4.46
95% CI for difference: (-5.52, 14.43)
T-Test of difference = 0 (vs not =): T-Value = 1.24 P-Value = 0.282 DF = 4

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
12	30	2.2993	0.0504	0.0092
14	7	2.134	0.163	0.061

Difference = mu (12) - mu (14)
Estimate for difference: 0.1650
95% CI for difference: (0.0129, 0.3172)
T-Test of difference = 0 (vs not =): T-Value = 2.65 P-Value = 0.038 DF = 6

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
12	30	2.0813	0.0656	0.012
14	7	1.956	0.158	0.060

Difference = mu (12) - mu (14)
Estimate for difference: 0.1256
95% CI for difference: (-0.0232, 0.2745)
T-Test of difference = 0 (vs not =): T-Value = 2.07 P-Value = 0.084 DF = 6

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on Natural Moisture Content (%)

Domain Reference	N	Median	Ave Rank	Z
12	75	11.00	52.3	-0.11
14	29	11.00	53.0	0.11
Overall	104		52.5	

H = 0.01 DF = 1 P = 0.911
H = 0.01 DF = 1 P = 0.910 (adjusted for ties)

Kruskal-Wallis Test on Liquid Limit (%)

Domain Reference	N	Median	Ave Rank	Z
12	46	31.00	47.6	6.01
14	26	25.50	16.8	-6.01
Overall	72		36.5	

H = 36.10 DF = 1 P = 0.000
H = 37.08 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain Reference	N	Median	Ave Rank	Z
12	46	14.00	44.7	4.43
14	26	12.00	22.0	-4.43
Overall	72		36.5	

H = 19.59 DF = 1 P = 0.000
H = 21.40 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain Reference	N	Median	Ave Rank	Z
12	46	17.00	46.7	5.48
14	26	13.00	18.5	-5.48
Overall	72		36.5	

H = 30.04 DF = 1 P = 0.000
H = 30.77 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	4	28.75	13.9	2.61
14	12	21.00	6.7	-2.61
Overall	16		8.5	

H = 6.80 DF = 1 P = 0.009
H = 6.83 DF = 1 P = 0.009 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	4	31.50	3.0	-2.67
14	12	43.25	10.3	2.67
Overall	16		8.5	

H = 7.12 DF = 1 P = 0.008
H = 7.13 DF = 1 P = 0.008 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
12	4	39.75	11.1	1.27
14	12	36.00	7.6	-1.27
Overall	16		8.5	

H = 1.62 DF = 1 P = 0.203
H = 1.65 DF = 1 P = 0.200 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
12	30	2.310	21.3	2.62
14	7	2.170	9.4	-2.62
Overall	37		19.0	

H = 6.85 DF = 1 P = 0.009
H = 6.89 DF = 1 P = 0.009 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
12	30	2.095	20.9	2.21
14	7	1.980	10.9	-2.21
Overall	37		19.0	

H = 4.89 DF = 1 P = 0.027
H = 4.90 DF = 1 P = 0.027 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for Natural Moisture Content (%)

Chi-Square = 0.03   DF = 1   P = 0.866

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
12          40  35   11.00   3.00       (-----*-------)
14          16  13   11.00   6.35  (----------*------------------------)
                                   ---------+---------+---------+-------
                                         10.8      12.0      13.2
```

Overall median = 11.00

A 95.0% CI for median(12) - median(14): (-3.25,1.86)

```
Mood median test for Liquid Limit (%)

Chi-Square = 24.08    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          13  33   31.00   2.00                                 *
14          23   3   25.50   4.25  (----*------)
                                   -------+---------+---------+---------
                                       26.0      28.0      30.0

Overall median = 30.50

A 95.0% CI for median(12) - median(14): (4.00,6.00)


Mood median test for Plastic Limit (%)

Chi-Square = 19.51    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          14  32   14.00   1.00                                     *
14          22   4   12.00   1.00     *----------------)
                                      +---------+---------+---------+------
                                   12.00     12.60     13.20     13.80

Overall median = 13.50

A 95.0% CI for median(12) - median(14): (1.00,2.00)


Mood median test for Plasticity Index (%)

Chi-Square = 8.70    DF = 1    P = 0.003

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          25  21   17.00   1.00                               *----)
14          23   3   13.00   2.25     (----*----)
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 17.00

A 95.0% CI for median(12) - median(14): (3.00,5.40)


Mood median test for % GRAVEL

Chi-Square = 5.33    DF = 1    P = 0.021

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12           0   4    28.8    5.4                    (------*---------)
14           8   4    21.0    5.3     (-*----------)
                                      +---------+---------+---------+------
                                   20.0      24.0      28.0      32.0

Overall median = 22.3
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(14): (3.0,13.0)
```

```
Mood median test for % SAND

Chi-Square = 5.33    DF = 1    P = 0.021

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12           4   0    31.5    7.8  (-----*------)
14           4   8    43.3   10.0                   (-------*--------)
                                   ----+---------+---------+---------+--
                                    30.0      36.0      42.0      48.0

Overall median = 42.8
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(14): (-20.5,-7.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.36    DF = 1    P = 0.551

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
12           2   2    39.8   12.4     (---------------*-----------)
14           8   4    36.0    9.0  (----------*-----)
                                   ---------+---------+---------+-------
                                         35.0      40.0      45.0

Overall median = 36.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(14): (-5.0,15.0)
```

```
Mood median test for Bulk Density

Chi-Square = 3.48    DF = 1    P = 0.062

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          14  16   2.310  0.070                                 (-*-)
14           6   1   2.170  0.260  (-------------------*-----------)
                                   ---+---------+---------+---------+---
                                    2.00      2.10      2.20      2.30

Overall median = 2.300

A 95.0% CI for median(12) - median(14): (0.028,0.331)
```

```
Mood median test for Dry Density

Chi-Square = 2.95    DF = 1    P = 0.086

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          15  15   2.095  0.078                            (*--)
14           6   1   1.980  0.230  (---------------*------------)
                                   --------+---------+---------+--------
                                         1.90      2.00      2.10

Overall median = 2.090

A 95.0% CI for median(12) - median(14): (0.004,0.280)
```

Site 2: Wythop Wood, Bassenthwaite

Results for: Domain 21, Lodgement Till and Hillwash

Two-Sample T-Test and CI: (Parameter) vs. Soil Type

```
Two-sample T for w (%)

Soil Type           N   Mean  StDev  SE Mean
 Lodgement Till    78  13.72   4.31     0.49
 Hillwash          49  14.83   4.70     0.67

Difference = mu(Lodgement Till) - mu(Hillwash)
Estimate for difference:  -1.108
95% CI for difference:  (-2.755, 0.540)
T-Test of difference = 0 (vs not =): T-Value = -1.33  P-Value = 0.185  DF = 95


Two-sample T for WL (%)

Soil Type           N   Mean  StDev  SE Mean
 Lodgement Till    24  29.67   5.51      1.1
 Hillwash          21   44.2   12.0      2.6

Difference = mu(Lodgement Till) - mu(Hillwash)
Estimate for difference:  -14.57
95% CI for difference:  (-20.41, -8.73)
T-Test of difference = 0 (vs not =): T-Value = -5.12  P-Value = 0.000  DF = 27


Two-sample T for Wp (%)

Soil Type           N   Mean  StDev  SE Mean
 Lodgement Till    24  17.17   3.60     0.73
 Hillwash          21  26.48   6.62      1.4

Difference = mu(Lodgement Till) - mu(Hillwash)
Estimate for difference:  -9.31
95% CI for difference:  (-12.62, -5.99)
T-Test of difference = 0 (vs not =): T-Value = -5.74  P-Value = 0.000  DF = 29


Two-sample T for Ip (%)

Soil Type           N   Mean  StDev  SE Mean
 Lodgement Till    24  12.50   4.42     0.90
 Hillwash          21  17.76   7.17      1.6

Difference = mu(Lodgement Till) - mu(Hillwash)
Estimate for difference:  -5.26
95% CI for difference:  (-8.94, -1.58)
T-Test of difference = 0 (vs not =): T-Value = -2.91  P-Value = 0.006  DF = 32


Two-sample T for % GRAVEL

Soil Type           N   Mean  StDev  SE Mean
 Lodgement Till    11  33.64   7.35      2.2
 Hillwash          17   53.8   11.9      2.9

Difference = mu(Lodgement Till) - mu(Hillwash)
Estimate for difference:  -20.13
95% CI for difference:  (-27.64, -12.62)
T-Test of difference = 0 (vs not =): T-Value = -5.52  P-Value = 0.000  DF = 25
```

```
Two-sample T for % SAND

Soil Type           N   Mean  StDev  SE Mean
 Lodgement Till    11  22.64   5.22      1.6
 Hillwash          17  25.76   8.22      2.0

Difference = mu(Lodgement Till) - mu(Hillwash)
Estimate for difference:  -3.13
95% CI for difference:  (-8.36, 2.10)
T-Test of difference = 0 (vs not =): T-Value = -1.23  P-Value = 0.230  DF = 25


Two-sample T for % Fines (SILT/CLAY)

Soil Type           N   Mean  StDev  SE Mean
 Lodgement Till    11  43.73   9.16      2.8
 Hillwash          17  19.76   7.60      1.8

Difference = mu(Lodgement Till) - mu(Hillwash)
Estimate for difference:  23.96
95% CI for difference:  (16.99, 30.93)
T-Test of difference = 0 (vs not =): T-Value = 7.22  P-Value = 0.000  DF = 18


Two-sample T for Bulk Density

Soil Type           N   Mean  StDev  SE Mean
 Lodgement Till    48  2.296  0.131    0.019
 Hillwash          16  2.103  0.250    0.063

Difference = mu(Lodgement Till) - mu(Hillwash)
Estimate for difference:  0.1934
95% CI for difference:  (0.0555, 0.3314)
T-Test of difference = 0 (vs not =): T-Value = 2.96  P-Value = 0.009  DF = 17


Two-sample T for Dry Density

Soil Type           N   Mean  StDev  SE Mean
 Lodgement Till    48  2.007  0.157    0.023
 Hillwash          16  1.860  0.229    0.057

Difference = mu(Lodgement Till) - mu(Hillwash)
Estimate for difference:  0.1471
95% CI for difference:  (0.0183, 0.2758)
T-Test of difference = 0 (vs not =): T-Value = 2.39  P-Value = 0.027  DF = 19
```

Kruskal-Wallis Test: (Parameter) versus Soil Type

```
Kruskal-Wallis Test on w (%)

Soil Type            N  Median  Ave Rank      Z
 Lodgement Till     78   12.90      59.9  -1.60
 Hillwash           49   14.00      70.6   1.60
Overall            127              64.0

H = 2.55  DF = 1  P = 0.110
H = 2.55  DF = 1  P = 0.110  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lodgement Till	24	28.00	15.0	-4.36
Hillwash	21	41.00	32.1	4.36
Overall	45		23.0	

H = 18.98 DF = 1 P = 0.000
H = 19.03 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lodgement Till	24	17.00	14.3	-4.78
Hillwash	21	25.00	33.0	4.78
Overall	45		23.0	

H = 22.83 DF = 1 P = 0.000
H = 22.93 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lodgement Till	24	12.00	18.0	-2.71
Hillwash	21	17.00	28.7	2.71
Overall	45		23.0	

H = 7.33 DF = 1 P = 0.007
H = 7.38 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lodgement Till	11	35.00	7.3	-3.74
Hillwash	17	50.00	19.2	3.74
Overall	28		14.5	

H = 13.99 DF = 1 P = 0.000
H = 14.05 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lodgement Till	11	24.00	13.0	-0.80
Hillwash	17	24.00	15.5	0.80
Overall	28		14.5	

H = 0.64 DF = 1 P = 0.424
H = 0.65 DF = 1 P = 0.422 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lodgement Till	11	47.00	22.1	3.95
Hillwash	17	21.00	9.6	-3.95
Overall	28		14.5	

H = 15.61 DF = 1 P = 0.000
H = 15.67 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

Soil Type           N  Median  Ave Rank      Z
 Lodgement Till    48   2.305      36.8   3.16
 Hillwash          16   2.085      19.8  -3.16
Overall            64              32.5

H = 10.00  DF = 1  P = 0.002
H = 10.01  DF = 1  P = 0.002  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Soil Type           N  Median  Ave Rank      Z
 Lodgement Till    48   2.043      35.8   2.47
 Hillwash          16   1.857      22.6  -2.47
Overall            64              32.5

H = 6.08  DF = 1  P = 0.014
H = 6.08  DF = 1  P = 0.014  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 3.98    DF = 1    P = 0.046

Soil Type          N<=  N>  Median  Q3-Q1
 Lodgement Till     46  32   12.90   3.32
 Hillwash           20  29   14.00   6.00

                   Individual 95.0% CIs
Soil Type          ------+---------+---------+---------+
 Lodgement Till    (------*------)
 Hillwash                    (----------*-----------)
                   ------+---------+---------+---------+
                      12.80     13.60     14.40     15.20

Overall median = 13.30

A 95.0% CI for median(Lodgement Till) - median(Hillwash):
     (-2.43,0.06)


Mood median test for WL (%)

Chi-Square = 13.77    DF = 1    P = 0.000

Soil Type        N<=  N>  Median  Q3-Q1
 Lodgement Till   20   4    28.0    6.5
Hillwash           6  15    41.0   21.5

                 Individual 95.0% CIs
Soil Type          -+---------+---------+---------+-----
 Lodgement Till    (*--)
 Hillwash                     (--------*------------)
                   -+---------+---------+---------+-----
                 28.0      35.0      42.0      49.0

Overall median = 34.0

A 95.0% CI for median(Lodgement Till) - median(Hillwash): (-22.2,-6.8)
```

```
Mood median test for Wp (%)

Chi-Square = 18.60    DF = 1    P = 0.000

Soil Type          N<=  N>  Median  Q3-Q1
 Lodgement Till     20   4    17.0    4.8
 Hillwash            4  17    25.0    9.0

                   Individual 95.0% CIs
Soil Type             +---------+---------+---------+------
 Lodgement Till       (-*----)
 Hillwash                            (------*----------)
                      +---------+---------+---------+------
                   16.0      20.0      24.0      28.0

Overall median = 20.0

A 95.0% CI for median(Lodgement Till) - median(Hillwash):
     (-12.2,-5.6)


Mood median test for Ip (%)

Chi-Square = 9.70    DF = 1    P = 0.002

                                         Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
 Lodgement Till   18   6    12.0    4.3  (--*--)
 Hillwash          6  15    17.0   11.5            (-------*---------------)
                                         ---------+---------+---------+-------
                                               14.0      17.5      21.0

Overall median = 13.0

A 95.0% CI for median(Lodgement Till) - median(Hillwash): (-10.2,-2.8)


Mood median test for % GRAVEL

Chi-Square = 10.15    DF = 1    P = 0.001

Soil Type          N<=  N>  Median  Q3-Q1
 Lodgement Till     10   1    35.0   11.0
 Hillwash            5  12    50.0   23.0

                   Individual 95.0% CIs
Soil Type          ---------+---------+---------+-------
 Lodgement Till    (-------*)
 Hillwash                           (---*-------------)
                   ---------+---------+---------+-------
                           36        48        60

Overall median = 45.0

A 95.0% CI for median(Lodgement Till) - median(Hillwash):
     (-36.0,-10.0)
```

```
Mood median test for % SAND

Chi-Square = 0.31    DF = 1    P = 0.576

Soil Type          N<=  N>  Median  Q3-Q1
 Lodgement Till      7   4    24.0    8.0
 Hillwash            9   8    24.0   12.5

                   Individual 95.0% CIs
Soil Type          ---------+---------+---------+-------
 Lodgement Till    (-----------------*----)
 Hillwash             (--------------*------------------)
                   ---------+---------+---------+-------
                         21.0      24.5      28.0

Overall median = 24.0

A 95.0% CI for median(Lodgement Till) - median(Hillwash): (-10.0,6.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 14.41    DF = 1    P = 0.000

Soil Type          N<=  N>  Median  Q3-Q1
 Lodgement Till      1  10    47.0    9.0
 Hillwash           14   3    21.0   14.5

                   Individual 95.0% CIs
Soil Type          -------+---------+---------+---------
 Lodgement Till                               (------*-)
 Hillwash          (-------*-----)
                   -------+---------+---------+---------
                         20        30        40

Overall median = 27.0

A 95.0% CI for median(Lodgement Till) - median(Hillwash): (16.0,35.0)


Mood median test for Bulk Density

Chi-Square = 5.33    DF = 1    P = 0.021

Soil Type          N<=  N>  Median  Q3-Q1
 Lodgement Till     20  28   2.305  0.119
 Hillwash           12   4   2.085  0.279

                   Individual 95.0% CIs
Soil Type          --------+---------+---------+--------
 Lodgement Till                            (---*---)
 Hillwash          (-----*-----------)
                   --------+---------+---------+--------
                         2.10      2.20      2.30

Overall median = 2.275

A 95.0% CI for median(Lodgement Till) - median(Hillwash):
     (0.091,0.298)
```

```
Mood median test for Dry Density

Chi-Square = 5.33    DF = 1    P = 0.021

Soil Type          N<=  N>  Median  Q3-Q1
 Lodgement Till     20  28   2.043  0.175
 Hillwash           12   4   1.857  0.290

                   Individual 95.0% CIs
Soil Type          ---+---------+---------+---------+---
 Lodgement Till                       (-------*----)
 Hillwash          (--------*------------)
                   ---+---------+---------+---------+---
                    1.80      1.90      2.00      2.10

Overall median = 2.011

A 95.0% CI for median(Lodgement Till) - median(Hillwash):
     (0.038,0.289)
```

Site 3: Sowerby Wood, Barrow-in-Furness

Results for: Domain 31

Two-Sample T-Test and CI: (Parameter) versus Soil Type

```
Two-sample T for w (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  73  18.00   2.13     0.25
Upper Till  52  19.13   2.82     0.39

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -1.135
95% CI for difference:  (-2.057, -0.212)
T-Test of difference = 0 (vs not =): T-Value = -2.44  P-Value = 0.016  DF = 90


Two-sample T for WL (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  64  32.95   3.63     0.45
Upper Till  48  34.02   6.11     0.88

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -1.068
95% CI for difference:  (-3.046, 0.910)
T-Test of difference = 0 (vs not =): T-Value = -1.08  P-Value = 0.285  DF = 71


Two-sample T for Wp (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  64  15.33   1.48     0.19
Upper Till  47  16.02   2.42     0.35

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -0.693
95% CI for difference:  (-1.488, 0.101)
T-Test of difference = 0 (vs not =): T-Value = -1.74  P-Value = 0.086  DF = 70


Two-sample T for Ip (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  64  17.62   2.66     0.33
Upper Till  47  18.26   3.80     0.55

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -0.630
95% CI for difference:  (-1.916, 0.656)
T-Test of difference = 0 (vs not =): T-Value = -0.98  P-Value = 0.332  DF = 77


Two-sample T for % GRAVEL

Soil Type    N  Mean  StDev  SE Mean
Lower Till  19  5.89   4.76      1.1
Upper Till  16  5.31   7.02      1.8

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  0.58
95% CI for difference:  (-3.68, 4.84)
T-Test of difference = 0 (vs not =): T-Value = 0.28  P-Value = 0.781  DF = 25
```

```
Two-sample T for % SAND

Soil Type    N   Mean  StDev  SE Mean
Lower Till  19  24.21   9.33      2.1
Upper Till  16  24.38   8.29      2.1

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -0.16
95% CI for difference:  (-6.23, 5.90)
T-Test of difference = 0 (vs not =): T-Value = -0.06  P-Value = 0.956  DF = 32


Two-sample T for % Fines (SILT/CLAY)

Soil Type    N  Mean  StDev  SE Mean
Lower Till  19  69.9   10.0      2.3
Upper Till  16  70.3   13.2      3.3

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -0.42
95% CI for difference:  (-8.67, 7.83)
T-Test of difference = 0 (vs not =): T-Value = -0.10  P-Value = 0.918  DF = 27


Two-sample T for Bulk Density

Soil Type    N    Mean   StDev  SE Mean
Lower Till  24  2.2546  0.0480   0.0098
Upper Till  19  2.1947  0.0672    0.015

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  0.0598
95% CI for difference:  (0.0226, 0.0971)
T-Test of difference = 0 (vs not =): T-Value = 3.28  P-Value = 0.003  DF = 31


Two-sample T for Dry Density

Soil Type    N    Mean   StDev  SE Mean
Lower Till  24  1.9182  0.0491    0.010
Upper Till  19  1.8419  0.0925    0.021

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  0.0763
95% CI for difference:  (0.0280, 0.1247)
T-Test of difference = 0 (vs not =): T-Value = 3.25  P-Value = 0.003  DF = 25
```

Kruskal-Wallis Test: (Parameter) versus Soil Type

```
Kruskal-Wallis Test on w (%)

Soil Type     N  Median  Ave Rank      Z
Lower Till   73   18.00      56.9  -2.24
Upper Till   52   19.00      71.6   2.24
Overall     125              63.0

H = 5.02  DF = 1  P = 0.025
H = 5.11  DF = 1  P = 0.024  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	64	34.00	53.5	-1.12
Upper Till	48	35.00	60.5	1.12
Overall	112		56.5	

H = 1.25 DF = 1 P = 0.263
H = 1.26 DF = 1 P = 0.261 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	64	16.00	53.2	-1.06
Upper Till	47	16.00	59.8	1.06
Overall	111		56.0	

H = 1.12 DF = 1 P = 0.291
H = 1.16 DF = 1 P = 0.282 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	64	18.00	52.9	-1.20
Upper Till	47	19.00	60.3	1.20
Overall	111		56.0	

H = 1.45 DF = 1 P = 0.229
H = 1.47 DF = 1 P = 0.226 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Till	19	4.000	20.2	1.36
Upper Till	16	2.500	15.4	-1.36
Overall	35		18.0	

H = 1.84 DF = 1 P = 0.175
H = 1.87 DF = 1 P = 0.172 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Till	19	22.00	17.6	-0.28
Upper Till	16	24.00	18.5	0.28
Overall	35		18.0	

H = 0.08 DF = 1 P = 0.778
H = 0.08 DF = 1 P = 0.778 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lower Till	19	69.00	17.2	-0.51
Upper Till	16	75.00	19.0	0.51
Overall	35		18.0	

H = 0.26 DF = 1 P = 0.608
H = 0.26 DF = 1 P = 0.607 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

Soil Type    N  Median  Ave Rank      Z
Lower Till  24   2.265      27.2   3.04
Upper Till  19   2.200      15.4  -3.04
Overall     43              22.0

H = 9.27  DF = 1  P = 0.002
H = 9.33  DF = 1  P = 0.002  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Soil Type    N  Median  Ave Rank      Z
Lower Till  24   1.922      26.9   2.89
Upper Till  19   1.842      15.8  -2.89
Overall     43              22.0

H = 8.33  DF = 1  P = 0.004
H = 8.35  DF = 1  P = 0.004  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 3.57    DF = 1    P = 0.059

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   42  31   18.00   2.00     (---------*---------)
Upper Till   21  31   19.00   4.00               (---------*---------)
                                       +---------+---------+---------+------
                                    17.0      18.0      19.0      20.0

Overall median = 18.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.00,0.36)


Mood median test for WL (%)

Chi-Square = 3.53    DF = 1    P = 0.060

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
Lower Till   42  22   34.00   3.00                 (------*
Upper Till   23  25   35.00   8.75  (---------------------------*-------)
                                    -----+---------+---------+---------+-
                                      31.5      33.0      34.5      36.0

Overall median = 34.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-3.00,3.00)
```

```
Mood median test for Wp (%)

Chi-Square = 0.38    DF = 1    P = 0.539

                                    Individual 95.0% CIs
Soil Type   N<  N>=  Median  Q3-Q1     +---------+---------+---------+------
Lower Till  31   33   16.00   1.00     (--------------------------------*
Upper Till  20   27   16.00   3.00     (--------------------------------*
                                       +---------+---------+---------+------
                                    15.00     15.30     15.60     15.90

Overall median = 16.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-1.00,1.00)


Mood median test for Ip (%)

Chi-Square = 1.58    DF = 1    P = 0.208

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till   39  25   18.00   2.75           (-------*-------)
Upper Till   23  24   19.00   6.00  (-----------------------*--------)
                                    -------+---------+---------+---------
                                        16.8      18.0      19.2

Overall median = 18.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.07,0.14)


Mood median test for % GRAVEL

Chi-Square = 0.94    DF = 1    P = 0.332

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
Lower Till   10   9    4.00   7.00           (-----*--------------------)
Upper Till   11   5    2.50   6.25  (-------*---------------)
                                    -----+---------+---------+---------+-
                                       2.0       4.0       6.0       8.0

Overall median = 4.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-1.28,5.00)


Mood median test for % SAND

Chi-Square = 1.32    DF = 1    P = 0.251

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   12   7   22.00   9.00        (---------*--------------)
Upper Till    7   9   24.00  12.50     (------------------*----------)
                                       +---------+---------+---------+------
                                    18.0      21.0      24.0      27.0

Overall median = 23.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-6.28,5.12)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.70    DF = 1    P = 0.404

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
Lower Till   11   8    69.0   14.0             (------*-----------)
Upper Till    7   9    75.0   22.3    (------------------------*--------)
                                      -+---------+---------+---------+-----
                                    60.0      66.0      72.0      78.0

Overall median = 72.0

A 95.0% CI for median(Lower Till) - median(Upper Till): (-8.8,8.8)


Mood median test for Bulk Density

Chi-Square = 6.91    DF = 1    P = 0.009

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
Lower Till    8  16   2.265  0.067                 (---------*------)
Upper Till   14   5   2.200  0.090  (------*--------)
                                    --------+---------+---------+--------
                                          2.205     2.240     2.275

Overall median = 2.230

A 95.0% CI for median(Lower Till) - median(Upper Till): (0.010,0.100)


Mood median test for Dry Density

Chi-Square = 10.52    DF = 1    P = 0.001

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Lower Till    7  17   1.922  0.060                         (---*-----)
Upper Till   15   4   1.842  0.100  (-----*-----------)
                                    ------+---------+---------+---------+
                                        1.840     1.880     1.920     1.960

Overall median = 1.890

A 95.0% CI for median(Lower Till) - median(Upper Till): (0.026,0.111)
```

Site 4: Askam-in-Furness

(Note: insufficient data in Domain 42)

Results for: Domain 41

Two-Sample T-Test and CI: (Parameter) versus Soil Type

```
Two-sample T for w (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  22   20.3   13.1      2.8
Upper Till  35  19.17   4.21     0.71

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  1.12
95% CI for difference:  (-4.84, 7.08)
T-Test of difference = 0 (vs not =): T-Value = 0.39  P-Value = 0.701  DF = 23


Two-sample T for WL (%)

Soil Type   N   Mean  StDev  SE Mean
Lower Till  9   44.9   11.8      3.9
Upper Till  4  43.50   8.96      4.5

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  1.39
95% CI for difference:  (-12.69, 15.46)
T-Test of difference = 0 (vs not =): T-Value = 0.23  P-Value = 0.822  DF = 7


Two-sample T for Wp (%)

Soil Type   N   Mean  StDev  SE Mean
Lower Till  9  22.22   5.02      1.7
Upper Till  4  21.00   2.83      1.4

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  1.22
95% CI for difference:  (-3.73, 6.18)
T-Test of difference = 0 (vs not =): T-Value = 0.56  P-Value = 0.591  DF = 9


Two-sample T for Ip (%)

Soil Type   N   Mean  StDev  SE Mean
Lower Till  9  22.67   7.40      2.5
Upper Till  4  22.50   6.14      3.1

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  0.17
95% CI for difference:  (-9.14, 9.48)
T-Test of difference = 0 (vs not =): T-Value = 0.04  P-Value = 0.967  DF = 7


Two-sample T for Bulk Density

Soil Type   N    Mean   StDev  SE Mean
Lower Till  3  2.2167  0.0252    0.015
Upper Till  5   2.190   0.104    0.046

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  0.0267
95% CI for difference:  (-0.1082, 0.1616)
T-Test of difference = 0 (vs not =): T-Value = 0.55  P-Value = 0.612  DF = 4
```

Two-sample T for Dry Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	3	1.9133	0.0351	0.020
Upper Till	5	1.8840	0.0918	0.041

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference: 0.0293
95% CI for difference: (-0.0884, 0.1471)
T-Test of difference = 0 (vs not =): T-Value = 0.64 P-Value = 0.550 DF = 5

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	22	16.00	22.7	-2.26
Upper Till	35	18.00	32.9	2.26
Overall	57		29.0	

H = 5.12 DF = 1 P = 0.024
H = 5.15 DF = 1 P = 0.023 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	9	41.00	7.0	0.00
Upper Till	4	46.50	7.0	0.00
Overall	13		7.0	

H = 0.00 DF = 1 P = 1.000
H = 0.00 DF = 1 P = 1.000 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	9	20.00	7.1	0.08
Upper Till	4	22.00	6.9	-0.08
Overall	13		7.0	

H = 0.01 DF = 1 P = 0.939
H = 0.01 DF = 1 P = 0.938 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	9	22.00	7.1	0.15
Upper Till	4	24.50	6.8	-0.15
Overall	13		7.0	

H = 0.02 DF = 1 P = 0.877
H = 0.02 DF = 1 P = 0.876 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on Bulk Density

                         Ave
Soil Type   N  Median  Rank      Z
Lower Till  3   2.220   4.2  -0.30
Upper Till  5   2.230   4.7   0.30
Overall     8           4.5

H = 0.09  DF = 1  P = 0.766
H = 0.09  DF = 1  P = 0.764  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

                         Ave
Soil Type   N  Median  Rank     Z
Lower Till  3   1.910   4.5  0.00
Upper Till  5   1.920   4.5  0.00
Overall     8           4.5

H = 0.00  DF = 1  P = 1.000
H = 0.00  DF = 1  P = 1.000  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 4.86    DF = 1    P = 0.028

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   16   6   16.00   4.22     (------*------)
Upper Till   15  20   18.00   4.70                  (------*-----------)
                                       +---------+---------+---------+------
                                    15.0      16.5      18.0      19.5

Overall median = 17.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-4.00,0.00)


Mood median test for WL (%)

Chi-Square = 1.93    DF = 1    P = 0.164

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Lower Till    6   3    41.0   19.0        (--------*------------------)
Upper Till    1   3    46.5   16.0  (---------------------*----)
                                    ------+---------+---------+---------+
                                       35.0      42.0      49.0      56.0

Overall median = 42.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-13.0,23.0)
```

```
Mood median test for Wp (%)

Chi-Square = 0.03    DF = 1    P = 0.853

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
Lower Till    5   4   20.00   6.50           (---*----------------------)
Upper Till    2   2   22.00   5.00   (-------------------*---)
                                     --+---------+---------+---------+----
                                    17.5      20.0      22.5      25.0

Overall median = 21.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-4.00,8.00)


Mood median test for Ip (%)

Chi-Square = 0.03    DF = 1    P = 0.853

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
Lower Till    5   4    22.0   13.0      (------------*-------------)
Upper Till    2   2    24.5   11.0   (--------------------*----)
                                     --+---------+---------+---------+----
                                    15.0      20.0      25.0      30.0

Overall median = 22.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-10.0,15.0)


Mood median test for Bulk Density

Chi-Square = 0.53    DF = 1    P = 0.465

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Lower Till    2   1   2.220  0.050                         (---*-)
Upper Till    2   3   2.230  0.150  (---------------------------*----)
                                    ---------+---------+---------+-------
                                           2.080     2.160     2.240

Overall median = 2.225
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.080,0.230)


Mood median test for Dry Density

Chi-Square = 0.53    DF = 1    P = 0.465

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    2   1   1.910  0.070                        (---*-----)
Upper Till    2   3   1.920  0.140  (--------------------------*------)
                                    ---+---------+---------+---------+---
                                     1.750     1.820     1.890     1.960

Overall median = 1.915
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.090,0.220)
```

Results for: Domain 43

Two-Sample T-Test and CI: (Parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	28	15.82	3.28	0.62
Upper Till	22	26.32	7.80	1.7

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference: -10.50
95% CI for difference: (-14.15, -6.85)
T-Test of difference = 0 (vs not =): T-Value = -5.91 P-Value = 0.000 DF = 26

Two-sample T for WL (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	10	34.80	6.00	1.9
Upper Till	7	41.00	8.60	3.3

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference: -6.20
95% CI for difference: (-14.59, 2.19)
T-Test of difference = 0 (vs not =): T-Value = -1.65 P-Value = 0.131 DF = 10

Two-sample T for Wp (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	10	18.40	3.10	0.98
Upper Till	7	23.00	2.08	0.79

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference: -4.60
95% CI for difference: (-7.30, -1.90)
T-Test of difference = 0 (vs not =): T-Value = -3.66 P-Value = 0.003 DF = 14

Two-sample T for Ip (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	10	16.40	3.75	1.2
Upper Till	7	18.00	6.93	2.6

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference: -1.60
95% CI for difference: (-8.23, 5.03)
T-Test of difference = 0 (vs not =): T-Value = -0.56 P-Value = 0.593 DF = 8

Two-sample T for % GRAVEL

Soil Type	N	Mean	StDev	SE Mean
Lower Till	10	39.2	13.8	4.4
Upper Till	5	36.0	11.9	5.3

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference: 3.20
95% CI for difference: (-12.40, 18.80)
T-Test of difference = 0 (vs not =): T-Value = 0.46 P-Value = 0.654 DF = 9

```
Two-sample T for % SAND

Soil Type    N   Mean  StDev  SE Mean
Lower Till  10  33.70   7.42      2.3
Upper Till   5  34.40   8.71      3.9

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -0.70
95% CI for difference:  (-11.45, 10.05)
T-Test of difference = 0 (vs not =): T-Value = -0.15  P-Value = 0.882  DF = 7


Two-sample T for % Fines (SILT/CLAY)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  10   27.1   12.2      3.9
Upper Till   5  29.60   9.04      4.0

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -2.50
95% CI for difference:  (-14.98, 9.98)
T-Test of difference = 0 (vs not =): T-Value = -0.45  P-Value = 0.665  DF = 10


Two-sample T for Bulk Density

Soil Type   N    Mean   StDev  SE Mean
Lower Till  8   2.096   0.195    0.069
Upper Till  4  2.1425  0.0754    0.038

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -0.0462
95% CI for difference:  (-0.2240, 0.1315)
T-Test of difference = 0 (vs not =): T-Value = -0.59  P-Value = 0.571  DF = 9


Two-sample T for Dry Density

Soil Type   N    Mean   StDev  SE Mean
Lower Till  8   1.803   0.212    0.075
Upper Till  4  1.8250  0.0943    0.047

Difference = mu(Lower Till) - mu(Upper Till)
Estimate for difference:  -0.0225
95% CI for difference:  (-0.2226, 0.1776)
T-Test of difference = 0 (vs not =): T-Value = -0.25  P-Value = 0.805  DF = 9
```

Kruskal-Wallis Test: (Parameter) versus Soil Type

```
Kruskal-Wallis Test on w (%)

Soil Type    N  Median  Ave Rank      Z
Lower Till  28   16.00      16.3  -5.05
Upper Till  22   26.50      37.3   5.05
Overall     50              25.5

H = 25.52  DF = 1  P = 0.000
H = 25.69  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	10	32.50	7.5	-1.46
Upper Till	7	41.00	11.1	1.46
Overall	17		9.0	

H = 2.14 DF = 1 P = 0.143
H = 2.16 DF = 1 P = 0.142 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	10	17.50	6.4	-2.54
Upper Till	7	23.00	12.7	2.54
Overall	17		9.0	

H = 6.44 DF = 1 P = 0.011
H = 6.53 DF = 1 P = 0.011 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Ave Rank	Z
Lower Till	10	16.00	8.2	-0.78
Upper Till	7	19.00	10.1	0.78
Overall	17		9.0	

H = 0.61 DF = 1 P = 0.435
H = 0.62 DF = 1 P = 0.432 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Till	10	42.00	8.6	0.73
Upper Till	5	32.00	6.8	-0.73
Overall	15		8.0	

H = 0.54 DF = 1 P = 0.462
H = 0.54 DF = 1 P = 0.461 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Till	10	33.00	7.7	-0.37
Upper Till	5	36.00	8.6	0.37
Overall	15		8.0	

H = 0.13 DF = 1 P = 0.713
H = 0.14 DF = 1 P = 0.712 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lower Till	10	21.00	7.1	-1.10
Upper Till	5	25.00	9.8	1.10
Overall	15		8.0	

H = 1.22 DF = 1 P = 0.270
H = 1.22 DF = 1 P = 0.269 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

                         Ave
Soil Type    N  Median  Rank      Z
Lower Till   8   2.135   6.3  -0.34
Upper Till   4   2.175   7.0   0.34
Overall     12           6.5

H = 0.12  DF = 1  P = 0.734

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

                         Ave
Soil Type    N  Median  Rank      Z
Lower Till   8   1.830   6.4  -0.17
Upper Till   4   1.860   6.8   0.17
Overall     12           6.5

H = 0.03  DF = 1  P = 0.865
H = 0.03  DF = 1  P = 0.865  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 28.98    DF = 1    P = 0.000

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
Lower Till   24   4    16.0    3.0   (---*-)
Upper Till    2  20    26.5   12.3               (------------*------)
                                     --+---------+---------+---------+----
                                    15.0      20.0      25.0      30.0

Overall median = 17.0

A 95.0% CI for median(Lower Till) - median(Upper Till): (-15.0,-7.0)


Mood median test for WL (%)

Chi-Square = 4.50    DF = 1    P = 0.034

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till    8   2    32.5   10.0     (----*---------------)
Upper Till    2   5    41.0    6.0               (-----------*-----------)
                                       +---------+---------+---------+------
                                    30.0      35.0      40.0      45.0

Overall median = 39.0

A 95.0% CI for median(Lower Till) - median(Upper Till): (-13.4,1.0)
```

```
Mood median test for Wp (%)

Chi-Square = 7.14    DF = 1    P = 0.008

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Lower Till    8   2   17.50   4.75  (-----*-------------)
Upper Till    1   6   23.00   3.00                      (------*-------)
                                    ------+---------+---------+---------+
                                       17.5      20.0      22.5      25.0

Overall median = 20.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-9.00,-2.63)


Mood median test for Ip (%)

Chi-Square = 2.84    DF = 1    P = 0.092

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till    7   3    16.0    5.5           (------*----------)
Upper Till    2   5    19.0    6.0     (---------------------*------------)
                                       +---------+---------+---------+------
                                    12.0      15.0      18.0      21.0

Overall median = 16.0

A 95.0% CI for median(Lower Till) - median(Upper Till): (-5.4,3.1)


Mood median test for % GRAVEL

Chi-Square = 1.25    DF = 1    P = 0.264

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till    5   5    42.0   21.3        (------------*--------)
Upper Till    4   1    32.0   21.0  (--------*---------------------)
                                    -------+---------+---------+---------
                                          30        40        50

Overall median = 41.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-21.2,22.2)


Mood median test for % SAND

Chi-Square = 0.54    DF = 1    P = 0.464

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till    6   4    33.0   10.8              (-------*-------)
Upper Till    2   3    36.0   14.0     (-------------------*-----------)
                                       +---------+---------+---------+------
                                    21.0      28.0      35.0      42.0

Overall median = 33.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-15.4,14.6)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.54    DF = 1    P = 0.464

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
Lower Till    6   4    21.0   20.0  (---*---------------------)
Upper Till    2   3    25.0   15.5         (-*-----------------------)
                                    --------+---------+---------+--------
                                         24.0      32.0      40.0

Overall median = 23.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-24.4,6.0)


Mood median test for Bulk Density

Chi-Square = 1.50    DF = 1    P = 0.221

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
Lower Till    5   3   2.135  0.367  (-------------------*------------)
Upper Till    1   3   2.175  0.123             (-----------*-)
                                    --+---------+---------+---------+----
                                    1.92      2.04      2.16      2.28

Overall median = 2.155
* NOTE * Levels with < 6 observations have confidence < 95.0%


A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.274,0.202)


Mood median test for Dry Density

Chi-Square = 0.00    DF = 1    P = 1.000

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till    4   4   1.830  0.390  (-------------------*----------------)
Upper Till    2   2   1.860  0.165          (-------------*--)
                                    -------+---------+---------+---------
                                         1.68      1.80      1.92

Overall median = 1.835
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.265,0.233)
```

Results for: Domains 41 and 43, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
41         35  19.17   4.21     0.71
43         22  26.32   7.80      1.7

Difference = mu (41) - mu (43)
Estimate for difference:  -7.15
95% CI for difference:  (-10.85, -3.44)
T-Test of difference = 0 (vs not =): T-Value = -3.95  P-Value = 0.000  DF = 28


Two-sample T for Liquid Limit (%)

Domain
reference  N   Mean  StDev  SE Mean
41         4  43.50   8.96      4.5
43         7  41.00   8.60      3.3

Difference = mu (41) - mu (43)
Estimate for difference:  2.50
95% CI for difference:  (-11.05, 16.05)
T-Test of difference = 0 (vs not =): T-Value = 0.45  P-Value = 0.667  DF = 6


Two-sample T for Plastic Limit (%)

Domain
reference  N   Mean  StDev  SE Mean
41         4  21.00   2.83      1.4
43         7  23.00   2.08     0.79

Difference = mu (41) - mu (43)
Estimate for difference:  -2.00
95% CI for difference:  (-6.49, 2.49)
T-Test of difference = 0 (vs not =): T-Value = -1.24  P-Value = 0.284  DF = 4


Two-sample T for Plasticity Index (%)

Domain
reference  N   Mean  StDev  SE Mean
41         4  22.50   6.14      3.1
43         7  18.00   6.93      2.6

Difference = mu (41) - mu (43)
Estimate for difference:  4.50
95% CI for difference:  (-5.04, 14.04)
T-Test of difference = 0 (vs not =): T-Value = 1.12  P-Value = 0.301  DF = 7


Two-sample T for Bulk Density

Domain
reference  N    Mean   StDev  SE Mean
41         5   2.190   0.104    0.046
43         4  2.1425  0.0754    0.038

Difference = mu (41) - mu (43)
Estimate for difference:  0.0475
95% CI for difference:  (-0.0988, 0.1938)
T-Test of difference = 0 (vs not =): T-Value = 0.79  P-Value = 0.457  DF = 6
```

```
Two-sample T for Dry Density

Domain
reference  N    Mean   StDev  SE Mean
41         5  1.8840  0.0918    0.041
43         4  1.8250  0.0943    0.047

Difference = mu (41) - mu (43)
Estimate for difference:  0.0590
95% CI for difference:  (-0.0940, 0.2120)
T-Test of difference = 0 (vs not =): T-Value = 0.94  P-Value = 0.382  DF = 6
```

Kruskal-Wallis Test: (Parameter) versus Domain reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
41         35   18.00      22.7  -3.60
43         22   26.50      39.0   3.60
Overall    57              29.0

H = 12.95  DF = 1  P = 0.000
H = 13.01  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Liquid Limit (%)

Domain                 Ave
reference   N  Median  Rank      Z
41          4   46.50   6.9   0.66
43          7   41.00   5.5  -0.66
Overall    11           6.0

H = 0.44  DF = 1  P = 0.508
H = 0.44  DF = 1  P = 0.506  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Plastic Limit (%)

Domain                 Ave
reference   N  Median  Rank      Z
41          4   22.00   4.3  -1.32
43          7   23.00   7.0   1.32
Overall    11           6.0

H = 1.75  DF = 1  P = 0.186
H = 1.84  DF = 1  P = 0.175  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Plasticity Index (%)

Domain                 Ave
reference   N  Median  Rank      Z
41          4   24.50   7.4   1.04
43          7   19.00   5.2  -1.04
Overall    11           6.0

H = 1.08  DF = 1  P = 0.299
H = 1.10  DF = 1  P = 0.295  (adjusted for ties)

* NOTE * One or more small samples
```

```
Kruskal-Wallis Test on Bulk Density

Domain                  Ave
reference  N  Median  Rank      Z
41         5   2.230   6.2   1.47
43         4   2.175   3.5  -1.47
Overall    9           5.0

H = 2.16  DF = 1  P = 0.142

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain                  Ave
reference  N  Median  Rank      Z
41         5   1.920   6.0   1.22
43         4   1.860   3.8  -1.22
Overall    9           5.0

H = 1.50  DF = 1  P = 0.221
H = 1.53  DF = 1  P = 0.217  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 9.99    DF = 1    P = 0.002

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
41          26   9    18.0    4.7  (--*----)
43           7  15    26.5   12.3          (---------------*--------)
                                   --------+---------+---------+--------
                                        20.0      24.0      28.0

Overall median = 20.0

A 95.0% CI for median(41) - median(43): (-13.0,-3.8)


Mood median test for Liquid Limit (%)

Chi-Square = 0.51    DF = 1    P = 0.477

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
41           2   2    46.5   16.0  (------------------------*----)
43           5   2    41.0    6.0        (---------*---------)
                                   --------+---------+---------+--------
                                        36.0      42.0      48.0

Overall median = 43.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (-13.0,12.0)
```

```
Mood median test for Plastic Limit (%)

Chi-Square = 2.36    DF = 1    P = 0.125

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
41           4   0   22.00   5.00   (-------------------*---)
43           4   3   23.00   3.00                    (------*-------)
                                    --+---------+---------+---------+----
                                   17.5      20.0      22.5      25.0

Overall median = 23.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (-8.00,1.00)


Mood median test for Plasticity Index (%)

Chi-Square = 2.21    DF = 1    P = 0.137

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
41           1   3    24.5   11.0      (--------------------*----)
43           5   2    19.0    6.0  (-------------*------)
                                   ------+---------+---------+---------+
                                      15.0      20.0      25.0      30.0

Overall median = 19.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (-6.0,13.0)


Mood median test for Bulk Density

Chi-Square = 5.76    DF = 1    P = 0.016

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
41           1   4   2.230  0.150  (---------------------------*----)
43           4   0   2.175  0.123     (-----------------*-)
                                   ---------+---------+---------+-------
                                          2.080     2.160     2.240

Overall median = 2.190
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (-0.040,0.218)


Mood median test for Dry Density

Chi-Square = 3.60    DF = 1    P = 0.058

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
41           2   3   1.920  0.140       (----------------------*-----)
43           4   0   1.860  0.165  (---------------------*--)
                                   ---------+---------+---------+-------
                                          1.760     1.840     1.920

Overall median = 1.890
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (-0.049,0.243)
```

Results for: Domains 41 and 43, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
41         22   20.3   13.1      2.8
43         28  15.82   3.28     0.62

Difference = mu (41) - mu (43)
Estimate for difference:  4.47
95% CI for difference:  (-1.45, 10.38)
T-Test of difference = 0 (vs not =): T-Value = 1.56  P-Value = 0.132  DF = 23


Two-sample T for Liquid Limit (%)

Domain
reference   N   Mean  StDev  SE Mean
41          9   44.9   11.8      3.9
43         10  34.80   6.00      1.9

Difference = mu (41) - mu (43)
Estimate for difference:  10.09
95% CI for difference:  (0.51, 19.67)
T-Test of difference = 0 (vs not =): T-Value = 2.32  P-Value = 0.041  DF = 11


Two-sample T for Plastic Limit (%)

Domain
reference   N   Mean  StDev  SE Mean
41          9  22.22   5.02      1.7
43         10  18.40   3.10     0.98

Difference = mu (41) - mu (43)
Estimate for difference:  3.82
95% CI for difference:  (-0.37, 8.01)
T-Test of difference = 0 (vs not =): T-Value = 1.97  P-Value = 0.070  DF = 13


Two-sample T for Plasticity Index (%)

Domain
reference   N   Mean  StDev  SE Mean
41          9  22.67   7.40      2.5
43         10  16.40   3.75      1.2

Difference = mu (41) - mu (43)
Estimate for difference:  6.27
95% CI for difference:  (0.24, 12.29)
T-Test of difference = 0 (vs not =): T-Value = 2.29  P-Value = 0.043  DF = 11


Two-sample T for % GRAVEL

Domain
reference   N  Mean  StDev  SE Mean
41          5  20.8   14.5      6.5
43         10  39.2   13.8      4.4

Difference = mu (41) - mu (43)
Estimate for difference:  -18.40
95% CI for difference:  (-36.90, 0.10)
T-Test of difference = 0 (vs not =): T-Value = -2.35  P-Value = 0.051  DF = 7
```

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
41	5	25.00	5.61	2.5
43	10	33.70	7.42	2.3

Difference = mu (41) - mu (43)
Estimate for difference: -8.70
95% CI for difference: (-16.36, -1.04)
T-Test of difference = 0 (vs not =): T-Value = -2.53 P-Value = 0.030 DF = 10

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
41	5	54.2	15.1	6.8
43	10	27.1	12.2	3.9

Difference = mu (41) - mu (43)
Estimate for difference: 27.10
95% CI for difference: (8.02, 46.18)
T-Test of difference = 0 (vs not =): T-Value = 3.47 P-Value = 0.013 DF = 6

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
41	3	2.2167	0.0252	0.015
43	8	2.096	0.195	0.069

Difference = mu (41) - mu (43)
Estimate for difference: 0.1204
95% CI for difference: (-0.0462, 0.2870)
T-Test of difference = 0 (vs not =): T-Value = 1.71 P-Value = 0.131 DF = 7

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
41	3	1.9133	0.0351	0.020
43	8	1.803	0.212	0.075

Difference = mu (41) - mu (43)
Estimate for difference: 0.1108
95% CI for difference: (-0.0725, 0.2942)
T-Test of difference = 0 (vs not =): T-Value = 1.43 P-Value = 0.196 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
41	22	16.00	27.8	0.98
43	28	16.00	23.7	-0.98
Overall	50		25.5	

H = 0.95 DF = 1 P = 0.328
H = 0.97 DF = 1 P = 0.324 (adjusted for ties)

Kruskal-Wallis Test on Liquid Limit (%)

Domain reference	N	Median	Ave Rank	Z
41	9	41.00	12.8	2.08
43	10	32.50	7.5	-2.08
Overall	19		10.0	

H = 4.34 DF = 1 P = 0.037
H = 4.35 DF = 1 P = 0.037 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain reference	N	Median	Ave Rank	Z
41	9	20.00	12.7	2.00
43	10	17.50	7.5	-2.00
Overall	19		10.0	

H = 4.00 DF = 1 P = 0.045
H = 4.06 DF = 1 P = 0.044 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain reference	N	Median	Ave Rank	Z
41	9	22.00	12.6	1.92
43	10	16.00	7.7	-1.92
Overall	19		10.0	

H = 3.68 DF = 1 P = 0.055
H = 3.70 DF = 1 P = 0.054 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
41	5	17.00	4.8	-1.96
43	10	42.00	9.6	1.96
Overall	15		8.0	

H = 3.84 DF = 1 P = 0.050

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
41	5	26.00	4.7	-2.02
43	10	33.00	9.7	2.02
Overall	15		8.0	

H = 4.08 DF = 1 P = 0.043
H = 4.10 DF = 1 P = 0.043 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
reference   N  Median  Ave Rank      Z
41          5   52.00      12.2   2.57
43         10   21.00       5.9  -2.57
Overall    15               8.0

H = 6.61  DF = 1  P = 0.010
H = 6.69  DF = 1  P = 0.010  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain                 Ave
reference   N  Median  Rank      Z
41          3   2.220   7.5   0.92
43          8   2.135   5.4  -0.92
Overall    11           6.0

H = 0.84  DF = 1  P = 0.358
H = 0.85  DF = 1  P = 0.357  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain                 Ave
reference   N  Median  Rank      Z
41          3   1.910   7.7   1.02
43          8   1.830   5.4  -1.02
Overall    11           6.0

H = 1.04  DF = 1  P = 0.307

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 0.49    DF = 1    P = 0.485

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
41          12  10   16.00   4.22               (---------*---------)
43          18  10   16.00   3.00     (------------------*---------)
                                      +---------+---------+---------+------
                                   14.0      15.0      16.0      17.0

Overall median = 16.00

A 95.0% CI for median(41) - median(43): (-1.00,2.00)
```

```
Mood median test for Liquid Limit (%)

Chi-Square = 4.23    DF = 1    P = 0.040

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41           3   6    41.0   19.0         (--------*------------------)
43           8   2    32.5   10.0  (--*-----------)
                                   -------+---------+---------+---------
                                       35.0      42.0      49.0

Overall median = 39.0

A 95.0% CI for median(41) - median(43): (-2.2,24.1)
```

```
Mood median test for Plastic Limit (%)

Chi-Square = 1.27    DF = 1    P = 0.260

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41           4   5   20.00   6.50            (---*------------------)
43           7   3   17.50   4.75  (----*-----------)
                                   -------+---------+---------+---------
                                       18.0      21.0      24.0

Overall median = 19.00

A 95.0% CI for median(41) - median(43): (-1.00,9.06)
```

```
Mood median test for Plasticity Index (%)

Chi-Square = 2.55    DF = 1    P = 0.110

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
41           3   6    22.0   13.0      (------------*-------------)
43           7   3    16.0    5.5  (----*------)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 17.0

A 95.0% CI for median(41) - median(43): (-2.1,15.0)
```

```
Mood median test for % GRAVEL

Chi-Square = 2.14    DF = 1    P = 0.143

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
41           4   1    17.0   28.5  (------*-------------)
43           4   6    42.0   21.3                (--------*-----)
                                   ------+---------+---------+---------+
                                        15        30        45        60

Overall median = 34.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (-39.2,5.2)
```

```
Mood median test for % SAND

Chi-Square = 2.14    DF = 1    P = 0.143

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
41           4   1    26.0   10.5   (-------------*--------)
43           4   6    33.0   10.8                    (--------*--------)
                                    --+---------+---------+---------+----
                                   18.0      24.0      30.0      36.0

Overall median = 30.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (-18.6,1.4)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 8.57    DF = 1    P = 0.003

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
41           0   5    52.0   29.5                (-------*------------)
43           8   2    21.0   20.0  (-*----------)
                                   ---------+---------+---------+-------
                                           32        48        64

Overall median = 37.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (11.0,54.4)


Mood median test for Bulk Density

Chi-Square = 0.75    DF = 1    P = 0.387

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
41           1   2   2.220  0.050                          (-*-)
43           5   3   2.135  0.367  (-------------------*------------)
                                   --+---------+---------+---------+----
                                   1.92      2.04      2.16      2.28

Overall median = 2.190
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (-0.101,0.342)


Mood median test for Dry Density

Chi-Square = 0.75    DF = 1    P = 0.387

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41           1   2   1.910  0.070                         (-*--)
43           5   3   1.830  0.390  (-------------------*----------------)
                                   -------+---------+---------+---------
                                        1.68      1.80      1.92

Overall median = 1.880
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(43): (-0.152,0.352)
```

Site 5: Lindale

(Note: insufficient data in Domain 53)

Results for: Upper and Lower Till, Domain 51

Two-Sample T-Test and CI: (Parameter) versus Soil Type

```
Two-sample T for w (%)

Soil Type        N  Mean  StDev  SE Mean
Lower Clay Till  5  19.2   10.3      4.6
Upper Clay Till  5  9.50   2.81      1.3

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference:  9.72
95% CI for difference:  (-3.53, 22.97)
T-Test of difference = 0 (vs not =): T-Value = 2.04  P-Value = 0.111  DF = 4


Two-sample T for WL (%)

Soil Type        N   Mean  StDev  SE Mean
Lower Clay Till  5  28.60   3.97      1.8
Upper Clay Till  8  26.13   1.64     0.58

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference:  2.47
95% CI for difference:  (-2.72, 7.67)
T-Test of difference = 0 (vs not =): T-Value = 1.32  P-Value = 0.256  DF = 4


Two-sample T for Wp (%)

Soil Type        N    Mean  StDev  SE Mean
Lower Clay Till  5   18.20   2.17     0.97
Upper Clay Till  8  16.375  0.916     0.32

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference:  1.82
95% CI for difference:  (-1.01, 4.66)
T-Test of difference = 0 (vs not =): T-Value = 1.79  P-Value = 0.149  DF = 4


Two-sample T for Ip (%)

Soil Type        N   Mean  StDev  SE Mean
Lower Clay Till  5  10.40   2.07     0.93
Upper Clay Till  8   9.75   1.75     0.62

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference:  0.65
95% CI for difference:  (-1.99, 3.29)
T-Test of difference = 0 (vs not =): T-Value = 0.58  P-Value = 0.578  DF = 7


Two-sample T for % GRAVEL

Soil Type        N   Mean  StDev  SE Mean
Lower Clay Till  2   32.0   21.2       15
Upper Clay Till  8  39.75   6.61      2.3

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference:  -7.8
95% CI for difference:  (-200.6, 185.1)
T-Test of difference = 0 (vs not =): T-Value = -0.51  P-Value = 0.700  DF = 1
```

Two-sample T for % SAND

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	2	11.50	2.12	1.5
Upper Clay Till	8	17.13	4.55	1.6

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: -5.63
95% CI for difference: (-12.62, 1.37)
T-Test of difference = 0 (vs not =): T-Value = -2.56 P-Value = 0.083 DF = 3

Two-sample T for % Fines (SILT/CLAY)

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	2	52.0	19.8	14
Upper Clay Till	8	35.13	9.25	3.3

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: 16.9
95% CI for difference: (-165.8, 199.6)
T-Test of difference = 0 (vs not =): T-Value = 1.17 P-Value = 0.449 DF = 1

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	5	17.100	6.8	1.36
Upper Clay Till	5	8.600	4.2	-1.36
Overall	10		5.5	

H = 1.84 DF = 1 P = 0.175

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	5	30.00	9.2	1.61
Upper Clay Till	8	26.00	5.6	-1.61
Overall	13		7.0	

H = 2.59 DF = 1 P = 0.107
H = 2.65 DF = 1 P = 0.103 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	5	19.00	9.1	1.54
Upper Clay Till	8	16.00	5.7	-1.54
Overall	13		7.0	

H = 2.36 DF = 1 P = 0.124
H = 2.47 DF = 1 P = 0.116 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	5	11.000	8.2	0.88
Upper Clay Till	8	9.500	6.3	-0.88
Overall	13		7.0	

H = 0.77 DF = 1 P = 0.380
H = 0.80 DF = 1 P = 0.372 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	2	32.00	5.0	-0.26
Upper Clay Till	8	39.50	5.6	0.26
Overall	10		5.5	

H = 0.07 DF = 1 P = 0.794
H = 0.07 DF = 1 P = 0.793 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	2	11.50	2.3	-1.70
Upper Clay Till	8	16.50	6.3	1.70
Overall	10		5.5	

H = 2.88 DF = 1 P = 0.090
H = 2.93 DF = 1 P = 0.087 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	2	52.00	8.3	1.44
Upper Clay Till	8	34.50	4.8	-1.44
Overall	10		5.5	

H = 2.06 DF = 1 P = 0.151
H = 2.08 DF = 1 P = 0.150 (adjusted for ties)

* NOTE * One or more small samples

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 3.60    DF = 1    P = 0.058

Soil Type        N<=  N>  Median  Q3-Q1
Lower Clay Till    1   4    17.1   19.4
Upper Clay Till    4   1     8.6    4.8

                 Individual 95.0% CIs
Soil Type         -+---------+---------+---------+-----
Lower Clay Till   (--------------*---------------------)
Upper Clay Till    (-*-------)
                  -+---------+---------+---------+-----
                 7.0      14.0      21.0      28.0

Overall median = 12.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-7.9,24.7)


Mood median test for WL (%)

Chi-Square = 5.92    DF = 1    P = 0.015

                                         Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Clay Till    1   4    30.0    6.5  (--------------------------*------)
Upper Clay Till    7   1    26.0    2.0            (---*--)
                                         -------+---------+---------+---------
                                             24.0      27.0      30.0

Overall median = 27.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-5.0,7.0)


Mood median test for Wp (%)

Chi-Square = 3.26    DF = 1    P = 0.071

Soil Type        N<=  N>  Median  Q3-Q1
Lower Clay Till    2   3   19.00   4.00
Upper Clay Till    7   1   16.00   1.00

                 Individual 95.0% CIs
Soil Type           +---------+---------+---------+------
Lower Clay Till     (-------------------------*-----)
Upper Clay Till           (*------)
                    +---------+---------+---------+------
                 15.0      16.5      18.0      19.5

Overall median = 17.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-2.00,4.00)
```

```
Mood median test for Ip (%)

Chi-Square = 1.59    DF = 1    P = 0.207

                                         Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Clay Till    2   3   11.00   3.50  (-------------------------*------)
Upper Clay Till    6   2    9.50   1.75             (---*----------)
                                         ---+---------+---------+---------+---
                                          7.5       9.0      10.5      12.0

Overall median = 10.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-3.12,3.00)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

                                         Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Clay Till    1   1    32.0   30.0  (--------------*--------------)
Upper Clay Till    4   4    39.5   12.0                (-------*-----)
                                         ---+---------+---------+---------+---
                                           20        30        40        50

Overall median = 39.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 91.8% CI for median(Lower Clay Till) - median(Upper Clay Till): (-32.0,17.0)


Mood median test for % SAND

Chi-Square = 1.67    DF = 1    P = 0.197

Soil Type        N<=  N>  Median  Q3-Q1
Lower Clay Till    2   0   11.50   3.00
Upper Clay Till    4   4   16.50   4.25

                 Individual 95.0% CIs
Soil Type           +---------+---------+---------+------
Lower Clay Till     (-----*-----)
Upper Clay Till                 (-------------*-------)
                    +---------+---------+---------+------
                 10.0      12.5      15.0      17.5

Overall median = 16.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 91.8% CI for median(Lower Clay Till) - median(Upper Clay Till): (-17.00,1.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.50    DF = 1    P = 0.114

                                         Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1  -+---------+---------+---------+-----
Lower Clay Till    0   2    52.0   28.0           (-------------*-------------)
Upper Clay Till    5   3    34.5    8.5  (-----*----)
                                         -+---------+---------+---------+-----
                                         30        40        50        60

Overall median = 37.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 91.8% CI for median(Lower Clay Till) - median(Upper Clay Till): (-15.0,45.0)
```

Results for: Clayey and Silty Tills, Domain 51

Two-Sample T-Test and CI: (Parameter) versus Soil Type

```
Two-sample T for w (%)

Soil Type   N   Mean  StDev  SE Mean
Clay Till  10  14.36   8.77      2.8
Silt        7   19.5   11.3      4.3

Difference = mu (Clay Till) - mu (Silt)
Estimate for difference:  -5.18
95% CI for difference:  (-16.52, 6.16)
T-Test of difference = 0 (vs not =): T-Value = -1.02  P-Value = 0.333  DF = 10


Two-sample T for WL (%)

Soil Type   N   Mean  StDev  SE Mean
Clay Till  13  27.08   2.90     0.80
Silt        7   29.0   10.6      4.0

Difference = mu (Clay Till) - mu (Silt)
Estimate for difference:  -1.92
95% CI for difference:  (-11.91, 8.06)
T-Test of difference = 0 (vs not =): T-Value = -0.47  P-Value = 0.654  DF = 6


Two-sample T for Wp (%)

Soil Type   N   Mean  StDev  SE Mean
Clay Till  13  17.08   1.71     0.47
Silt        7   23.4   10.4      3.9

Difference = mu (Clay Till) - mu (Silt)
Estimate for difference:  -6.35
95% CI for difference:  (-16.07, 3.37)
T-Test of difference = 0 (vs not =): T-Value = -1.60  P-Value = 0.161  DF = 6


Two-sample T for Ip (%)

Soil Type   N   Mean  StDev  SE Mean
Clay Till  13  10.00   1.83     0.51
Silt        7   5.57   2.76      1.0

Difference = mu (Clay Till) - mu (Silt)
Estimate for difference:  4.43
95% CI for difference:  (1.75, 7.10)
T-Test of difference = 0 (vs not =): T-Value = 3.82  P-Value = 0.005  DF = 8


Two-sample T for % GRAVEL

Soil Type   N   Mean  StDev  SE Mean
Clay Till  10  38.20   9.73      3.1
Silt        9   36.2   17.5      5.8

Difference = mu (Clay Till) - mu (Silt)
Estimate for difference:  1.98
95% CI for difference:  (-12.42, 16.38)
T-Test of difference = 0 (vs not =): T-Value = 0.30  P-Value = 0.770  DF = 12
```

Two-sample T for % SAND

Soil Type	N	Mean	StDev	SE Mean
Clay Till	10	16.00	4.71	1.5
Silt	9	17.89	9.57	3.2

Difference = mu (Clay Till) - mu (Silt)
Estimate for difference: -1.89
95% CI for difference: (-9.64, 5.86)
T-Test of difference = 0 (vs not =): T-Value = -0.54 P-Value = 0.602 DF = 11

Two-sample T for % Fines (SILT/CLAY)

Soil Type	N	Mean	StDev	SE Mean
Clay Till	10	38.5	12.7	4.0
Silt	9	41.3	23.5	7.8

Difference = mu (Clay Till) - mu (Silt)
Estimate for difference: -2.83
95% CI for difference: (-22.23, 16.57)
T-Test of difference = 0 (vs not =): T-Value = -0.32 P-Value = 0.754 DF = 11

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Clay Till	10	12.00	8.1	-0.88
Silt	7	12.80	10.3	0.88
Overall	17		9.0	

H = 0.77 DF = 1 P = 0.380

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Clay Till	13	27.00	11.0	0.52
Silt	7	21.00	9.6	-0.52
Overall	20		10.5	

H = 0.27 DF = 1 P = 0.606
H = 0.27 DF = 1 P = 0.604 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Clay Till	13	17.00	9.8	-0.75
Silt	7	16.00	11.9	0.75
Overall	20		10.5	

H = 0.57 DF = 1 P = 0.452
H = 0.61 DF = 1 P = 0.436 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Clay Till	13	10.000	13.5	3.05
Silt	7	5.000	5.0	-3.05
Overall	20		10.5	

H = 9.31 DF = 1 P = 0.002
H = 9.57 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Clay Till	10	39.50	10.4	0.29
Silt	9	31.00	9.6	-0.29
Overall	19		10.0	

H = 0.08 DF = 1 P = 0.775
H = 0.08 DF = 1 P = 0.774 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Clay Till	10	16.00	9.4	-0.49
Silt	9	16.00	10.7	0.49
Overall	19		10.0	

H = 0.24 DF = 1 P = 0.624
H = 0.24 DF = 1 P = 0.623 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Clay Till	10	37.50	10.1	0.08
Silt	9	36.00	9.9	-0.08
Overall	19		10.0	

H = 0.01 DF = 1 P = 0.935
H = 0.01 DF = 1 P = 0.935 (adjusted for ties)

Mood Median Test: (Parameter) versus Soil Type

Mood median test for w (%)

Chi-Square = 0.08   DF = 1   P = 0.772

```
                                   Individual 95.0% CIs
Soil Type  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Clay Till    5   5    12.0   12.2  (-----*-----------)
Silt         4   3    12.8   15.8      (--*------------------------)
                                   ---------+---------+---------+-------
                                         14.0      21.0      28.0
```

Overall median = 12.8

A 95.0% CI for median(Clay Till) - median(Silt): (-18.6,4.2)

Mood median test for WL (%)

Chi-Square = 0.04   DF = 1   P = 0.848

```
                                   Individual 95.0% CIs
Soil Type  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
Clay Till    8   5    27.0    4.5         (--*---)
Silt         4   3    21.0   20.0  *---------------------------------)
                                   -----+---------+---------+---------+-
                                     24.0      30.0      36.0      42.0
```

Overall median = 27.0

A 95.0% CI for median(Clay Till) - median(Silt): (-16.1,7.1)

```
Mood median test for Wp (%)

Chi-Square = 0.22    DF = 1    P = 0.639

                                   Individual 95.0% CIs
Soil Type  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Clay Till    6   7    17.0    2.5  (*--)
Silt         4   3    16.0   20.0  *---------------------------------)
                                   ---+---------+---------+---------+---
                                   18.0      24.0      30.0      36.0

Overall median = 16.5

A 95.0% CI for median(Clay Till) - median(Silt): (-20.1,1.1)


Mood median test for Ip (%)

Chi-Square = 7.18    DF = 1    P = 0.007

                                   Individual 95.0% CIs
Soil Type  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
Clay Till    5   8   10.00   2.50                            (----*------)
Silt         7   0    5.00   4.00    (----*-------------------)
                                     +---------+---------+---------+------
                                   4.0       6.0       8.0      10.0

Overall median = 9.00

A 95.0% CI for median(Clay Till) - median(Silt): (0.00,6.07)


Mood median test for % GRAVEL

Chi-Square = 0.06    DF = 1    P = 0.809

                                   Individual 95.0% CIs
Soil Type  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
Clay Till    5   5    39.5   14.8         (----------*---------)
Silt         5   4    31.0   21.0   (-----*--------------------------)
                                    --+---------+---------+---------+----
                                   28.0      35.0      42.0      49.0

Overall median = 38.0

A 95.0% CI for median(Clay Till) - median(Silt): (-15.2,15.3)


Mood median test for % SAND

Chi-Square = 0.04    DF = 1    P = 0.845

                                   Individual 95.0% CIs
Soil Type  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
Clay Till    6   4    16.0    5.3          (------*---)
Silt         5   4    16.0   13.0    (------------*--------------------)
                                     -+---------+---------+---------+-----
                                   10.0      15.0      20.0      25.0

Overall median = 16.0

A 95.0% CI for median(Clay Till) - median(Silt): (-7.5,3.4)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.06    DF = 1    P = 0.809

                                   Individual 95.0% CIs
Soil Type  N<=  N>  Median  Q3-Q1  +---------+---------+---------+------
Clay Till    5   5    37.5   11.8             (------*-----)
Silt         5   4    36.0   29.5  (---------------*-------------------)
                                   +---------+---------+---------+------
                                  20        30        40        50

Overall median = 37.0

A 95.0% CI for median(Clay Till) - median(Silt): (-15.7,11.6)
```

Results for: Upper and Lower Till, Domain 52

Two-Sample T-Test and CI: (Parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	7	7.09	2.00	0.76
Upper Clay Till	17	9.05	2.90	0.70

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: -1.97
95% CI for difference: (-4.15, 0.22)
T-Test of difference = 0 (vs not =): T-Value = -1.91 P-Value = 0.075 DF = 16

Two-sample T for WL (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	7	24.14	2.19	0.83
Upper Clay Till	17	25.82	2.83	0.69

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: -1.68
95% CI for difference: (-3.99, 0.63)
T-Test of difference = 0 (vs not =): T-Value = -1.56 P-Value = 0.141 DF = 14

Two-sample T for Wp (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	7	15.71	1.11	0.42
Upper Clay Till	17	16.41	1.77	0.43

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: -0.697
95% CI for difference: (-1.965, 0.570)
T-Test of difference = 0 (vs not =): T-Value = -1.16 P-Value = 0.262 DF = 17

Two-sample T for Ip (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	7	8.43	1.90	0.72
Upper Clay Till	17	9.41	2.18	0.53

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: -0.983
95% CI for difference: (-2.928, 0.962)
T-Test of difference = 0 (vs not =): T-Value = -1.10 P-Value = 0.292 DF = 12

Two-sample T for % GRAVEL

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	5	44.2	14.6	6.5
Upper Clay Till	10	34.1	12.2	3.9

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: 10.10
95% CI for difference: (-8.47, 28.67)
T-Test of difference = 0 (vs not =): T-Value = 1.33 P-Value = 0.232 DF = 6

Two-sample T for % SAND

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	5	16.60	5.41	2.4
Upper Clay Till	10	19.40	6.48	2.1

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: -2.80
95% CI for difference: (-9.98, 4.38)
T-Test of difference = 0 (vs not =): T-Value = -0.88 P-Value = 0.400 DF = 9

Two-sample T for % Fines (SILT/CLAY)

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	5	34.6	14.0	6.2
Upper Clay Till	10	37.7	17.1	5.4

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: -3.10
95% CI for difference: (-21.82, 15.62)
T-Test of difference = 0 (vs not =): T-Value = -0.37 P-Value = 0.717 DF = 9

Two-sample T for Bulk Density

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	4	2.4275	0.0802	0.040
Upper Clay Till	3	2.280	0.135	0.078

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: 0.1475
95% CI for difference: (-0.1319, 0.4269)
T-Test of difference = 0 (vs not =): T-Value = 1.68 P-Value = 0.192 DF = 3

Two-sample T for Dry Density

Soil Type	N	Mean	StDev	SE Mean
Lower Clay Till	4	2.2925	0.0842	0.042
Upper Clay Till	3	2.067	0.131	0.075

Difference = mu (Lower Clay Till) - mu (Upper Clay Till)
Estimate for difference: 0.2258
95% CI for difference: (-0.0489, 0.5005)
T-Test of difference = 0 (vs not =): T-Value = 2.62 P-Value = 0.079 DF = 3

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	7	7.300	8.9	-1.59
Upper Clay Till	17	9.300	14.0	1.59
Overall	24		12.5	

H = 2.52 DF = 1 P = 0.112
H = 2.53 DF = 1 P = 0.112 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	7	25.00	9.4	-1.40
Upper Clay Till	17	26.00	13.8	1.40
Overall	24		12.5	

H = 1.95 DF = 1 P = 0.162
H = 1.99 DF = 1 P = 0.158 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	7	15.00	9.8	-1.21
Upper Clay Till	17	16.00	13.6	1.21
Overall	24		12.5	

H = 1.46 DF = 1 P = 0.228
H = 1.57 DF = 1 P = 0.210 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	7	9.000	10.9	-0.73
Upper Clay Till	17	9.000	13.2	0.73
Overall	24		12.5	

H = 0.53 DF = 1 P = 0.465
H = 0.55 DF = 1 P = 0.458 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	5	52.00	9.5	0.92
Upper Clay Till	10	34.00	7.3	-0.92
Overall	15		8.0	

H = 0.84 DF = 1 P = 0.358
H = 0.85 DF = 1 P = 0.356 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	5	19.00	6.3	-1.04
Upper Clay Till	10	20.50	8.8	1.04
Overall	15		8.0	

H = 1.08 DF = 1 P = 0.298
H = 1.09 DF = 1 P = 0.297 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	5	29.00	7.8	-0.12
Upper Clay Till	10	39.00	8.1	0.12
Overall	15		8.0	

H = 0.01 DF = 1 P = 0.903
H = 0.02 DF = 1 P = 0.902 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	4	2.410	5.0	1.41
Upper Clay Till	3	2.290	2.7	-1.41
Overall	7		4.0	

H = 2.00 DF = 1 P = 0.157
H = 2.15 DF = 1 P = 0.142 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Dry Density

Soil Type	N	Median	Ave Rank	Z
Lower Clay Till	4	2.290	5.5	2.12
Upper Clay Till	3	2.080	2.0	-2.12
Overall	7		4.0	

H = 4.50 DF = 1 P = 0.034

* NOTE * One or more small samples

Mood Median Test: (Parameter) versus Soil Type

Mood median test for w (%)

Chi-Square = 5.04   DF = 1   P = 0.025

```
                                          Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Clay Till    6   1    7.30   2.20  (---------*------)
Upper Clay Till    6  11    9.30   5.35        (-------------*----------)
                                         ---+---------+---------+---------+---
                                           6.0       8.0      10.0      12.0
```

Overall median = 8.45

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-4.16,-0.13)

Mood median test for WL (%)

Chi-Square = 1.82   DF = 1   P = 0.178

```
                                          Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
Lower Clay Till    5   2   25.00   4.00  (---------------------*-------)
Upper Clay Till    7  10   26.00   3.00                (------------*------)
                                         -----+---------+---------+---------+-
                                            22.5      24.0      25.5      27.0
```

Overall median = 25.50

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-5.05,1.19)

```
Mood median test for Wp (%)

Chi-Square = 2.52    DF = 1    P = 0.112

Soil Type        N<  N>=  Median  Q3-Q1
Lower Clay Till   4    3   15.00   1.00
Upper Clay Till   4   13   16.00   2.50

                 Individual 95.0% CIs
Soil Type           +---------+---------+---------+------
Lower Clay Till     *--------------)
Upper Clay Till               *-------------------)
                    +---------+---------+---------+------
                 15.0      16.0      17.0      18.0

Overall median = 16.00

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-1.14,0.10)


Mood median test for Ip (%)

Chi-Square = 0.10    DF = 1    P = 0.751

Soil Type        N<=  N>  Median  Q3-Q1
Lower Clay Till    5   2    9.00   4.00
Upper Clay Till   11   6    9.00   3.00

                 Individual 95.0% CIs
Soil Type          +---------+---------+---------+------
Lower Clay Till    (-------------------*-------)
Upper Clay Till                 (------*------------)
                   +---------+---------+---------+------
                 6.0       7.5       9.0      10.5

Overall median = 9.00

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-3.27,2.05)


Mood median test for % GRAVEL

Chi-Square = 0.54    DF = 1    P = 0.464

                                         Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Clay Till    2   3    52.0   27.5  (------------------------*------)
Upper Clay Till    6   4    34.0   11.0    (----*------)
                                         ---+---------+---------+---------+---
                                           30        40        50        60

Overall median = 36.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-11.2,29.0)
```

```
Mood median test for % SAND

Chi-Square = 2.14    DF = 1    P = 0.143

                                         Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Lower Clay Till    4   1    19.0    7.0  (-----------------------*-)
Upper Clay Till    4   6    20.5   11.3            (---------------*-------)
                                         ------+---------+---------+---------+
                                            10.0      15.0      20.0      25.0

Overall median = 19.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-15.2,5.4)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.13    DF = 1    P = 0.714

                                         Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
Lower Clay Till    3   2    29.0   27.0   (--------*--------------------)
Upper Clay Till    5   5    39.0   16.0         (------------*---)
                                          +---------+---------+---------+------
                                         20        30        40        50

Overall median = 38.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Clay Till) - median(Upper Clay Till): (-20.2,15.6)


Mood median test for Bulk Density

Chi-Square = 1.22    DF = 1    P = 0.270

                                         Individual 95.0% CIs
Soil Type        N<  N>=  Median  Q3-Q1  --+---------+---------+---------+----
Lower Clay Till   1    3   2.410  0.143                   (----*----------)
Upper Clay Till   2    1   2.290  0.270  (------------*---------)
                                         --+---------+---------+---------+----
                                         2.16      2.28      2.40      2.52

Overall median = 2.410
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.6% CI for median(Lower Clay Till) - median(Upper Clay Till):
     (-0.060,0.400)


Mood median test for Dry Density

Chi-Square = 3.94    DF = 1    P = 0.047

                                         Individual 95.0% CIs
Soil Type        N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
Lower Clay Till    1   3   2.290  0.162                    (-----*-----)
Upper Clay Till    3   0   2.080  0.260   (---------*------)
                                          -+---------+---------+---------+-----
                                         1.95      2.10      2.25      2.40

Overall median = 2.200
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.6% CI for median(Lower Clay Till) - median(Upper Clay Till): (0.010,0.460)
```

Results for: Clayey and Silty Tills, Domain 52

Two-Sample T-Test and CI: (parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Clay Till	24	8.48	2.78	0.57
Silty Till	8	25.1	10.9	3.9

Difference = mu (Clay Till) - mu (Silty Till)
Estimate for difference: -16.67
95% CI for difference: (-25.88, -7.46)
T-Test of difference = 0 (vs not =): T-Value = -4.28 P-Value = 0.004 DF = 7

Two-sample T for WL (%)

Soil Type	N	Mean	StDev	SE Mean
Clay Till	24	25.33	2.73	0.56
Silty Till	7	36.7	19.9	7.5

Difference = mu (Clay Till) - mu (Silty Till)
Estimate for difference: -11.38
95% CI for difference: (-29.82, 7.06)
T-Test of difference = 0 (vs not =): T-Value = -1.51 P-Value = 0.182 DF = 6

Two-sample T for Wp (%)

Soil Type	N	Mean	StDev	SE Mean
Clay Till	24	16.21	1.61	0.33
Silty Till	5	36.8	15.1	6.8

Difference = mu (Clay Till) - mu (Silty Till)
Estimate for difference: -20.59
95% CI for difference: (-39.41, -1.77)
T-Test of difference = 0 (vs not =): T-Value = -3.04 P-Value = 0.038 DF = 4

Two-sample T for Ip (%)

Soil Type	N	Mean	StDev	SE Mean
Clay Till	24	9.13	2.11	0.43
Silty Till	5	7.20	4.55	2.0

Difference = mu (Clay Till) - mu (Silty Till)
Estimate for difference: 1.93
95% CI for difference: (-3.85, 7.70)
T-Test of difference = 0 (vs not =): T-Value = 0.93 P-Value = 0.407 DF = 4

Two-sample T for % GRAVEL

Soil Type	N	Mean	StDev	SE Mean
Clay Till	15	37.5	13.5	3.5
Silty Till	10	35.6	15.5	4.9

Difference = mu (Clay Till) - mu (Silty Till)
Estimate for difference: 1.87
95% CI for difference: (-10.78, 14.51)
T-Test of difference = 0 (vs not =): T-Value = 0.31 P-Value = 0.759 DF = 17

```
Two-sample T for % SAND

Soil Type    N   Mean  StDev  SE Mean
Clay Till   15  18.47   6.10      1.6
Silty Till  10  23.00   5.58      1.8

Difference = mu (Clay Till) - mu (Silty Till)
Estimate for difference:  -4.53
95% CI for difference:  (-9.47, 0.40)
T-Test of difference = 0 (vs not =): T-Value = -1.92  P-Value = 0.070  DF = 20


Two-sample T for % Fines (SILT/CLAY)

Soil Type    N  Mean  StDev  SE Mean
Clay Till   15  36.7   15.7      4.1
Silty Till  10  39.5   14.0      4.4

Difference = mu (Clay Till) - mu (Silty Till)
Estimate for difference:  -2.83
95% CI for difference:  (-15.37, 9.70)
T-Test of difference = 0 (vs not =): T-Value = -0.47  P-Value = 0.642  DF = 20


Two-sample T for Bulk Density

Soil Type   N   Mean  StDev  SE Mean
Clay Till   7  2.364  0.125    0.047
Silty Till  4  1.945  0.237     0.12

Difference = mu (Clay Till) - mu (Silty Till)
Estimate for difference:  0.419
95% CI for difference:  (0.013, 0.826)
T-Test of difference = 0 (vs not =): T-Value = 3.28  P-Value = 0.046  DF = 3


Two-sample T for Dry Density

Soil Type   N   Mean  StDev  SE Mean
Clay Till   7  2.196  0.154    0.058
Silty Till  4  1.617  0.279     0.14

Difference = mu (Clay Till) - mu (Silty Till)
Estimate for difference:  0.578
95% CI for difference:  (0.159, 0.997)
T-Test of difference = 0 (vs not =): T-Value = 3.83  P-Value = 0.019  DF = 4
```

Kruskal-Wallis Test: (Parameter) versus Soil Type

```
Kruskal-Wallis Test on w (%)

Soil Type    N  Median  Ave Rank      Z
Clay Till   24   8.450      12.8  -3.85
Silty Till   8  22.750      27.6   3.85
Overall     32              16.5

H = 14.83  DF = 1  P = 0.000
H = 14.86  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Clay Till	24	25.50	14.9	-1.28
Silty Till	7	27.00	19.9	1.28
Overall	31		16.0	

H = 1.63 DF = 1 P = 0.202
H = 1.65 DF = 1 P = 0.198 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Clay Till	24	16.00	12.5	-3.46
Silty Till	5	37.00	27.0	3.46
Overall	29		15.0	

H = 12.00 DF = 1 P = 0.001
H = 12.51 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Clay Till	24	9.000	15.4	0.49
Silty Till	5	9.000	13.3	-0.49
Overall	29		15.0	

H = 0.24 DF = 1 P = 0.624
H = 0.25 DF = 1 P = 0.620 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Clay Till	15	36.00	12.7	-0.22
Silty Till	10	36.00	13.4	0.22
Overall	25		13.0	

H = 0.05 DF = 1 P = 0.824
H = 0.05 DF = 1 P = 0.824 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Clay Till	15	19.00	10.7	-1.91
Silty Till	10	23.00	16.4	1.91
Overall	25		13.0	

H = 3.66 DF = 1 P = 0.056
H = 3.68 DF = 1 P = 0.055 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Clay Till	15	38.00	12.4	-0.53
Silty Till	10	39.00	13.9	0.53
Overall	25		13.0	

H = 0.28 DF = 1 P = 0.598
H = 0.28 DF = 1 P = 0.598 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

                         Ave
Soil Type    N  Median  Rank      Z
Clay Till    7   2.410   8.0   2.65
Silty Till   4   2.050   2.5  -2.65
Overall     11           6.0

H = 7.00  DF = 1  P = 0.008
H = 7.16  DF = 1  P = 0.007  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

                         Ave
Soil Type    N  Median  Rank      Z
Clay Till    7   2.200   8.0   2.65
Silty Till   4   1.695   2.5  -2.65
Overall     11           6.0

H = 7.00  DF = 1  P = 0.008

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 9.72    DF = 1    P = 0.002

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
Clay Till    18   6     8.4    4.5    (-*-)
Silty Till    1   7    22.8    8.7                      (----*----------)
                                      +---------+---------+---------+------
                                    7.0      14.0      21.0      28.0

Overall median = 10.0

A 95.0% CI for median(Clay Till) - median(Silty Till): (-22.6,-10.7)


Mood median test for WL (%)

Chi-Square = 0.86    DF = 1    P = 0.354

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Clay Till    15   9    25.5    3.8     (-*)
Silty Till    3   4    27.0   26.0  (-----*---------------------------)
                                    ---------+---------+---------+-------
                                            30        40        50

Overall median = 26.0

A 95.0% CI for median(Clay Till) - median(Silty Till): (-26.9,3.0)
```

```
Mood median test for Wp (%)

Chi-Square = 8.56    DF = 1    P = 0.003

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
Clay Till    17   7    16.0    2.8   (*
Silty Till    0   5    37.0   25.5        (---------*---------------)
                                     +---------+---------+---------+------
                                    15        30        45        60

Overall median = 16.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Clay Till) - median(Silty Till): (-45.0,-7.0)
```

```
Mood median test for Ip (%)

Chi-Square = 0.08    DF = 1    P = 0.775

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Clay Till    16   8     9.0    3.0                          (--*---)
Silty Till    3   2     9.0    8.5  (-------------------------*---------)
                                    -------+---------+---------+---------
                                         3.0       6.0       9.0

Overall median = 9.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Clay Till) - median(Silty Till): (-4.0,8.0)
```

```
Mood median test for % GRAVEL

Chi-Square = 0.11    DF = 1    P = 0.742

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Clay Till     8   7    36.0   22.0     (---------*---------------------)
Silty Till    6   4    36.0    9.8         (-----*-----------)
                                       +---------+---------+---------+------
                                    30.0      36.0      42.0      48.0

Overall median = 36.0

A 95.0% CI for median(Clay Till) - median(Silty Till): (-10.0,7.5)
```

```
Mood median test for % SAND

Chi-Square = 3.23    DF = 1    P = 0.072

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Clay Till    10   5    19.0    9.0  (------------*------)
Silty Till    3   7    23.0    9.3              (----------*-----------)
                                    ------+---------+---------+---------+
                                       16.0      20.0      24.0      28.0

Overall median = 20.0

A 95.0% CI for median(Clay Till) - median(Silty Till): (-10.9,0.3)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.03    DF = 1    P = 0.870

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
Clay Till     8   7    38.0   21.0  (-----------------------*----------)
Silty Till    5   5    39.0    9.0                   (--------*---------)
                                    --------+---------+---------+--------
                                         30.0      35.0      40.0

Overall median = 38.0

A 95.0% CI for median(Clay Till) - median(Silty Till): (-14.3,5.3)


Mood median test for Bulk Density

Chi-Square = 5.24    DF = 1    P = 0.022

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Clay Till     2   5   2.410  0.120                          (-----*-)
Silty Till    4   0   2.050  0.375  (-----------------*-)
                                    ------+---------+---------+---------+
                                        1.75      2.00      2.25      2.50

Overall median = 2.290
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Clay Till) - median(Silty Till): (0.200,0.820)


Mood median test for Dry Density

Chi-Square = 5.24    DF = 1    P = 0.022

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
Clay Till     2   5    2.20   0.25                         (----*---)
Silty Till    4   0    1.70   0.50  (------------*----)
                                    -----+---------+---------+---------+-
                                       1.40      1.75      2.10      2.45

Overall median = 2.08
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Clay Till) - median(Silty Till): (0.22,1.11)
```

Results for: Domains 51 and 52, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
51	5	9.50	2.81	1.3
52	17	9.05	2.90	0.70

Difference = mu (51) - mu (52)
Estimate for difference: 0.45
95% CI for difference: (-3.08, 3.97)
T-Test of difference = 0 (vs not =): T-Value = 0.31 P-Value = 0.767 DF = 6

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
51	8	26.13	1.64	0.58
52	17	25.82	2.83	0.69

Difference = mu (51) - mu (52)
Estimate for difference: 0.301
95% CI for difference: (-1.569, 2.172)
T-Test of difference = 0 (vs not =): T-Value = 0.34 P-Value = 0.741 DF = 21

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
51	8	16.375	0.916	0.32
52	17	16.41	1.77	0.43

Difference = mu (51) - mu (52)
Estimate for difference: -0.037
95% CI for difference: (-1.152, 1.078)
T-Test of difference = 0 (vs not =): T-Value = -0.07 P-Value = 0.946 DF = 22

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
51	8	9.75	1.75	0.62
52	17	9.41	2.18	0.53

Difference = mu (51) - mu (52)
Estimate for difference: 0.338
95% CI for difference: (-1.389, 2.065)
T-Test of difference = 0 (vs not =): T-Value = 0.42 P-Value = 0.684 DF = 16

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
51	8	39.75	6.61	2.3
52	10	34.1	12.2	3.9

Difference = mu (51) - mu (52)
Estimate for difference: 5.65
95% CI for difference: (-4.02, 15.32)
T-Test of difference = 0 (vs not =): T-Value = 1.25 P-Value = 0.231 DF = 14

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
51	8	17.13	4.55	1.6
52	10	19.40	6.48	2.1

Difference = mu (51) - mu (52)
Estimate for difference: -2.27
95% CI for difference: (-7.83, 3.28)
T-Test of difference = 0 (vs not =): T-Value = -0.87 P-Value = 0.396 DF = 15

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
51	8	35.13	9.25	3.3
52	10	37.7	17.1	5.4

Difference = mu (51) - mu (52)
Estimate for difference: -2.57
95% CI for difference: (-16.16, 11.01)
T-Test of difference = 0 (vs not =): T-Value = -0.41 P-Value = 0.690 DF = 14

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
51	3	2.3267	0.0379	0.022
52	3	2.280	0.135	0.078

Difference = mu (51) - mu (52)
Estimate for difference: 0.0467
95% CI for difference: (-0.3023, 0.3956)
T-Test of difference = 0 (vs not =): T-Value = 0.58 P-Value = 0.623 DF = 2

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
51	3	2.1600	0.0361	0.021
52	3	2.067	0.131	0.075

Difference = mu (51) - mu (52)
Estimate for difference: 0.0933
95% CI for difference: (-0.2430, 0.4297)
T-Test of difference = 0 (vs not =): T-Value = 1.19 P-Value = 0.355 DF = 2

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
51	5	8.600	11.9	0.16
52	17	9.300	11.4	-0.16
Overall	22		11.5	

H = 0.02 DF = 1 P = 0.875
H = 0.02 DF = 1 P = 0.875 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
51	8	26.00	13.6	0.29
52	17	26.00	12.7	-0.29
Overall	25		13.0	

H = 0.08 DF = 1 P = 0.771
H = 0.09 DF = 1 P = 0.766 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
51	8	16.00	13.2	0.09
52	17	16.00	12.9	-0.09
Overall	25		13.0	

H = 0.01 DF = 1 P = 0.930
H = 0.01 DF = 1 P = 0.927 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
51	8	9.500	14.5	0.70
52	17	9.000	12.3	-0.70
Overall	25		13.0	

H = 0.49 DF = 1 P = 0.485
H = 0.50 DF = 1 P = 0.478 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
51	8	39.50	11.4	1.33
52	10	34.00	8.0	-1.33
Overall	18		9.5	

H = 1.78 DF = 1 P = 0.183
H = 1.79 DF = 1 P = 0.180 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
51	8	16.50	8.6	-0.67
52	10	20.50	10.3	0.67
Overall	18		9.5	

H = 0.44 DF = 1 P = 0.505
H = 0.45 DF = 1 P = 0.504 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
51	8	34.50	8.6	-0.62
52	10	39.00	10.2	0.62
Overall	18		9.5	

H = 0.39 DF = 1 P = 0.534
H = 0.39 DF = 1 P = 0.533 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
51	3	2.310	4.0	0.65
52	3	2.290	3.0	-0.65
Overall	6		3.5	

H = 0.43 DF = 1 P = 0.513

* NOTE * One or more small samples

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
51	3	2.150	4.3	1.09
52	3	2.080	2.7	-1.09
Overall	6		3.5	

H = 1.19 DF = 1 P = 0.275

* NOTE * One or more small samples

Mood Median Test: (Parameter) versus Domain reference

Mood median test for w (%)

Chi-Square = 0.26   DF = 1   P = 0.611

```
Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
51           3   2    8.60   4.75    (----*---------------------)
52           8   9    9.30   5.35  (---------*--------)
                                   ---+---------+---------+---------+---
                                    7.5      10.0      12.5      15.0
```

Overall median = 9.20
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(52): (-2.80,5.50)

```
Mood median test for WL (%)

Chi-Square = 0.02    DF = 1    P = 0.891

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
51           4   4   26.00   2.00             (----------*----------)
52           9   8   26.00   3.00    (-------------------*---------)
                                     +---------+---------+---------+------
                                   24.0      25.0      26.0      27.0

Overall median = 26.00

A 95.0% CI for median(51) - median(52): (-2.00,2.22)


Mood median test for Wp (%)

Chi-Square = 0.01    DF = 1    P = 0.915

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
51           5   3   16.00   1.00  (*----------------)
52          11   6   16.00   2.50   *-------------------------------)
                                   ----+---------+---------+---------+--
                                    16.20     16.80     17.40     18.00

Overall median = 16.00

A 95.0% CI for median(51) - median(52): (-0.22,1.00)


Mood median test for Ip (%)

Chi-Square = 0.49    DF = 1    P = 0.484

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
51           4   4    9.50   1.75             (-----*---------------)
52          11   6    9.00   3.00    (---------*-------------------)
                                     +---------+---------+---------+------
                                   8.0       9.0      10.0      11.0

Overall median = 9.00

A 95.0% CI for median(51) - median(52): (-0.44,3.00)


Mood median test for % GRAVEL

Chi-Square = 0.75    DF = 1    P = 0.387

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
51           4   4    39.5   12.0         (--------------*------------)
52           7   3    34.0   11.0   (---------*------------)
                                    --+---------+---------+---------+----
                                   30.0      35.0      40.0      45.0

Overall median = 38.0

A 95.0% CI for median(51) - median(52): (-7.0,16.0)
```

```
Mood median test for % SAND

Chi-Square = 0.90    DF = 1    P = 0.343

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
51           5   3    16.5    4.3   (---------*-----)
52           4   6    20.5   11.3  (----------------------*----------)
                                   ----+---------+---------+---------+--
                                    14.0      17.5      21.0      24.5

Overall median = 17.5

A 95.0% CI for median(51) - median(52): (-10.0,5.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.90    DF = 1    P = 0.343

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           5   3    34.5    8.5          (---------*----------)
52           4   6    39.0   16.0  (--------------------------*------)
                                   ---------+---------+---------+-------
                                         30.0      35.0      40.0

Overall median = 37.5

A 95.0% CI for median(51) - median(52): (-11.0,11.0)
```

```
Mood median test for Bulk Density

Chi-Square = 0.67    DF = 1    P = 0.414

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
51           1   2   2.310  0.070                     (-*------)
52           2   1   2.290  0.270   (-----------------*--------------)
                                   ---+---------+---------+---------+---
                                    2.160     2.240     2.320     2.400

Overall median = 2.305
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 89.8% CI for median(51) - median(52): (-0.110,0.230)
```

```
Mood median test for Dry Density

Chi-Square = 0.67    DF = 1    P = 0.414

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           1   2   2.150  0.070                          (--*-----)
52           2   1   2.080  0.260  (-------------------*-------------)
                                   ---------+---------+---------+-------
                                          2.000     2.080     2.160

Overall median = 2.140
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 89.8% CI for median(51) - median(52): (-0.060,0.270)
```

Results for: Domains 51 and 52, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
51	5	19.2	10.3	4.6
52	7	7.09	2.00	0.76

Difference = mu (51) - mu (52)
Estimate for difference: 12.13
95% CI for difference: (-0.81, 25.08)
T-Test of difference = 0 (vs not =): T-Value = 2.60 P-Value = 0.060 DF = 4

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
51	5	28.60	3.97	1.8
52	7	24.14	2.19	0.83

Difference = mu (51) - mu (52)
Estimate for difference: 4.46
95% CI for difference: (-0.58, 9.50)
T-Test of difference = 0 (vs not =): T-Value = 2.27 P-Value = 0.072 DF = 5

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
51	5	18.20	2.17	0.97
52	7	15.71	1.11	0.42

Difference = mu (51) - mu (52)
Estimate for difference: 2.49
95% CI for difference: (-0.23, 5.20)
T-Test of difference = 0 (vs not =): T-Value = 2.35 P-Value = 0.065 DF = 5

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
51	5	10.40	2.07	0.93
52	7	8.43	1.90	0.72

Difference = mu (51) - mu (52)
Estimate for difference: 1.97
95% CI for difference: (-0.73, 4.68)
T-Test of difference = 0 (vs not =): T-Value = 1.68 P-Value = 0.131 DF = 8

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
51	2	32.0	21.2	15
52	5	44.2	14.6	6.5

Difference = mu (51) - mu (52)
Estimate for difference: -12.2
95% CI for difference: (-220.1, 195.7)
T-Test of difference = 0 (vs not =): T-Value = -0.75 P-Value = 0.592 DF = 1

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
51	2	11.50	2.12	1.5
52	5	16.60	5.41	2.4

Difference = mu (51) - mu (52)
Estimate for difference: -5.10
95% CI for difference: (-13.01, 2.81)
T-Test of difference = 0 (vs not =): T-Value = -1.79 P-Value = 0.148 DF = 4

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
51	2	52.0	19.8	14
52	5	34.6	14.0	6.2

Difference = mu (51) - mu (52)
Estimate for difference: 17.4
95% CI for difference: (-177.4, 212.2)
T-Test of difference = 0 (vs not =): T-Value = 1.13 P-Value = 0.460 DF = 1

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
51	5	17.100	9.0	2.03
52	7	7.300	4.7	-2.03
Overall	12		6.5	

H = 4.12 DF = 1 P = 0.042

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
51	5	30.00	8.9	1.95
52	7	25.00	4.8	-1.95
Overall	12		6.5	

H = 3.80 DF = 1 P = 0.051
H = 3.82 DF = 1 P = 0.051 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
51	5	19.00	8.8	1.87
52	7	15.00	4.9	-1.87
Overall	12		6.5	

H = 3.49 DF = 1 P = 0.062
H = 3.78 DF = 1 P = 0.052 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
51	5	11.000	8.6	1.71
52	7	9.000	5.0	-1.71
Overall	12		6.5	

H = 2.91 DF = 1 P = 0.088
H = 2.96 DF = 1 P = 0.085 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
51	2	32.00	2.5	-1.16
52	5	52.00	4.6	1.16
Overall	7		4.0	

H = 1.35 DF = 1 P = 0.245

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
51	2	11.50	2.5	-1.16
52	5	19.00	4.6	1.16
Overall	7		4.0	

H = 1.35 DF = 1 P = 0.245
H = 1.37 DF = 1 P = 0.241 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
51	2	52.00	5.5	1.16
52	5	29.00	3.4	-1.16
Overall	7		4.0	

H = 1.35 DF = 1 P = 0.245

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
51	2	52.00	5.5	1.16
52	5	29.00	3.4	-1.16
Overall	7		4.0	

H = 1.35 DF = 1 P = 0.245

* NOTE * One or more small samples

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 3.09    DF = 1    P = 0.079

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
51           1   4    17.1   19.4   (------------*-----------------)
52           5   2     7.3    2.2  (-*-)
                                   ---+---------+---------+---------+---
                                    8.0      16.0      24.0      32.0

Overall median = 7.9
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(52): (-2.1,25.8)


Mood median test for WL (%)

Chi-Square = 3.09    DF = 1    P = 0.079

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
51           1   4    30.0    6.5   (-------------------------*------)
52           5   2    25.0    4.0  (----------*----)
                                   --------+---------+---------+--------
                                        24.0      27.0      30.0

Overall median = 25.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(52): (-4.0,10.0)


Mood median test for Wp (%)

Chi-Square = 5.18    DF = 1    P = 0.023

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
51           1   4   19.00   4.00     (--------------------------*-----)
52           6   1   15.00   1.00     *---------)
                                      +---------+---------+---------+------
                                   15.0      16.5      18.0      19.5

Overall median = 16.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(52): (-1.00,5.00)


Mood median test for Ip (%)

Chi-Square = 3.09    DF = 1    P = 0.079

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
51           1   4   11.00   3.50         (-------------------*----)
52           5   2    9.00   4.00    (--------------*-----)
                                     +---------+---------+---------+------
                                   6.0       8.0      10.0      12.0

Overall median = 9.50
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(52): (-3.00,6.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 2.10    DF = 1    P = 0.147

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
51           2   0    32.0   30.0  (------------*-----------)
52           2   3    52.0   27.5           (-------------------*-----)
                                   ------+---------+---------+---------+
                                        24        36        48        60

Overall median = 47.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 88.0% CI for median(51) - median(52): (-42.0,20.0)


Mood median test for % SAND

Chi-Square = 2.10    DF = 1    P = 0.147

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
51           2   0    11.5    3.0          (---*---)
52           2   3    19.0    7.0   (----------------------------*-)
                                   ---+---------+---------+---------+---
                                    8.0      12.0      16.0      20.0

Overall median = 18.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 88.0% CI for median(51) - median(52): (-10.0,6.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.06    DF = 1    P = 0.809

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
51           1   1    52.0   28.0              (---------*--------)
52           3   2    29.0   27.0  (-----*-------------)
                                   -------+---------+---------+---------
                                         30        45        60

Overall median = 38.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 88.0% CI for median(51) - median(52): (-12.0,46.0)
```

Site 6: Distington

(Note: insufficient data from lower till in Domain 65)

Results for: Domain 61

Two-Sample T-Test and CI: (Parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	4	12.43	2.65	1.3
Upper Till	5	21.56	6.69	3.0

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -9.14
95% CI for difference: (-17.54, -0.73)
T-Test of difference = 0 (vs not =): T-Value = -2.79 P-Value = 0.038 DF = 5

Two-sample T for Bulk Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	4	2.2150	0.0915	0.046
Upper Till	5	2.044	0.158	0.071

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.1710
95% CI for difference: (-0.0347, 0.3767)
T-Test of difference = 0 (vs not =): T-Value = 2.03 P-Value = 0.088 DF = 6

Two-sample T for Dry Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	4	1.972	0.123	0.061
Upper Till	5	1.692	0.210	0.094

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.281
95% CI for difference: (0.006, 0.555)
T-Test of difference = 0 (vs not =): T-Value = 2.50 P-Value = 0.046 DF = 6

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	4	11.55	2.8	-2.20
Upper Till	5	21.10	6.8	2.20
Overall	9		5.0	

H = 4.86 DF = 1 P = 0.027

* NOTE * One or more small samples

```
Kruskal-Wallis Test on Bulk Density

                        Ave
Soil Type   N  Median  Rank      Z
Lower Till  4   2.250   6.8   1.71
Upper Till  5   2.090   3.6  -1.71
Overall     9           5.0

H = 2.94  DF = 1  P = 0.086

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

                        Ave
Soil Type   N  Median  Rank      Z
Lower Till  4   2.025   7.1   2.08
Upper Till  5   1.760   3.3  -2.08
Overall     9           5.0

H = 4.34  DF = 1  P = 0.037
H = 4.37  DF = 1  P = 0.037  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 5.76    DF = 1    P = 0.016

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    4   0    11.6    4.5  (-*-------)
Upper Till    1   4    21.1   12.9        (-----------*-------------)
                                    ---+---------+---------+---------+---
                                    12.0      18.0      24.0      30.0

Overall median = 16.3
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-16.9,0.3)


Mood median test for Bulk Density

Chi-Square = 2.72    DF = 1    P = 0.099

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
Lower Till    1   3   2.250  0.155                       (----------*-)
Upper Till    4   1   2.090  0.275    (-----------------*-------)
                                      +---------+---------+---------+------
                                    1.80      1.95      2.10      2.25

Overall median = 2.130
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.071,0.340)
```

```
Mood median test for Dry Density

Chi-Square = 2.72    DF = 1    P = 0.099

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Lower Till    1   3   2.025  0.202                  (-----------*)
Upper Till    4   1   1.760  0.390  (----------------*--------)
                                    ---------+---------+---------+-------
                                           1.60      1.80      2.00

Overall median = 1.790
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.042,0.547)
```

Results for: Domain 62

Two-Sample T-Test and CI: (Parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	42	14.24	2.87	0.44
Upper Till	89	18.13	5.52	0.59

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -3.889
95% CI for difference: (-5.341, -2.437)
T-Test of difference = 0 (vs not =): T-Value = -5.30 P-Value = 0.000 DF = 127

Two-sample T for WL (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	39	32.46	3.41	0.55
Upper Till	74	35.22	6.92	0.80

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -2.755
95% CI for difference: (-4.682, -0.827)
T-Test of difference = 0 (vs not =): T-Value = -2.83 P-Value = 0.006 DF = 110

Two-sample T for Wp (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	39	16.49	1.76	0.28
Upper Till	74	18.34	2.99	0.35

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -1.851
95% CI for difference: (-2.738, -0.964)
T-Test of difference = 0 (vs not =): T-Value = -4.14 P-Value = 0.000 DF = 109

Two-sample T for Ip (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	39	15.97	3.17	0.51
Upper Till	74	16.88	5.03	0.58

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -0.904
95% CI for difference: (-2.440, 0.632)
T-Test of difference = 0 (vs not =): T-Value = -1.17 P-Value = 0.246 DF = 107

Two-sample T for % GRAVEL

Soil Type	N	Mean	StDev	SE Mean
Lower Till	19	25.8	12.6	2.9
Upper Till	28	24.3	14.5	2.7

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 1.59
95% CI for difference: (-6.43, 9.62)
T-Test of difference = 0 (vs not =): T-Value = 0.40 P-Value = 0.691 DF = 42

Two-sample T for % SAND

Soil Type	N	Mean	StDev	SE Mean
Lower Till	19	28.21	4.73	1.1
Upper Till	28	29.11	8.65	1.6

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -0.90
95% CI for difference: (-4.85, 3.06)
T-Test of difference = 0 (vs not =): T-Value = -0.46 P-Value = 0.650 DF = 43

Two-sample T for % Fines (SILT/CLAY)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	19	45.4	12.1	2.8
Upper Till	28	44.7	19.6	3.7

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.65
95% CI for difference: (-8.69, 10.00)
T-Test of difference = 0 (vs not =): T-Value = 0.14 P-Value = 0.888 DF = 44

Two-sample T for Bulk Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	11	2.1526	0.0905	0.027
Upper Till	18	2.088	0.110	0.026

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.0644
95% CI for difference: (-0.0134, 0.1422)
T-Test of difference = 0 (vs not =): T-Value = 1.71 P-Value = 0.101 DF = 24

Two-sample T for Dry Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	11	1.886	0.128	0.038
Upper Till	18	1.747	0.184	0.043

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.1391
95% CI for difference: (0.0200, 0.2583)
T-Test of difference = 0 (vs not =): T-Value = 2.40 P-Value = 0.024 DF = 26

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	42	14.32	45.4	-4.27
Upper Till	89	17.69	75.7	4.27
Overall	131		66.0	

H = 18.20 DF = 1 P = 0.000
H = 18.20 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	39	33.00	48.6	-1.99
Upper Till	74	34.00	61.5	1.99
Overall	113		57.0	

H = 3.96 DF = 1 P = 0.047
H = 4.01 DF = 1 P = 0.045 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	39	16.00	43.0	-3.29
Upper Till	74	18.00	64.4	3.29
Overall	113		57.0	

H = 10.83 DF = 1 P = 0.001
H = 11.03 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	39	15.00	53.1	-0.92
Upper Till	74	17.00	59.1	0.92
Overall	113		57.0	

H = 0.85 DF = 1 P = 0.355
H = 0.86 DF = 1 P = 0.353 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Till	19	25.00	24.7	0.28
Upper Till	28	23.00	23.5	-0.28
Overall	47		24.0	

H = 0.08 DF = 1 P = 0.778
H = 0.08 DF = 1 P = 0.778 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Till	19	27.00	22.8	-0.51
Upper Till	28	28.50	24.8	0.51
Overall	47		24.0	

H = 0.26 DF = 1 P = 0.610
H = 0.26 DF = 1 P = 0.610 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lower Till	19	49.00	25.1	0.43
Upper Till	28	45.00	23.3	-0.43
Overall	47		24.0	

H = 0.19 DF = 1 P = 0.665
H = 0.19 DF = 1 P = 0.664 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

Soil Type    N  Median  Ave Rank      Z
Lower Till  11   2.200      18.2   1.60
Upper Till  18   2.095      13.0  -1.60
Overall     29              15.0

H = 2.55  DF = 1  P = 0.111
H = 2.56  DF = 1  P = 0.110  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Soil Type    N  Median  Ave Rank      Z
Lower Till  11   1.930      19.1   2.05
Upper Till  18   1.740      12.5  -2.05
Overall     29              15.0

H = 4.18  DF = 1  P = 0.041
H = 4.19  DF = 1  P = 0.041  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 23.11    DF = 1    P = 0.000

                                   Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Lower Till   34   8   14.32   3.13  (----*-----)
Upper Till   32  57   17.69   6.48                 (----------*-----)
                                    ---------+---------+---------+-------
                                          15.0      16.5      18.0

Overall median = 15.87

A 95.0% CI for median(Lower Till) - median(Upper Till): (-4.29,-1.49)


Mood median test for WL (%)

Chi-Square = 5.06    DF = 1    P = 0.024

                                   Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
Lower Till   30   9   33.00   3.00    (----------*---------)
Upper Till   41  33   34.00   3.50               (---------*---------)
                                      -+---------+---------+---------+-----
                                    32.0      33.0      34.0      35.0

Overall median = 34.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-3.00,0.42)
```

```
Mood median test for Wp (%)

Chi-Square = 5.57    DF = 1    P = 0.018

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   27  12   16.00   2.00     *---------)
Upper Till   34  40   18.00   4.00               (---------*---------)
                                       +---------+---------+---------+------
                                    16.0      17.0      18.0      19.0

Overall median = 17.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.00,0.00)


Mood median test for Ip (%)

Chi-Square = 2.08    DF = 1    P = 0.150

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   24  15   15.00   4.00     *--------------------------------)
Upper Till   35  39   17.00   4.25                      (---------------*
                                       +---------+---------+---------+------
                                    15.00     15.60     16.20     16.80

Overall median = 16.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.00,1.00)


Mood median test for % GRAVEL

Chi-Square = 0.17    DF = 1    P = 0.676

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
Lower Till    9  10    25.0   14.0        (-------------*---------)
Upper Till   15  13    23.0   24.3  (--------------*-------------------)
                                    --------+---------+---------+--------
                                         20.0      24.0      28.0

Overall median = 24.0

A 95.0% CI for median(Lower Till) - median(Upper Till): (-7.6,9.4)


Mood median test for % SAND

Chi-Square = 0.79    DF = 1    P = 0.373

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
Lower Till   12   7   27.00   8.00    (--------*------------)
Upper Till   14  14   28.50  13.25       (-----------*----------------)
                                      -+---------+---------+---------+-----
                                    25.0      27.5      30.0      32.5

Overall median = 28.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-6.00,3.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 1.02    DF = 1    P = 0.312

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
Lower Till    8  11    49.0    8.0                    (-------*---)
Upper Till   16  12    45.0   24.0  (-----------------*-------------)
                                    --------+---------+---------+--------
                                         40.0      45.0      50.0

Overall median = 47.0

A 95.0% CI for median(Lower Till) - median(Upper Till): (-5.2,14.2)


Mood median test for Bulk Density

Chi-Square = 3.62    DF = 1    P = 0.057

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
Lower Till    4   7   2.200  0.180       (----------------------*--)
Upper Till   13   5   2.095  0.213  (------------*-----------)
                                    ----+---------+---------+---------+--
                                      2.030     2.100     2.170     2.240

Overall median = 2.150

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.110,0.210)


Mood median test for Dry Density

Chi-Square = 1.67    DF = 1    P = 0.196

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till    4   7   1.930  0.180                  (-----------*--)
Upper Till   11   7   1.740  0.312  (-----------*-----------)
                                    -------+---------+---------+---------
                                         1.68      1.80      1.92

Overall median = 1.850

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.071,0.293)
```

Results for: Domain 63

Two-Sample T-Test and CI: (Parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	31	14.88	3.06	0.55
Upper Till	24	20.64	6.11	1.2

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -5.76
95% CI for difference: (-8.54, -2.98)
T-Test of difference = 0 (vs not =): T-Value = -4.22 P-Value = 0.000 DF = 31

Two-sample T for WL (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	31	32.87	3.07	0.55
Upper Till	27	37.19	4.61	0.89

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -4.31
95% CI for difference: (-6.42, -2.21)
T-Test of difference = 0 (vs not =): T-Value = -4.13 P-Value = 0.000 DF = 44

Two-sample T for Wp (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	31	16.26	2.18	0.39
Upper Till	27	19.96	2.36	0.45

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -3.705
95% CI for difference: (-4.907, -2.503)
T-Test of difference = 0 (vs not =): T-Value = -6.18 P-Value = 0.000 DF = 53

Two-sample T for Ip (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	31	16.61	2.32	0.42
Upper Till	27	17.22	3.73	0.72

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -0.609
95% CI for difference: (-2.286, 1.067)
T-Test of difference = 0 (vs not =): T-Value = -0.73 P-Value = 0.467 DF = 42

Two-sample T for % GRAVEL

Soil Type	N	Mean	StDev	SE Mean
Lower Till	11	27.6	13.2	4.0
Upper Till	19	26.5	11.2	2.6

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 1.11
95% CI for difference: (-8.85, 11.07)
T-Test of difference = 0 (vs not =): T-Value = 0.23 P-Value = 0.817 DF = 18

Two-sample T for % SAND

Soil Type	N	Mean	StDev	SE Mean
Lower Till	11	27.73	4.94	1.5
Upper Till	19	30.84	9.91	2.3

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -3.11
95% CI for difference: (-8.69, 2.46)
T-Test of difference = 0 (vs not =): T-Value = -1.15 P-Value = 0.262 DF = 27

Two-sample T for % Fines (SILT/CLAY)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	11	44.6	11.6	3.5
Upper Till	19	42.6	11.3	2.6

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 2.00
95% CI for difference: (-7.06, 11.06)
T-Test of difference = 0 (vs not =): T-Value = 0.46 P-Value = 0.649 DF = 20

Two-sample T for Bulk Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	6	2.1294	0.0686	0.028
Upper Till	5	2.023	0.145	0.065

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.1065
95% CI for difference: (-0.0755, 0.2884)
T-Test of difference = 0 (vs not =): T-Value = 1.50 P-Value = 0.193 DF = 5

Two-sample T for Dry Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	6	1.8817	0.0691	0.028
Upper Till	5	1.716	0.171	0.076

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.1657
95% CI for difference: (-0.0435, 0.3749)
T-Test of difference = 0 (vs not =): T-Value = 2.04 P-Value = 0.097 DF = 5

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	31	14.26	21.3	-3.53
Upper Till	24	19.28	36.7	3.53
Overall	55		28.0	

H = 12.46 DF = 1 P = 0.000
H = 12.46 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	31	32.00	21.1	-4.04
Upper Till	27	36.00	39.1	4.04
Overall	58		29.5	

H = 16.30 DF = 1 P = 0.000
H = 16.48 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	31	16.00	19.3	-4.92
Upper Till	27	20.00	41.2	4.92
Overall	58		29.5	

H = 24.19 DF = 1 P = 0.000
H = 24.59 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	31	16.00	28.0	-0.70
Upper Till	27	17.00	31.2	0.70
Overall	58		29.5	

H = 0.49 DF = 1 P = 0.483
H = 0.50 DF = 1 P = 0.479 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	22.00	14.9	-0.30
Upper Till	19	27.00	15.9	0.30
Overall	30		15.5	

H = 0.09 DF = 1 P = 0.763
H = 0.09 DF = 1 P = 0.763 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	28.00	13.5	-0.95
Upper Till	19	31.00	16.7	0.95
Overall	30		15.5	

H = 0.90 DF = 1 P = 0.344
H = 0.90 DF = 1 P = 0.342 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	47.00	16.9	0.67
Upper Till	19	40.00	14.7	-0.67
Overall	30		15.5	

H = 0.44 DF = 1 P = 0.505
H = 0.45 DF = 1 P = 0.504 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

                          Ave
Soil Type    N  Median  Rank      Z
Lower Till   6   2.100   6.9   1.00
Upper Till   5   1.950   4.9  -1.00
Overall     11           6.0

H = 1.01  DF = 1  P = 0.315
H = 1.02  DF = 1  P = 0.313  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

                          Ave
Soil Type    N  Median  Rank      Z
Lower Till   6   1.865   7.5   1.64
Upper Till   5   1.680   4.2  -1.64
Overall     11           6.0

H = 2.70  DF = 1  P = 0.100
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 5.26    DF = 1    P = 0.022

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till   20  11    14.3    5.1  (---*----)
Upper Till    8  16    19.3   10.7        (-----------*---------------)
                                    ---+---------+---------+---------+---
                                    14.0      17.5      21.0      24.5

Overall median = 15.4

A 95.0% CI for median(Lower Till) - median(Upper Till): (-10.4,-0.3)


Mood median test for WL (%)

Chi-Square = 15.40    DF = 1    P = 0.000

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till   26   5   32.00   3.00  (*-------)
Upper Till    9  18   36.00   6.00           (-------*---------------)
                                    ---+---------+---------+---------+---
                                    32.5      35.0      37.5      40.0

Overall median = 34.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-6.00,-2.00)
```

```
Mood median test for Wp (%)

Chi-Square = 22.58    DF = 1    P = 0.000

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
Lower Till   28   3   16.00   3.00  (----*------)
Upper Till    8  19   20.00   4.00                      (----*----)
                                    -----+---------+---------+---------+-
                                      16.0      18.0      20.0      22.0

Overall median = 18.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-6.00,-2.00)
```

```
Mood median test for Ip (%)

Chi-Square = 1.07    DF = 1    P = 0.300

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   18  13   16.00   3.00     *------------)
Upper Till   12  15   17.00   4.00     (---------*-------------------)
                                       +---------+---------+---------+------
                                    16.0      17.0      18.0      19.0

Overall median = 16.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-3.00,1.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 0.14    DF = 1    P = 0.705

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
Lower Till    6   5    22.0   16.0  (-------*-------------------------)
Upper Till    9  10    27.0   15.0           (---------*----------)
                                    ----+---------+---------+---------+--
                                     20.0      25.0      30.0      35.0

Overall median = 25.5

A 95.0% CI for median(Lower Till) - median(Upper Till): (-14.0,11.0)
```

```
Mood median test for % SAND

Chi-Square = 0.74    DF = 1    P = 0.389

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
Lower Till    7   4    28.0    8.0  (--------------*--------)
Upper Till    9  10    31.0    9.0           (--------------*-------)
                                    -----+---------+---------+---------+-
                                      24.5      28.0      31.5      35.0

Overall median = 29.0

A 95.0% CI for median(Lower Till) - median(Upper Till): (-9.0,5.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.59    DF = 1    P = 0.058

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Lower Till    3   8    47.0   22.0  (----------------------*--------)
Upper Till   12   7    40.0   15.0            (--*--------------)
                                    ------+---------+---------+---------+
                                       35.0      42.0      49.0      56.0

Overall median = 42.5

A 95.0% CI for median(Lower Till) - median(Upper Till): (-14.0,14.0)


Mood median test for Bulk Density

Chi-Square = 0.11    DF = 1    P = 0.740

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    3   3   2.100  0.131                    (--*-----------)
Upper Till    3   2   1.950  0.268  (-------*-------------------------)
                                    ---+---------+---------+---------+---
                                     1.90      2.00      2.10      2.20

Overall median = 2.090
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.131,0.336)


Mood median test for Dry Density

Chi-Square = 2.40    DF = 1    P = 0.122

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
Lower Till    2   4   1.865  0.145                          (--*------)
Upper Till    4   1   1.680  0.320    (-----------*----------------)
                                      +---------+---------+---------+------
                                    1.50      1.65      1.80      1.95

Overall median = 1.840
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.110,0.460)
```

Results for: Domain 64

Two-Sample T-Test and CI: (Parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	11	14.76	3.21	0.97
Upper Till	13	15.83	2.56	0.71

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -1.07
95% CI for difference: (-3.58, 1.44)
T-Test of difference = 0 (vs not =): T-Value = -0.89 P-Value = 0.385 DF = 19

Two-sample T for WL (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	11	34.27	2.41	0.73
Upper Till	16	34.56	2.37	0.59

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -0.290
95% CI for difference: (-2.239, 1.660)
T-Test of difference = 0 (vs not =): T-Value = -0.31 P-Value = 0.760 DF = 21

Two-sample T for Wp (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	11	16.64	1.91	0.58
Upper Till	16	18.63	2.13	0.53

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -1.989
95% CI for difference: (-3.610, -0.367)
T-Test of difference = 0 (vs not =): T-Value = -2.54 P-Value = 0.018 DF = 23

Two-sample T for Ip (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	11	17.64	2.01	0.61
Upper Till	16	15.94	2.43	0.61

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 1.699
95% CI for difference: (-0.076, 3.473)
T-Test of difference = 0 (vs not =): T-Value = 1.98 P-Value = 0.060 DF = 24

Two-sample T for Bulk Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	6	2.1633	0.0761	0.031
Upper Till	7	2.1314	0.0969	0.037

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.0319
95% CI for difference: (-0.0751, 0.1389)
T-Test of difference = 0 (vs not =): T-Value = 0.66 P-Value = 0.521 DF = 10

Two-sample T for Dry Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	6	1.9067	0.0720	0.029
Upper Till	7	1.844	0.101	0.038

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.0624
95% CI for difference: (-0.0447, 0.1695)
T-Test of difference = 0 (vs not =): T-Value = 1.30 P-Value = 0.224 DF = 10

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	14.00	10.8	-1.10
Upper Till	13	16.00	14.0	1.10
Overall	24		12.5	

H = 1.21 DF = 1 P = 0.271
H = 1.22 DF = 1 P = 0.270 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	34.00	13.5	-0.27
Upper Till	16	34.00	14.3	0.27
Overall	27		14.0	

H = 0.07 DF = 1 P = 0.786
H = 0.08 DF = 1 P = 0.784 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	17.00	9.6	-2.37
Upper Till	16	18.00	17.0	2.37
Overall	27		14.0	

H = 5.61 DF = 1 P = 0.018
H = 5.79 DF = 1 P = 0.016 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	17.00	17.1	1.70
Upper Till	16	16.50	11.8	-1.70
Overall	27		14.0	

H = 2.90 DF = 1 P = 0.089
H = 3.00 DF = 1 P = 0.083 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Soil Type	N	Median	Ave Rank	Z
Lower Till	6	2.190	7.9	0.79
Upper Till	7	2.110	6.2	-0.79
Overall	13		7.0	

H = 0.62 DF = 1 P = 0.432
H = 0.62 DF = 1 P = 0.431 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

                         Ave
Soil Type    N  Median  Rank      Z
Lower Till   6   1.930   8.5   1.29
Upper Till   7   1.870   5.7  -1.29
Overall     13           7.0

H = 1.65  DF = 1  P = 0.199
H = 1.70  DF = 1  P = 0.192  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 1.51    DF = 1    P = 0.219

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
Lower Till    7   4   14.00   5.00     (------------*--------------------)
Upper Till    5   8   16.00   4.43            (-------------------*-------)
                                       +---------+---------+---------+------
                                    12.0      13.5      15.0      16.5

Overall median = 15.44

A 95.0% CI for median(Lower Till) - median(Upper Till): (-5.00,1.76)


Mood median test for WL (%)

Chi-Square = 0.01    DF = 1    P = 0.930

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till    6   5   34.00   4.00  (-------------*-------------)
Upper Till    9   7   34.00   4.00         (------*-------------------)
                                    -------+---------+---------+---------
                                        33.0      34.5      36.0

Overall median = 34.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-3.00,2.00)


Mood median test for Wp (%)

Chi-Square = 8.43    DF = 1    P = 0.004

                                    Individual 95.0% CIs
Soil Type   N<  N>=  Median  Q3-Q1     +---------+---------+---------+------
Lower Till   9    2   17.00   2.00     (------------*)
Upper Till   4   12   18.00   2.75                      (-*------------)
                                       +---------+---------+---------+------
                                    15.0      16.5      18.0      19.5

Overall median = 18.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-4.00,-1.00)
```

```
Mood median test for Ip (%)

Chi-Square = 1.39    DF = 1    P = 0.238

                                    Individual 95.0% CIs
Soil Type   N<  N>=  Median  Q3-Q1   --+---------+---------+---------+----
Lower Till   3    8   17.00   4.00          (------*-------------------)
Upper Till   8    8   16.50   2.75   (-----------*--)
                                     --+---------+---------+---------+----
                                    15.0      16.5      18.0      19.5

Overall median = 17.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-1.00,5.00)


Mood median test for Bulk Density

Chi-Square = 0.07    DF = 1    P = 0.797

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
Lower Till    3   3   2.190  0.125       (--------------------*-----)
Upper Till    4   3   2.110  0.150   (------------*-----------------)
                                     -+---------+---------+---------+-----
                                    2.040     2.100     2.160     2.220

Overall median = 2.180

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.089,0.171)


Mood median test for Dry Density

Chi-Square = 1.89    DF = 1    P = 0.170

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
Lower Till    2   4   1.930  0.135             (---------------*-----)
Upper Till    5   2   1.870  0.200  (------------------*-----------)
                                    --+---------+---------+---------+----
                                    1.750     1.820     1.890     1.960

Overall median = 1.900

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.122,0.204)
```

Results for: Domains 61 and 62, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
61          5  21.56   6.69      3.0
62         89  18.13   5.52     0.59

Difference = mu (61) - mu (62)
Estimate for difference:  3.43
95% CI for difference:  (-5.03, 11.89)
T-Test of difference = 0 (vs not =): T-Value = 1.13  P-Value = 0.323  DF = 4


Two-sample T for Bulk Density

Domain
reference   N   Mean  StDev  SE Mean
61          5  2.044  0.158    0.071
62         18  2.088  0.110    0.026

Difference = mu (61) - mu (62)
Estimate for difference:  -0.0443
95% CI for difference:  (-0.2375, 0.1490)
T-Test of difference = 0 (vs not =): T-Value = -0.59  P-Value = 0.582  DF = 5


Two-sample T for Dry Density

Domain
reference   N   Mean  StDev  SE Mean
61          5  1.692  0.210    0.094
62         18  1.747  0.184    0.043

Difference = mu (61) - mu (62)
Estimate for difference:  -0.055
95% CI for difference:  (-0.321, 0.210)
T-Test of difference = 0 (vs not =): T-Value = -0.54  P-Value = 0.615  DF = 5
```

Kruskal-Wallis Test: (Parameter) versus Domain reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
61          5   21.10      61.5   1.18
62         89   17.69      46.7  -1.18
Overall    94              47.5

H = 1.39  DF = 1  P = 0.238
H = 1.39  DF = 1  P = 0.238  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
61          5   2.090      10.7  -0.48
62         18   2.095      12.4   0.48
Overall    23              12.0

H = 0.23  DF = 1  P = 0.628
H = 0.24  DF = 1  P = 0.628  (adjusted for ties)
```

```
Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
61          5   1.760      10.6  -0.52
62         18   1.740      12.4   0.52
Overall    23              12.0

H = 0.27  DF = 1  P = 0.602
H = 0.27  DF = 1  P = 0.602  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 0.21    DF = 1    P = 0.646

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
61           2   3    21.1   12.9  (--------------*-----------------)
62          45  44    17.7    6.5       (--*-)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 17.8
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(62): (-4.5,13.4)


Mood median test for Bulk Density

Chi-Square = 0.16    DF = 1    P = 0.692

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
61           3   2   2.090  0.275    (-----------------------*---------)
62           9   9   2.095  0.213                     (-------*-----)
                                     +---------+---------+---------+------
                                   1.80      1.92      2.04      2.16

Overall median = 2.090
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(62): (-0.345,0.176)


Mood median test for Dry Density

Chi-Square = 0.38    DF = 1    P = 0.538

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           2   3   1.760  0.390  (---------------------*------------)
62          10   8   1.740  0.312             (---------*---------)
                                   -----+---------+---------+---------+-
                                      1.50      1.65      1.80      1.95

Overall median = 1.750
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(62): (-0.424,0.251)
```

Results for: Domains 61 and 62, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
61	4	12.43	2.65	1.3
62	42	14.24	2.87	0.44

Difference = mu (61) - mu (62)
Estimate for difference: -1.81
95% CI for difference: (-6.26, 2.63)
T-Test of difference = 0 (vs not =): T-Value = -1.30 P-Value = 0.285 DF = 3

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
61	4	2.2150	0.0915	0.046
62	11	2.1526	0.0905	0.027

Difference = mu (61) - mu (62)
Estimate for difference: 0.0624
95% CI for difference: (-0.0745, 0.1993)
T-Test of difference = 0 (vs not =): T-Value = 1.17 P-Value = 0.294 DF = 5

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
61	4	1.972	0.123	0.061
62	11	1.886	0.128	0.038

Difference = mu (61) - mu (62)
Estimate for difference: 0.0861
95% CI for difference: (-0.1002, 0.2725)
T-Test of difference = 0 (vs not =): T-Value = 1.19 P-Value = 0.288 DF = 5

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
61	4	11.55	15.8	-1.21
62	42	14.32	24.2	1.21
Overall	46		23.5	

H = 1.46 DF = 1 P = 0.227
H = 1.46 DF = 1 P = 0.227 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
61          4   2.250      11.5   1.83
62         11   2.200       6.7  -1.83
Overall    15               8.0

H = 3.34  DF = 1  P = 0.068
H = 3.35  DF = 1  P = 0.067  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
61          4   2.025      11.1   1.63
62         11   1.930       6.9  -1.63
Overall    15               8.0

H = 2.66  DF = 1  P = 0.103
H = 2.67  DF = 1  P = 0.102  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 1.10    DF = 1    P = 0.295

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
61           3   1   11.55   4.53  (-----*----------------------)
62          20  22   14.32   3.13                 (---*---)
                                   --------+---------+---------+--------
                                        12.0      14.0      16.0

Overall median = 14.09
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(62): (-4.92,2.51)


Mood median test for Bulk Density

Chi-Square = 1.76    DF = 1    P = 0.185

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
61           1   3   2.250  0.155        (----------------------*----)
62           7   4   2.200  0.180  (----------------------*--)
                                   ---------+---------+---------+-------
                                          2.100     2.170     2.240

Overall median = 2.200
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(62): (-0.130,0.141)
```

```
Mood median test for Dry Density

Chi-Square = 1.76    DF = 1    P = 0.185

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
61           1   3   2.025  0.202   (-----------------------------*--)
62           7   4   1.930  0.180  (-----------------*----)
                                   -------+---------+---------+---------
                                        1.840     1.920     2.000

Overall median = 1.950
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(62): (-0.171,0.206)
```

Results for: Domains 61 and 63, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
61	5	21.56	6.69	3.0
63	24	20.64	6.11	1.2

Difference = mu (61) - mu (63)
Estimate for difference: 0.92
95% CI for difference: (-7.41, 9.25)
T-Test of difference = 0 (vs not =): T-Value = 0.28 P-Value = 0.788 DF = 5

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
61	5	2.044	0.158	0.071
63	5	2.023	0.145	0.065

Difference = mu (61) - mu (63)
Estimate for difference: 0.0211
95% CI for difference: (-0.2057, 0.2479)
T-Test of difference = 0 (vs not =): T-Value = 0.22 P-Value = 0.832 DF = 7

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
61	5	1.692	0.210	0.094
63	5	1.716	0.171	0.076

Difference = mu (61) - mu (63)
Estimate for difference: -0.024
95% CI for difference: (-0.310, 0.262)
T-Test of difference = 0 (vs not =): T-Value = -0.20 P-Value = 0.848 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
61	5	21.10	16.6	0.46
63	24	19.28	14.7	-0.46
Overall	29		15.0	

H = 0.21 DF = 1 P = 0.644
H = 0.21 DF = 1 P = 0.644 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
61	5	2.090	5.7	0.21
63	5	1.950	5.3	-0.21
Overall	10		5.5	

H = 0.04 DF = 1 P = 0.835
H = 0.04 DF = 1 P = 0.834 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain                  Ave
reference   N  Median  Rank      Z
61          5   1.760   5.4  -0.10
63          5   1.680   5.6   0.10
Overall    10           5.5

H = 0.01  DF = 1  P = 0.917
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 0.17    DF = 1    P = 0.684

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
61           3   2    21.1   12.9  (--------------*-----------------)
63          12  12    19.3   10.7     (--------*----------)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 21.1
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(63): (-9.8,14.1)


Mood median test for Bulk Density

Chi-Square = 0.40    DF = 1    P = 0.527

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
61           2   3   2.090  0.275    (----------------------*---------)
63           3   2   1.950  0.268          (------*--------------------)
                                     +---------+---------+---------+------
                                   1.80      1.92      2.04      2.16

Overall median = 2.040
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(63): (-0.420,0.336)


Mood median test for Dry Density

Chi-Square = 0.40    DF = 1    P = 0.527

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           2   3   1.760  0.390  (---------------------*------------)
63           3   2   1.680  0.320       (-----------*---------------)
                                   -----+---------+---------+---------+-
                                      1.50      1.65      1.80      1.95

Overall median = 1.720
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(63): (-0.500,0.450)
```

Results for: Domains 61 and 63, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
61	4	12.43	2.65	1.3
63	31	14.88	3.06	0.55

Difference = mu (61) - mu (63)
Estimate for difference: -2.46
95% CI for difference: (-6.44, 1.53)
T-Test of difference = 0 (vs not =): T-Value = -1.71 P-Value = 0.162 DF = 4

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
61	4	2.2150	0.0915	0.046
63	6	2.1294	0.0686	0.028

Difference = mu (61) - mu (63)
Estimate for difference: 0.0856
95% CI for difference: (-0.0522, 0.2235)
T-Test of difference = 0 (vs not =): T-Value = 1.60 P-Value = 0.171 DF = 5

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
61	4	1.972	0.123	0.061
63	6	1.8817	0.0691	0.028

Difference = mu (61) - mu (63)
Estimate for difference: 0.0908
95% CI for difference: (-0.0968, 0.2785)
T-Test of difference = 0 (vs not =): T-Value = 1.34 P-Value = 0.250 DF = 4

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
61	4	11.55	10.0	-1.66
63	31	14.26	19.0	1.66
Overall	35		18.0	

H = 2.75 DF = 1 P = 0.097
H = 2.75 DF = 1 P = 0.097 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on Bulk Density

Domain                  Ave
reference   N  Median  Rank      Z
61          4   2.250   7.3   1.49
63          6   2.100   4.3  -1.49
Overall    10           5.5

H = 2.23  DF = 1  P = 0.136
H = 2.24  DF = 1  P = 0.134  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain                  Ave
reference   N  Median  Rank      Z
61          4   2.025   7.0   1.28
63          6   1.865   4.5  -1.28
Overall    10           5.5

H = 1.64  DF = 1  P = 0.201

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 1.00    DF = 1    P = 0.316

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
61           3   1   11.55   4.53  (-----*-----------------------)
63          15  16   14.26   5.07              (-----*---------)
                                   --------+---------+---------+--------
                                        12.0      14.0      16.0

Overall median = 14.23
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(63): (-5.60,3.30)


Mood median test for Bulk Density

Chi-Square = 1.67    DF = 1    P = 0.197

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           1   3   2.250  0.155    (--------------------------*----)
63           4   2   2.100  0.131  (----*------------------)
                                   -----+---------+---------+---------+-
                                      2.100     2.160     2.220     2.280

Overall median = 2.160
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(63): (-0.130,0.190)
```

```
Mood median test for Dry Density

Chi-Square = 1.67    DF = 1    P = 0.197

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
61           1   3   2.025  0.202  (-----------------------------*--)
63           4   2   1.865  0.145     (-----*------------)
                                   ------+---------+---------+---------+
                                       1.840     1.920     2.000     2.080

Overall median = 1.920
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(63): (-0.170,0.230)
```

Results for: Domains 61 and 64, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
61          5  21.56   6.69      3.0
64         13  15.83   2.56     0.71

Difference = mu (61) - mu (64)
Estimate for difference:  5.73
95% CI for difference:  (-2.80, 14.26)
T-Test of difference = 0 (vs not =): T-Value = 1.86  P-Value = 0.136  DF = 4

Two-sample T for Bulk Density

Domain
reference  N    Mean   StDev  SE Mean
61         5   2.044   0.158    0.071
64         7  2.1314  0.0969    0.037

Difference = mu (61) - mu (64)
Estimate for difference:  -0.0874
95% CI for difference:  (-0.2819, 0.1070)
T-Test of difference = 0 (vs not =): T-Value = -1.10  P-Value = 0.313  DF = 6


Two-sample T for Dry Density

Domain
reference  N   Mean  StDev  SE Mean
61         5  1.692  0.210    0.094
64         7  1.844  0.101    0.038

Difference = mu (61) - mu (64)
Estimate for difference:  -0.152
95% CI for difference:  (-0.412, 0.108)
T-Test of difference = 0 (vs not =): T-Value = -1.51  P-Value = 0.192  DF = 5
```

Kruskal-Wallis Test: (Parameter) versus Domain reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
61          5   21.10      13.2   1.82
64         13   16.00       8.1  -1.82
Overall    18               9.5

H = 3.33  DF = 1  P = 0.068
H = 3.34  DF = 1  P = 0.068  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain                 Ave
reference   N  Median  Rank      Z
61          5   2.090   5.5  -0.81
64          7   2.110   7.2   0.81
Overall    12           6.5

H = 0.66  DF = 1  P = 0.417
H = 0.66  DF = 1  P = 0.416  (adjusted for ties)
```

```
Kruskal-Wallis Test on Dry Density

Domain                  Ave
reference   N  Median  Rank      Z
61          5   1.760   5.0  -1.22
64          7   1.870   7.6   1.22
Overall    12           6.5

H = 1.48  DF = 1  P = 0.223
H = 1.50  DF = 1  P = 0.220  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 2.49    DF = 1    P = 0.114

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
61           1   4    21.1   12.9   (-------------*-----------------)
64           8   5    16.0    4.4  (-----*--)
                                   ----+---------+---------+---------+--
                                    15.0      20.0      25.0      30.0

Overall median = 16.8
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(64): (-3.4,15.1)

Mood median test for Bulk Density

Chi-Square = 0.34    DF = 1    P = 0.558

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
61           3   2   2.090  0.275    (----------------------*---------)
64           3   4   2.110  0.150                        (-----*--------)
                                     +---------+---------+---------+------
                                   1.80      1.92      2.04      2.16

Overall median = 2.100
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(64): (-0.400,0.160)


Mood median test for Dry Density

Chi-Square = 3.09    DF = 1    P = 0.079

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           4   1   1.760  0.390  (---------------------*------------)
64           2   5   1.870  0.200                      (--------*----)
                                   -----+---------+---------+---------+-
                                      1.50      1.65      1.80      1.95

Overall median = 1.795
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(64): (-0.520,0.200)
```

Results for: Domains 61 and 64, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
61          4  12.43   2.65      1.3
64         11  14.76   3.21     0.97

Difference = mu (61) - mu (64)
Estimate for difference:  -2.34
95% CI for difference:  (-6.35, 1.68)
T-Test of difference = 0 (vs not =): T-Value = -1.42  P-Value = 0.204  DF = 6


Two-sample T for Bulk Density

Domain
reference  N    Mean   StDev  SE Mean
61         4  2.2150  0.0915    0.046
64         6  2.1633  0.0761    0.031

Difference = mu (61) - mu (64)
Estimate for difference:  0.0517
95% CI for difference:  (-0.0904, 0.1938)
T-Test of difference = 0 (vs not =): T-Value = 0.93  P-Value = 0.393  DF = 5


Two-sample T for Dry Density

Domain
reference  N    Mean   StDev  SE Mean
61         4   1.972   0.123    0.061
64         6  1.9067  0.0720    0.029

Difference = mu (61) - mu (64)
Estimate for difference:  0.0658
95% CI for difference:  (-0.1232, 0.2549)
T-Test of difference = 0 (vs not =): T-Value = 0.97  P-Value = 0.388  DF = 4
```

Kruskal-Wallis Test: (Parameter) versus Domain reference

```
Kruskal-Wallis Test on w (%)

Domain                    Ave
reference   N  Median  Rank      Z
61          4   11.55   5.0  -1.57
64         11   14.00   9.1   1.57
Overall    15           8.0

H = 2.45  DF = 1  P = 0.117
H = 2.46  DF = 1  P = 0.117  (adjusted for ties)

* NOTE * One or more small samples
```

```
Kruskal-Wallis Test on Bulk Density

Domain                  Ave
reference   N  Median  Rank      Z
61          4   2.250   7.3   1.49
64          6   2.190   4.3  -1.49
Overall    10           5.5

H = 2.23  DF = 1  P = 0.136

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain                  Ave
reference   N  Median  Rank      Z
61          4   2.025   7.0   1.28
64          6   1.930   4.5  -1.28
Overall    10           5.5

H = 1.64  DF = 1  P = 0.201
H = 1.65  DF = 1  P = 0.199  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 1.03    DF = 1    P = 0.310

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
61           3   1   11.55   4.53  (-----*----------------------)
64           5   6   14.00   5.00          (---------*---------------)
                                   --------+---------+---------+--------
                                        12.0      14.0      16.0

Overall median = 13.85
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(64): (-5.76,4.30)


Mood median test for Bulk Density

Chi-Square = 1.67    DF = 1    P = 0.197

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
61           1   3   2.250  0.155     (---------------------------*----)
64           4   2   2.190  0.125  (--------------------*-----)
                                   ------+---------+---------+---------+
                                       2.100     2.160     2.220     2.280

Overall median = 2.210
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(64): (-0.140,0.161)
```

```
Mood median test for Dry Density

Chi-Square = 3.40    DF = 1    P = 0.065

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
61           1   3   2.025  0.202  (-----------------------------*--)
64           5   1   1.930  0.135     (-------------*-----)
                                   ------+---------+---------+---------+
                                       1.840     1.920     2.000     2.080

Overall median = 1.950
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(64): (-0.161,0.220)
```

Results for: Domains 61 and 65, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
61	5	21.56	6.69	3.0
65	6	17.50	4.64	1.9

Difference = mu (61) - mu (65)
Estimate for difference: 4.06
95% CI for difference: (-4.60, 12.72)
T-Test of difference = 0 (vs not =): T-Value = 1.15 P-Value = 0.295 DF = 6

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
61	5	2.044	0.158	0.071
65	6	2.0917	0.0542	0.022

Difference = mu (61) - mu (65)
Estimate for difference: -0.0477
95% CI for difference: (-0.2529, 0.1576)
T-Test of difference = 0 (vs not =): T-Value = -0.64 P-Value = 0.554 DF = 4

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
61	5	1.692	0.210	0.094
65	6	1.783	0.109	0.044

Difference = mu (61) - mu (65)
Estimate for difference: -0.091
95% CI for difference: (-0.358, 0.175)
T-Test of difference = 0 (vs not =): T-Value = -0.88 P-Value = 0.418 DF = 5

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
61	5	21.10	7.2	1.10
65	6	16.00	5.0	-1.10
Overall	11		6.0	

H = 1.20 DF = 1 P = 0.273
H = 1.21 DF = 1 P = 0.272 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
61	5	2.090	5.7	-0.27
65	6	2.105	6.3	0.27
Overall	11		6.0	

H = 0.07 DF = 1 P = 0.784
H = 0.08 DF = 1 P = 0.783 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain                  Ave
reference   N  Median  Rank      Z
61          5   1.760   5.0  -0.91
65          6   1.815   6.8   0.91
Overall    11           6.0

H = 0.83  DF = 1  P = 0.361
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 0.78    DF = 1    P = 0.376

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
61           2   3    21.1   12.9  (--------------*-----------------)
65           4   2    16.0    6.3  (----*--------------)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 17.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(65): (-5.7,15.2)


Mood median test for Bulk Density

Chi-Square = 0.11    DF = 1    P = 0.740

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
61           3   2   2.090  0.275    (-----------------------*---------)
65           3   3   2.105  0.090                      (-----*---)
                                     +---------+---------+---------+------
                                   1.80      1.92      2.04      2.16

Overall median = 2.090
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(65): (-0.322,0.162)


Mood median test for Dry Density

Chi-Square = 2.40    DF = 1    P = 0.122

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           4   1   1.760  0.390  (---------------------*------------)
65           2   4   1.815  0.168                (----------*----)
                                   -----+---------+---------+---------+-
                                      1.50      1.65      1.80      1.95

Overall median = 1.790
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(61) - median(65): (-0.413,0.235)
```

(Note: insufficient data from lower till in Domain 65)

Results for: Domains 62 and 63, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
62	89	18.13	5.52	0.59
63	24	20.64	6.11	1.2

Difference = mu (62) - mu (63)
Estimate for difference: -2.52
95% CI for difference: (-5.32, 0.29)
T-Test of difference = 0 (vs not =): T-Value = -1.83 P-Value = 0.077 DF = 33

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
62	74	35.22	6.92	0.80
63	27	37.19	4.61	0.89

Difference = mu (62) - mu (63)
Estimate for difference: -1.97
95% CI for difference: (-4.36, 0.42)
T-Test of difference = 0 (vs not =): T-Value = -1.64 P-Value = 0.105 DF = 69

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
62	74	18.34	2.99	0.35
63	27	19.96	2.36	0.45

Difference = mu (62) - mu (63)
Estimate for difference: -1.625
95% CI for difference: (-2.770, -0.480)
T-Test of difference = 0 (vs not =): T-Value = -2.84 P-Value = 0.006 DF = 58

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
62	74	16.88	5.03	0.58
63	27	17.22	3.73	0.72

Difference = mu (62) - mu (63)
Estimate for difference: -0.344
95% CI for difference: (-2.196, 1.509)
T-Test of difference = 0 (vs not =): T-Value = -0.37 P-Value = 0.712 DF = 62

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
62	28	24.3	14.5	2.7
63	19	26.5	11.2	2.6

Difference = mu (62) - mu (63)
Estimate for difference: -2.28
95% CI for difference: (-9.83, 5.28)
T-Test of difference = 0 (vs not =): T-Value = -0.61 P-Value = 0.547 DF = 44

```
Two-sample T for % SAND

Domain
reference   N   Mean  StDev  SE Mean
62         28  29.11   8.65      1.6
63         19  30.84   9.91      2.3

Difference = mu (62) - mu (63)
Estimate for difference:  -1.73
95% CI for difference:  (-7.42, 3.95)
T-Test of difference = 0 (vs not =): T-Value = -0.62  P-Value = 0.540  DF = 35


Two-sample T for % Fines (SILT/CLAY)

Domain
reference   N  Mean  StDev  SE Mean
62         28  44.7   19.6      3.7
63         19  42.6   11.3      2.6

Difference = mu (62) - mu (63)
Estimate for difference:  2.08
95% CI for difference:  (-7.03, 11.20)
T-Test of difference = 0 (vs not =): T-Value = 0.46  P-Value = 0.647  DF = 44


Two-sample T for Bulk Density

Domain
reference   N   Mean  StDev  SE Mean
62         18  2.088  0.110    0.026
63          5  2.023  0.145    0.065

Difference = mu (62) - mu (63)
Estimate for difference:  0.0654
95% CI for difference:  (-0.1146, 0.2453)
T-Test of difference = 0 (vs not =): T-Value = 0.93  P-Value = 0.393  DF = 5


Two-sample T for Dry Density

Domain
reference   N   Mean  StDev  SE Mean
62         18  1.747  0.184    0.043
63          5  1.716  0.171    0.076

Difference = mu (62) - mu (63)
Estimate for difference:  0.0312
95% CI for difference:  (-0.1836, 0.2460)
T-Test of difference = 0 (vs not =): T-Value = 0.36  P-Value = 0.734  DF = 6
```

Kruskal-Wallis Test: (Parameter) versus Domain reference

```
Kruskal-Wallis Test on w (%)

Domain
reference    N  Median  Ave Rank      Z
62          89   17.69      54.6  -1.50
63          24   19.28      65.9   1.50
Overall    113              57.0

H = 2.26  DF = 1  P = 0.133
H = 2.26  DF = 1  P = 0.133  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
62	74	34.00	46.5	-2.55
63	27	36.00	63.3	2.55
Overall	101		51.0	

H = 6.51 DF = 1 P = 0.011
H = 6.58 DF = 1 P = 0.010 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
62	74	18.00	45.8	-2.97
63	27	20.00	65.3	2.97
Overall	101		51.0	

H = 8.82 DF = 1 P = 0.003
H = 8.93 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
62	74	17.00	49.8	-0.71
63	27	17.00	54.4	0.71
Overall	101		51.0	

H = 0.50 DF = 1 P = 0.480
H = 0.50 DF = 1 P = 0.478 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
62	28	23.00	22.9	-0.66
63	19	27.00	25.6	0.66
Overall	47		24.0	

H = 0.44 DF = 1 P = 0.509
H = 0.44 DF = 1 P = 0.508 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
62	28	28.50	23.2	-0.50
63	19	31.00	25.2	0.50
Overall	47		24.0	

H = 0.25 DF = 1 P = 0.618
H = 0.25 DF = 1 P = 0.618 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
reference   N  Median  Ave Rank      Z
62         28   45.00      24.2   0.13
63         19   40.00      23.7  -0.13
Overall    47              24.0

H = 0.02  DF = 1  P = 0.897
H = 0.02  DF = 1  P = 0.896  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
62         18   2.095      12.9   1.19
63          5   1.950       8.8  -1.19
Overall    23              12.0

H = 1.42  DF = 1  P = 0.233
H = 1.43  DF = 1  P = 0.232  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
62         18   1.740      12.3   0.45
63          5   1.680      10.8  -0.45
Overall    23              12.0

H = 0.20  DF = 1  P = 0.655
H = 0.20  DF = 1  P = 0.654  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 0.00    DF = 1    P = 0.961

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
62          45  44    17.7    6.5    (-----*--)
63          12  12    19.3   10.7  (------------*------------------)
                                   ---------+---------+---------+-------
                                         18.0      21.0      24.0

Overall median = 17.7

A 95.0% CI for median(62) - median(63): (-8.4,2.9)


Mood median test for WL (%)

Chi-Square = 3.86    DF = 1    P = 0.050

Domain                                 Individual 95.0% CIs
reference  N<  N>=  Median  Q3-Q1  -----+---------+---------+---------+-
62         41   33   34.00   3.50  (----*----)
63          9   18   36.00   6.00       (---------*------------------)
                                   -----+---------+---------+---------+-
                                     34.0      36.0      38.0      40.0

Overall median = 35.00

A 95.0% CI for median(62) - median(63): (-4.52,0.26)
```

```
Mood median test for Wp (%)

Chi-Square = 6.42    DF = 1    P = 0.011

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
62          43  31   18.00   4.00  (-------*-------)
63           8  19   20.00   4.00                  (--------*-------)
                                   --------+---------+---------+--------
                                        18.0      19.2      20.4

Overall median = 18.00

A 95.0% CI for median(62) - median(63): (-4.00,-1.00)


Mood median test for Ip (%)

Chi-Square = 0.53    DF = 1    P = 0.467

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          47  27   17.00   4.25     (---------*
63          15  12   17.00   4.00     (---------*-------------------)
                                      +---------+---------+---------+------
                                   16.0      17.0      18.0      19.0

Overall median = 17.00

A 95.0% CI for median(62) - median(63): (-3.00,1.00)


Mood median test for % GRAVEL

Chi-Square = 0.17    DF = 1    P = 0.676

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          15  13    23.0   24.3  (-----------*---------------)
63           9  10    27.0   15.0             (--------*----------)
                                   ------+---------+---------+---------+
                                      20.0      25.0      30.0      35.0

Overall median = 24.0

A 95.0% CI for median(62) - median(63): (-14.0,7.0)


Mood median test for % SAND

Chi-Square = 0.43    DF = 1    P = 0.510

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
62          16  12   28.50  13.25  (-----------*-----------------)
63           9  10   31.00   9.00   (-------------------*-----------)
                                   --------+---------+---------+--------
                                        27.5      30.0      32.5

Overall median = 29.00

A 95.0% CI for median(62) - median(63): (-5.41,5.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 1.27    DF = 1    P = 0.259

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
62          13  15    45.0   24.0  (-----------------*-------------)
63          12   7    40.0   15.0      (---*--------------------)
                                   --------+---------+---------+--------
                                        40.0      45.0      50.0

Overall median = 41.0

A 95.0% CI for median(62) - median(63): (-10.0,12.2)


Mood median test for Bulk Density

Chi-Square = 0.16    DF = 1    P = 0.692

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62           9   9   2.095  0.213              (--------*-------)
63           3   2   1.950  0.268  (-------*-------------------------)
                                   ---+---------+---------+---------+---
                                    1.90      2.00      2.10      2.20

Overall median = 2.060
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(63): (-0.186,0.271)


Mood median test for Dry Density

Chi-Square = 0.16    DF = 1    P = 0.692

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
62           9   9   1.740  0.312          (-----------*-----------)
63           3   2   1.680  0.320  (--------------*-------------------)
                                   -----+---------+---------+---------+-
                                      1.56      1.68      1.80      1.92

Overall median = 1.730
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(63): (-0.231,0.354)
```

Results for: Domains 62 and 63, Lower Till

Two-Sample T-Test and CI: (Parameter)versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
62	42	14.24	2.87	0.44
63	31	14.88	3.06	0.55

Difference = mu (62) - mu (63)
Estimate for difference: -0.646
95% CI for difference: (-2.058, 0.765)
T-Test of difference = 0 (vs not =): T-Value = -0.92 P-Value = 0.364 DF = 62

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
62	39	32.46	3.41	0.55
63	31	32.87	3.07	0.55

Difference = mu (62) - mu (63)
Estimate for difference: -0.409
95% CI for difference: (-1.960, 1.141)
T-Test of difference = 0 (vs not =): T-Value = -0.53 P-Value = 0.600 DF = 66

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
62	39	16.49	1.76	0.28
63	31	16.26	2.18	0.39

Difference = mu (62) - mu (63)
Estimate for difference: 0.229
95% CI for difference: (-0.736, 1.194)
T-Test of difference = 0 (vs not =): T-Value = 0.48 P-Value = 0.636 DF = 57

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
62	39	15.97	3.17	0.51
63	31	16.61	2.32	0.42

Difference = mu (62) - mu (63)
Estimate for difference: -0.639
95% CI for difference: (-1.950, 0.673)
T-Test of difference = 0 (vs not =): T-Value = -0.97 P-Value = 0.335 DF = 67

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
62	19	25.8	12.6	2.9
63	11	27.6	13.2	4.0

Difference = mu (62) - mu (63)
Estimate for difference: -1.79
95% CI for difference: (-12.06, 8.47)
T-Test of difference = 0 (vs not =): T-Value = -0.36 P-Value = 0.719 DF = 20

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
62	19	28.21	4.73	1.1
63	11	27.73	4.94	1.5

Difference = mu (62) - mu (63)
Estimate for difference: 0.48
95% CI for difference: (-3.36, 4.33)
T-Test of difference = 0 (vs not =): T-Value = 0.26 P-Value = 0.796 DF = 20

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
62	19	45.4	12.1	2.8
63	11	44.6	11.6	3.5

Difference = mu (62) - mu (63)
Estimate for difference: 0.73
95% CI for difference: (-8.54, 10.01)
T-Test of difference = 0 (vs not =): T-Value = 0.16 P-Value = 0.871 DF = 21

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
62	11	2.1526	0.0905	0.027
63	6	2.1294	0.0686	0.028

Difference = mu (62) - mu (63)
Estimate for difference: 0.0233
95% CI for difference: (-0.0612, 0.1078)
T-Test of difference = 0 (vs not =): T-Value = 0.59 P-Value = 0.562 DF = 13

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
62	11	1.886	0.128	0.038
63	6	1.8817	0.0691	0.028

Difference = mu (62) - mu (63)
Estimate for difference: 0.0047
95% CI for difference: (-0.0976, 0.1070)
T-Test of difference = 0 (vs not =): T-Value = 0.10 P-Value = 0.923 DF = 14

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
62	42	14.32	35.6	-0.67
63	31	14.26	38.9	0.67
Overall	73		37.0	

H = 0.45 DF = 1 P = 0.503
H = 0.45 DF = 1 P = 0.503 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
62	39	33.00	36.0	0.24
63	31	32.00	34.8	-0.24
Overall	70		35.5	

H = 0.06 DF = 1 P = 0.808
H = 0.06 DF = 1 P = 0.807 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
62	39	16.00	37.0	0.70
63	31	16.00	33.6	-0.70
Overall	70		35.5	

H = 0.49 DF = 1 P = 0.482
H = 0.51 DF = 1 P = 0.475 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
62	39	15.00	33.2	-1.04
63	31	16.00	38.3	1.04
Overall	70		35.5	

H = 1.08 DF = 1 P = 0.298
H = 1.10 DF = 1 P = 0.294 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
62	19	25.00	15.3	-0.15
63	11	22.00	15.8	0.15
Overall	30		15.5	

H = 0.02 DF = 1 P = 0.880
H = 0.02 DF = 1 P = 0.880 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
62	19	27.00	15.7	0.17
63	11	28.00	15.1	-0.17
Overall	30		15.5	

H = 0.03 DF = 1 P = 0.863
H = 0.03 DF = 1 P = 0.863 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
62	19	49.00	15.8	0.24
63	11	47.00	15.0	-0.24
Overall	30		15.5	

H = 0.06 DF = 1 P = 0.813
H = 0.06 DF = 1 P = 0.813 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
62	11	2.200	9.4	0.45
63	6	2.100	8.3	-0.45
Overall	17		9.0	

H = 0.20 DF = 1 P = 0.651
H = 0.21 DF = 1 P = 0.650 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
62	11	1.930	9.3	0.35
63	6	1.865	8.4	-0.35
Overall	17		9.0	

H = 0.12 DF = 1 P = 0.725
H = 0.12 DF = 1 P = 0.724 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain reference

Mood median test for w (%)

Chi-Square = 0.02   DF = 1   P = 0.892

```
Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
62          21  21   14.32   3.13          (------*---------)
63          16  15   14.26   5.07    (------------*-------------------)
                                     +---------+---------+---------+------
                                   13.0      14.0      15.0      16.0
```

Overall median = 14.26

A 95.0% CI for median(62) - median(63): (-1.43,1.51)

Mood median test for WL (%)

Chi-Square = 0.22   DF = 1   P = 0.636

```
Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
62          23  16   33.00   3.00     (--------------*--------------)
63          20  11   32.00   3.00  (---*---------------------------)
                                   -------+---------+---------+---------
                                       32.20     32.90     33.60
```

Overall median = 33.00

A 95.0% CI for median(62) - median(63): (-0.10,2.00)

```
Mood median test for Wp (%)

Chi-Square = 0.12    DF = 1    P = 0.724

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          21  18   16.00   2.00               *-------------)
63          18  13   16.00   3.00  (--------------*----------------)
                                   ------+---------+---------+---------+
                                      15.40     16.10     16.80     17.50

Overall median = 16.00

A 95.0% CI for median(62) - median(63): (-1.00,2.00)


Mood median test for Ip (%)

Chi-Square = 0.09    DF = 1    P = 0.768

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          24  15   15.00   4.00  *----------------------------)
63          18  13   16.00   3.00               *-----------------)
                                   ------+---------+---------+---------+
                                      15.40     16.10     16.80     17.50

Overall median = 16.00

A 95.0% CI for median(62) - median(63): (-2.00,0.05)


Mood median test for % GRAVEL

Chi-Square = 0.14    DF = 1    P = 0.705

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
62           9  10    25.0   14.0     (----------*-------)
63           6   5    22.0   16.0  (-------*-------------------------)
                                   ----+---------+---------+---------+--
                                    20.0      25.0      30.0      35.0

Overall median = 24.5

A 95.0% CI for median(62) - median(63): (-11.0,9.0)


Mood median test for % SAND

Chi-Square = 0.14    DF = 1    P = 0.705

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
62          10   9   27.00   8.00          (--------*------------)
63           5   6   28.00   8.00  (--------------------*------------)
                                   ---------+---------+---------+-------
                                         25.0      27.5      30.0

Overall median = 27.50

A 95.0% CI for median(62) - median(63): (-6.00,7.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.74    DF = 1    P = 0.389

Domain                                   Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62           9  10    49.0    8.0                      (-----*--)
63           7   4    47.0   22.0  (---------------------*--------)
                                   ------+---------+---------+---------+
                                      35.0      42.0      49.0      56.0

Overall median = 48.0

A 95.0% CI for median(62) - median(63): (-7.0,19.0)


Mood median test for Bulk Density

Chi-Square = 0.70    DF = 1    P = 0.402

Domain                                   Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
62           5   6   2.200  0.180  (------------------------------*---)
63           4   2   2.100  0.131        (-----*---------------------)
                                   --+---------+---------+---------+----
                                   2.050     2.100     2.150     2.200

Overall median = 2.190

A 95.0% CI for median(62) - median(63): (-0.062,0.126)


Mood median test for Dry Density

Chi-Square = 0.24    DF = 1    P = 0.627

Domain                                   Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62           6   5   1.930  0.180  (---------------------------*-------)
63           4   2   1.865  0.145        (---------*------------------)
                                   ---+---------+---------+---------+---
                                    1.800     1.850     1.900     1.950

Overall median = 1.930

A 95.0% CI for median(62) - median(63): (-0.112,0.142)
```

Results for: Domains 62 and 64, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
62	89	18.13	5.52	0.59
64	13	15.83	2.56	0.71

Difference = mu (62) - mu (64)
Estimate for difference: 2.297
95% CI for difference: (0.422, 4.172)
T-Test of difference = 0 (vs not =): T-Value = 2.50 P-Value = 0.018 DF = 31

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
62	74	35.22	6.92	0.80
64	16	34.56	2.37	0.59

Difference = mu (62) - mu (64)
Estimate for difference: 0.654
95% CI for difference: (-1.338, 2.645)
T-Test of difference = 0 (vs not =): T-Value = 0.65 P-Value = 0.515 DF = 71

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
62	74	18.34	2.99	0.35
64	16	18.63	2.13	0.53

Difference = mu (62) - mu (64)
Estimate for difference: -0.287
95% CI for difference: (-1.586, 1.011)
T-Test of difference = 0 (vs not =): T-Value = -0.45 P-Value = 0.654 DF = 29

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
62	74	16.88	5.03	0.58
64	16	15.94	2.43	0.61

Difference = mu (62) - mu (64)
Estimate for difference: 0.941
95% CI for difference: (-0.757, 2.639)
T-Test of difference = 0 (vs not =): T-Value = 1.11 P-Value = 0.271 DF = 47

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
62	18	2.088	0.110	0.026
64	7	2.1314	0.0969	0.037

Difference = mu (62) - mu (64)
Estimate for difference: -0.0432
95% CI for difference: (-0.1410, 0.0547)
T-Test of difference = 0 (vs not =): T-Value = -0.96 P-Value = 0.355 DF = 12

```
Two-sample T for Dry Density

Domain
reference   N   Mean  StDev  SE Mean
62         18  1.747  0.184    0.043
64          7  1.844  0.101    0.038

Difference = mu (62) - mu (64)
Estimate for difference:  -0.0971
95% CI for difference:  (-0.2178, 0.0237)
T-Test of difference = 0 (vs not =): T-Value = -1.68  P-Value = 0.109  DF = 19
```

Kruskal-Wallis Test: (Parameter) versus Domain reference

```
Kruskal-Wallis Test on w (%)

Domain
reference    N  Median  Ave Rank      Z
62          89   17.69      53.1   1.41
64          13   16.00      40.7  -1.41
Overall    102              51.5

H = 1.99  DF = 1  P = 0.159
H = 1.99  DF = 1  P = 0.159  (adjusted for ties)


Kruskal-Wallis Test on WL (%)

Domain
reference   N  Median  Ave Rank      Z
62         74   34.00      44.9  -0.48
64         16   34.00      48.3   0.48
Overall    90              45.5

H = 0.23  DF = 1  P = 0.631
H = 0.23  DF = 1  P = 0.629  (adjusted for ties)


Kruskal-Wallis Test on Wp (%)

Domain
reference   N  Median  Ave Rank      Z
62         74   18.00      44.5  -0.75
64         16   18.00      50.0   0.75
Overall    90              45.5

H = 0.57  DF = 1  P = 0.451
H = 0.58  DF = 1  P = 0.447  (adjusted for ties)


Kruskal-Wallis Test on Ip (%)

Domain
reference   N  Median  Ave Rank      Z
62         74   17.00      46.3   0.60
64         16   16.50      42.0  -0.60
Overall    90              45.5

H = 0.36  DF = 1  P = 0.551
H = 0.36  DF = 1  P = 0.549  (adjusted for ties)
```

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
62	28	23.00	14.9	-0.24
64	1	27.00	17.0	0.24
Overall	29		15.0	

H = 0.06 DF = 1 P = 0.811
H = 0.06 DF = 1 P = 0.811 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
62	28	28.50	15.2	0.54
64	1	26.00	10.5	-0.54
Overall	29		15.0	

H = 0.29 DF = 1 P = 0.591
H = 0.29 DF = 1 P = 0.590 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
62	28	45.00	14.9	-0.18
64	1	47.00	16.5	0.18
Overall	29		15.0	

H = 0.03 DF = 1 P = 0.858
H = 0.03 DF = 1 P = 0.858 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
62	18	2.095	12.3	-0.79
64	7	2.110	14.9	0.79
Overall	25		13.0	

H = 0.62 DF = 1 P = 0.431
H = 0.62 DF = 1 P = 0.431 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
62	18	1.740	11.9	-1.18
64	7	1.870	15.8	1.18
Overall	25		13.0	

H = 1.39 DF = 1 P = 0.238
H = 1.39 DF = 1 P = 0.238 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 4.01    DF = 1    P = 0.045

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62          42  47   17.69   6.48                      (----------*-----)
64          10   3   16.00   4.43  (-------------------*-------)
                                   ---+---------+---------+---------+---
                                   13.5      15.0      16.5      18.0

Overall median = 17.00

A 95.0% CI for median(62) - median(64): (-0.23,4.91)


Mood median test for WL (%)

Chi-Square = 0.00    DF = 1    P = 0.951

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
62          41  33   34.00   3.50  (-------*--------)
64           9   7   34.00   4.00  (-------*-----------------------)
                                   -----+---------+---------+---------+-
                                     33.6      34.8      36.0      37.2

Overall median = 34.00

A 95.0% CI for median(62) - median(64): (-3.00,1.05)


Mood median test for Wp (%)

Chi-Square = 0.10    DF = 1    P = 0.746

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          43  31   18.00   4.00     (---------*---------)
64          10   6   18.00   2.75             (-*-------------------)
                                      +---------+---------+---------+------
                                   17.0      18.0      19.0      20.0

Overall median = 18.00

A 95.0% CI for median(62) - median(64): (-3.00,0.01)


Mood median test for Ip (%)

Chi-Square = 1.86    DF = 1    P = 0.172

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
62          47  27   17.00   4.25                    (-------------*
64          13   3   16.50   2.75  (-----------------------*------)
                                   ---------+---------+---------+-------
                                         15.40     16.10     16.80

Overall median = 17.00

A 95.0% CI for median(62) - median(64): (-1.00,2.01)
```

```
Mood median test for Bulk Density

Chi-Square = 0.10    DF = 1    P = 0.748

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
62           9   9   2.095  0.213  (------------*-----------)
64           4   3   2.110  0.150       (---------*---------------)
                                   ----+---------+---------+---------+--
                                     2.030     2.100     2.170     2.240

Overall median = 2.110

A 95.0% CI for median(62) - median(64): (-0.194,0.103)


Mood median test for Dry Density

Chi-Square = 0.33    DF = 1    P = 0.568

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
62          10   8   1.740  0.312    (-------------*-------------)
64           3   4   1.870  0.200                (-------------*-------)
                                     +---------+---------+---------+------
                                   1.60      1.70      1.80      1.90

Overall median = 1.800

A 95.0% CI for median(62) - median(64): (-0.270,0.113)
```

Results for: Domains 62 and 64, Lower Till

Two-Sample T-Test and CI: (Parameter) Domain reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
62         42  14.24   2.87     0.44
64         11  14.76   3.21     0.97

Difference = mu (62) - mu (64)
Estimate for difference:  -0.53
95% CI for difference:  (-2.81, 1.76)
T-Test of difference = 0 (vs not =): T-Value = -0.49  P-Value = 0.629  DF = 14


Two-sample T for WL (%)

Domain
reference   N   Mean  StDev  SE Mean
62         39  32.46   3.41     0.55
64         11  34.27   2.41     0.73

Difference = mu (62) - mu (64)
Estimate for difference:  -1.811
95% CI for difference:  (-3.697, 0.075)
T-Test of difference = 0 (vs not =): T-Value = -1.99  P-Value = 0.059  DF = 22


Two-sample T for Wp (%)

Domain
reference   N   Mean  StDev  SE Mean
62         39  16.49   1.76     0.28
64         11  16.64   1.91     0.58

Difference = mu (62) - mu (64)
Estimate for difference:  -0.149
95% CI for difference:  (-1.517, 1.218)
T-Test of difference = 0 (vs not =): T-Value = -0.23  P-Value = 0.819  DF = 15


Two-sample T for Ip (%)

Domain
reference   N   Mean  StDev  SE Mean
62         39  15.97   3.17     0.51
64         11  17.64   2.01     0.61

Difference = mu (62) - mu (64)
Estimate for difference:  -1.662
95% CI for difference:  (-3.293, -0.031)
T-Test of difference = 0 (vs not =): T-Value = -2.10  P-Value = 0.046  DF = 25


Two-sample T for Bulk Density

Domain
reference   N    Mean   StDev  SE Mean
62         11  2.1526  0.0905    0.027
64          6  2.1633  0.0761    0.031

Difference = mu (62) - mu (64)
Estimate for difference:  -0.0107
95% CI for difference:  (-0.1008, 0.0794)
T-Test of difference = 0 (vs not =): T-Value = -0.26  P-Value = 0.800  DF = 12
```

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
62	11	1.886	0.128	0.038
64	6	1.9067	0.0720	0.029

Difference = mu (62) - mu (64)
Estimate for difference: -0.0203
95% CI for difference: (-0.1242, 0.0836)
T-Test of difference = 0 (vs not =): T-Value = -0.42 P-Value = 0.681 DF = 14

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
62	42	14.32	26.8	-0.15
64	11	14.00	27.6	0.15
Overall	53		27.0	

H = 0.02 DF = 1 P = 0.878
H = 0.02 DF = 1 P = 0.878 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
62	39	33.00	23.8	-1.56
64	11	34.00	31.5	1.56
Overall	50		25.5	

H = 2.43 DF = 1 P = 0.119
H = 2.46 DF = 1 P = 0.117 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
62	39	16.00	25.2	-0.23
64	11	17.00	26.4	0.23
Overall	50		25.5	

H = 0.05 DF = 1 P = 0.815
H = 0.06 DF = 1 P = 0.812 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
62	39	15.00	23.5	-1.85
64	11	17.00	32.7	1.85
Overall	50		25.5	

H = 3.42 DF = 1 P = 0.064
H = 3.49 DF = 1 P = 0.062 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

Domain                  Ave
reference   N  Median  Rank      Z
62         11   2.200   9.0  -0.05
64          6   2.190   9.1   0.05
Overall    17           9.0

H = 0.00  DF = 1  P = 0.960
H = 0.00  DF = 1  P = 0.960  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain                  Ave
reference   N  Median  Rank      Z
62         11   1.930   9.0   0.05
64          6   1.930   8.9  -0.05
Overall    17           9.0

H = 0.00  DF = 1  P = 0.960
H = 0.00  DF = 1  P = 0.960  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 0.07    DF = 1    P = 0.788

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          21  21   14.32   3.13                (---*------)
64           6   5   14.00   5.00     (------------*-------------------)
                                      +---------+---------+---------+------
                                   12.0      13.5      15.0      16.5

Overall median = 14.18

A 95.0% CI for median(62) - median(64): (-3.00,2.76)


Mood median test for WL (%)

Chi-Square = 1.77    DF = 1    P = 0.184

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
62          23  16   33.00   3.00  (--------*-------)
64           4   7   34.00   4.00   (---------------*-----------------)
                                   ----+---------+---------+---------+--
                                    32.4      33.6      34.8      36.0

Overall median = 33.00

A 95.0% CI for median(62) - median(64): (-3.00,1.00)
```

```
Mood median test for Wp (%)

Chi-Square = 1.05    DF = 1    P = 0.306

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
62          21  18   16.00   2.00                     *---------------)
64           4   7   17.00   2.00    (--------------------------------*--)
                                     +---------+---------+---------+------
                                  15.00     15.60     16.20     16.80

Overall median = 16.50

A 95.0% CI for median(62) - median(64): (-1.00,2.00)


Mood median test for Ip (%)

Chi-Square = 4.06    DF = 1    P = 0.044

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
62          24  15   15.00   4.00    *------------)
64           3   8   17.00   4.00          (------*-------------------)
                                     +---------+---------+---------+------
                                  15.0      16.5      18.0      19.5

Overall median = 16.00

A 95.0% CI for median(62) - median(64): (-5.00,0.00)


Mood median test for Bulk Density

Chi-Square = 0.02    DF = 1    P = 0.901

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
62           7   4   2.200  0.180   (-------------------------*--)
64           4   2   2.190  0.125       (--------------------*-----)
                                    +---------+---------+---------+------
                                  2.040     2.100     2.160     2.220

Overall median = 2.200

A 95.0% CI for median(62) - median(64): (-0.072,0.107)


Mood median test for Dry Density

Chi-Square = 0.03    DF = 1    P = 0.858

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
62           6   5   1.930  0.180  (-----------------------*------)
64           3   3   1.930  0.135       (-----------------*------)
                                   --+---------+---------+---------+----
                                   1.800     1.860     1.920     1.980

Overall median = 1.930

A 95.0% CI for median(62) - median(64): (-0.108,0.134)
```

Results for: Domains 62 and 65, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
62	89	18.13	5.52	0.59
65	6	17.50	4.64	1.9

Difference = mu (62) - mu (65)
Estimate for difference: 0.63
95% CI for difference: (-4.47, 5.72)
T-Test of difference = 0 (vs not =): T-Value = 0.32 P-Value = 0.765 DF = 5

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
62	74	35.22	6.92	0.80
65	7	34.57	5.68	2.1

Difference = mu (62) - mu (65)
Estimate for difference: 0.64
95% CI for difference: (-4.78, 6.07)
T-Test of difference = 0 (vs not =): T-Value = 0.28 P-Value = 0.787 DF = 7

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
62	74	18.34	2.99	0.35
65	7	18.86	1.57	0.59

Difference = mu (62) - mu (65)
Estimate for difference: -0.519
95% CI for difference: (-2.054, 1.016)
T-Test of difference = 0 (vs not =): T-Value = -0.75 P-Value = 0.468 DF = 10

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
62	74	16.88	5.03	0.58
65	7	15.71	4.31	1.6

Difference = mu (62) - mu (65)
Estimate for difference: 1.16
95% CI for difference: (-2.93, 5.26)
T-Test of difference = 0 (vs not =): T-Value = 0.67 P-Value = 0.523 DF = 7

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
62	28	24.3	14.5	2.7
65	2	20.0	11.3	8.0

Difference = mu (62) - mu (65)
Estimate for difference: 4.25
95% CI for difference: (-103.19, 111.69)
T-Test of difference = 0 (vs not =): T-Value = 0.50 P-Value = 0.704 DF = 1

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
62	28	29.11	8.65	1.6
65	2	34.00	1.41	1.0

Difference = mu (62) - mu (65)
Estimate for difference: -4.89
95% CI for difference: (-9.16, -0.62)
T-Test of difference = 0 (vs not =): T-Value = -2.55 P-Value = 0.029 DF = 10

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
62	28	44.7	19.6	3.7
65	2	46.0	12.7	9.0

Difference = mu (62) - mu (65)
Estimate for difference: -1.29
95% CI for difference: (-124.96, 122.39)
T-Test of difference = 0 (vs not =): T-Value = -0.13 P-Value = 0.916 DF = 1

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
62	18	2.088	0.110	0.026
65	6	2.0917	0.0542	0.022

Difference = mu (62) - mu (65)
Estimate for difference: -0.0034
95% CI for difference: (-0.0751, 0.0683)
T-Test of difference = 0 (vs not =): T-Value = -0.10 P-Value = 0.922 DF = 18

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
62	18	1.747	0.184	0.043
65	6	1.783	0.109	0.044

Difference = mu (62) - mu (65)
Estimate for difference: -0.0361
95% CI for difference: (-0.1683, 0.0961)
T-Test of difference = 0 (vs not =): T-Value = -0.58 P-Value = 0.569 DF = 15

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
62	89	17.69	48.2	0.28
65	6	16.00	44.9	-0.28
Overall	95		48.0	

H = 0.08 DF = 1 P = 0.777
H = 0.08 DF = 1 P = 0.777 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
62	74	34.00	40.7	-0.43
65	7	37.00	44.6	0.43
Overall	81		41.0	

H = 0.18 DF = 1 P = 0.668
H = 0.19 DF = 1 P = 0.666 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
62	74	18.00	40.3	-0.89
65	7	19.00	48.6	0.89
Overall	81		41.0	

H = 0.79 DF = 1 P = 0.373
H = 0.81 DF = 1 P = 0.369 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
62	74	17.00	41.0	-0.04
65	7	18.00	41.4	0.04
Overall	81		41.0	

H = 0.00 DF = 1 P = 0.966
H = 0.00 DF = 1 P = 0.966 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
62	28	23.00	15.7	0.42
65	2	20.00	13.0	-0.42
Overall	30		15.5	

H = 0.17 DF = 1 P = 0.678
H = 0.17 DF = 1 P = 0.677 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
62	28	28.50	15.1	-0.96
65	2	34.00	21.3	0.96
Overall	30		15.5	

H = 0.91 DF = 1 P = 0.339
H = 0.92 DF = 1 P = 0.338 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
reference   N  Median  Ave Rank      Z
62         28   45.00      15.3  -0.42
65          2   46.00      18.0   0.42
Overall    30              15.5

H = 0.17  DF = 1  P = 0.678
H = 0.17  DF = 1  P = 0.677  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
62         18   2.095      12.5  -0.03
65          6   2.105      12.6   0.03
Overall    24              12.5

H = 0.00  DF = 1  P = 0.973
H = 0.00  DF = 1  P = 0.973  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
62         18   1.740      12.3  -0.23
65          6   1.815      13.1   0.23
Overall    24              12.5

H = 0.05  DF = 1  P = 0.816
H = 0.05  DF = 1  P = 0.815  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 0.67    DF = 1    P = 0.414

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
62          44  45   17.69   6.48         (-----*--)
65           4   2   16.00   6.25  (------*------------------------)
                                   ----+---------+---------+---------+--
                                    15.0      18.0      21.0      24.0

Overall median = 17.48

A 95.0% CI for median(62) - median(65): (-8.93,5.00)
```

```
Mood median test for WL (%)

Chi-Square = 0.41    DF = 1    P = 0.524

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62          41  33    34.0    3.5             (--*---)
65           3   4    37.0    8.0  (-------------------------*-------)
                                   ---+---------+---------+---------+---
                                   30.0      33.0      36.0      39.0

Overall median = 34.0

A 95.0% CI for median(62) - median(65): (-5.2,4.3)


Mood median test for Wp (%)

Chi-Square = 2.26    DF = 1    P = 0.133

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          43  31   18.00   4.00     (---------*---------)
65           2   5   19.00   2.00          (--------------*------------)
                                      +---------+---------+---------+------
                                   17.0      18.0      19.0      20.0

Overall median = 18.00

A 95.0% CI for median(62) - median(65): (-2.19,0.38)


Mood median test for Ip (%)

Chi-Square = 1.16    DF = 1    P = 0.282

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          47  27   17.00   4.25                      (---*
65           3   4   18.00   7.00  (---------------------------*---)
                                   ------+---------+---------+---------+
                                      12.5      15.0      17.5      20.0

Overall median = 17.00

A 95.0% CI for median(62) - median(65): (-3.00,5.76)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          14  14    23.0   24.3           (---------*-------------)
65           1   1    20.0   16.0     (------------*-------------)
                                      +---------+---------+---------+------
                                   12.0      18.0      24.0      30.0

Overall median = 23.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(65): (-27.0,42.0)
```

```
Mood median test for % SAND

Chi-Square = 2.45    DF = 1    P = 0.118

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
62          16  12   28.50  13.25  (---------*--------------)
65           0   2   34.00   2.00                            (--*---)
                                   -----+---------+---------+---------+-
                                     27.0      30.0      33.0      36.0

Overall median = 29.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(65): (-30.00,10.00)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.01    DF = 1    P = 0.922

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          15  13    45.0   24.0     (--------------*-----------)
65           1   1    46.0   18.0       (--------------*--------------)
                                      +---------+---------+---------+------
                                   36.0      42.0      48.0      54.0

Overall median = 45.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(65): (-42.0,57.0)


Mood median test for Bulk Density

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
62           9   9   2.095  0.213    (-----------------*---------------)
65           3   3   2.105  0.090         (---------------*-------)
                                     +---------+---------+---------+------
                                   2.000     2.050     2.100     2.150

Overall median = 2.105

A 95.0% CI for median(62) - median(65): (-0.150,0.140)


Mood median test for Dry Density

Chi-Square = 0.89    DF = 1    P = 0.346

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
62          10   8   1.740  0.312   (-----------------*------------------)
65           2   4   1.815  0.168         (--------------------*--------)
                                    -+---------+---------+---------+-----
                                   1.600     1.680     1.760     1.840

Overall median = 1.780

A 95.0% CI for median(62) - median(65): (-0.230,0.260)
```

(Note: insufficient data from lower till in Domain 65)

Results for: Domains 63 and 64, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
63         24  20.64   6.11      1.2
64         13  15.83   2.56     0.71

Difference = mu (63) - mu (64)
Estimate for difference:  4.81
95% CI for difference:  (1.90, 7.73)
T-Test of difference = 0 (vs not =): T-Value = 3.36  P-Value = 0.002  DF = 33


Two-sample T for WL (%)

Domain
reference   N   Mean  StDev  SE Mean
63         27  37.19   4.61     0.89
64         16  34.56   2.37     0.59

Difference = mu (63) - mu (64)
Estimate for difference:  2.62
95% CI for difference:  (0.47, 4.78)
T-Test of difference = 0 (vs not =): T-Value = 2.46  P-Value = 0.018  DF = 40


Two-sample T for Wp (%)

Domain
reference   N   Mean  StDev  SE Mean
63         27  19.96   2.36     0.45
64         16  18.63   2.13     0.53

Difference = mu (63) - mu (64)
Estimate for difference:  1.338
95% CI for difference:  (-0.083, 2.759)
T-Test of difference = 0 (vs not =): T-Value = 1.91  P-Value = 0.064  DF = 34


Two-sample T for Ip (%)

Domain
reference   N   Mean  StDev  SE Mean
63         27  17.22   3.73     0.72
64         16  15.94   2.43     0.61

Difference = mu (63) - mu (64)
Estimate for difference:  1.285
95% CI for difference:  (-0.619, 3.188)
T-Test of difference = 0 (vs not =): T-Value = 1.36  P-Value = 0.180  DF = 40


Two-sample T for Bulk Density

Domain
reference  N    Mean   StDev  SE Mean
63         5   2.023   0.145    0.065
64         7  2.1314  0.0969    0.037

Difference = mu (63) - mu (64)
Estimate for difference:  -0.1085
95% CI for difference:  (-0.2911, 0.0740)
T-Test of difference = 0 (vs not =): T-Value = -1.45  P-Value = 0.196  DF = 6
```

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
63	5	1.716	0.171	0.076
64	7	1.844	0.101	0.038

Difference = mu (63) - mu (64)
Estimate for difference: -0.1283
95% CI for difference: (-0.3475, 0.0909)
T-Test of difference = 0 (vs not =): T-Value = -1.50 P-Value = 0.193 DF = 5

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
63	24	19.28	21.3	1.78
64	13	16.00	14.7	-1.78
Overall	37		19.0	

H = 3.17 DF = 1 P = 0.075
H = 3.18 DF = 1 P = 0.075 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
63	27	36.00	24.7	1.85
64	16	34.00	17.4	-1.85
Overall	43		22.0	

H = 3.41 DF = 1 P = 0.065
H = 3.46 DF = 1 P = 0.063 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
63	27	20.00	24.8	1.88
64	16	18.00	17.3	-1.88
Overall	43		22.0	

H = 3.55 DF = 1 P = 0.060
H = 3.64 DF = 1 P = 0.056 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
63	27	17.00	23.6	1.08
64	16	16.50	19.3	-1.08
Overall	43		22.0	

H = 1.17 DF = 1 P = 0.280
H = 1.19 DF = 1 P = 0.276 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
63	19	27.00	10.5	0.00
64	1	27.00	10.5	0.00
Overall	20		10.5	

H = 0.00 DF = 1 P = 1.000
H = 0.00 DF = 1 P = 1.000 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
63	19	31.00	10.7	0.52
64	1	26.00	7.5	-0.52
Overall	20		10.5	

H = 0.27 DF = 1 P = 0.603
H = 0.27 DF = 1 P = 0.601 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
63	19	40.00	10.3	-0.61
64	1	47.00	14.0	0.61
Overall	20		10.5	

H = 0.37 DF = 1 P = 0.544
H = 0.37 DF = 1 P = 0.543 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
63	5	1.950	5.0	-1.22
64	7	2.110	7.6	1.22
Overall	12		6.5	

H = 1.48 DF = 1 P = 0.223

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
63	5	1.680	4.6	-1.54
64	7	1.870	7.9	1.54
Overall	12		6.5	

H = 2.38 DF = 1 P = 0.123
H = 2.39 DF = 1 P = 0.122 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 0.05    DF = 1    P = 0.823

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
63          12  12    19.3   10.7        (-----------*----------------)
64           7   6    16.0    4.4  (--------*--)
                                   ---+---------+---------+---------+---
                                   14.0      17.5      21.0      24.5

Overall median = 16.6

A 95.0% CI for median(63) - median(64): (-1.1,10.5)


Mood median test for WL (%)

Chi-Square = 1.73    DF = 1    P = 0.189

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
63          13  14   36.00   6.00       (---------*------------------)
64          11   5   34.00   4.00  (----*--------------)
                                   -----+---------+---------+---------+-
                                     34.0      36.0      38.0      40.0

Overall median = 35.00

A 95.0% CI for median(63) - median(64): (-2.00,5.00)


Mood median test for Wp (%)

Chi-Square = 2.39    DF = 1    P = 0.122

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
63          12  15   20.00   4.00             (---------*---------)
64          11   5   18.00   2.75   (-*-------------------)
                                    --+---------+---------+---------+----
                                   18.0      19.0      20.0      21.0

Overall median = 19.00

A 95.0% CI for median(63) - median(64): (-1.00,3.00)


Mood median test for Ip (%)

Chi-Square = 2.92    DF = 1    P = 0.087

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
63          15  12   17.00   4.00            (--------*---------------)
64          13   3   16.50   2.75  (--------------*---)
                                   -------+---------+---------+---------
                                       15.6      16.8      18.0

Overall median = 17.00

A 95.0% CI for median(63) - median(64): (-1.00,3.08)
```

```
Mood median test for Bulk Density

Chi-Square = 0.34    DF = 1    P = 0.558

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
63           3   2   1.950  0.268  (-------*--------------------------)
64           3   4   2.110  0.150                   (------*----------)
                                   ---+---------+---------+---------+---
                                    1.90      2.00      2.10      2.20

Overall median = 2.100
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(64): (-0.326,0.170)


Mood median test for Dry Density

Chi-Square = 0.34    DF = 1    P = 0.558

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
63           3   2   1.680  0.320    (-----------*----------------)
64           3   4   1.870  0.200                    (--------*----)
                                     +---------+---------+---------+------
                                   1.50      1.65      1.80      1.95

Overall median = 1.820
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(64): (-0.450,0.180)
```

Results for: Domains 63 and 64, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
63	31	14.88	3.06	0.55
64	11	14.76	3.21	0.97

Difference = mu (63) - mu (64)
Estimate for difference: 0.12
95% CI for difference: (-2.24, 2.48)
T-Test of difference = 0 (vs not =): T-Value = 0.11 P-Value = 0.915 DF = 16

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
63	31	32.87	3.07	0.55
64	11	34.27	2.41	0.73

Difference = mu (63) - mu (64)
Estimate for difference: -1.402
95% CI for difference: (-3.295, 0.492)
T-Test of difference = 0 (vs not =): T-Value = -1.54 P-Value = 0.139 DF = 22

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
63	31	16.26	2.18	0.39
64	11	16.64	1.91	0.58

Difference = mu (63) - mu (64)
Estimate for difference: -0.378
95% CI for difference: (-1.836, 1.079)
T-Test of difference = 0 (vs not =): T-Value = -0.54 P-Value = 0.593 DF = 19

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
63	31	16.61	2.32	0.42
64	11	17.64	2.01	0.61

Difference = mu (63) - mu (64)
Estimate for difference: -1.023
95% CI for difference: (-2.559, 0.512)
T-Test of difference = 0 (vs not =): T-Value = -1.39 P-Value = 0.180 DF = 20

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
63	6	2.1294	0.0686	0.028
64	6	2.1633	0.0761	0.031

Difference = mu (63) - mu (64)
Estimate for difference: -0.0340
95% CI for difference: (-0.1286, 0.0606)
T-Test of difference = 0 (vs not =): T-Value = -0.81 P-Value = 0.438 DF = 9

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
63	6	1.8817	0.0691	0.028
64	6	1.9067	0.0720	0.029

Difference = mu (63) - mu (64)
Estimate for difference: -0.0250
95% CI for difference: (-0.1172, 0.0672)
T-Test of difference = 0 (vs not =): T-Value = -0.61 P-Value = 0.555 DF = 9

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
63	31	14.26	21.8	0.26
64	11	14.00	20.7	-0.26
Overall	42		21.5	

H = 0.07 DF = 1 P = 0.797
H = 0.07 DF = 1 P = 0.797 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
63	31	32.00	19.5	-1.73
64	11	34.00	27.0	1.73
Overall	42		21.5	

H = 3.00 DF = 1 P = 0.083
H = 3.06 DF = 1 P = 0.080 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
63	31	16.00	20.8	-0.59
64	11	17.00	23.4	0.59
Overall	42		21.5	

H = 0.34 DF = 1 P = 0.558
H = 0.35 DF = 1 P = 0.552 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
63	31	16.00	20.0	-1.33
64	11	17.00	25.7	1.33
Overall	42		21.5	

H = 1.77 DF = 1 P = 0.183
H = 1.81 DF = 1 P = 0.178 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
63	6	2.100	5.6	-0.88
64	6	2.190	7.4	0.88
Overall	12		6.5	

H = 0.78 DF = 1 P = 0.378
H = 0.78 DF = 1 P = 0.377 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
63	6	1.865	6.1	-0.40
64	6	1.930	6.9	0.40
Overall	12		6.5	

H = 0.16 DF = 1 P = 0.689
H = 0.16 DF = 1 P = 0.688 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain reference

Mood median test for w (%)

Chi-Square = 0.12   DF = 1   P = 0.726

```
Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
63          15  16   14.26   5.07            (-------*------------)
64           6   5   14.00   5.00     (------------*-------------------)
                                      +---------+---------+---------+------
                                   12.0      13.5      15.0      16.5
```

Overall median = 14.25

A 95.0% CI for median(63) - median(64): (-3.40,3.28)

Mood median test for WL (%)

Chi-Square = 2.63   DF = 1   P = 0.105

```
Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
63          20  11   32.00   3.00  (-*-------------)
64           4   7   34.00   4.00    (-------------*-------------)
                                   ---------+---------+---------+-------
                                         33.0      34.5      36.0
```

Overall median = 33.00

A 95.0% CI for median(63) - median(64): (-4.00,1.00)

```
Mood median test for Wp (%)

Chi-Square = 1.53    DF = 1    P = 0.216

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63          18  13   16.00   3.00  (--------------*-----------------)
64           4   7   17.00   2.00  (----------------------------*-)
                                   ------+---------+---------+---------+
                                      15.40     16.10     16.80     17.50

Overall median = 16.00

A 95.0% CI for median(63) - median(64): (-2.00,2.00)


Mood median test for Ip (%)

Chi-Square = 3.08    DF = 1    P = 0.079

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
63          18  13   16.00   3.00  *----------)
64           3   8   17.00   4.00  (--------*-----------------------)
                                   -------+---------+---------+---------
                                       16.8      18.0      19.2

Overall median = 16.50

A 95.0% CI for median(63) - median(64): (-4.00,1.00)


Mood median test for Bulk Density

Chi-Square = 1.33    DF = 1    P = 0.248

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
63           4   2   2.100  0.131    (-----*---------------------)
64           2   4   2.190  0.125  (------------------------*------)
                                   --------+---------+---------+--------
                                         2.100     2.150     2.200

Overall median = 2.150

A 95.0% CI for median(63) - median(64): (-0.133,0.097)


Mood median test for Dry Density

Chi-Square = 1.33    DF = 1    P = 0.248

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
63           4   2   1.865  0.145  (---------*-------------------)
64           2   4   1.930  0.135  (---------------------*--------)
                                   -------+---------+---------+---------
                                        1.850     1.900     1.950

Overall median = 1.895

A 95.0% CI for median(63) - median(64): (-0.134,0.132)
```

Results for: Domains 63 and 65, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
63         24  20.64   6.11      1.2
65          6  17.50   4.64      1.9

Difference = mu (63) - mu (65)
Estimate for difference:  3.14
95% CI for difference:  (-1.99, 8.27)
T-Test of difference = 0 (vs not =): T-Value = 1.39  P-Value = 0.199  DF = 9


Two-sample T for WL (%)

Domain
reference   N   Mean  StDev  SE Mean
63         27  37.19   4.61     0.89
65          7  34.57   5.68      2.1

Difference = mu (63) - mu (65)
Estimate for difference:  2.61
95% CI for difference:  (-2.74, 7.97)
T-Test of difference = 0 (vs not =): T-Value = 1.12  P-Value = 0.293  DF = 8


Two-sample T for Wp (%)

Domain
reference   N   Mean  StDev  SE Mean
63         27  19.96   2.36     0.45
65          7  18.86   1.57     0.59

Difference = mu (63) - mu (65)
Estimate for difference:  1.106
95% CI for difference:  (-0.511, 2.723)
T-Test of difference = 0 (vs not =): T-Value = 1.48  P-Value = 0.163  DF = 13


Two-sample T for Ip (%)

Domain
reference   N   Mean  StDev  SE Mean
63         27  17.22   3.73     0.72
65          7  15.71   4.31      1.6

Difference = mu (63) - mu (65)
Estimate for difference:  1.51
95% CI for difference:  (-2.60, 5.61)
T-Test of difference = 0 (vs not =): T-Value = 0.85  P-Value = 0.422  DF = 8


Two-sample T for % GRAVEL

Domain
reference   N  Mean  StDev  SE Mean
63         19  26.5   11.2      2.6
65          2  20.0   11.3      8.0

Difference = mu (63) - mu (65)
Estimate for difference:  6.53
95% CI for difference:  (-100.20, 113.25)
T-Test of difference = 0 (vs not =): T-Value = 0.78  P-Value = 0.579  DF = 1
```

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
63	19	30.84	9.91	2.3
65	2	34.00	1.41	1.0

Difference = mu (63) - mu (65)
Estimate for difference: -3.16
95% CI for difference: (-8.45, 2.14)
T-Test of difference = 0 (vs not =): T-Value = -1.27 P-Value = 0.223 DF = 15

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
63	19	42.6	11.3	2.6
65	2	46.0	12.7	9.0

Difference = mu (63) - mu (65)
Estimate for difference: -3.37
95% CI for difference: (-122.37, 115.63)
T-Test of difference = 0 (vs not =): T-Value = -0.36 P-Value = 0.780 DF = 1

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
63	5	2.023	0.145	0.065
65	6	2.0917	0.0542	0.022

Difference = mu (63) - mu (65)
Estimate for difference: -0.0688
95% CI for difference: (-0.2594, 0.1219)
T-Test of difference = 0 (vs not =): T-Value = -1.00 P-Value = 0.373 DF = 4

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
63	5	1.716	0.171	0.076
65	6	1.783	0.109	0.044

Difference = mu (63) - mu (65)
Estimate for difference: -0.0673
95% CI for difference: (-0.2833, 0.1486)
T-Test of difference = 0 (vs not =): T-Value = -0.76 P-Value = 0.474 DF = 6

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
63	24	19.28	16.2	0.83
65	6	16.00	12.8	-0.83
Overall	30		15.5	

H = 0.69 DF = 1 P = 0.407
H = 0.69 DF = 1 P = 0.406 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
63	27	36.00	18.2	0.83
65	7	37.00	14.7	-0.83
Overall	34		17.5	

H = 0.69 DF = 1 P = 0.406
H = 0.70 DF = 1 P = 0.404 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
63	27	20.00	18.5	1.13
65	7	19.00	13.7	-1.13
Overall	34		17.5	

H = 1.27 DF = 1 P = 0.259
H = 1.30 DF = 1 P = 0.254 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
63	27	17.00	17.8	0.38
65	7	18.00	16.2	-0.38
Overall	34		17.5	

H = 0.15 DF = 1 P = 0.701
H = 0.15 DF = 1 P = 0.698 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
63	19	27.00	11.3	0.72
65	2	20.00	8.0	-0.72
Overall	21		11.0	

H = 0.52 DF = 1 P = 0.472
H = 0.52 DF = 1 P = 0.471 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
63	19	31.00	10.5	-1.08
65	2	34.00	15.5	1.08
Overall	21		11.0	

H = 1.16 DF = 1 P = 0.281
H = 1.17 DF = 1 P = 0.280 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
63	19	40.00	11.0	-0.06
65	2	46.00	11.3	0.06
Overall	21		11.0	

H = 0.00 DF = 1 P = 0.952
H = 0.00 DF = 1 P = 0.952 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
63	5	1.950	5.2	-0.73
65	6	2.105	6.7	0.73
Overall	11		6.0	

H = 0.53 DF = 1 P = 0.465
H = 0.54 DF = 1 P = 0.464 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
63	5	1.680	5.5	-0.46
65	6	1.815	6.4	0.46
Overall	11		6.0	

H = 0.21 DF = 1 P = 0.648
H = 0.21 DF = 1 P = 0.647 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain reference

Mood median test for w (%)

Chi-Square = 0.00   DF = 1   P = 1.000

```
Domain                                   Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
63          12  12    19.3   10.7        (-----------*----------------)
65           3   3    16.0    6.3    (------*--------------------)
                                     -+---------+---------+---------+-----
                                   14.0      17.5      21.0      24.5
```

Overall median = 16.8

A 95.0% CI for median(63) - median(65): (-10.0,10.6)

```
Mood median test for WL (%)

Chi-Square = 0.18    DF = 1    P = 0.671

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
63          14  13    36.0    6.0                (------*------------)
65           3   4    37.0    8.0  (------------------------*-------)
                                   ---+---------+---------+---------+---
                                   30.0      33.0      36.0      39.0

Overall median = 36.5

A 95.0% CI for median(63) - median(65): (-4.1,7.0)


Mood median test for Wp (%)

Chi-Square = 1.62    DF = 1    P = 0.203

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
63          12  15   20.00   4.00                (---------*---------)
65           5   2   19.00   2.00  (--------------*------------)
                                   -----+---------+---------+---------+-
                                     18.0      19.0      20.0      21.0

Overall median = 19.50

A 95.0% CI for median(63) - median(65): (-1.10,3.20)


Mood median test for Ip (%)

Chi-Square = 0.36    DF = 1    P = 0.549

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63          15  12   17.00   4.00                    (---*-------)
65           3   4   18.00   7.00  (--------------------------*---)
                                   ------+---------+---------+---------+
                                      12.5      15.0      17.5      20.0

Overall median = 17.00

A 95.0% CI for median(63) - median(65): (-3.00,6.41)


Mood median test for % GRAVEL

Chi-Square = 0.01    DF = 1    P = 0.943

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
63          10   9    27.0   15.0                    (-------*--------)
65           1   1    20.0   16.0     (------------*-------------)
                                      +---------+---------+---------+------
                                   12.0      18.0      24.0      30.0

Overall median = 27.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.8% CI for median(63) - median(65): (-22.0,36.0)
```

```
Mood median test for % SAND

Chi-Square = 2.43    DF = 1    P = 0.119

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
63          11   8   31.00   9.00  (--------------------*-----------)
65           0   2   34.00   2.00                             (---*---)
                                   -------+---------+---------+---------
                                       27.5      30.0      32.5

Overall median = 31.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.8% CI for median(63) - median(65): (-26.00,21.00)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.01    DF = 1    P = 0.943

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63          10   9    40.0   15.0    (---*--------------------)
65           1   1    46.0   18.0  (-----------------*-----------------)
                                   ------+---------+---------+---------+
                                      40.0      45.0      50.0      55.0

Overall median = 40.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.8% CI for median(63) - median(65): (-35.0,27.0)


Mood median test for Bulk Density

Chi-Square = 0.11    DF = 1    P = 0.740

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
63           3   2   1.950  0.268  (-------*-------------------------)
65           3   3   2.105  0.090                 (-------*----)
                                   ---+---------+---------+---------+---
                                    1.90      2.00      2.10      2.20

Overall median = 2.090
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(65): (-0.247,0.172)


Mood median test for Dry Density

Chi-Square = 0.11    DF = 1    P = 0.740

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
63           3   2   1.680  0.320  (--------------*--------------------)
65           3   3   1.815  0.168              (-------------*-----)
                                   -----+---------+---------+---------+-
                                      1.56      1.68      1.80      1.92

Overall median = 1.810
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(65): (-0.343,0.215)
```

(Note: insufficient data from lower till in Domain 65)

Results **for: Domains 64 and 65, Upper Till**

Two-Sample T-Test and CI: (Parameter) versus Domain reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
64         13  15.83   2.56     0.71
65          6  17.50   4.64      1.9

Difference = mu (64) - mu (65)
Estimate for difference:  -1.67
95% CI for difference:  (-6.62, 3.28)
T-Test of difference = 0 (vs not =): T-Value = -0.83  P-Value = 0.440  DF = 6


Two-sample T for WL (%)

Domain
reference   N   Mean  StDev  SE Mean
64         16  34.56   2.37     0.59
65          7  34.57   5.68      2.1

Difference = mu (64) - mu (65)
Estimate for difference:  -0.01
95% CI for difference:  (-5.46, 5.44)
T-Test of difference = 0 (vs not =): T-Value = -0.00  P-Value = 0.997  DF = 6


Two-sample T for Wp (%)

Domain
reference   N   Mean  StDev  SE Mean
64         16  18.63   2.13     0.53
65          7  18.86   1.57     0.59

Difference = mu (64) - mu (65)
Estimate for difference:  -0.232
95% CI for difference:  (-1.932, 1.468)
T-Test of difference = 0 (vs not =): T-Value = -0.29  P-Value = 0.775  DF = 15


Two-sample T for Ip (%)

Domain
reference   N   Mean  StDev  SE Mean
64         16  15.94   2.43     0.61
65          7  15.71   4.31      1.6

Difference = mu (64) - mu (65)
Estimate for difference:  0.22
95% CI for difference:  (-3.89, 4.33)
T-Test of difference = 0 (vs not =): T-Value = 0.13  P-Value = 0.901  DF = 7


Two-sample T for Bulk Density

Domain
reference  N    Mean   StDev  SE Mean
64         7  2.1314  0.0969    0.037
65         6  2.0917  0.0542    0.022

Difference = mu (64) - mu (65)
Estimate for difference:  0.0398
95% CI for difference:  (-0.0570, 0.1365)
T-Test of difference = 0 (vs not =): T-Value = 0.93  P-Value = 0.377  DF = 9
```

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
64	7	1.844	0.101	0.038
65	6	1.783	0.109	0.044

Difference = mu (64) - mu (65)
Estimate for difference: 0.0610
95% CI for difference: (-0.0692, 0.1911)
T-Test of difference = 0 (vs not =): T-Value = 1.04 P-Value = 0.321 DF = 10

Kruskal-Wallis Test: (Parameter) versus Domain reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
64	13	16.00	9.5	-0.53
65	6	16.00	11.0	0.53
Overall	19		10.0	

H = 0.28 DF = 1 P = 0.599
H = 0.28 DF = 1 P = 0.597 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
64	16	34.00	11.5	-0.57
65	7	37.00	13.2	0.57
Overall	23		12.0	

H = 0.32 DF = 1 P = 0.570
H = 0.33 DF = 1 P = 0.567 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
64	16	18.00	11.4	-0.63
65	7	19.00	13.4	0.63
Overall	23		12.0	

H = 0.40 DF = 1 P = 0.526
H = 0.42 DF = 1 P = 0.518 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
64	16	16.50	11.6	-0.47
65	7	18.00	13.0	0.47
Overall	23		12.0	

H = 0.22 DF = 1 P = 0.640
H = 0.22 DF = 1 P = 0.637 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

Domain                 Ave
reference   N  Median  Rank      Z
64          7   2.110   7.6   0.57
65          6   2.105   6.3  -0.57
Overall    13           7.0

H = 0.33  DF = 1  P = 0.568
H = 0.33  DF = 1  P = 0.566  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain                 Ave
reference   N  Median  Rank      Z
64          7   1.870   7.9   0.86
65          6   1.815   6.0  -0.86
Overall    13           7.0

H = 0.73  DF = 1  P = 0.391
H = 0.74  DF = 1  P = 0.391  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 0.02    DF = 1    P = 0.876

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
64           7   6    16.0    4.4  (--------*----)
65           3   3    16.0    6.3    (------*-----------------------)
                                   ------+---------+---------+---------+
                                      15.0      18.0      21.0      24.0

Overall median = 16.0

A 95.0% CI for median(64) - median(65): (-5.7,2.5)


Mood median test for WL (%)

Chi-Square = 0.35    DF = 1    P = 0.554

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
64           9   7    34.0    4.0              (--*---------)
65           3   4    37.0    8.0  (------------------------*-------)
                                   ---+---------+---------+---------+---
                                   30.0      33.0      36.0      39.0

Overall median = 34.0

A 95.0% CI for median(64) - median(65): (-5.0,4.3)
```

```
Mood median test for Wp (%)

Chi-Square = 2.25    DF = 1    P = 0.134

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
64          10   6   18.00   2.75       (--*-----------------------)
65           2   5   19.00   2.00   (-----------------*---------------)
                                     --+---------+---------+---------+----
                                   17.60     18.40     19.20     20.00

Overall median = 18.00

A 95.0% CI for median(64) - median(65): (-2.04,1.08)


Mood median test for Ip (%)

Chi-Square = 3.39    DF = 1    P = 0.066

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   ------+---------+---------+---------+
64          13   3   16.50   2.75                  (------*-)
65           3   4   18.00   7.00   (---------------------------*---)
                                    ------+---------+---------+---------+
                                       12.5      15.0      17.5      20.0

Overall median = 17.00

A 95.0% CI for median(64) - median(65): (-4.00,5.17)


Mood median test for Bulk Density

Chi-Square = 0.07    DF = 1    P = 0.797

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   ---+---------+---------+---------+---
64           4   3   2.110  0.150     (------------*-----------------)
65           3   3   2.105  0.090   (-------------*------)
                                    ---+---------+---------+---------+---
                                     2.040     2.100     2.160     2.220

Overall median = 2.110

A 95.0% CI for median(64) - median(65): (-0.074,0.154)


Mood median test for Dry Density

Chi-Square = 0.74    DF = 1    P = 0.391

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   ------+---------+---------+---------+
64           3   4   1.870  0.200            (-------------*-------)
65           4   2   1.815  0.168   (----------------*------)
                                    ------+---------+---------+---------+
                                        1.70      1.80      1.90      2.00

Overall median = 1.820

A 95.0% CI for median(64) - median(65): (-0.097,0.242)
```

(Note: insufficient data from lower till in Domain 65)

Site **7: Cleator Moor**

Results **for: Domain 71**

Two-Sample T-Test and CI: (Parameter) versus Soil Type

```
Two-sample T for w (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  28  15.32   6.96      1.3
Upper Till  16  13.23   2.47     0.62

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  2.09
95% CI for difference:  (-0.86, 5.04)
T-Test of difference = 0 (vs not =): T-Value = 1.44  P-Value = 0.159  DF = 36
```

```
Two-sample T for WL (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  11  31.55   2.77     0.84
Upper Till   6  30.67   2.42     0.99

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  0.88
95% CI for difference:  (-1.97, 3.73)
T-Test of difference = 0 (vs not =): T-Value = 0.68  P-Value = 0.511  DF = 11
```

```
Two-sample T for Wp (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  11  15.18   1.78     0.54
Upper Till   6  15.67   1.75     0.71

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -0.485
95% CI for difference:  (-2.476, 1.506)
T-Test of difference = 0 (vs not =): T-Value = -0.54  P-Value = 0.599  DF = 10
```

```
Two-sample T for Ip (%)

Soil Type    N   Mean  StDev  SE Mean
Lower Till  11  16.36   1.96     0.59
Upper Till   6  15.00   1.79     0.73

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  1.364
95% CI for difference:  (-0.705, 3.433)
T-Test of difference = 0 (vs not =): T-Value = 1.45  P-Value = 0.175  DF = 11
```

```
Two-sample T for % GRAVEL

Soil Type   N   Mean  StDev  SE Mean
Lower Till  9  21.78   8.56      2.9
Upper Till  7  19.29   3.77      1.4

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  2.49
95% CI for difference:  (-4.53, 9.51)
T-Test of difference = 0 (vs not =): T-Value = 0.78  P-Value = 0.451  DF = 11
```

Two-sample T for % SAND

Soil Type	N	Mean	StDev	SE Mean
Lower Till	9	21.78	6.18	2.1
Upper Till	7	27.71	8.54	3.2

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -5.94
95% CI for difference: (-14.47, 2.59)
T-Test of difference = 0 (vs not =): T-Value = -1.55 P-Value = 0.152 DF = 10

Two-sample T for % Fines (SILT/CLAY)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	9	56.44	8.93	3.0
Upper Till	7	46.6	12.2	4.6

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 9.87
95% CI for difference: (-2.37, 22.12)
T-Test of difference = 0 (vs not =): T-Value = 1.80 P-Value = 0.103 DF = 10

Two-sample T for Bulk Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	8	2.2587	0.0603	0.021
Upper Till	4	2.2575	0.0126	0.0063

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.0012
95% CI for difference: (-0.0500, 0.0525)
T-Test of difference = 0 (vs not =): T-Value = 0.06 P-Value = 0.957 DF = 8

Two-sample T for Dry Density

Soil Type	N	Mean	StDev	SE Mean
Lower Till	8	1.9915	0.0879	0.031
Upper Till	4	1.9980	0.0294	0.015

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -0.0065
95% CI for difference: (-0.0843, 0.0713)
T-Test of difference = 0 (vs not =): T-Value = -0.19 P-Value = 0.854 DF = 9

Kruskal-Wallis Test: (Parameter) versus Soil Type

Kruskal-Wallis Test on w (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	28	13.00	23.2	0.45
Upper Till	16	14.00	21.3	-0.45
Overall	44		22.5	

H = 0.20 DF = 1 P = 0.652
H = 0.21 DF = 1 P = 0.648 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	32.00	9.5	0.55
Upper Till	6	31.00	8.1	-0.55
Overall	17		9.0	

H = 0.31 DF = 1 P = 0.580
H = 0.31 DF = 1 P = 0.575 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	15.00	8.5	-0.55
Upper Till	6	16.50	9.9	0.55
Overall	17		9.0	

H = 0.31 DF = 1 P = 0.580
H = 0.32 DF = 1 P = 0.569 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	11	16.00	10.4	1.51
Upper Till	6	14.50	6.5	-1.51
Overall	17		9.0	

H = 2.27 DF = 1 P = 0.132
H = 2.35 DF = 1 P = 0.125 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Till	9	20.00	9.1	0.53
Upper Till	7	18.00	7.8	-0.53
Overall	16		8.5	

H = 0.28 DF = 1 P = 0.597
H = 0.28 DF = 1 P = 0.595 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Till	9	21.00	7.1	-1.32
Upper Till	7	31.00	10.3	1.32
Overall	16		8.5	

H = 1.75 DF = 1 P = 0.186
H = 1.77 DF = 1 P = 0.183 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Soil Type	N	Median	Ave Rank	Z
Lower Till	9	56.00	10.3	1.69
Upper Till	7	48.00	6.2	-1.69
Overall	16		8.5	

H = 2.87 DF = 1 P = 0.090
H = 2.87 DF = 1 P = 0.090 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

                         Ave
Soil Type    N  Median  Rank      Z
Lower Till   8   2.270   6.6   0.17
Upper Till   4   2.260   6.3  -0.17
Overall     12           6.5

H = 0.03  DF = 1  P = 0.865
H = 0.03  DF = 1  P = 0.864  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

                         Ave
Soil Type    N  Median  Rank      Z
Lower Till   8   1.991   6.4  -0.17
Upper Till   4   1.996   6.8   0.17
Overall     12           6.5

H = 0.03  DF = 1  P = 0.865

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 0.73    DF = 1    P = 0.392

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
Lower Till   16  12   13.00   5.75      *------------------------------)
Upper Till    7   9   14.00   1.75    (--------------*
                                      +---------+---------+---------+------
                                    12.80     13.60     14.40     15.20

Overall median = 13.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-1.00,2.00)


Mood median test for WL (%)

Chi-Square = 0.70    DF = 1    P = 0.402

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
Lower Till    5   6   32.00   4.00              (---------*---------)
Upper Till    4   2   31.00   4.00   (---------------*----------)
                                     -+---------+---------+---------+-----
                                    28.0      30.0      32.0      34.0

Overall median = 31.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.40,3.40)
```

```
Mood median test for Wp (%)

Chi-Square = 0.88    DF = 1    P = 0.349

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Lower Till    8   3   15.00   3.00        (---------*------------------)
Upper Till    3   3   16.50   3.25  (------------------------------*----)
                                    ------+---------+---------+---------+
                                       14.0      15.0      16.0      17.0

Overall median = 16.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.00,2.20)


Mood median test for Ip (%)

Chi-Square = 1.41    DF = 1    P = 0.235

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Lower Till    6   5   16.00   1.00                        *--------)
Upper Till    5   1   14.50   2.75  (---------*---------------------)
                                    ---------+---------+---------+-------
                                          14.4      15.6      16.8

Overall median = 16.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.40,3.20)


Mood median test for % GRAVEL

Chi-Square = 0.25    DF = 1    P = 0.614

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till    4   5   20.00   7.50     (-------------*------------------)
Upper Till    4   3   18.00   7.00  (--------*---------------------)
                                    -------+---------+---------+---------
                                        17.5      20.0      22.5

Overall median = 19.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-5.00,8.00)


Mood median test for % SAND

Chi-Square = 2.29    DF = 1    P = 0.131

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
Lower Till    6   3    21.0   11.0  (-------*---------------)
Upper Till    2   5    31.0   11.0    (------------------------*---)
                                    ------+---------+---------+---------+
                                       20.0      25.0      30.0      35.0

Overall median = 23.5

A 95.0% CI for median(Lower Till) - median(Upper Till): (-14.0,6.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.29    DF = 1    P = 0.131

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
Lower Till    3   6    56.0   10.5                       (-------*-------)
Upper Till    5   2    48.0   14.0  (-----------------*-----------)
                                    ---------+---------+---------+-------
                                          42.0      49.0      56.0

Overall median = 53.0

A 95.0% CI for median(Lower Till) - median(Upper Till): (-2.0,21.0)


Mood median test for Bulk Density

Chi-Square = 0.69    DF = 1    P = 0.408

                                     Individual 95.0% CIs
Soil Type   N<=  N>  Median   Q3-Q1    +---------+---------+---------+------
Lower Till    4   4  2.2700  0.0750    (-----------------*----------------)
Upper Till    3   1  2.2600  0.0225          (-------*---)
                                       +---------+---------+---------+------
                                     2.225     2.250     2.275     2.300

Overall median = 2.2600
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.0400,0.0536)


Mood median test for Dry Density

Chi-Square = 0.00    DF = 1    P = 1.000

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    4   4   1.991  0.107  (----------*----------------------)
Upper Till    2   2   1.996  0.056      (-------*---------)
                                    ---+---------+---------+---------+---
                                     1.960     2.000     2.040     2.080

Overall median = 1.991
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-0.066,0.071)
```

Results for: Domain 72

Two-Sample T-Test and CI: (Parameter) versus Soil Type

Two-sample T for w (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	9	12.89	1.76	0.59
Upper Till	17	16.31	4.72	1.1

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -3.42
95% CI for difference: (-6.09, -0.75)
T-Test of difference = 0 (vs not =): T-Value = -2.66 P-Value = 0.014 DF = 22

Two-sample T for WL (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	3	30.67	3.21	1.9
Upper Till	7	30.43	5.62	2.1

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.24
95% CI for difference: (-6.67, 7.14)
T-Test of difference = 0 (vs not =): T-Value = 0.08 P-Value = 0.935 DF = 6

Two-sample T for Wp (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	3	15.333	0.577	0.33
Upper Till	7	15.14	2.41	0.91

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.190
95% CI for difference: (-2.103, 2.484)
T-Test of difference = 0 (vs not =): T-Value = 0.20 P-Value = 0.850 DF = 7

Two-sample T for Ip (%)

Soil Type	N	Mean	StDev	SE Mean
Lower Till	3	15.33	3.06	1.8
Upper Till	7	15.29	4.19	1.6

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: 0.05
95% CI for difference: (-6.05, 6.14)
T-Test of difference = 0 (vs not =): T-Value = 0.02 P-Value = 0.985 DF = 5

Two-sample T for % GRAVEL

Soil Type	N	Mean	StDev	SE Mean
Lower Till	3	15.67	1.53	0.88
Upper Till	6	23.00	7.69	3.1

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference: -7.33
95% CI for difference: (-15.72, 1.05)
T-Test of difference = 0 (vs not =): T-Value = -2.25 P-Value = 0.074 DF = 5

```
Two-sample T for % SAND

Soil Type   N   Mean  StDev  SE Mean
Lower Till  3  25.33   4.93      2.8
Upper Till  6  28.67   8.29      3.4

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  -3.33
95% CI for difference:  (-14.15, 7.49)
T-Test of difference = 0 (vs not =): T-Value = -0.75  P-Value = 0.480  DF = 6


Two-sample T for % Fines (SILT/CLAY)

Soil Type   N   Mean  StDev  SE Mean
Lower Till  3  59.00   3.46      2.0
Upper Till  6  48.33   6.59      2.7

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  10.67
95% CI for difference:  (2.46, 18.87)
T-Test of difference = 0 (vs not =): T-Value = 3.18  P-Value = 0.019  DF = 6


Two-sample T for Bulk Density

Soil Type   N    Mean   StDev  SE Mean
Lower Till  3  2.2633  0.0321    0.019
Upper Till  4   2.190   0.128    0.064

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  0.0733
95% CI for difference:  (-0.1388, 0.2855)
T-Test of difference = 0 (vs not =): T-Value = 1.10  P-Value = 0.352  DF = 3


Two-sample T for Dry Density

Soil Type   N    Mean   StDev  SE Mean
Lower Till  3  2.0208  0.0287    0.017
Upper Till  4   1.887   0.193    0.097

Difference = mu (Lower Till) - mu (Upper Till)
Estimate for difference:  0.1339
95% CI for difference:  (-0.1784, 0.4461)
T-Test of difference = 0 (vs not =): T-Value = 1.36  P-Value = 0.266  DF = 3
```

Kruskal-Wallis Test: (Parameter) versus Soil Type

```
Kruskal-Wallis Test on w (%)

Soil Type    N  Median  Ave Rank      Z
Lower Till   9   12.00       9.6  -1.91
Upper Till  17   16.00      15.6   1.91
Overall     26              13.5

H = 3.66  DF = 1  P = 0.056
H = 3.73  DF = 1  P = 0.053  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	3	32.00	6.5	0.68
Upper Till	7	30.00	5.1	-0.68
Overall	10		5.5	

H = 0.47 DF = 1 P = 0.494
H = 0.47 DF = 1 P = 0.491 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Wp (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	3	15.00	6.7	0.80
Upper Till	7	14.00	5.0	-0.80
Overall	10		5.5	

H = 0.64 DF = 1 P = 0.425
H = 0.66 DF = 1 P = 0.416 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Ip (%)

Soil Type	N	Median	Ave Rank	Z
Lower Till	3	16.00	6.0	0.34
Upper Till	7	15.00	5.3	-0.34
Overall	10		5.5	

H = 0.12 DF = 1 P = 0.732
H = 0.12 DF = 1 P = 0.728 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % GRAVEL

Soil Type	N	Median	Ave Rank	Z
Lower Till	3	16.00	3.7	-1.03
Upper Till	6	25.00	5.7	1.03
Overall	9		5.0	

H = 1.07 DF = 1 P = 0.302
H = 1.08 DF = 1 P = 0.300 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Soil Type	N	Median	Ave Rank	Z
Lower Till	3	23.00	4.3	-0.52
Upper Till	6	27.00	5.3	0.52
Overall	9		5.0	

H = 0.27 DF = 1 P = 0.606
H = 0.27 DF = 1 P = 0.604 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

                        Ave
Soil Type   N  Median  Rank      Z
Lower Till  3   61.00   7.7   2.07
Upper Till  6   48.00   3.7  -2.07
Overall     9           5.0

H = 4.27  DF = 1  P = 0.039
H = 4.30  DF = 1  P = 0.038  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

                        Ave
Soil Type   N  Median  Rank      Z
Lower Till  3   2.250   5.0   1.06
Upper Till  4   2.240   3.3  -1.06
Overall     7           4.0

H = 1.13  DF = 1  P = 0.289
H = 1.21  DF = 1  P = 0.271  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

                        Ave
Soil Type   N  Median  Rank      Z
Lower Till  3   2.009   5.3   1.41
Upper Till  4   1.965   3.0  -1.41
Overall     7           4.0

H = 2.00  DF = 1  P = 0.157

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Soil Type

```
Mood median test for w (%)

Chi-Square = 3.17    DF = 1    P = 0.075

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
Lower Till    7   2   12.00   1.50   *------)
Upper Till    7  10   16.00   7.50       (-----------*---------------)
                                     --+---------+---------+---------+----
                                    12.5      15.0      17.5      20.0

Overall median = 13.00

A 95.0% CI for median(Lower Till) - median(Upper Till): (-5.90,0.20)
```

```
Mood median test for WL (%)

Chi-Square = 1.27    DF = 1    P = 0.260

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
Lower Till    1   2   32.00   6.00     (-------------------*---)
Upper Till    5   2   30.00   4.00  (--------------*---------------)
                                    -----+---------+---------+---------+-
                                      27.5      30.0      32.5      35.0

Overall median = 30.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-5.61,6.44)


Mood median test for Wp (%)

Chi-Square = 0.02    DF = 1    P = 0.880

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    2   1   15.00   1.00               *------)
Upper Till    5   2   14.00   5.00  (-----*----------------------------)
                                    ---+---------+---------+---------+---
                                    13.5      15.0      16.5      18.0

Overall median = 15.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-3.15,3.00)


Mood median test for Ip (%)

Chi-Square = 0.48    DF = 1    P = 0.490

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
Lower Till    1   2   16.00   6.00     (-------------------*---------)
Upper Till    4   3   15.00   5.00    (---------------*-----------------)
                                      -+---------+---------+---------+-----
                                    12.0      14.0      16.0      18.0

Overall median = 15.50
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-5.88,6.15)


Mood median test for % GRAVEL

Chi-Square = 3.60    DF = 1    P = 0.058

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    3   0    16.0    3.0   (---*-)
Upper Till    2   4    25.0   14.5  (----------------------*----------)
                                    ---+---------+---------+---------+---
                                    15.0      20.0      25.0      30.0

Overall median = 17.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-18.0,4.0)
```

```
Mood median test for % SAND

Chi-Square = 0.23    DF = 1    P = 0.635

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
Lower Till    2   1    23.0    9.0   (-*---------------)
Upper Till    3   3    27.0    8.5  (----------*---------------------)
                                    -------+---------+---------+---------
                                        25.0      30.0      35.0

Overall median = 26.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-22.0,12.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 5.63    DF = 1    P = 0.018

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
Lower Till    0   3    61.0    6.0                         (---------*
Upper Till    5   1    48.0   12.5    (----------*-------------)
                                      -+---------+---------+---------+-----
                                    42.0      48.0      54.0      60.0

Overall median = 53.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(Lower Till) - median(Upper Till): (-3.0,20.0)


Mood median test for Bulk Density

Chi-Square = 1.22    DF = 1    P = 0.270

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
Lower Till    1   2   2.250  0.060                          (*----)
Upper Till    3   1   2.240  0.210    (-----------------------*---)
                                      +---------+---------+---------+------
                                    2.00      2.10      2.20      2.30

Overall median = 2.240
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.6% CI for median(Lower Till) - median(Upper Till): (-0.040,0.300)


Mood median test for Dry Density

Chi-Square = 1.22    DF = 1    P = 0.270

                                    Individual 95.0% CIs
Soil Type   N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
Lower Till    1   2   2.009  0.054                          (*--)
Upper Till    3   1   1.965  0.322  (-----------------------*---)
                                    ---+---------+---------+---------+---
                                     1.65      1.80      1.95      2.10

Overall median = 2.000
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.6% CI for median(Lower Till) - median(Upper Till): (-0.018,0.454)
```

Results for: Domains 71 and 72, Upper Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
71	16	13.23	2.47	0.62
72	17	16.31	4.72	1.1

Difference = mu (71) - mu (72)
Estimate for difference: -3.08
95% CI for difference: (-5.77, -0.40)
T-Test of difference = 0 (vs not =): T-Value = -2.37 P-Value = 0.026 DF = 24

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
71	6	30.67	2.42	0.99
72	7	30.43	5.62	2.1

Difference = mu (71) - mu (72)
Estimate for difference: 0.24
95% CI for difference: (-5.17, 5.64)
T-Test of difference = 0 (vs not =): T-Value = 0.10 P-Value = 0.922 DF = 8

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
71	6	15.67	1.75	0.71
72	7	15.14	2.41	0.91

Difference = mu (71) - mu (72)
Estimate for difference: 0.52
95% CI for difference: (-2.06, 3.10)
T-Test of difference = 0 (vs not =): T-Value = 0.45 P-Value = 0.661 DF = 10

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
71	6	15.00	1.79	0.73
72	7	15.29	4.19	1.6

Difference = mu (71) - mu (72)
Estimate for difference: -0.29
95% CI for difference: (-4.31, 3.74)
T-Test of difference = 0 (vs not =): T-Value = -0.16 P-Value = 0.874 DF = 8

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
71	7	19.29	3.77	1.4
72	6	23.00	7.69	3.1

Difference = mu (71) - mu (72)
Estimate for difference: -3.71
95% CI for difference: (-11.87, 4.44)
T-Test of difference = 0 (vs not =): T-Value = -1.08 P-Value = 0.317 DF = 7

```
Two-sample T for % SAND

Domain
reference  N   Mean  StDev  SE Mean
71         7  27.71   8.54      3.2
72         6  28.67   8.29      3.4

Difference = mu (71) - mu (72)
Estimate for difference:  -0.95
95% CI for difference:  (-11.37, 9.47)
T-Test of difference = 0 (vs not =): T-Value = -0.20  P-Value = 0.843  DF = 10


Two-sample T for % Fines (SILT/CLAY)

Domain
reference  N   Mean  StDev  SE Mean
71         7   46.6   12.2      4.6
72         6  48.33   6.59      2.7

Difference = mu (71) - mu (72)
Estimate for difference:  -1.76
95% CI for difference:  (-13.85, 10.33)
T-Test of difference = 0 (vs not =): T-Value = -0.33  P-Value = 0.749  DF = 9


Two-sample T for Bulk Density

Domain
reference  N    Mean   StDev  SE Mean
71         4  2.2575  0.0126   0.0063
72         4   2.190   0.128    0.064

Difference = mu (71) - mu (72)
Estimate for difference:  0.0675
95% CI for difference:  (-0.1373, 0.2723)
T-Test of difference = 0 (vs not =): T-Value = 1.05  P-Value = 0.371  DF = 3


Two-sample T for Dry Density

Domain
reference  N    Mean   StDev  SE Mean
71         4  1.9980  0.0294    0.015
72         4   1.887   0.193    0.097

Difference = mu (71) - mu (72)
Estimate for difference:  0.1111
95% CI for difference:  (-0.2002, 0.4224)
T-Test of difference = 0 (vs not =): T-Value = 1.14  P-Value = 0.339  DF = 3
```

Kruskal-Wallis Test: (Parameter) versus Domain reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
71         16   14.00      14.2  -1.64
72         17   16.00      19.7   1.64
Overall    33              17.0

H = 2.69  DF = 1  P = 0.101
H = 2.74  DF = 1  P = 0.098  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
71	6	31.00	8.0	0.86
72	7	30.00	6.1	-0.86
Overall	13		7.0	

H = 0.73 DF = 1 P = 0.391
H = 0.75 DF = 1 P = 0.387 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
71	6	16.50	7.5	0.43
72	7	14.00	6.6	-0.43
Overall	13		7.0	

H = 0.18 DF = 1 P = 0.668
H = 0.19 DF = 1 P = 0.663 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
71	6	14.50	7.3	0.21
72	7	15.00	6.8	-0.21
Overall	13		7.0	

H = 0.05 DF = 1 P = 0.830
H = 0.05 DF = 1 P = 0.829 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
71	7	18.00	6.2	-0.79
72	6	25.00	7.9	0.79
Overall	13		7.0	

H = 0.62 DF = 1 P = 0.432
H = 0.62 DF = 1 P = 0.431 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
71	7	31.00	7.6	0.64
72	6	27.00	6.3	-0.64
Overall	13		7.0	

H = 0.41 DF = 1 P = 0.520
H = 0.42 DF = 1 P = 0.517 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
71	7	48.00	6.9	-0.14
72	6	48.00	7.2	0.14
Overall	13		7.0	

H = 0.02 DF = 1 P = 0.886

```
Kruskal-Wallis Test on Bulk Density

Domain                 Ave
reference  N  Median  Rank      Z
71         4   2.260   5.3   0.87
72         4   2.240   3.8  -0.87
Overall    8           4.5

H = 0.75  DF = 1  P = 0.386
H = 0.80  DF = 1  P = 0.372  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain                 Ave
reference  N  Median  Rank      Z
71         4   1.996   5.5   1.15
72         4   1.965   3.5  -1.15
Overall    8           4.5

H = 1.33  DF = 1  P = 0.248

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain reference

```
Mood median test for w (%)

Chi-Square = 5.54    DF = 1    P = 0.019

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
71          13   3   14.00   1.75  (-----*
72           7  10   16.00   7.50   (--------------*-------------------)
                                   ------+---------+---------+---------+
                                      14.0      16.0      18.0      20.0

Overall median = 14.00

A 95.0% CI for median(71) - median(72): (-7.00,1.00)


Mood median test for WL (%)

Chi-Square = 1.89    DF = 1    P = 0.170

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
71           2   4   31.00   4.00        (------------*--------)
72           5   2   30.00   4.00  (--------------*---------------)
                                   -----+---------+---------+---------+-
                                     27.5      30.0      32.5      35.0

Overall median = 30.00

A 95.0% CI for median(71) - median(72): (-2.21,5.21)
```

```
Mood median test for Wp (%)

Chi-Square = 1.89    DF = 1    P = 0.170

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
71           2   4   16.50   3.25    (--------------------*--)
72           5   2   14.00   5.00  (-----*---------------------------)
                                   ---+---------+---------+---------+---
                                   13.5      15.0      16.5      18.0

Overall median = 15.00

A 95.0% CI for median(71) - median(72): (-4.10,4.00)

Mood median test for Ip (%)

Chi-Square = 0.12    DF = 1    P = 0.725

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
71           4   2   14.50   2.75            (-----*------------)
72           4   3   15.00   5.00    (---------------*-----------------)
                                     -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 15.00

A 95.0% CI for median(71) - median(72): (-3.10,4.21)


Mood median test for % GRAVEL

Chi-Square = 1.89    DF = 1    P = 0.170

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
71           5   2    18.0    7.0      (----*----------)
72           2   4    25.0   14.5  (---------------------*----------)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 21.0

A 95.0% CI for median(71) - median(72): (-12.4,8.2)


Mood median test for % SAND

Chi-Square = 2.24    DF = 1    P = 0.135

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
71           3   4    31.0   11.0     (---------------------*--)
72           5   1    27.0    8.5           (--------*-----------------)
                                      +---------+---------+---------+------
                                   18.0      24.0      30.0      36.0

Overall median = 29.0

A 95.0% CI for median(71) - median(72): (-10.5,5.7)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.07    DF = 1    P = 0.797

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
71           4   3    48.0   14.0    (-------------------*------------)
72           3   3    48.0   12.5             (----------*------------)
                                     +---------+---------+---------+------
                                   36.0      42.0      48.0      54.0

Overall median = 48.0

A 95.0% CI for median(71) - median(72): (-13.5,12.1)


Mood median test for Bulk Density

Chi-Square = 2.00    DF = 1    P = 0.157

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
71           1   3   2.260  0.022                               (-*-)
72           3   1   2.240  0.210   (-----------------------------*----)
                                    +---------+---------+---------+------
                                   2.000     2.080     2.160     2.240

Overall median = 2.250
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-0.040,0.270)


Mood median test for Dry Density

Chi-Square = 2.00    DF = 1    P = 0.157

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
71           1   3   1.996  0.056                               (-*---)
72           3   1   1.965  0.322  (------------------------------*---)
                                   -------+---------+---------+---------
                                        1.68      1.80      1.92

Overall median = 1.987
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-0.053,0.436)
```

Results for: Domains 71 and 72, Lower Till

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
71	28	15.32	6.96	1.3
72	9	12.89	1.76	0.59

Difference = mu (71) - mu (72)
Estimate for difference: 2.43
95% CI for difference: (-0.50, 5.36)
T-Test of difference = 0 (vs not =): T-Value = 1.69 P-Value = 0.101 DF = 34

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
71	11	31.55	2.77	0.84
72	3	30.67	3.21	1.9

Difference = mu (71) - mu (72)
Estimate for difference: 0.88
95% CI for difference: (-7.88, 9.64)
T-Test of difference = 0 (vs not =): T-Value = 0.43 P-Value = 0.708 DF = 2

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
71	11	15.18	1.78	0.54
72	3	15.333	0.577	0.33

Difference = mu (71) - mu (72)
Estimate for difference: -0.152
95% CI for difference: (-1.541, 1.238)
T-Test of difference = 0 (vs not =): T-Value = -0.24 P-Value = 0.815 DF = 11

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
71	11	16.36	1.96	0.59
72	3	15.33	3.06	1.8

Difference = mu (71) - mu (72)
Estimate for difference: 1.03
95% CI for difference: (-6.97, 9.04)
T-Test of difference = 0 (vs not =): T-Value = 0.55 P-Value = 0.635 DF = 2

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
71	9	21.78	8.56	2.9
72	3	15.67	1.53	0.88

Difference = mu (71) - mu (72)
Estimate for difference: 6.11
95% CI for difference: (-0.64, 12.86)
T-Test of difference = 0 (vs not =): T-Value = 2.05 P-Value = 0.071 DF = 9

```
Two-sample T for % SAND

Domain
reference  N   Mean  StDev  SE Mean
71         9  21.78   6.18      2.1
72         3  25.33   4.93      2.8

Difference = mu (71) - mu (72)
Estimate for difference:  -3.56
95% CI for difference:  (-13.31, 6.20)
T-Test of difference = 0 (vs not =): T-Value = -1.01  P-Value = 0.369  DF = 4


Two-sample T for % Fines (SILT/CLAY)

Domain
reference  N   Mean  StDev  SE Mean
71         9  56.44   8.93      3.0
72         3  59.00   3.46      2.0

Difference = mu (71) - mu (72)
Estimate for difference:  -2.56
95% CI for difference:  (-10.67, 5.56)
T-Test of difference = 0 (vs not =): T-Value = -0.71  P-Value = 0.494  DF = 9


Two-sample T for Bulk Density

Domain
reference  N    Mean   StDev  SE Mean
71         8  2.2587  0.0603    0.021
72         3  2.2633  0.0321    0.019

Difference = mu (71) - mu (72)
Estimate for difference:  -0.0046
95% CI for difference:  (-0.0714, 0.0623)
T-Test of difference = 0 (vs not =): T-Value = -0.16  P-Value = 0.876  DF = 7


Two-sample T for Dry Density

Domain
reference  N    Mean   StDev  SE Mean
71         8  1.9915  0.0879    0.031
72         3  2.0208  0.0287    0.017

Difference = mu (71) - mu (72)
Estimate for difference:  -0.0293
95% CI for difference:  (-0.1105, 0.0519)
T-Test of difference = 0 (vs not =): T-Value = -0.83  P-Value = 0.430  DF = 8
```

Kruskal-Wallis Test: (Parameter) versus Domain reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
71         28   13.00      20.2   1.15
72          9   12.00      15.4  -1.15
Overall    37              19.0

H = 1.32  DF = 1  P = 0.250
H = 1.36  DF = 1  P = 0.243  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
71	11	32.00	7.6	0.23
72	3	32.00	7.0	-0.23
Overall	14		7.5	

H = 0.05 DF = 1 P = 0.815
H = 0.06 DF = 1 P = 0.812 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
71	11	15.00	7.5	0.08
72	3	15.00	7.3	-0.08
Overall	14		7.5	

H = 0.01 DF = 1 P = 0.938
H = 0.01 DF = 1 P = 0.936 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
71	11	16.00	7.7	0.39
72	3	16.00	6.7	-0.39
Overall	14		7.5	

H = 0.15 DF = 1 P = 0.697
H = 0.16 DF = 1 P = 0.689 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
71	9	20.00	7.5	1.66
72	3	16.00	3.5	-1.66
Overall	12		6.5	

H = 2.77 DF = 1 P = 0.096
H = 2.79 DF = 1 P = 0.095 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
71	9	21.00	5.8	-1.20
72	3	23.00	8.7	1.20
Overall	12		6.5	

H = 1.44 DF = 1 P = 0.229
H = 1.47 DF = 1 P = 0.225 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
71	9	56.00	6.1	-0.65
72	3	61.00	7.7	0.65
Overall	12		6.5	

H = 0.42 DF = 1 P = 0.518
H = 0.42 DF = 1 P = 0.515 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
71	8	2.270	5.9	-0.10
72	3	2.250	6.2	0.10
Overall	11		6.0	

H = 0.01 DF = 1 P = 0.919
H = 0.01 DF = 1 P = 0.918 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
71	8	1.991	5.5	-0.82
72	3	2.009	7.3	0.82
Overall	11		6.0	

H = 0.67 DF = 1 P = 0.414

* NOTE * One or more small samples

Mood Median Test: (Parameter) versus Domain reference

Mood median test for w (%)

Chi-Square = 1.23   DF = 1   P = 0.267

```
Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
71          16  12   13.00   5.75             *-------------------------)
72           7   2   12.00   1.50   *-----------------)
                                    +---------+---------+---------+------
                                 12.0      13.0      14.0      15.0
```

Overall median = 13.00

A 95.0% CI for median(71) - median(72): (-1.00,2.05)

```
Mood median test for WL (%)

Chi-Square = 0.04    DF = 1    P = 0.837

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
71           8   3   32.00   4.00                 (---------*---------)
72           2   1   32.00   6.00  (-----------------------*----)
                                   -----+---------+---------+---------+-
                                     28.0      30.0      32.0      34.0

Overall median = 32.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-3.14,7.00)


Mood median test for Wp (%)

Chi-Square = 0.14    DF = 1    P = 0.707

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
71           6   5   15.00   3.00     (---------*-------------------)
72           2   1   15.00   1.00               *---------)
                                      +---------+---------+---------+------
                                   14.0      15.0      16.0      17.0

Overall median = 15.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-2.00,2.00)


Mood median test for Ip (%)

Chi-Square = 0.14    DF = 1    P = 0.707

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
71           6   5   16.00   1.00                         *----)
72           2   1   16.00   6.00     (-------------------*---------)
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 16.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-2.14,5.14)


Mood median test for % GRAVEL

Chi-Square = 2.86    DF = 1    P = 0.091

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
71           4   5    20.0    7.5         (-----------*--------------)
72           3   0    16.0    3.0  (-----*---)
                                   ---+---------+---------+---------+---
                                   15.0      18.0      21.0      24.0

Overall median = 18.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-1.0,11.0)
```

```
Mood median test for % SAND

Chi-Square = 4.00    DF = 1    P = 0.046

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
71           6   3    21.0   11.0  (---------*--------------------)
72           0   3    23.0    9.0              (-*-------------------)
                                   --------+---------+---------+--------
                                        20.0      24.0      28.0

Overall median = 21.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-14.0,8.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.44    DF = 1    P = 0.505

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
71           5   4    56.0   10.5  (---------------*---------------)
72           1   2    61.0    6.0              (----------------*
                                   ------+---------+---------+---------+
                                      52.5      56.0      59.5      63.0

Overall median = 57.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-11.0,7.0)
```

```
Mood median test for Bulk Density

Chi-Square = 0.24    DF = 1    P = 0.621

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median   Q3-Q1    +---------+---------+---------+------
71           4   4  2.2700  0.0750    (-----------------*----------------)
72           2   1  2.2500  0.0600          (---*-------------------)
                                      +---------+---------+---------+------
                                    2.225     2.250     2.275     2.300

Overall median = 2.2500
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-0.0720,0.0704)
```

```
Mood median test for Dry Density

Chi-Square = 0.75    DF = 1    P = 0.387

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
71           5   3   1.991  0.107  (----------*---------------------)
72           1   2   2.009  0.054              (-*----------)
                                   ---+---------+---------+---------+---
                                    1.960     2.000     2.040     2.080

Overall median = 2.000
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(71) - median(72): (-0.101,0.081)
```

Appendix D.2

Minitab Project Report

Comparisons Between Domains

Results for: Domain 11 v 12

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for Natural Moisture Content (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
12	84	12.39	3.30	0.36

Difference = mu (11) - mu (12)
Estimate for difference: -0.722
95% CI for difference: (-1.817, 0.373)
T-Test of difference = 0 (vs not =): T-Value = -1.30 P-Value = 0.195 DF = 156

Two-sample T for Liquid Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
12	55	31.49	2.21	0.30

Difference = mu (11) - mu (12)
Estimate for difference: -1.991
95% CI for difference: (-3.818, -0.163)
T-Test of difference = 0 (vs not =): T-Value = -2.18 P-Value = 0.033 DF = 55

Two-sample T for Plastic Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
12	55	14.29	2.02	0.27

Difference = mu (11) - mu (12)
Estimate for difference: -0.334
95% CI for difference: (-1.262, 0.593)
T-Test of difference = 0 (vs not =): T-Value = -0.72 P-Value = 0.475 DF = 84

Two-sample T for Plasticity Index (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
12	55	17.20	2.08	0.28

Difference = mu (11) - mu (12)
Estimate for difference: -1.657
95% CI for difference: (-2.851, -0.462)
T-Test of difference = 0 (vs not =): T-Value = -2.77 P-Value = 0.007 DF = 69

```
Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
11         18  25.58   8.54      2.0
12          7  28.86   3.66      1.4

Difference = mu (11) - mu (12)
Estimate for difference:  -3.27
95% CI for difference:  (-8.34, 1.79)
T-Test of difference = 0 (vs not =): T-Value = -1.34  P-Value = 0.194  DF = 22


Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
11         18  34.61   7.83      1.8
12          7  30.29   4.80      1.8

Difference = mu (11) - mu (12)
Estimate for difference:  4.33
95% CI for difference:  (-1.11, 9.77)
T-Test of difference = 0 (vs not =): T-Value = 1.67  P-Value = 0.112  DF = 18


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
11         18  39.81   5.41      1.3
12          7  40.86   5.31      2.0

Difference = mu (11) - mu (12)
Estimate for difference:  -1.05
95% CI for difference:  (-6.29, 4.18)
T-Test of difference = 0 (vs not =): T-Value = -0.44  P-Value = 0.667  DF = 11


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
11         48  2.191  0.145    0.021
12         32  2.279  0.107    0.019

Difference = mu (11) - mu (12)
Estimate for difference:  -0.0879
95% CI for difference:  (-0.1441, -0.0317)
T-Test of difference = 0 (vs not =): T-Value = -3.11  P-Value = 0.003  DF = 77


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
11         48  1.982  0.155    0.022
12         32  2.060  0.117    0.021

Difference = mu (11) - mu (12)
Estimate for difference:  -0.0781
95% CI for difference:  (-0.1387, -0.0176)
T-Test of difference = 0 (vs not =): T-Value = -2.57  P-Value = 0.012  DF = 76
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on Natural Moisture Content (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	75.5	-1.84
12	84	11.60	89.1	1.84
Overall	164		82.5	

H = 3.38 DF = 1 P = 0.066
H = 3.39 DF = 1 P = 0.065 (adjusted for ties)

Kruskal-Wallis Test on Liquid Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	34.0	-5.34
12	55	31.00	65.2	5.34
Overall	101		51.0	

H = 28.51 DF = 1 P = 0.000
H = 28.85 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	45.1	-1.87
12	55	14.00	56.0	1.87
Overall	101		51.0	

H = 3.48 DF = 1 P = 0.062
H = 3.75 DF = 1 P = 0.053 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	35.4	-4.89
12	55	17.00	64.0	4.89
Overall	101		51.0	

H = 23.87 DF = 1 P = 0.000
H = 24.30 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	12.5	-0.57
12	7	28.50	14.4	0.57
Overall	25		13.0	

H = 0.33 DF = 1 P = 0.565
H = 0.33 DF = 1 P = 0.565 (adjusted for ties)

```
Kruskal-Wallis Test on % SAND

Domain
Reference   N  Median  Ave Rank      Z
11         18   32.50      14.2   1.27
12          7   28.00      10.0  -1.27
Overall    25              13.0

H = 1.62  DF = 1  P = 0.204
H = 1.62  DF = 1  P = 0.203  (adjusted for ties)


Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
11         18   39.50      12.4  -0.70
12          7   42.00      14.6   0.70
Overall    25              13.0

H = 0.48  DF = 1  P = 0.486
H = 0.49  DF = 1  P = 0.485  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.240      32.4  -3.83
12         32   2.305      52.7   3.83
Overall    80              40.5

H = 14.63  DF = 1  P = 0.000
H = 14.67  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.040      34.0  -3.06
12         32   2.090      50.2   3.06
Overall    80              40.5

H = 9.36  DF = 1  P = 0.002
H = 9.38  DF = 1  P = 0.002  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for Natural Moisture Content  (%)

Chi-Square = 6.71    DF = 1    P = 0.010

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11          55  25   11.00   2.38   (--------*
12          41  43   11.60   4.00       (-------------*-----------------)
                                    --+---------+---------+---------+----
                                   10.50     11.20     11.90     12.60

Overall median = 11.00

A 95.0% CI for median(11) - median(12): (-1.50,0.00)
```

Mood median test for Liquid Limit (%)

Chi-Square = 31.33   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11          39   7   28.00   4.00    (------*-----)
12          16  39   31.00   3.00                               *-----)
                                     +---------+---------+---------+------
                                   27.0      28.5      30.0      31.5
```

Overall median = 30.00

A 95.0% CI for median(11) - median(12): (-4.00,-2.00)

Mood median test for Plastic Limit (%)

Chi-Square = 7.68   DF = 1   P = 0.006

```
Domain                               Individual 95.0% CIs
Reference  N<   N>=  Median  Q3-Q1   -------+---------+---------+---------
11         25   21   13.00   3.00    *---------------------------------)
12         15   40   14.00   1.00                                      *
                                     -------+---------+---------+---------
                                         13.20     13.50     13.80
```

Overall median = 14.00

A 95.0% CI for median(11) - median(12): (-1.00,0.00)

Mood median test for Plasticity Index (%)

Chi-Square = 30.76   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    ---+---------+---------+---------+---
11          38   8   15.00   2.00    (-------*
12          15  40   17.00   2.00                          *-------)
                                     ---+---------+---------+---------+---
                                     14.4      15.6      16.8      18.0
```

Overall median = 16.00

A 95.0% CI for median(11) - median(12): (-4.00,-2.00)

Mood median test for % GRAVEL

Chi-Square = 1.19   DF = 1   P = 0.275

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     -+---------+---------+---------+-----
11          12   6    27.5   17.8     (-------------------*-------)
12           3   4    28.5    7.0                    (------*-----------)
                                      -+---------+---------+---------+-----
                                     20.0      24.0      28.0      32.0
```

Overall median = 28.0

A 95.0% CI for median(11) - median(12): (-8.1,2.1)

```
Mood median test for % SAND

Chi-Square = 0.10    DF = 1    P = 0.748

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11           9   9   32.50   7.75               (-------*------------)
12           4   3   28.00   7.50   (----*----------------------)
                                    --+---------+---------+---------+----
                                   27.0      30.0      33.0      36.0

Overall median = 31.50

A 95.0% CI for median(11) - median(12): (-5.03,7.72)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 1.19    DF = 1    P = 0.275

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          12   6    39.5    6.6        (---------*--)
12           3   4    42.0   10.0     (-------------------*-----------)
                                      +---------+---------+---------+------
                                   35.0      38.5      42.0      45.5

Overall median = 40.0

A 95.0% CI for median(11) - median(12): (-8.0,4.2)
```

```
Mood median test for Bulk Density

Chi-Square = 10.86    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11          33  15   2.240  0.165  (-----------*-----)
12          10  22   2.305  0.078                       (--*----)
                                   ----+---------+---------+---------+--
                                     2.200     2.250     2.300     2.350

Overall median = 2.270

A 95.0% CI for median(11) - median(12): (-0.110,-0.020)
```

```
Mood median test for Dry Density

Chi-Square = 9.66    DF = 1    P = 0.002

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          32  16   2.040  0.172  (---------------*---)
12          10  22   2.090  0.090                       (---*-----)
                                   --------+---------+---------+--------
                                         2.000     2.050     2.100

Overall median = 2.060

A 95.0% CI for median(11) - median(12): (-0.100,-0.020)
```

Results for: Domain 11 v 14

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for Natural Moisture Content  (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         80  11.67   3.77     0.42
14         78  11.89   4.13     0.47

Difference = mu (11) - mu (14)
Estimate for difference:  -0.226
95% CI for difference:  (-1.471, 1.019)
T-Test of difference = 0 (vs not =): T-Value = -0.36  P-Value = 0.720  DF = 153


Two-sample T for Liquid Limit (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  29.50   5.85     0.86
14         51  27.00   5.23     0.73

Difference = mu (11) - mu (14)
Estimate for difference:  2.50
95% CI for difference:  (0.25, 4.75)
T-Test of difference = 0 (vs not =): T-Value = 2.21  P-Value = 0.030  DF = 90


Two-sample T for Plastic Limit (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  13.96   2.56     0.38
14         51  13.04   2.58     0.36

Difference = mu (11) - mu (14)
Estimate for difference:  0.917
95% CI for difference:  (-0.120, 1.955)
T-Test of difference = 0 (vs not =): T-Value = 1.76  P-Value = 0.082  DF = 94


Two-sample T for Plasticity Index (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  15.54   3.59     0.53
14         51  13.96   3.31     0.46

Difference = mu (11) - mu (14)
Estimate for difference:  1.583
95% CI for difference:  (0.185, 2.980)
T-Test of difference = 0 (vs not =): T-Value = 2.25  P-Value = 0.027  DF = 91


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
11         18  25.58   8.54      2.0
14         24  22.67   4.75     0.97

Difference = mu (11) - mu (14)
Estimate for difference:  2.92
95% CI for difference:  (-1.69, 7.53)
T-Test of difference = 0 (vs not =): T-Value = 1.31  P-Value = 0.204  DF = 24
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
14	24	42.13	5.88	1.2

Difference = mu (11) - mu (14)
Estimate for difference: -7.51
95% CI for difference: (-12.01, -3.02)
T-Test of difference = 0 (vs not =): T-Value = -3.41 P-Value = 0.002 DF = 30

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
14	24	35.21	5.14	1.0

Difference = mu (11) - mu (14)
Estimate for difference: 4.60
95% CI for difference: (1.25, 7.95)
T-Test of difference = 0 (vs not =): T-Value = 2.78 P-Value = 0.009 DF = 35

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
14	36	2.266	0.114	0.019

Difference = mu (11) - mu (14)
Estimate for difference: -0.0747
95% CI for difference: (-0.1311, -0.0182)
T-Test of difference = 0 (vs not =): T-Value = -2.63 P-Value = 0.010 DF = 81

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
14	36	2.077	0.115	0.019

Difference = mu (11) - mu (14)
Estimate for difference: -0.0948
95% CI for difference: (-0.1533, -0.0363)
T-Test of difference = 0 (vs not =): T-Value = -3.22 P-Value = 0.002 DF = 81

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on Natural Moisture Content (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.000	81.9	0.66
14	78	9.850	77.1	-0.66
Overall	158		79.5	

H = 0.44 DF = 1 P = 0.509
H = 0.44 DF = 1 P = 0.508 (adjusted for ties)

Kruskal-Wallis Test on Liquid Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	58.8	3.26
14	51	26.00	40.1	-3.26
Overall	97		49.0	

H = 10.64 DF = 1 P = 0.001
H = 10.76 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	57.6	2.85
14	51	12.00	41.3	-2.85
Overall	97		49.0	

H = 8.10 DF = 1 P = 0.004
H = 8.61 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	57.4	2.78
14	51	14.00	41.5	-2.78
Overall	97		49.0	

H = 7.72 DF = 1 P = 0.005
H = 7.89 DF = 1 P = 0.005 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	24.8	1.52
14	24	21.25	19.0	-1.52
Overall	42		21.5	

H = 2.33 DF = 1 P = 0.127
H = 2.33 DF = 1 P = 0.127 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	14.4	-3.25
14	24	42.75	26.8	3.25
Overall	42		21.5	

H = 10.58 DF = 1 P = 0.001
H = 10.60 DF = 1 P = 0.001 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
11         18   39.50      26.8   2.40
14         24   36.00      17.6  -2.40
Overall    42              21.5

H = 5.77  DF = 1  P = 0.016
H = 5.78  DF = 1  P = 0.016  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.240      36.2  -2.72
14         36   2.280      50.8   2.72
Overall    84              42.5

H = 7.38  DF = 1  P = 0.007
H = 7.39  DF = 1  P = 0.007  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.040      35.4  -3.10
14         36   2.115      52.0   3.10
Overall    84              42.5

H = 9.61  DF = 1  P = 0.002
H = 9.62  DF = 1  P = 0.002  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for Natural Moisture Content  (%)

Chi-Square = 0.91    DF = 1    P = 0.341

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
11          55  25   11.00   2.38                     (-----------*
14          48  30    9.85   6.15  (--------*-----------------------)
                                   --+---------+---------+---------+----
                                   9.50     10.00     10.50     11.00

Overall median = 11.00

A 95.0% CI for median(11) - median(14): (-0.50,1.60)


Mood median test for Liquid Limit (%)

Chi-Square = 7.28    DF = 1    P = 0.007

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11          20  26   28.00   4.00                    (-------*--------)
14          36  15   26.00   5.00   (--------*-------)
                                    --+---------+---------+---------+----
                                   25.2      26.4      27.6      28.8

Overall median = 27.00

A 95.0% CI for median(11) - median(14): (0.00,4.00)
```

```
Mood median test for Plastic Limit (%)

Chi-Square = 6.35    DF = 1    P = 0.012

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          25  21   13.00   3.00                     *---------------)
14          40  11   12.00   1.00     *----------------)
                                      +---------+---------+---------+------
                                   12.00     12.60     13.20     13.80

Overall median = 13.00

A 95.0% CI for median(11) - median(14): (1.00,2.00)


Mood median test for Plasticity Index (%)

Chi-Square = 5.23    DF = 1    P = 0.022

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          21  25   15.00   2.00                  (-----------------*
14          35  16   14.00   3.00  (---------------*
                                   ---+---------+---------+---------+---
                                   13.20     13.80     14.40     15.00

Overall median = 14.00

A 95.0% CI for median(11) - median(14): (0.00,2.00)


Mood median test for % GRAVEL

Chi-Square = 4.58    DF = 1    P = 0.032

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11           6  12    27.5   17.8  (----------------------*--------)
14          16   8    21.3    6.0   (---*------------)
                                   ----+---------+---------+---------+--
                                    21.0      24.5      28.0      31.5

Overall median = 23.0

A 95.0% CI for median(11) - median(14): (0.0,8.5)


Mood median test for % SAND

Chi-Square = 9.72    DF = 1    P = 0.002

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          14   4    32.5    7.8     (----*------)
14           7  17    42.8    9.5                       (-------*----)
                                      +---------+---------+---------+------
                                   30.0      35.0      40.0      45.0

Overall median = 38.8

A 95.0% CI for median(11) - median(14): (-14.0,-4.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 5.84    DF = 1    P = 0.016

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11           6  12   39.50   6.63                (-----------*---)
14          17   7   36.00   7.63  (--------------*---)
                                   -----+---------+---------+---------+-
                                     33.0      36.0      39.0      42.0

Overall median = 37.00

A 95.0% CI for median(11) - median(14): (0.00,6.50)


Mood median test for Bulk Density

Chi-Square = 1.02    DF = 1    P = 0.312

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11          28  20   2.240  0.165  (-----------*-----)
14          17  19   2.280  0.137            (---------*-----------)
                                   ----+---------+---------+---------+--
                                     2.200     2.250     2.300     2.350

Overall median = 2.260

A 95.0% CI for median(11) - median(14): (-0.130,0.030)


Mood median test for Dry Density

Chi-Square = 3.11    DF = 1    P = 0.078

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          28  20   2.040  0.172  (------------*--)
14          14  22   2.115  0.158              (------------*-----)
                                   ---+---------+---------+---------+---
                                    1.980     2.040     2.100     2.160

Overall median = 2.055

A 95.0% CI for median(11) - median(14): (-0.130,0.010)
```

Results for: Domain 11 v 21

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
21	78	13.72	4.31	0.49

Difference = mu (11) - mu (21)
Estimate for difference: -2.057
95% CI for difference: (-3.331, -0.783)
T-Test of difference = 0 (vs not =): T-Value = -3.19 P-Value = 0.002 DF = 152

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
21	24	29.67	5.51	1.1

Difference = mu (11) - mu (21)
Estimate for difference: -0.17
95% CI for difference: (-3.02, 2.68)
T-Test of difference = 0 (vs not =): T-Value = -0.12 P-Value = 0.907 DF = 49

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
21	24	17.17	3.60	0.73

Difference = mu (11) - mu (21)
Estimate for difference: -3.210
95% CI for difference: (-4.886, -1.534)
T-Test of difference = 0 (vs not =): T-Value = -3.89 P-Value = 0.000 DF = 35

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
21	24	12.50	4.42	0.90

Difference = mu (11) - mu (21)
Estimate for difference: 3.04
95% CI for difference: (0.93, 5.16)
T-Test of difference = 0 (vs not =): T-Value = 2.91 P-Value = 0.006 DF = 39

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	18	25.58	8.54	2.0
21	11	33.64	7.35	2.2

Difference = mu (11) - mu (21)
Estimate for difference: -8.05
95% CI for difference: (-14.25, -1.86)
T-Test of difference = 0 (vs not =): T-Value = -2.69 P-Value = 0.013 DF = 23

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
21	11	22.64	5.22	1.6

Difference = mu (11) - mu (21)
Estimate for difference: 11.97
95% CI for difference: (6.99, 16.96)
T-Test of difference = 0 (vs not =): T-Value = 4.94 P-Value = 0.000 DF = 26

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
21	11	43.73	9.16	2.8

Difference = mu (11) - mu (21)
Estimate for difference: -3.92
95% CI for difference: (-10.44, 2.60)
T-Test of difference = 0 (vs not =): T-Value = -1.29 P-Value = 0.218 DF = 14

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
21	48	2.296	0.131	0.019

Difference = mu (11) - mu (21)
Estimate for difference: -0.1045
95% CI for difference: (-0.1606, -0.0484)
T-Test of difference = 0 (vs not =): T-Value = -3.70 P-Value = 0.000 DF = 92

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
21	48	2.007	0.157	0.023

Difference = mu (11) - mu (21)
Estimate for difference: -0.0256
95% CI for difference: (-0.0887, 0.0375)
T-Test of difference = 0 (vs not =): T-Value = -0.80 P-Value = 0.423 DF = 93

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	60.7	-5.24
21	78	12.90	98.8	5.24
Overall	158		79.5	

H = 27.47 DF = 1 P = 0.000
H = 27.55 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	34.8	-0.37
21	24	28.00	36.8	0.37
Overall	70		35.5	

H = 0.14 DF = 1 P = 0.710
H = 0.14 DF = 1 P = 0.709 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	28.5	-4.01
21	24	17.00	49.0	4.01
Overall	70		35.5	

H = 16.07 DF = 1 P = 0.000
H = 16.35 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	41.9	3.66
21	24	12.00	23.2	-3.66
Overall	70		35.5	

H = 13.41 DF = 1 P = 0.000
H = 13.67 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	12.5	-2.02
21	11	35.00	19.1	2.02
Overall	29		15.0	

H = 4.09 DF = 1 P = 0.043
H = 4.13 DF = 1 P = 0.042 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	19.9	3.93
21	11	24.00	7.0	-3.93
Overall	29		15.0	

H = 15.47 DF = 1 P = 0.000
H = 15.54 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
11	18	39.50	12.3	-2.16
21	11	47.00	19.4	2.16
Overall	29		15.0	

H = 4.65 DF = 1 P = 0.031
H = 4.69 DF = 1 P = 0.030 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.240	38.1	-3.67
21	48	2.305	58.9	3.67
Overall	96		48.5	

H = 13.48 DF = 1 P = 0.000
H = 13.49 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.040	46.0	-0.89
21	48	2.043	51.0	0.89
Overall	96		48.5	

H = 0.80 DF = 1 P = 0.371
H = 0.80 DF = 1 P = 0.371 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 28.06   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
11          63  17   11.00   2.38  (-----*
21          29  49   12.90   3.32                    (-----*----)
                                   ------+---------+---------+---------+
                                      11.0      12.0      13.0      14.0
```

Overall median = 12.00

A 95.0% CI for median(11) - median(21): (-2.80,-1.30)

Mood median test for WL (%)

Chi-Square = 0.04   DF = 1   P = 0.851

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          26  20   28.00   4.00     (---------*---------)
21          13  11   28.00   6.50     (---------*---------------------)
                                      +---------+---------+---------+------
                                   27.0      28.0      29.0      30.0
```

Overall median = 28.00

A 95.0% CI for median(11) - median(21): (-3.00,2.00)

```
Mood median test for Wp (%)

Chi-Square = 16.47    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          33  13   13.00   3.00  *----)
21           5  19   17.00   4.75                (-----*---------)
                                   -----+---------+---------+---------+-
                                     14.0      16.0      18.0      20.0

Overall median = 14.00

A 95.0% CI for median(11) - median(21): (-5.29,-2.00)


Mood median test for Ip (%)

Chi-Square = 5.51    DF = 1    P = 0.019

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          21  25   15.00   2.00                           (-------*
21          18   6   12.00   4.25  (-------*-------)
                                   --------+---------+---------+--------
                                        12.0      13.2      14.4

Overall median = 14.00

A 95.0% CI for median(11) - median(21): (1.00,4.00)


Mood median test for % GRAVEL

Chi-Square = 4.24    DF = 1    P = 0.039

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
11          12   6    27.5   17.8    (---------------*------)
21           3   8    35.0   11.0               (-------------------*-)
                                     -+---------+---------+---------+-----
                                   20.0      25.0      30.0      35.0

Overall median = 28.0

A 95.0% CI for median(11) - median(21): (-11.1,3.0)


Mood median test for % SAND

Chi-Square = 7.62    DF = 1    P = 0.006

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11           7  11    32.5    7.8                        (----*------)
21          10   1    24.0    8.0  (-----------*---)
                                   ----+---------+---------+---------+--
                                    20.0      25.0      30.0      35.0

Overall median = 30.0

A 95.0% CI for median(11) - median(21): (4.0,17.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 4.24    DF = 1    P = 0.039

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          12   6    39.5    6.6     (--------*--)
21           3   8    47.0    9.0               (-----------------*----)
                                      +---------+---------+---------+------
                                   36.0      40.0      44.0      48.0

Overall median = 40.0

A 95.0% CI for median(11) - median(21): (-11.0,0.0)


Mood median test for Bulk Density

Chi-Square = 7.12    DF = 1    P = 0.008

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11          33  15   2.240  0.165  (-----------*-----)
21          20  28   2.305  0.119                  (--------*------)
                                   ----+---------+---------+---------+--
                                     2.200     2.250     2.300     2.350

Overall median = 2.270

A 95.0% CI for median(11) - median(21): (-0.127,0.002)


Mood median test for Dry Density

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11          24  24   2.040  0.172    (----------------------*-----)
21          24  24   2.043  0.175     (----------------------*-----------)
                                     +---------+---------+---------+------
                                   1.960     1.995     2.030     2.065

Overall median = 2.040

A 95.0% CI for median(11) - median(21): (-0.067,0.055)
```

Results for: Domain 11 v 31

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
31	125	18.47	2.50	0.22

Difference = mu (11) - mu (31)
Estimate for difference: -6.806
95% CI for difference: (-7.750, -5.861)
T-Test of difference = 0 (vs not =): T-Value = -14.26 P-Value = 0.000 DF = 123

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
31	112	33.41	4.86	0.46

Difference = mu (11) - mu (31)
Estimate for difference: -3.911
95% CI for difference: (-5.858, -1.964)
T-Test of difference = 0 (vs not =): T-Value = -4.01 P-Value = 0.000 DF = 71

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
31	111	15.62	1.95	0.19

Difference = mu (11) - mu (31)
Estimate for difference: -1.665
95% CI for difference: (-2.506, -0.824)
T-Test of difference = 0 (vs not =): T-Value = -3.95 P-Value = 0.000 DF = 67

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
31	111	17.89	3.19	0.30

Difference = mu (11) - mu (31)
Estimate for difference: -2.348
95% CI for difference: (-3.563, -1.134)
T-Test of difference = 0 (vs not =): T-Value = -3.85 P-Value = 0.000 DF = 75

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	18	25.58	8.54	2.0
31	35	5.63	5.82	0.98

Difference = mu (11) - mu (31)
Estimate for difference: 19.95
95% CI for difference: (15.34, 24.57)
T-Test of difference = 0 (vs not =): T-Value = 8.91 P-Value = 0.000 DF = 25

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
11         18  34.61   7.83      1.8
31         35  24.29   8.74      1.5

Difference = mu (11) - mu (31)
Estimate for difference:  10.33
95% CI for difference:  (5.53, 15.12)
T-Test of difference = 0 (vs not =): T-Value = 4.37  P-Value = 0.000  DF = 37


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
11         18  39.81   5.41      1.3
31         35   70.1   11.4      1.9

Difference = mu (11) - mu (31)
Estimate for difference:  -30.28
95% CI for difference:  (-34.92, -25.64)
T-Test of difference = 0 (vs not =): T-Value = -13.10  P-Value = 0.000  DF = 50


Two-sample T for Particle Density

Domain
Reference   N    Mean   StDev  SE Mean
11          3  2.6600  0.0173    0.010
31         17  2.6735  0.0212   0.0051

Difference = mu (11) - mu (31)
Estimate for difference:  -0.0135
95% CI for difference:  (-0.0493, 0.0223)
T-Test of difference = 0 (vs not =): T-Value = -1.20  P-Value = 0.315  DF = 3


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
11         48   2.191   0.145    0.021
31         43  2.2281  0.0640   0.0098

Difference = mu (11) - mu (31)
Estimate for difference:  -0.0367
95% CI for difference:  (-0.0829, 0.0096)
T-Test of difference = 0 (vs not =): T-Value = -1.58  P-Value = 0.118  DF = 66


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
11         48   1.982   0.155    0.022
31         43  1.8845  0.0804    0.012

Difference = mu (11) - mu (31)
Estimate for difference:  0.0974
95% CI for difference:  (0.0466, 0.1481)
T-Test of difference = 0 (vs not =): T-Value = 3.83  P-Value = 0.000  DF = 72
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	50.7	-10.10
31	125	18.00	136.5	10.10
Overall	205		103.0	

H = 102.05 DF = 1 P = 0.000
H = 102.63 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	48.8	-5.40
31	112	34.00	92.1	5.40
Overall	158		79.5	

H = 29.12 DF = 1 P = 0.000
H = 29.26 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	49.9	-5.16
31	111	16.00	91.1	5.16
Overall	157		79.0	

H = 26.63 DF = 1 P = 0.000
H = 27.28 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	49.3	-5.28
31	111	18.00	91.3	5.28
Overall	157		79.0	

H = 27.84 DF = 1 P = 0.000
H = 28.14 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.500	43.3	5.52
31	35	4.000	18.6	-5.52
Overall	53		27.0	

H = 30.49 DF = 1 P = 0.000
H = 30.60 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	38.8	3.97
31	35	23.00	21.0	-3.97
Overall	53		27.0	

H = 15.78 DF = 1 P = 0.000
H = 15.80 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
11	18	39.50	10.2	-5.69
31	35	72.00	35.7	5.69
Overall	53		27.0	

H = 32.38 DF = 1 P = 0.000
H = 32.42 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Particle Density

Domain Reference	N	Median	Ave Rank	Z
11	3	2.670	6.7	-1.22
31	17	2.680	11.2	1.22
Overall	20		10.5	

H = 1.48 DF = 1 P = 0.223
H = 1.53 DF = 1 P = 0.216 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.240	45.3	-0.28
31	43	2.230	46.8	0.28
Overall	91		46.0	

H = 0.08 DF = 1 P = 0.781
H = 0.08 DF = 1 P = 0.781 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.040	58.1	4.63
31	43	1.890	32.5	-4.63
Overall	91		46.0	

H = 21.44 DF = 1 P = 0.000
H = 21.47 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 58.06   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          72   8   11.00   2.38  (-*
31          45  80   18.00   3.00                                *---)
                                   --------+---------+---------+--------
                                        12.5      15.0      17.5
```

Overall median = 17.00

A 95.0% CI for median(11) - median(31): (-8.50,-7.00)

Mood median test for WL (%)

Chi-Square = 35.45   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11          40   6   28.00   4.00   (---*---)
31          39  73   34.00   6.00                         (---*---)
                                    --+---------+---------+---------+----
                                   27.5      30.0      32.5      35.0
```

Overall median = 32.50

A 95.0% CI for median(11) - median(31): (-7.00,-4.00)

Mood median test for Wp (%)

Chi-Square = 17.80   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          38   8   13.00   3.00     *---------)
31          51  60   16.00   3.00                        (---------*
                                      +---------+---------+---------+------
                                   13.0      14.0      15.0      16.0
```

Overall median = 15.00

A 95.0% CI for median(11) - median(31): (-3.00,-1.00)

Mood median test for Ip (%)

Chi-Square = 28.22   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11          40   6   15.00   2.00  (------*
31          45  66   18.00   4.00                           (-*------)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0
```

Overall median = 17.00

A 95.0% CI for median(11) - median(31): (-4.00,-3.00)

```
Mood median test for % GRAVEL

Chi-Square = 28.31    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11           0  18    27.5   17.8                        (--------*----)
31          27   8     4.0    6.0   (-*)
                                   --------+---------+---------+--------
                                         8.0      16.0      24.0

Overall median = 8.0

A 95.0% CI for median(11) - median(31): (18.7,26.0)


Mood median test for % SAND

Chi-Square = 19.04    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
11           2  16    32.5    7.8                        (----*------)
31          26   9    23.0   10.0    (------*----)
                                     -+---------+---------+---------+-----
                                   20.0      25.0      30.0      35.0

Overall median = 26.0

A 95.0% CI for median(11) - median(31): (6.0,13.5)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 26.25    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
11          18   0    39.5    6.6   (--*)
31           9  26    72.0   16.0                              (-*--)
                                    +---------+---------+---------+------
                                   36        48        60        72

Overall median = 62.0

A 95.0% CI for median(11) - median(31): (-38.3,-28.5)


Mood median test for Particle Density

Chi-Square = 2.89    DF = 1    P = 0.089

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1     +---------+---------+---------+------
11           3   0  2.6700  0.0300     (-------------------*
31           8   9  2.6800  0.0300                  (-------------*-----)
                                       +---------+---------+---------+------
                                     2.640     2.655     2.670     2.685

Overall median = 2.6700
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(31): (-0.0500,0.0100)
```

```
Mood median test for Bulk Density

Chi-Square = 0.02    DF = 1    P = 0.893

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1  ---------+---------+---------+-------
11          25  23  2.2400  0.1650  (------------------------*-----------)
31          23  20  2.2300  0.0900                 (----*-----------)
                                    ---------+---------+---------+-------
                                           2.200     2.225     2.250

Overall median = 2.2400

A 95.0% CI for median(11) - median(31): (-0.0527,0.0500)


Mood median test for Dry Density

Chi-Square = 22.38    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          13  35   2.040  0.172               (------------*--)
31          33  10   1.890  0.119  (--*-----)
                                   --------+---------+---------+--------
                                         1.920     1.980     2.040

Overall median = 1.949

A 95.0% CI for median(11) - median(31): (0.089,0.180)
```

Results for: Domain 11 v 41

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         80  11.67   3.77     0.42
41         57  19.60   8.68      1.1

Difference = mu (11) - mu (41)
Estimate for difference:  -7.94
95% CI for difference:  (-10.38, -5.50)
T-Test of difference = 0 (vs not =): T-Value = -6.48  P-Value = 0.000  DF = 71


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  29.50   5.85     0.86
41         13   44.5   10.6      2.9

Difference = mu (11) - mu (41)
Estimate for difference:  -14.96
95% CI for difference:  (-21.54, -8.38)
T-Test of difference = 0 (vs not =): T-Value = -4.88  P-Value = 0.000  DF = 14


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  13.96   2.56     0.38
41         13  21.85   4.38      1.2

Difference = mu (11) - mu (41)
Estimate for difference:  -7.89
95% CI for difference:  (-10.62, -5.16)
T-Test of difference = 0 (vs not =): T-Value = -6.21  P-Value = 0.000  DF = 14


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  15.54   3.59     0.53
41         13  22.62   6.78      1.9

Difference = mu (11) - mu (41)
Estimate for difference:  -7.07
95% CI for difference:  (-11.29, -2.85)
T-Test of difference = 0 (vs not =): T-Value = -3.62  P-Value = 0.003  DF = 13


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
11         18  25.58   8.54      2.0
41          6   22.3   13.5      5.5

Difference = mu (11) - mu (41)
Estimate for difference:  3.25
95% CI for difference:  (-11.12, 17.62)
T-Test of difference = 0 (vs not =): T-Value = 0.55  P-Value = 0.600  DF = 6
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
41	6	27.00	7.01	2.9

Difference = mu (11) - mu (41)
Estimate for difference: 7.61
95% CI for difference: (-0.10, 15.32)
T-Test of difference = 0 (vs not =): T-Value = 2.23 P-Value = 0.052 DF = 9

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
41	6	50.7	16.1	6.6

Difference = mu (11) - mu (41)
Estimate for difference: -10.86
95% CI for difference: (-28.04, 6.32)
T-Test of difference = 0 (vs not =): T-Value = -1.63 P-Value = 0.165 DF = 5

Two-sample T for Particle Density

Domain Reference	N	Mean	StDev	SE Mean
11	3	2.6600	0.0173	0.010
41	9	2.7611	0.0237	0.0079

Difference = mu (11) - mu (41)
Estimate for difference: -0.1011
95% CI for difference: (-0.1365, -0.0657)
T-Test of difference = 0 (vs not =): T-Value = -7.94 P-Value = 0.001 DF = 4

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
41	8	2.2000	0.0807	0.029

Difference = mu (11) - mu (41)
Estimate for difference: -0.0085
95% CI for difference: (-0.0841, 0.0670)
T-Test of difference = 0 (vs not =): T-Value = -0.24 P-Value = 0.813 DF = 15

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
41	8	1.8950	0.0735	0.026

Difference = mu (11) - mu (41)
Estimate for difference: 0.0869
95% CI for difference: (0.0152, 0.1586)
T-Test of difference = 0 (vs not =): T-Value = 2.54 P-Value = 0.020 DF = 19

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	45.5	-8.21
41	57	17.00	102.0	8.21
Overall	137		69.0	

H = 67.36 DF = 1 P = 0.000
H = 67.63 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	24.3	-4.80
41	13	42.00	50.2	4.80
Overall	59		30.0	

H = 23.05 DF = 1 P = 0.000
H = 23.26 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	24.0	-5.07
41	13	21.00	51.3	5.07
Overall	59		30.0	

H = 25.75 DF = 1 P = 0.000
H = 26.24 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	26.1	-3.26
41	13	22.00	43.7	3.26
Overall	59		30.0	

H = 10.66 DF = 1 P = 0.001
H = 10.97 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	12.7	0.27
41	6	23.50	11.8	-0.27
Overall	24		12.5	

H = 0.07 DF = 1 P = 0.790
H = 0.07 DF = 1 P = 0.790 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	14.1	1.90
41	6	27.50	7.8	-1.90
Overall	24		12.5	

H = 3.61 DF = 1 P = 0.057
H = 3.62 DF = 1 P = 0.057 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
11	18	39.50	11.3	-1.50
41	6	46.00	16.3	1.50
Overall	24		12.5	

H = 2.25 DF = 1 P = 0.134
H = 2.28 DF = 1 P = 0.131 (adjusted for ties)

Kruskal-Wallis Test on Particle Density

Domain Reference	N	Median	Ave Rank	Z
11	3	2.670	2.0	-2.50
41	9	2.770	8.0	2.50
Overall	12		6.5	

H = 6.23 DF = 1 P = 0.013
H = 6.60 DF = 1 P = 0.010 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.240	29.2	0.78
41	8	2.225	24.3	-0.78
Overall	56		28.5	

H = 0.62 DF = 1 P = 0.433
H = 0.62 DF = 1 P = 0.432 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.040	30.6	2.39
41	8	1.915	15.8	-2.39
Overall	56		28.5	

H = 5.70 DF = 1 P = 0.017
H = 5.72 DF = 1 P = 0.017 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 85.73    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          67  13   11.00   2.38  (-*
41           2  55   17.00   4.50                       (--*---)
                                   --------+---------+---------+--------
                                        12.5      15.0      17.5

Overall median = 13.00

A 95.0% CI for median(11) - median(41): (-7.24,-5.50)


Mood median test for WL (%)

Chi-Square = 22.68    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
11          34  12    28.0    4.0    (*)
41           0  13    42.0   16.5                   (-------*-----------)
                                     -+---------+---------+---------+-----
                                   28.0      35.0      42.0      49.0

Overall median = 29.0

A 95.0% CI for median(11) - median(41): (-23.2,-7.9)


Mood median test for Wp (%)

Chi-Square = 21.16    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11          33  13    13.0    3.0  *---)
41           0  13    21.0    5.0                      (------*--------)
                                   -------+---------+---------+---------
                                       15.0      18.0      21.0

Overall median = 14.0

A 95.0% CI for median(11) - median(41): (-10.1,-5.0)


Mood median test for Ip (%)

Chi-Square = 11.20    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          34  12    15.0    2.0  (-*
41           3  10    22.0   12.0        (-------------*------------)
                                   -----+---------+---------+---------+-
                                     16.0      20.0      24.0      28.0

Overall median = 15.0

A 95.0% CI for median(11) - median(41): (-13.1,-1.9)
```

Mood median test for % GRAVEL

Chi-Square = 0.00   DF = 1   P = 1.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
11           9   9    27.5   17.8                 (--------*----)
41           3   3    23.5   26.8   (------------------*---------------)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0
```

Overall median = 27.5

A 95.0% CI for median(11) - median(41): (-13.0,22.0)

Mood median test for % SAND

Chi-Square = 3.56   DF = 1   P = 0.059

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11           7  11    32.5    7.8                       (----*------)
41           5   1    27.5   11.8   (---------------*--------------)
                                    --+---------+---------+---------+----
                                   20.0      25.0      30.0      35.0
```

Overall median = 31.3

A 95.0% CI for median(11) - median(41): (-7.0,18.0)

Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.53   DF = 1   P = 0.465

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11          12   6    39.5    6.6  (---*)
41           3   3    46.0   29.0  (---------*-----------------------)
                                   ----+---------+---------+---------+--
                                      40        50        60        70
```

Overall median = 40.0

A 95.0% CI for median(11) - median(41): (-36.0,7.0)

Mood median test for Particle Density

Chi-Square = 4.00   DF = 1   P = 0.046

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11           3   0   2.670  0.030    (------*
41           3   6   2.770  0.050                         (---------*--)
                                     +---------+---------+---------+------
                                   2.640     2.680     2.720     2.760
```

Overall median = 2.750
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(41): (-0.140,-0.060)

```
Mood median test for Bulk Density

Chi-Square = 3.51    DF = 1    P = 0.061

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1  ---------+---------+---------+-------
11          25  23  2.2400  0.1650  (------------------------*-----------)
41           7   1  2.2250  0.0475  (------------------*------)
                                    ---------+---------+---------+-------
                                         2.200     2.225     2.250

Overall median = 2.2400

A 95.0% CI for median(11) - median(41): (-0.0007,0.0703)


Mood median test for Dry Density

Chi-Square = 9.33    DF = 1    P = 0.002

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          20  28   2.040  0.172                 (------------*--)
41           8   0   1.915  0.062  (------*-----)
                                   --------+---------+---------+--------
                                        1.920     1.980     2.040

Overall median = 2.015

A 95.0% CI for median(11) - median(41): (0.070,0.170)
```

Results for: Domain 11 v 43

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         80  11.67   3.77     0.42
43         50  20.44   7.73      1.1

Difference = mu (11) - mu (43)
Estimate for difference:  -8.77
95% CI for difference:  (-11.11, -6.43)
T-Test of difference = 0 (vs not =): T-Value = -7.49  P-Value = 0.000  DF = 63


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  29.50   5.85     0.86
43         17  37.35   7.61      1.8

Difference = mu (11) - mu (43)
Estimate for difference:  -7.85
95% CI for difference:  (-12.07, -3.64)
T-Test of difference = 0 (vs not =): T-Value = -3.86  P-Value = 0.001  DF = 23


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  13.96   2.56     0.38
43         17  20.29   3.53     0.86

Difference = mu (11) - mu (43)
Estimate for difference:  -6.338
95% CI for difference:  (-8.279, -4.396)
T-Test of difference = 0 (vs not =): T-Value = -6.77  P-Value = 0.000  DF = 22


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  15.54   3.59     0.53
43         17  17.06   5.15      1.2

Difference = mu (11) - mu (43)
Estimate for difference:  -1.52
95% CI for difference:  (-4.34, 1.31)
T-Test of difference = 0 (vs not =): T-Value = -1.12  P-Value = 0.277  DF = 21


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
11         18  25.58   8.54      2.0
43         15   38.1   12.9      3.3

Difference = mu (11) - mu (43)
Estimate for difference:  -12.55
95% CI for difference:  (-20.59, -4.51)
T-Test of difference = 0 (vs not =): T-Value = -3.23  P-Value = 0.004  DF = 23
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
43	15	33.93	7.56	2.0

Difference = mu (11) - mu (43)
Estimate for difference: 0.68
95% CI for difference: (-4.81, 6.17)
T-Test of difference = 0 (vs not =): T-Value = 0.25 P-Value = 0.803 DF = 30

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
43	15	27.9	11.0	2.8

Difference = mu (11) - mu (43)
Estimate for difference: 11.87
95% CI for difference: (5.35, 18.39)
T-Test of difference = 0 (vs not =): T-Value = 3.81 P-Value = 0.001 DF = 19

Two-sample T for Particle Density

Domain Reference	N	Mean	StDev	SE Mean
11	3	2.6600	0.0173	0.010
43	6	2.7217	0.0571	0.023

Difference = mu (11) - mu (43)
Estimate for difference: -0.0617
95% CI for difference: (-0.1237, 0.0004)
T-Test of difference = 0 (vs not =): T-Value = -2.43 P-Value = 0.051 DF = 6

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
43	12	2.112	0.162	0.047

Difference = mu (11) - mu (43)
Estimate for difference: 0.0798
95% CI for difference: (-0.0295, 0.1891)
T-Test of difference = 0 (vs not =): T-Value = 1.56 P-Value = 0.141 DF = 15

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
43	12	1.810	0.176	0.051

Difference = mu (11) - mu (43)
Estimate for difference: 0.1719
95% CI for difference: (0.0534, 0.2903)
T-Test of difference = 0 (vs not =): T-Value = 3.09 P-Value = 0.007 DF = 15

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	45.3	-7.75
43	50	17.00	97.9	7.75
Overall	130		65.5	

H = 59.99 DF = 1 P = 0.000
H = 60.27 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	26.4	-3.98
43	17	39.00	47.1	3.98
Overall	63		32.0	

H = 15.84 DF = 1 P = 0.000
H = 16.00 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	24.6	-5.29
43	17	20.00	52.1	5.29
Overall	63		32.0	

H = 27.96 DF = 1 P = 0.000
H = 28.44 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	29.5	-1.75
43	17	16.00	38.6	1.75
Overall	63		32.0	

H = 3.06 DF = 1 P = 0.080
H = 3.15 DF = 1 P = 0.076 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	12.8	-2.71
43	15	41.00	22.0	2.71
Overall	33		17.0	

H = 7.35 DF = 1 P = 0.007
H = 7.37 DF = 1 P = 0.007 (adjusted for ties)

```
Kruskal-Wallis Test on % SAND

Domain
Reference   N  Median  Ave Rank      Z
11         18   32.50      16.9  -0.04
43         15   33.00      17.1   0.04
Overall    33              17.0

H = 0.00  DF = 1  P = 0.971
H = 0.00  DF = 1  P = 0.971  (adjusted for ties)


Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
11         18   39.50      21.7   3.06
43         15   23.00      11.4  -3.06
Overall    33              17.0

H = 9.33  DF = 1  P = 0.002
H = 9.36  DF = 1  P = 0.002  (adjusted for ties)


Kruskal-Wallis Test on Particle Density

Domain                 Ave
Reference  N  Median  Rank      Z
11         3   2.670   3.0  -1.55
43         6   2.735   6.0   1.55
Overall    9           5.0

H = 2.40  DF = 1  P = 0.121
H = 2.42  DF = 1  P = 0.120  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.240      32.5   1.74
43         12   2.155      22.7  -1.74
Overall    60              30.5

H = 3.02  DF = 1  P = 0.082
H = 3.02  DF = 1  P = 0.082  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.040      34.0   3.07
43         12   1.835      16.7  -3.07
Overall    60              30.5

H = 9.41  DF = 1  P = 0.002
H = 9.43  DF = 1  P = 0.002  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 61.67    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          63  17   11.00   2.38  (-*
43           4  46   17.00  11.25                        (---*--------)
                                   --------+---------+---------+--------
                                        12.5      15.0      17.5

Overall median = 12.00

A 95.0% CI for median(11) - median(43): (-8.20,-5.00)


Mood median test for WL (%)

Chi-Square = 19.58    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
11          34  12    28.0    4.0  (-*-)
43           2  15    39.0   12.5          (---------------*-------)
                                   ------+---------+---------+---------+
                                      30.0      35.0      40.0      45.0

Overall median = 29.0

A 95.0% CI for median(11) - median(43): (-14.6,-2.0)


Mood median test for Wp (%)

Chi-Square = 25.61    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11          33  13    13.0    3.0  *---)
43           0  17    20.0    7.0                (---------*---------)
                                   -------+---------+---------+---------
                                       15.0      18.0      21.0

Overall median = 14.0

A 95.0% CI for median(11) - median(43): (-10.0,-3.7)


Mood median test for Ip (%)

Chi-Square = 7.99    DF = 1    P = 0.005

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11          34  12   15.00   2.00  (------*
43           6  11   16.00   5.50  (-------------*------------------)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0

Overall median = 15.00

A 95.0% CI for median(11) - median(43): (-5.00,0.31)
```

```
Mood median test for % GRAVEL

Chi-Square = 6.80    DF = 1    P = 0.009

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          13   5    27.5   17.8  (--------*----)
43           4  11    41.0   20.0              (-----------*--------)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 30.0

A 95.0% CI for median(11) - median(43): (-19.4,-3.8)


Mood median test for % SAND

Chi-Square = 0.04    DF = 1    P = 0.849

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11           9   9   32.50   7.75       (---------*--------------)
43           8   7   33.00  10.00  (----------------*-----------------)
                                   -----+---------+---------+---------+-
                                     30.0      32.5      35.0      37.5

Overall median = 33.00

A 95.0% CI for median(11) - median(43): (-7.00,5.11)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 7.19    DF = 1    P = 0.007

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11           6  12    39.5    6.6                            (-----*-)
43          12   3    23.0   17.0  (----*--------------------)
                                   -------+---------+---------+---------
                                       24.0      30.0      36.0

Overall median = 37.0

A 95.0% CI for median(11) - median(43): (4.8,20.1)


Mood median test for Particle Density

Chi-Square = 3.60    DF = 1    P = 0.058

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11           3   0   2.670  0.030    (------*
43           2   4   2.735  0.105      (--------------------*---------)
                                     +---------+---------+---------+------
                                   2.640     2.680     2.720     2.760

Overall median = 2.680
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(43): (-0.140,0.040)
```

```
Mood median test for Bulk Density

Chi-Square = 6.67    DF = 1    P = 0.010

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          20  28   2.240  0.165                        (-----*--)
43          10   2   2.155  0.265  (--------------------*----)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.225

A 95.0% CI for median(11) - median(43): (0.010,0.340)
```

```
Mood median test for Dry Density

Chi-Square = 6.67    DF = 1    P = 0.010

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          20  28   2.040  0.172                          (------*-)
43          10   2   1.835  0.252  (---------------*----)
                                   ---+---------+---------+---------+---
                                    1.68      1.80      1.92      2.04

Overall median = 2.015

A 95.0% CI for median(11) - median(43): (0.120,0.420)
```

Results for: Domain 11 v 51

Two-Sample T-Test and (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         80  11.67   3.77     0.42
51         10  14.36   8.77      2.8

Difference = mu (11) - mu (51)
Estimate for difference:  -2.69
95% CI for difference:  (-9.04, 3.65)
T-Test of difference = 0 (vs not =): T-Value = -0.96  P-Value = 0.362  DF = 9


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  29.50   5.85     0.86
51         13  27.08   2.90     0.80

Difference = mu (11) - mu (51)
Estimate for difference:  2.42
95% CI for difference:  (0.04, 4.81)
T-Test of difference = 0 (vs not =): T-Value = 2.06  P-Value = 0.046  DF = 40


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  13.96   2.56     0.38
51         13  17.08   1.71     0.47

Difference = mu (11) - mu (51)
Estimate for difference:  -3.120
95% CI for difference:  (-4.359, -1.882)
T-Test of difference = 0 (vs not =): T-Value = -5.15  P-Value = 0.000  DF = 29


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
11         46  15.54   3.59     0.53
51         13  10.00   1.83     0.51

Difference = mu (11) - mu (51)
Estimate for difference:  5.543
95% CI for difference:  (4.062, 7.025)
T-Test of difference = 0 (vs not =): T-Value = 7.57  P-Value = 0.000  DF = 39
Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
11         18  25.58   8.54      2.0
51         10  38.20   9.73      3.1

Difference = mu (11) - mu (51)
Estimate for difference:  -12.62
95% CI for difference:  (-20.41, -4.82)
T-Test of difference = 0 (vs not =): T-Value = -3.43  P-Value = 0.003  DF = 16
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
51	10	16.00	4.71	1.5

Difference = mu (11) - mu (51)
Estimate for difference: 18.61
95% CI for difference: (13.72, 23.50)
T-Test of difference = 0 (vs not =): T-Value = 7.84 P-Value = 0.000 DF = 25

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
51	10	38.5	12.7	4.0

Difference = mu (11) - mu (51)
Estimate for difference: 1.31
95% CI for difference: (-8.07, 10.68)
T-Test of difference = 0 (vs not =): T-Value = 0.31 P-Value = 0.763 DF = 10

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
51	3	2.3267	0.0379	0.022

Difference = mu (11) - mu (51)
Estimate for difference: -0.1352
95% CI for difference: (-0.2069, -0.0635)
T-Test of difference = 0 (vs not =): T-Value = -4.46 P-Value = 0.003 DF = 7

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
51	3	2.1600	0.0361	0.021

Difference = mu (11) - mu (51)
Estimate for difference: -0.1781
95% CI for difference: (-0.2485, -0.1078)
T-Test of difference = 0 (vs not =): T-Value = -5.84 P-Value = 0.000 DF = 8

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	45.4	-0.13
51	10	12.00	46.5	0.13
Overall	90		45.5	

H = 0.02 DF = 1 P = 0.898
H = 0.02 DF = 1 P = 0.897 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	31.6	1.33
51	13	27.00	24.4	-1.33
Overall	59		30.0	

H = 1.76 DF = 1 P = 0.185
H = 1.79 DF = 1 P = 0.181 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	24.9	-4.26
51	13	17.00	47.9	4.26
Overall	59		30.0	

H = 18.16 DF = 1 P = 0.000
H = 18.56 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	36.3	5.26
51	13	10.00	7.9	-5.26
Overall	59		30.0	

H = 27.64 DF = 1 P = 0.000
H = 28.32 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	10.8	-3.21
51	10	39.50	21.2	3.21
Overall	28		14.5	

H = 10.32 DF = 1 P = 0.001
H = 10.34 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	19.4	4.22
51	10	16.00	5.7	-4.22
Overall	28		14.5	

H = 17.80 DF = 1 P = 0.000
H = 17.84 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
11         18   39.50      16.0   1.29
51         10   37.50      11.8  -1.29
Overall    28              14.5

H = 1.68  DF = 1  P = 0.195
H = 1.68  DF = 1  P = 0.194  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.240      24.9  -2.20
51          3   2.310      44.3   2.20
Overall    51              26.0

H = 4.85  DF = 1  P = 0.028
H = 4.86  DF = 1  P = 0.027  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.040      24.6  -2.68
51          3   2.150      48.3   2.68
Overall    51              26.0

H = 7.19  DF = 1  P = 0.007
H = 7.21  DF = 1  P = 0.007  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)
Chi-Square = 1.41    DF = 1    P = 0.236

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
11          55  25    11.0    2.4          (-*
51           5   5    12.0   12.2  (-----------*--------------------)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 11.0

A 95.0% CI for median(11) - median(51): (-8.1,3.6)
```

```
Mood median test for WL (%)

Chi-Square = 0.68    DF = 1    P = 0.410

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11          26  20   28.00   4.00                 (-------*--------)
51           9   4   27.00   4.50   (----------------*-----------------)
                                     --+---------+---------+---------+----
                                    25.2      26.4      27.6      28.8

Overall median = 28.00

A 95.0% CI for median(11) - median(51): (-2.04,4.00)
```

```
Mood median test for Wp (%)

Chi-Square = 21.16    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          33  13   13.00   3.00  *-----)
51           0  13   17.00   2.50                     (-----*--------)
                                   ---+---------+---------+---------+---
                                   13.5      15.0      16.5      18.0

Overall median = 14.00

A 95.0% CI for median(11) - median(51): (-5.04,-2.00)
```

```
Mood median test for Ip (%)

Chi-Square = 12.26    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          21  25   15.00   2.00                          (----*
51          13   0   10.00   2.50  (----*------)
                                   -----+---------+---------+---------+-
                                     10.0      12.0      14.0      16.0

Overall median = 14.00

A 95.0% CI for median(11) - median(51): (2.96,6.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 9.96    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          13   5    27.5   17.8  (--------*----)
51           1   9    39.5   14.8                (---------*--------)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 29.5

A 95.0% CI for median(11) - median(51): (-21.0,-4.0)
```

```
Mood median test for % SAND

Chi-Square = 15.56    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11           4  14    32.5    7.8                         (--*-----)
51          10   0    16.0    5.3   (----*--)
                                    --+---------+---------+---------+----
                                   14.0      21.0      28.0      35.0

Overall median = 29.5

A 95.0% CI for median(11) - median(51): (12.0,22.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.49    DF = 1    P = 0.115

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11           7  11    39.5    6.6              (--------*--)
51           7   3    37.5   11.8  (----------------*--------------)
                                   ---+---------+---------+---------+---
                                   32.0      36.0      40.0      44.0

Overall median = 38.5

A 95.0% CI for median(11) - median(51): (-1.0,9.0)


Mood median test for Bulk Density

Chi-Square = 3.32    DF = 1    P = 0.069

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11          26  22   2.240  0.165  (---------*----)
51           0   3   2.310  0.070                     (-*---------)
                                   -------+---------+---------+---------
                                        2.220     2.280     2.340

Overall median = 2.250
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(51): (-0.242,-0.018)


Mood median test for Dry Density

Chi-Square = 3.88    DF = 1    P = 0.049

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11          28  20   2.040  0.172    (----------*--)
51           0   3   2.150  0.070                           (--*------)
                                     +---------+---------+---------+------
                                   1.960     2.030     2.100     2.170

Overall median = 2.050
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(11) - median(51): (-0.273,-0.048)
```

Results for: Domain 11 v 52

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
52	24	8.48	2.78	0.57

Difference = mu (11) - mu (52)
Estimate for difference: 3.187
95% CI for difference: (1.768, 4.606)
T-Test of difference = 0 (vs not =): T-Value = 4.51 P-Value = 0.000 DF = 50

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
52	24	25.33	2.73	0.56

Difference = mu (11) - mu (52)
Estimate for difference: 4.17
95% CI for difference: (2.12, 6.22)
T-Test of difference = 0 (vs not =): T-Value = 4.06 P-Value = 0.000 DF = 67

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
52	24	16.21	1.61	0.33

Difference = mu (11) - mu (52)
Estimate for difference: -2.252
95% CI for difference: (-3.254, -1.250)
T-Test of difference = 0 (vs not =): T-Value = -4.49 P-Value = 0.000 DF = 65

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
52	24	9.13	2.11	0.43

Difference = mu (11) - mu (52)
Estimate for difference: 6.418
95% CI for difference: (5.056, 7.781)
T-Test of difference = 0 (vs not =): T-Value = 9.40 P-Value = 0.000 DF = 66

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	18	25.58	8.54	2.0
52	15	37.5	13.5	3.5

Difference = mu (11) - mu (52)
Estimate for difference: -11.88
95% CI for difference: (-20.21, -3.56)
T-Test of difference = 0 (vs not =): T-Value = -2.96 P-Value = 0.007 DF = 22

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
52	15	18.47	6.10	1.6

Difference = mu (11) - mu (52)
Estimate for difference: 16.14
95% CI for difference: (11.19, 21.10)
T-Test of difference = 0 (vs not =): T-Value = 6.65 P-Value = 0.000 DF = 30

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
52	15	36.7	15.7	4.1

Difference = mu (11) - mu (52)
Estimate for difference: 3.14
95% CI for difference: (-5.88, 12.16)
T-Test of difference = 0 (vs not =): T-Value = 0.74 P-Value = 0.471 DF = 16

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
52	7	2.364	0.125	0.047

Difference = mu (11) - mu (52)
Estimate for difference: -0.1728
95% CI for difference: (-0.2917, -0.0539)
T-Test of difference = 0 (vs not =): T-Value = -3.35 P-Value = 0.010 DF = 8

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
52	7	2.196	0.154	0.058

Difference = mu (11) - mu (52)
Estimate for difference: -0.2138
95% CI for difference: (-0.3615, -0.0662)
T-Test of difference = 0 (vs not =): T-Value = -3.43 P-Value = 0.011 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.000	58.4	3.66
52	24	8.450	32.7	-3.66
Overall	104		52.5	

H = 13.43 DF = 1 P = 0.000
H = 13.54 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	42.3	3.86
52	24	25.50	22.5	-3.86
Overall	70		35.5	

H = 14.90 DF = 1 P = 0.000
H = 15.14 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	27.5	-4.57
52	24	16.00	50.9	4.57
Overall	70		35.5	

H = 20.90 DF = 1 P = 0.000
H = 21.39 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.000	46.9	6.51
52	24	9.000	13.6	-6.51
Overall	70		35.5	

H = 42.44 DF = 1 P = 0.000
H = 43.16 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	12.8	-2.75
52	15	36.00	22.1	2.75
Overall	33		17.0	

H = 7.55 DF = 1 P = 0.006
H = 7.57 DF = 1 P = 0.006 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	24.1	4.61
52	15	19.00	8.5	-4.61
Overall	33		17.0	

H = 21.25 DF = 1 P = 0.000
H = 21.30 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
11	18	39.50	18.3	0.85
52	15	38.00	15.4	-0.85
Overall	33		17.0	

H = 0.72 DF = 1 P = 0.396
H = 0.73 DF = 1 P = 0.394 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.240	25.4	-3.09
52	7	2.410	45.5	3.09
Overall	55		28.0	

H = 9.57 DF = 1 P = 0.002
H = 9.59 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.040	25.5	-3.01
52	7	2.200	45.0	3.01
Overall	55		28.0	

H = 9.03 DF = 1 P = 0.003
H = 9.05 DF = 1 P = 0.003 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 7.80   DF = 1   P = 0.005

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
11          34  46   11.00   2.38                             (-----*
52          18   6    8.45   4.52  (-----------*------------)
                                   --+---------+---------+---------+----
                                   7.2       8.4       9.6      10.8
```

Overall median = 10.65

A 95.0% CI for median(11) - median(52): (0.80,4.00)

Mood median test for WL (%)

Chi-Square = 12.60   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          20  26   28.00   4.00                         (------*-----)
52          21   3   25.50   3.75     (---------*---------)
                                      +---------+---------+---------+------
                                   24.0      25.5      27.0      28.5
```

Overall median = 27.00

A 95.0% CI for median(11) - median(52): (0.00,5.00)

```
Mood median test for Wp (%)

Chi-Square = 25.36    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          33  13   13.00   3.00     *---------)
52           2  22   16.00   2.75                         (---------*-)
                                      +---------+---------+---------+------
                                   13.0      14.0      15.0      16.0

Overall median = 14.50

A 95.0% CI for median(11) - median(52): (-3.00,-1.71)


Mood median test for Ip (%)

Chi-Square = 20.29    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11          21  25   15.00   2.00                                 (----*
52          24   0    9.00   3.00    (----*-----)
                                     +---------+---------+---------+------
                                   8.0      10.0      12.0      14.0

Overall median = 14.00

A 95.0% CI for median(11) - median(52): (4.71,7.00)


Mood median test for % GRAVEL

Chi-Square = 3.48    DF = 1    P = 0.062

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          13   5    27.5   17.8  (--------*----)
52           6   9    36.0   22.0              (-------*---------------)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 30.0

A 95.0% CI for median(11) - median(52): (-19.4,-1.8)


Mood median test for % SAND

Chi-Square = 19.25    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11           3  15    32.5    7.8                           (--*-----)
52          14   1    19.0    9.0     (------*---)
                                      +---------+---------+---------+------
                                   14.0      21.0      28.0      35.0

Overall median = 28.0

A 95.0% CI for median(11) - median(52): (9.0,20.1)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.04    DF = 1    P = 0.849

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11           9   9    39.5    6.6                      (------*-)
52           8   7    38.0   21.0  (-----------------------*-----------)
                                   --------+---------+---------+--------
                                        30.0      35.0      40.0

Overall median = 39.0

A 95.0% CI for median(11) - median(52): (-3.2,12.1)


Mood median test for Bulk Density

Chi-Square = 4.76    DF = 1    P = 0.029

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          28  20   2.240  0.165  (-------*---)
52           1   6   2.410  0.120           (-------------------*----)
                                   --------+---------+---------+--------
                                         2.240     2.320     2.400

Overall median = 2.260

A 95.0% CI for median(11) - median(52): (-0.191,-0.006)


Mood median test for Dry Density

Chi-Square = 4.76    DF = 1    P = 0.029

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11          28  20   2.040  0.172  (------*-)
52           1   6   2.200  0.250         (------------*------------)
                                   -------+---------+---------+---------
                                        2.04      2.16      2.28

Overall median = 2.050

A 95.0% CI for median(11) - median(52): (-0.319,-0.006)
```

Results for: Domain 11 v 61

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
61	9	17.50	6.94	2.3

Difference = mu (11) - mu (61)
Estimate for difference: -5.83
95% CI for difference: (-11.26, -0.41)
T-Test of difference = 0 (vs not =): T-Value = -2.48 P-Value = 0.038 DF = 8

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
61	9	2.120	0.154	0.051

Difference = mu (11) - mu (61)
Estimate for difference: 0.0715
95% CI for difference: (-0.0521, 0.1950)
T-Test of difference = 0 (vs not =): T-Value = 1.29 P-Value = 0.226 DF = 10

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
61	9	1.817	0.222	0.074

Difference = mu (11) - mu (61)
Estimate for difference: 0.1653
95% CI for difference: (-0.0099, 0.3405)
T-Test of difference = 0 (vs not =): T-Value = 2.13 P-Value = 0.062 DF = 9

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	42.2	-3.10
61	9	16.30	70.3	3.10
Overall	89		45.0	

H = 9.58 DF = 1 P = 0.002
H = 9.69 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.240	30.6	1.72
61	9	2.130	20.3	-1.72
Overall	57		29.0	

H = 2.95 DF = 1 P = 0.086
H = 2.96 DF = 1 P = 0.085 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank       Z
11         48   2.040      31.5    2.60
61          9   1.790      15.8   -2.60
Overall    57              29.0

H = 6.78  DF = 1  P = 0.009
H = 6.80  DF = 1  P = 0.009  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 11.52    DF = 1    P = 0.001

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11          55  25    11.0    2.4  (-*
61           1   8    16.3   12.1     (-----------*--------------------)
                                   ----+---------+---------+---------+--
                                    12.0      16.0      20.0      24.0

Overall median = 11.0

A 95.0% CI for median(11) - median(61): (-15.1,-0.5)


Mood median test for Bulk Density

Chi-Square = 2.03    DF = 1    P = 0.154

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
11          25  23   2.240  0.165                      (-------*---)
61           7   2   2.130  0.215  (--------------*---------------)
                                   ---------+---------+---------+-------
                                          2.080     2.160     2.240

Overall median = 2.240

A 95.0% CI for median(11) - median(61): (-0.022,0.270)
Mood median test for Dry Density

Chi-Square = 2.71    DF = 1    P = 0.100

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          23  25   2.040  0.172                           (----*)
61           7   2   1.790  0.380  (-------------*----------------)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10

Overall median = 2.020

A 95.0% CI for median(11) - median(61): (-0.020,0.520)
```

Results for: Domain 11 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
62	131	16.88	5.15	0.45

Difference = mu (11) - mu (62)
Estimate for difference: -5.213
95% CI for difference: (-6.429, -3.997)
T-Test of difference = 0 (vs not =): T-Value = -8.45 P-Value = 0.000 DF = 202

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
62	113	34.27	6.08	0.57

Difference = mu (11) - mu (62)
Estimate for difference: -4.77
95% CI for difference: (-6.82, -2.71)
T-Test of difference = 0 (vs not =): T-Value = -4.61 P-Value = 0.000 DF = 86

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
62	113	17.70	2.77	0.26

Difference = mu (11) - mu (62)
Estimate for difference: -3.743
95% CI for difference: (-4.655, -2.830)
T-Test of difference = 0 (vs not =): T-Value = -8.15 P-Value = 0.000 DF = 89

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
62	113	16.57	4.48	0.42

Difference = mu (11) - mu (62)
Estimate for difference: -1.023
95% CI for difference: (-2.365, 0.319)
T-Test of difference = 0 (vs not =): T-Value = -1.51 P-Value = 0.134 DF = 103

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	18	25.58	8.54	2.0
62	47	24.9	13.6	2.0

Difference = mu (11) - mu (62)
Estimate for difference: 0.69
95% CI for difference: (-4.99, 6.37)
T-Test of difference = 0 (vs not =): T-Value = 0.24 P-Value = 0.808 DF = 49

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
62	47	28.74	7.27	1.1

Difference = mu (11) - mu (62)
Estimate for difference: 5.87
95% CI for difference: (1.50, 10.23)
T-Test of difference = 0 (vs not =): T-Value = 2.76 P-Value = 0.010 DF = 28

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
62	47	45.0	16.8	2.5

Difference = mu (11) - mu (62)
Estimate for difference: -5.17
95% CI for difference: (-10.71, 0.36)
T-Test of difference = 0 (vs not =): T-Value = -1.87 P-Value = 0.066 DF = 61

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
62	29	2.113	0.106	0.020

Difference = mu (11) - mu (62)
Estimate for difference: 0.0788
95% CI for difference: (0.0213, 0.1363)
T-Test of difference = 0 (vs not =): T-Value = 2.73 P-Value = 0.008 DF = 72

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
62	29	1.800	0.176	0.033

Difference = mu (11) - mu (62)
Estimate for difference: 0.1819
95% CI for difference: (0.1024, 0.2613)
T-Test of difference = 0 (vs not =): T-Value = 4.59 P-Value = 0.000 DF = 53

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	61.3	-8.30
62	131	15.87	133.3	8.30
Overall	211		106.0	

H = 68.97 DF = 1 P = 0.000
H = 69.07 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	43.9	-6.31
62	113	34.00	94.7	6.31
Overall	159		80.0	

H = 39.83 DF = 1 P = 0.000
H = 40.06 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	37.3	-7.46
62	113	17.00	97.4	7.46
Overall	159		80.0	

H = 55.60 DF = 1 P = 0.000
H = 56.21 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	64.6	-2.69
62	113	16.00	86.3	2.69
Overall	159		80.0	

H = 7.25 DF = 1 P = 0.007
H = 7.35 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	35.2	0.57
62	47	24.00	32.2	-0.57
Overall	65		33.0	

H = 0.33 DF = 1 P = 0.567
H = 0.33 DF = 1 P = 0.567 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	43.1	2.68
62	47	28.00	29.1	-2.68
Overall	65		33.0	

H = 7.16 DF = 1 P = 0.007
H = 7.18 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
11	18	39.50	25.9	-1.86
62	47	47.00	35.7	1.86
Overall	65		33.0	

H = 3.47 DF = 1 P = 0.063
H = 3.47 DF = 1 P = 0.063 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.240	45.9	3.49
62	29	2.150	27.6	-3.49
Overall	77		39.0	

H = 12.15 DF = 1 P = 0.000
H = 12.16 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.040	48.1	4.60
62	29	1.850	23.9	-4.60
Overall	77		39.0	

H = 21.20 DF = 1 P = 0.000
H = 21.23 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 62.93   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          70  10   11.00   2.38  (--*
62          41  90   15.87   5.61                            (--*---)
                                   --------+---------+---------+--------
                                        12.0      14.0      16.0
```

Overall median = 14.00

A 95.0% CI for median(11) - median(62): (-5.75,-4.50)

Mood median test for WL (%)

Chi-Square = 34.76   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          40   6   28.00   4.00  (----*----)
62          40  73   34.00   4.00                                (----*
                                   -----+---------+---------+---------+-
                                     28.0      30.0      32.0      34.0
```

Overall median = 32.00

A 95.0% CI for median(11) - median(62): (-7.00,-4.00)

```
Mood median test for Wp (%)

Chi-Square = 40.91    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          42   4   13.00   3.00  *-----)
62          40  73   17.00   3.00                             *------)
                                   ---+---------+---------+---------+---
                                   13.5      15.0      16.5      18.0

Overall median = 16.00

A 95.0% CI for median(11) - median(62): (-5.00,-3.00)


Mood median test for Ip (%)

Chi-Square = 14.42    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          34  12   15.00   2.00     (---------*
62          46  67   16.00   4.00                    (---*---------)
                                      +---------+---------+---------+------
                                   14.0      15.0      16.0      17.0

Overall median = 15.00

A 95.0% CI for median(11) - median(62): (-3.00,-1.00)


Mood median test for % GRAVEL

Chi-Square = 2.24    DF = 1    P = 0.134

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11           7  11    27.5   17.8  (----------------------*--------)
62          28  19    24.0   19.0   (-----------*-------------)
                                   ----+---------+---------+---------+--
                                    21.0      24.5      28.0      31.5

Overall median = 26.0

A 95.0% CI for median(11) - median(62): (-3.0,7.0)


Mood median test for % SAND

Chi-Square = 3.93    DF = 1    P = 0.048

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11           7  11    32.5    7.8                 (-------*------------)
62          31  16    28.0    9.0  (-------*------)
                                   -----+---------+---------+---------+-
                                     27.0      30.0      33.0      36.0

Overall median = 30.0

A 95.0% CI for median(11) - median(62): (1.0,8.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 10.56    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11          15   3    39.5    6.6    (--------*--)
62          18  29    47.0   20.0                   (------------*--------)
                                     +---------+---------+---------+------
                                  36.0      40.0      44.0      48.0

Overall median = 44.0

A 95.0% CI for median(11) - median(62): (-12.0,-4.5)


Mood median test for Bulk Density

Chi-Square = 9.56    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
11          19  29   2.240  0.165                      (--------*---)
62          22   7   2.150  0.196  (---------------*------)
                                   ---------+---------+---------+-------
                                          2.100     2.170     2.240

Overall median = 2.200

A 95.0% CI for median(11) - median(62): (0.010,0.221)


Mood median test for Dry Density

Chi-Square = 12.69    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11          18  30   2.040  0.172                         (-------*-)
62          23   6   1.850  0.315  (-----------*-------)
                                   -------+---------+---------+---------
                                        1.80      1.90      2.00

Overall median = 1.960

A 95.0% CI for median(11) - median(62): (0.080,0.312)
```

Results for: Domain 11 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
63	55	17.40	5.42	0.73

Difference = mu (11) - mu (63)
Estimate for difference: -5.730
95% CI for difference: (-7.408, -4.053)
T-Test of difference = 0 (vs not =): T-Value = -6.79 P-Value = 0.000 DF = 89

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
63	58	34.88	4.40	0.58

Difference = mu (11) - mu (63)
Estimate for difference: -5.38
95% CI for difference: (-7.44, -3.31)
T-Test of difference = 0 (vs not =): T-Value = -5.18 P-Value = 0.000 DF = 81

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
63	58	17.98	2.92	0.38

Difference = mu (11) - mu (63)
Estimate for difference: -4.026
95% CI for difference: (-5.094, -2.958)
T-Test of difference = 0 (vs not =): T-Value = -7.48 P-Value = 0.000 DF = 100

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
63	58	16.90	3.05	0.40

Difference = mu (11) - mu (63)
Estimate for difference: -1.353
95% CI for difference: (-2.671, -0.035)
T-Test of difference = 0 (vs not =): T-Value = -2.04 P-Value = 0.044 DF = 88

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	18	25.58	8.54	2.0
63	30	26.9	11.7	2.1

Difference = mu (11) - mu (63)
Estimate for difference: -1.35
95% CI for difference: (-7.28, 4.58)
T-Test of difference = 0 (vs not =): T-Value = -0.46 P-Value = 0.648 DF = 44

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
63	30	29.70	8.47	1.5

Difference = mu (11) - mu (63)
Estimate for difference: 4.91
95% CI for difference: (0.04, 9.79)
T-Test of difference = 0 (vs not =): T-Value = 2.04 P-Value = 0.048 DF = 38

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
63	30	43.4	11.2	2.1

Difference = mu (11) - mu (63)
Estimate for difference: -3.56
95% CI for difference: (-8.43, 1.31)
T-Test of difference = 0 (vs not =): T-Value = -1.47 P-Value = 0.147 DF = 44

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
63	11	2.081	0.118	0.036

Difference = mu (11) - mu (63)
Estimate for difference: 0.1105
95% CI for difference: (0.0234, 0.1976)
T-Test of difference = 0 (vs not =): T-Value = 2.68 P-Value = 0.016 DF = 17

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
63	11	1.806	0.147	0.044

Difference = mu (11) - mu (63)
Estimate for difference: 0.1755
95% CI for difference: (0.0699, 0.2811)
T-Test of difference = 0 (vs not =): T-Value = 3.54 P-Value = 0.003 DF = 15

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	48.3	-7.07
63	55	15.38	96.7	7.07
Overall	135		68.0	

H = 50.00 DF = 1 P = 0.000
H = 50.17 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	31.2	-6.43
63	58	34.00	69.4	6.43
Overall	104		52.5	

H = 41.31 DF = 1 P = 0.000
H = 41.51 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	31.0	-6.46
63	58	18.00	69.5	6.46
Overall	104		52.5	

H = 41.77 DF = 1 P = 0.000
H = 42.22 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	40.8	-3.53
63	58	16.00	61.8	3.53
Overall	104		52.5	

H = 12.44 DF = 1 P = 0.000
H = 12.68 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	24.3	-0.06
63	30	25.50	24.6	0.06
Overall	48		24.5	

H = 0.00 DF = 1 P = 0.949
H = 0.00 DF = 1 P = 0.949 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	30.1	2.15
63	30	29.00	21.1	-2.15
Overall	48		24.5	

H = 4.63 DF = 1 P = 0.031
H = 4.65 DF = 1 P = 0.031 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
11         18   39.50      20.7  -1.45
63         30   42.50      26.8   1.45
Overall    48              24.5

H = 2.10  DF = 1  P = 0.148
H = 2.10  DF = 1  P = 0.147  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.240      33.1   2.91
63         11   2.090      16.4  -2.91
Overall    59              30.0

H = 8.47  DF = 1  P = 0.004
H = 8.48  DF = 1  P = 0.004  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.040      33.7   3.43
63         11   1.840      14.0  -3.43
Overall    59              30.0

H = 11.73  DF = 1  P = 0.001
H = 11.75  DF = 1  P = 0.001  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 60.03    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          63  17   11.00   2.38  (--*
63           6  49   15.38   5.92                      (---*--------)
                                   --------+---------+---------+--------
                                        12.0      14.0      16.0

Overall median = 12.00

A 95.0% CI for median(11) - median(63): (-6.23,-3.86)


Mood median test for WL (%)

Chi-Square = 30.70    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11          40   6   28.00   4.00   (---*---)
63          19  39   34.00   5.00                          (---*---)
                                    --+---------+---------+---------+----
                                   27.5      30.0      32.5      35.0

Overall median = 32.00

A 95.0% CI for median(11) - median(63): (-7.00,-4.00)
```

```
Mood median test for Wp (%)

Chi-Square = 35.08    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          38   8   13.00   3.00  *----)
63          14  44   18.00   4.25                      (----*----)
                                   -----+---------+---------+---------+-
                                     14.0      16.0      18.0      20.0

Overall median = 15.50

A 95.0% CI for median(11) - median(63): (-5.00,-3.58)


Mood median test for Ip (%)

Chi-Square = 10.81    DF = 1    P = 0.001

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          38   8   15.00   2.00  (-------*
63          30  28   16.00   4.00                 *----------------)
                                   ---+---------+---------+---------+---
                                   14.4      15.6      16.8      18.0

Overall median = 16.00

A 95.0% CI for median(11) - median(63): (-3.00,-1.00)


Mood median test for % GRAVEL

Chi-Square = 0.20    DF = 1    P = 0.654

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11           9   9    27.5   17.8  (----------------------*--------)
63          17  13    25.5   15.3         (---------*-----------------)
                                   ----+---------+---------+---------+--
                                    21.0      24.5      28.0      31.5

Overall median = 27.0

A 95.0% CI for median(11) - median(63): (-5.0,6.0)


Mood median test for % SAND

Chi-Square = 1.42    DF = 1    P = 0.233

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11           7  11    32.5    7.8               (-------*------------)
63          17  13    29.0    9.0  (---------*--------)
                                   ---+---------+---------+---------+---
                                   27.0      30.0      33.0      36.0

Overall median = 30.5

A 95.0% CI for median(11) - median(63): (-1.0,9.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.45    DF = 1    P = 0.117

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          12   6    39.5    6.6     (--------*--)
63          13  17    42.5   15.5             (-------*-----------------)
                                      +---------+---------+---------+------
                                   36.0      40.0      44.0      48.0

Overall median = 40.0

A 95.0% CI for median(11) - median(63): (-10.0,0.5)


Mood median test for Bulk Density

Chi-Square = 12.21    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          20  28   2.240  0.165                       (-----*--)
63          11   0   2.090  0.260  (-------------*-----------)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.220

A 95.0% CI for median(11) - median(63): (0.026,0.310)


Mood median test for Dry Density

Chi-Square = 13.07    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11          19  29   2.040  0.172                          (------*-)
63          11   0   1.840  0.250    (------------*-------)
                                     +---------+---------+---------+------
                                   1.68      1.80      1.92      2.04

Overall median = 2.000

A 95.0% CI for median(11) - median(63): (0.090,0.370)
```

Results for: Domain 11 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
64	24	15.34	2.86	0.58

Difference = mu (11) - mu (64)
Estimate for difference: -3.674
95% CI for difference: (-5.122, -2.227)
T-Test of difference = 0 (vs not =): T-Value = -5.10 P-Value = 0.000 DF = 49

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
64	27	34.44	2.34	0.45

Difference = mu (11) - mu (64)
Estimate for difference: -4.944
95% CI for difference: (-6.887, -3.001)
T-Test of difference = 0 (vs not =): T-Value = -5.08 P-Value = 0.000 DF = 64

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
64	27	17.81	2.24	0.43

Difference = mu (11) - mu (64)
Estimate for difference: -3.858
95% CI for difference: (-5.004, -2.712)
T-Test of difference = 0 (vs not =): T-Value = -6.73 P-Value = 0.000 DF = 60

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
64	27	16.63	2.39	0.46

Difference = mu (11) - mu (64)
Estimate for difference: -1.086
95% CI for difference: (-2.484, 0.312)
T-Test of difference = 0 (vs not =): T-Value = -1.55 P-Value = 0.126 DF = 69

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	18	25.58	8.54	2.0
64	2	19.0	11.3	8.0

Difference = mu (11) - mu (64)
Estimate for difference: 6.58
95% CI for difference: (-98.23, 111.40)
T-Test of difference = 0 (vs not =): T-Value = 0.80 P-Value = 0.571 DF = 1

Two-sample T for % SAND

Domain

Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
64	2	27.50	2.12	1.5

Difference = mu (11) - mu (64)
Estimate for difference: 7.11
95% CI for difference: (1.00, 13.23)
T-Test of difference = 0 (vs not =): T-Value = 2.99 P-Value = 0.030 DF = 5

Two-sample T for % Fines (SILT/CLAY)

Domain

Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
64	2	53.50	9.19	6.5

Difference = mu (11) - mu (64)
Estimate for difference: -13.69
95% CI for difference: (-97.86, 70.47)
T-Test of difference = 0 (vs not =): T-Value = -2.07 P-Value = 0.287 DF = 1

Two-sample T for Bulk Density

Domain

Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
64	13	2.1462	0.0859	0.024

Difference = mu (11) - mu (64)
Estimate for difference: 0.0453
95% CI for difference: (-0.0194, 0.1100)
T-Test of difference = 0 (vs not =): T-Value = 1.43 P-Value = 0.163 DF = 32

Two-sample T for Dry Density

Domain

Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
64	13	1.8731	0.0910	0.025

Difference = mu (11) - mu (64)
Estimate for difference: 0.1088
95% CI for difference: (0.0402, 0.1774)
T-Test of difference = 0 (vs not =): T-Value = 3.23 P-Value = 0.003 DF = 32

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain

Reference	N	Median	Ave Rank	Z
11	80	11.00	44.2	-5.11
64	24	15.44	80.1	5.11
Overall	104		52.5	

H = 26.13 DF = 1 P = 0.000
H = 26.36 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	26.8	-5.34
64	27	34.00	54.3	5.34
Overall	73		37.0	

H = 28.47 DF = 1 P = 0.000
H = 28.66 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	26.4	-5.59
64	27	18.00	55.1	5.59
Overall	73		37.0	

H = 31.28 DF = 1 P = 0.000
H = 31.73 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	31.1	-3.09
64	27	17.00	47.0	3.09
Overall	73		37.0	

H = 9.55 DF = 1 P = 0.002
H = 9.81 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	11.0	1.13
64	2	19.00	6.0	-1.13
Overall	20		10.5	

H = 1.29 DF = 1 P = 0.257
H = 1.29 DF = 1 P = 0.256 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	11.2	1.64
64	2	27.50	4.0	-1.64
Overall	20		10.5	

H = 2.68 DF = 1 P = 0.101
H = 2.70 DF = 1 P = 0.101 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

```
Domain
Reference   N  Median  Ave Rank      Z
11         18   39.50       9.6  -1.95
64          2   53.50      18.3   1.95
Overall    20              10.5

H = 3.81  DF = 1  P = 0.051
H = 3.84  DF = 1  P = 0.050  (adjusted for ties)

* NOTE * One or more small samples
```

Kruskal-Wallis Test on Bulk Density

```
Domain
Reference   N  Median  Ave Rank      Z
11         48   2.240      33.4   2.07
64         13   2.180      22.0  -2.07
Overall    61              31.0

H = 4.28  DF = 1  P = 0.039
H = 4.29  DF = 1  P = 0.038  (adjusted for ties)
```

Kruskal-Wallis Test on Dry Density

```
Domain
Reference   N  Median  Ave Rank      Z
11         48   2.040      34.9   3.26
64         13   1.900      16.8  -3.26
Overall    61              31.0

H = 10.62  DF = 1  P = 0.001
H = 10.64  DF = 1  P = 0.001  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

```
Chi-Square = 30.98    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          55  25   11.00   2.38  (--*
64           1  23   15.44   4.00               (----------*-------)
                                   --------+---------+---------+--------
                                        12.0      14.0      16.0

Overall median = 11.00

A 95.0% CI for median(11) - median(64): (-6.20,-2.13)
```

```
Mood median test for WL (%)

Chi-Square = 45.15    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
11          39   7   28.00   4.00  (---*---)
64           1  26   34.00   4.00                        (---*---)
                                   --+---------+---------+---------+----
                                   27.5      30.0      32.5      35.0

Overall median = 30.00

A 95.0% CI for median(11) - median(64): (-8.00,-4.98)


Mood median test for Wp (%)

Chi-Square = 32.00    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          38   8   13.00   3.00  *-----)
64           4  23   18.00   2.00                          (------*
                                   ---+---------+---------+---------+---
                                   13.5      15.0      16.5      18.0

Overall median = 15.00

A 95.0% CI for median(11) - median(64): (-5.00,-3.00)


Mood median test for Ip (%)

Chi-Square = 13.66    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          34  12   15.00   2.00     (---------*
64           8  19   17.00   3.00                       (---------*
                                      +---------+---------+---------+------
                                   14.0      15.0      16.0      17.0

Overall median = 15.00

A 95.0% CI for median(11) - median(64): (-3.00,-1.00)


Mood median test for % GRAVEL

Chi-Square = 1.82    DF = 1    P = 0.178

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
11           9   9    27.5   17.8                 (------------*-----)
64           2   0    19.0   16.0  (-------------*------------)
                                   --+---------+---------+---------+----
                                   12.0      18.0      24.0      30.0

Overall median = 27.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.7% CI for median(11) - median(64): (-16.0,26.0)
```

```
Mood median test for % SAND

Chi-Square = 1.82    DF = 1    P = 0.178

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11           9   9    32.5    7.8               (-------*-----------)
64           2   0    27.5    3.0  (----*----)
                                   ---+---------+---------+---------+---
                                   27.0      30.0      33.0      36.0

Overall median = 31.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.7% CI for median(11) - median(64): (-4.0,28.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.33    DF = 1    P = 0.068

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
11          12   6    39.5    6.6  (----*-)
64           0   2    53.5   13.0                 (--------*---------)
                                   ---------+---------+---------+-------
                                         42.0      49.0      56.0

Overall median = 40.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.7% CI for median(11) - median(64): (-28.0,4.5)


Mood median test for Bulk Density

Chi-Square = 7.55    DF = 1    P = 0.006

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11          20  28   2.240  0.165                  (---------*----)
64          11   2   2.180  0.140  (----------------*----)
                                   ----+---------+---------+---------+--
                                     2.100     2.160     2.220     2.280

Overall median = 2.220

A 95.0% CI for median(11) - median(64): (0.029,0.172)


Mood median test for Dry Density

Chi-Square = 15.99    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
11          18  30   2.040  0.172                        (----------*--)
64          13   0   1.900  0.145  (------------*-------)
                                   --+---------+---------+---------+----
                                   1.820     1.890     1.960     2.030

Overall median = 1.990

A 95.0% CI for median(11) - median(64): (0.070,0.240)
```

Results for: Domain 11 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
65	7	17.71	4.27	1.6

Difference = mu (11) - mu (65)
Estimate for difference: -6.05
95% CI for difference: (-10.13, -1.97)
T-Test of difference = 0 (vs not =): T-Value = -3.63 P-Value = 0.011 DF = 6

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
65	8	35.25	5.60	2.0

Difference = mu (11) - mu (65)
Estimate for difference: -5.75
95% CI for difference: (-10.63, -0.87)
T-Test of difference = 0 (vs not =): T-Value = -2.66 P-Value = 0.026 DF = 9

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
65	8	18.88	1.46	0.52

Difference = mu (11) - mu (65)
Estimate for difference: -4.918
95% CI for difference: (-6.281, -3.556)
T-Test of difference = 0 (vs not =): T-Value = -7.69 P-Value = 0.000 DF = 15

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
65	8	16.38	4.41	1.6

Difference = mu (11) - mu (65)
Estimate for difference: -0.83
95% CI for difference: (-4.63, 2.96)
T-Test of difference = 0 (vs not =): T-Value = -0.51 P-Value = 0.627 DF = 8

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	18	25.58	8.54	2.0
65	2	20.0	11.3	8.0

Difference = mu (11) - mu (65)
Estimate for difference: 5.58
95% CI for difference: (-99.23, 110.40)
T-Test of difference = 0 (vs not =): T-Value = 0.68 P-Value = 0.621 DF = 1

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
11	18	34.61	7.83	1.8
65	2	34.00	1.41	1.0

Difference = mu (11) - mu (65)
Estimate for difference: 0.61
95% CI for difference: (-4.01, 5.23)
T-Test of difference = 0 (vs not =): T-Value = 0.29 P-Value = 0.776 DF = 11

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
11	18	39.81	5.41	1.3
65	2	46.0	12.7	9.0

Difference = mu (11) - mu (65)
Estimate for difference: -6.19
95% CI for difference: (-121.69, 109.30)
T-Test of difference = 0 (vs not =): T-Value = -0.68 P-Value = 0.619 DF = 1

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	2.191	0.145	0.021
65	7	2.0929	0.0496	0.019

Difference = mu (11) - mu (65)
Estimate for difference: 0.0986
95% CI for difference: (0.0406, 0.1566)
T-Test of difference = 0 (vs not =): T-Value = 3.50 P-Value = 0.002 DF = 25

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
11	48	1.982	0.155	0.022
65	7	1.7800	0.0995	0.038

Difference = mu (11) - mu (65)
Estimate for difference: 0.2019
95% CI for difference: (0.1044, 0.2993)
T-Test of difference = 0 (vs not =): T-Value = 4.62 P-Value = 0.001 DF = 10

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
11	80	11.00	41.2	-3.51
65	7	17.00	76.1	3.51
Overall	87		44.0	

H = 12.33 DF = 1 P = 0.000
H = 12.48 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	25.3	-2.50
65	8	37.50	40.3	2.50
Overall	54		27.5	

H = 6.23 DF = 1 P = 0.013
H = 6.30 DF = 1 P = 0.012 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	24.0	-3.94
65	8	19.00	47.8	3.94
Overall	54		27.5	

H = 15.56 DF = 1 P = 0.000
H = 15.96 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	26.4	-1.22
65	8	18.50	33.8	1.22
Overall	54		27.5	

H = 1.48 DF = 1 P = 0.223
H = 1.53 DF = 1 P = 0.216 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	10.9	0.82
65	2	20.00	7.3	-0.82
Overall	20		10.5	

H = 0.67 DF = 1 P = 0.413
H = 0.68 DF = 1 P = 0.411 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	10.4	-0.31
65	2	34.00	11.8	0.31
Overall	20		10.5	

H = 0.10 DF = 1 P = 0.753
H = 0.10 DF = 1 P = 0.752 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
11	18	39.50	10.2	-0.69
65	2	46.00	13.3	0.69
Overall	20		10.5	

H = 0.48 DF = 1 P = 0.488
H = 0.48 DF = 1 P = 0.487 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.240	30.1	2.53
65	7	2.100	13.7	-2.53
Overall	55		28.0	

H = 6.38 DF = 1 P = 0.012
H = 6.39 DF = 1 P = 0.011 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
11	48	2.040	30.7	3.30
65	7	1.810	9.4	-3.30
Overall	55		28.0	

H = 10.86 DF = 1 P = 0.001
H = 10.88 DF = 1 P = 0.001 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 13.08   DF = 1   P = 0.000

```
Domain                                   Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          55  25    11.0    2.4  (-*
65           0   7    17.0    4.0               (--------*-----------)
                                   -----+---------+---------+---------+-
                                     12.0      15.0      18.0      21.0
```

Overall median = 11.0

A 95.0% CI for median(11) - median(65): (-9.4,-3.6)

```
Mood median test for WL (%)

Chi-Square = 5.28    DF = 1    P = 0.022

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
11          26  20    28.0    4.0  (--*-)
65           1   7    37.5    8.3           (-----------------*-----)
                                   ---+---------+---------+---------+---
                                   28.0      32.0      36.0      40.0

Overall median = 28.5

A 95.0% CI for median(11) - median(65): (-12.1,-2.9)


Mood median test for Wp (%)

Chi-Square = 14.76    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          33  13   13.00   3.00  *----)
65           0   8   19.00   1.50                        (-----*----)
                                   -----+---------+---------+---------+-
                                     14.0      16.0      18.0      20.0

Overall median = 14.00

A 95.0% CI for median(11) - median(65): (-7.00,-4.00)


Mood median test for Ip (%)

Chi-Square = 1.19    DF = 1    P = 0.276

Domain                               Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1    -+---------+---------+---------+-----
11         21   25   15.00   2.00              (----*
65          2    6   18.50   6.25    (---------------------------------*--)
                                     -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 15.00

A 95.0% CI for median(11) - median(65): (-5.00,3.00)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11           9   9    27.5   17.8                  (------------*-----)
65           1   1    20.0   16.0     (------------*-------------)
                                      +---------+---------+---------+------
                                   12.0      18.0      24.0      30.0

Overall median = 27.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.7% CI for median(11) - median(65): (-17.0,25.0)
```

```
Mood median test for % SAND

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11           9   9   32.50   7.75    (------------*-----------------)
65           1   1   34.00   2.00                   (----*----)
                                     +---------+---------+---------+------
                                  30.0      32.0      34.0      36.0

Overall median = 33.25
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.7% CI for median(11) - median(65): (-10.00,21.00)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
11           9   9    39.5    6.6    (-----*-)
65           1   1    46.0   18.0      (--------------*--------------)
                                     +---------+---------+---------+------
                                  36.0      42.0      48.0      54.0

Overall median = 39.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.7% CI for median(11) - median(65): (-23.0,14.5)


Mood median test for Bulk Density

Chi-Square = 7.73    DF = 1    P = 0.005

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
11          21  27   2.240  0.165                     (--------*---)
65           7   0   2.100  0.070  (--------*---)
                                   ---------+---------+---------+-------
                                         2.100     2.170     2.240

Overall median = 2.230

A 95.0% CI for median(11) - median(65): (0.114,0.216)


Mood median test for Dry Density

Chi-Square = 6.68    DF = 1    P = 0.010

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
11          23  25   2.040  0.172                       (------*-)
65           7   0   1.810  0.120  (---------*---)
                                   ---------+---------+---------+-------
                                         1.80      1.92      2.04

Overall median = 2.020

A 95.0% CI for median(11) - median(65): (0.169,0.349)
```

Results for: Domain 11 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
71	44	14.56	5.80	0.87

Difference = mu (11) - mu (71)
Estimate for difference: -2.895
95% CI for difference: (-4.834, -0.956)
T-Test of difference = 0 (vs not =): T-Value = -2.98 P-Value = 0.004 DF = 63

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
71	17	31.24	2.61	0.63

Difference = mu (11) - mu (71)
Estimate for difference: -1.74
95% CI for difference: (-3.88, 0.41)
T-Test of difference = 0 (vs not =): T-Value = -1.62 P-Value = 0.110 DF = 58

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
71	17	15.35	1.73	0.42

Difference = mu (11) - mu (71)
Estimate for difference: -1.396
95% CI for difference: (-2.536, -0.257)
T-Test of difference = 0 (vs not =): T-Value = -2.47 P-Value = 0.018 DF = 42

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
71	17	15.88	1.96	0.48

Difference = mu (11) - mu (71)
Estimate for difference: -0.339
95% CI for difference: (-1.768, 1.091)
T-Test of difference = 0 (vs not =): T-Value = -0.48 P-Value = 0.636 DF = 51

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	18	25.58	8.54	2.0
71	16	20.69	6.81	1.7

Difference = mu (11) - mu (71)
Estimate for difference: 4.90
95% CI for difference: (-0.48, 10.27)
T-Test of difference = 0 (vs not =): T-Value = 1.86 P-Value = 0.073 DF = 31

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
11         18  34.61   7.83      1.8
71         16  24.37   7.67      1.9

Difference = mu (11) - mu (71)
Estimate for difference:  10.24
95% CI for difference:  (4.81, 15.66)
T-Test of difference = 0 (vs not =): T-Value = 3.85  P-Value = 0.001  DF = 31


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
11         18  39.81   5.41      1.3
71         16   52.1   11.3      2.8

Difference = mu (11) - mu (71)
Estimate for difference:  -12.32
95% CI for difference:  (-18.79, -5.85)
T-Test of difference = 0 (vs not =): T-Value = -3.97  P-Value = 0.001  DF = 20


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
11         48   2.191   0.145    0.021
71         12  2.2583  0.0486    0.014

Difference = mu (11) - mu (71)
Estimate for difference:  -0.0669
95% CI for difference:  (-0.1175, -0.0162)
T-Test of difference = 0 (vs not =): T-Value = -2.65  P-Value = 0.011  DF = 53


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
11         48   1.982   0.155    0.022
71         12  1.9937  0.0718    0.021

Difference = mu (11) - mu (71)
Estimate for difference:  -0.0118
95% CI for difference:  (-0.0735, 0.0498)
T-Test of difference = 0 (vs not =): T-Value = -0.39  P-Value = 0.700  DF = 38
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
11          80   11.00      51.1  -4.76
71          44   13.00      83.2   4.76
Overall    124              62.5

H = 22.63  DF = 1  P = 0.000
H = 22.86  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	27.5	-3.24
71	17	31.00	44.3	3.24
Overall	63		32.0	

H = 10.47 DF = 1 P = 0.001
H = 10.62 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	27.8	-3.02
71	17	16.00	43.5	3.02
Overall	63		32.0	

H = 9.12 DF = 1 P = 0.003
H = 9.33 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	29.4	-1.83
71	17	16.00	39.0	1.83
Overall	63		32.0	

H = 3.37 DF = 1 P = 0.067
H = 3.48 DF = 1 P = 0.062 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	20.4	1.83
71	16	19.00	14.2	-1.83
Overall	34		17.5	

H = 3.34 DF = 1 P = 0.067
H = 3.35 DF = 1 P = 0.067 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	22.4	3.07
71	16	23.50	11.9	-3.07
Overall	34		17.5	

H = 9.43 DF = 1 P = 0.002
H = 9.46 DF = 1 P = 0.002 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
11         18   39.50      11.6  -3.67
71         16   53.00      24.2   3.67
Overall    34              17.5

H = 13.50  DF = 1  P = 0.000
H = 13.54  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.240      29.3  -1.11
71         12   2.260      35.5   1.11
Overall    60              30.5

H = 1.23  DF = 1  P = 0.268
H = 1.23  DF = 1  P = 0.267  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.040      31.3   0.69
71         12   1.991      27.4  -0.69
Overall    60              30.5

H = 0.48  DF = 1  P = 0.488
H = 0.48  DF = 1  P = 0.488  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 26.51    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
11          55  25   11.00   2.38  (-----*
71           9  35   13.00   3.75                            *---------)
                                   ------+---------+---------+---------+
                                      11.0      12.0      13.0      14.0

Overall median = 11.00

A 95.0% CI for median(11) - median(71): (-3.20,-2.00)


Mood median test for WL (%)

Chi-Square = 13.16    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          34  12   28.00   4.00     (------*-----)
71           4  13   31.00   3.50                         (------*-----)
                                      +---------+---------+---------+------
                                   27.0      28.5      30.0      31.5

Overall median = 29.00

A 95.0% CI for median(11) - median(71): (-5.00,-1.00)
```

```
Mood median test for Wp (%)

Chi-Square = 9.29    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11          33  13   13.00   3.00   *--------)
71           5  12   16.00   3.00            (---------------*--------)
                                    --+---------+---------+---------+----
                                   13.2      14.4      15.6      16.8

Overall median = 14.00

A 95.0% CI for median(11) - median(71): (-4.00,-0.69)


Mood median test for Ip (%)

Chi-Square = 7.99    DF = 1    P = 0.005

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          34  12   15.00   2.00     (---------*
71           6  11   16.00   2.50               (---------*---------)
                                      +---------+---------+---------+------
                                   14.0      15.0      16.0      17.0

Overall median = 15.00

A 95.0% CI for median(11) - median(71): (-3.00,0.00)


Mood median test for % GRAVEL

Chi-Square = 5.90    DF = 1    P = 0.015

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11           6  12    27.5   17.8        (-------------------*-------)
71          12   4    19.0    7.5  (----*----------)
                                   --------+---------+---------+--------
                                        20.0      24.0      28.0

Overall median = 23.0

A 95.0% CI for median(11) - median(71): (3.0,10.5)


Mood median test for % SAND

Chi-Square = 3.03    DF = 1    P = 0.082

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11           7  11    32.5    7.8                         (---*-----)
71          11   5    23.5   14.0   (----------*------------)
                                    --+---------+---------+---------+----
                                   18.0      24.0      30.0      36.0

Overall median = 30.0

A 95.0% CI for median(11) - median(71): (-0.2,15.9)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 11.81    DF = 1    P = 0.001

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
11          14   4    39.5    6.6  (----*-)
71           3  13    53.0   15.5                  (--------*--------)
                                   ---------+---------+---------+-------
                                         42.0      49.0      56.0

Overall median = 42.3

A 95.0% CI for median(11) - median(71): (-19.0,-9.4)


Mood median test for Bulk Density

Chi-Square = 0.60    DF = 1    P = 0.438

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          26  22   2.240  0.165  (----------------*--------)
71           5   7   2.260  0.058                  (-------*-------)
                                   --------+---------+---------+--------
                                         2.205     2.240     2.275

Overall median = 2.250

A 95.0% CI for median(11) - median(71): (-0.060,0.030)


Mood median test for Dry Density

Chi-Square = 1.35    DF = 1    P = 0.245

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
11          23  25   2.040  0.172  (-------------------------*------)
71           8   4   1.991  0.067     (-------*-------------)
                                   -------+---------+---------+---------
                                        1.980     2.010     2.040

Overall median = 2.020

A 95.0% CI for median(11) - median(71): (-0.016,0.085)
```

Results for: Domain 11 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
11	80	11.67	3.77	0.42
72	26	15.13	4.24	0.83

Difference = mu (11) - mu (72)
Estimate for difference: -3.461
95% CI for difference: (-5.350, -1.572)
T-Test of difference = 0 (vs not =): T-Value = -3.71 P-Value = 0.001 DF = 38

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	29.50	5.85	0.86
72	10	30.50	4.84	1.5

Difference = mu (11) - mu (72)
Estimate for difference: -1.00
95% CI for difference: (-4.74, 2.74)
T-Test of difference = 0 (vs not =): T-Value = -0.57 P-Value = 0.577 DF = 15

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	13.96	2.56	0.38
72	10	15.20	1.99	0.63

Difference = mu (11) - mu (72)
Estimate for difference: -1.243
95% CI for difference: (-2.799, 0.312)
T-Test of difference = 0 (vs not =): T-Value = -1.69 P-Value = 0.110 DF = 16

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
11	46	15.54	3.59	0.53
72	10	15.30	3.71	1.2

Difference = mu (11) - mu (72)
Estimate for difference: 0.24
95% CI for difference: (-2.56, 3.05)
T-Test of difference = 0 (vs not =): T-Value = 0.19 P-Value = 0.853 DF = 12
Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
11	18	25.58	8.54	2.0
72	9	20.56	7.14	2.4

Difference = mu (11) - mu (72)
Estimate for difference: 5.03
95% CI for difference: (-1.52, 11.58)
T-Test of difference = 0 (vs not =): T-Value = 1.61 P-Value = 0.124 DF = 18

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
11         18  34.61   7.83      1.8
72          9  27.56   7.20      2.4

Difference = mu (11) - mu (72)
Estimate for difference:  7.06
95% CI for difference:  (0.67, 13.44)
T-Test of difference = 0 (vs not =): T-Value = 2.33  P-Value = 0.032  DF = 17


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
11         18  39.81   5.41      1.3
72          9  51.89   7.66      2.6

Difference = mu (11) - mu (72)
Estimate for difference:  -12.08
95% CI for difference:  (-18.30, -5.87)
T-Test of difference = 0 (vs not =): T-Value = -4.24  P-Value = 0.001  DF = 12


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
11         48  2.191  0.145    0.021
72          7  2.221  0.100    0.038

Difference = mu (11) - mu (72)
Estimate for difference:  -0.0300
95% CI for difference:  (-0.1266, 0.0667)
T-Test of difference = 0 (vs not =): T-Value = -0.69  P-Value = 0.505  DF = 10


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
11         48  1.982  0.155    0.022
72          7  1.944  0.155    0.059

Difference = mu (11) - mu (72)
Estimate for difference:  0.0375
95% CI for difference:  (-0.1109, 0.1860)
T-Test of difference = 0 (vs not =): T-Value = 0.60  P-Value = 0.569  DF = 7
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
11          80   11.00      45.8  -4.54
72          26   13.00      77.3   4.54
Overall    106              53.5

H = 20.59  DF = 1  P = 0.000
H = 20.83  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	28.00	27.0	-1.49
72	10	30.00	35.5	1.49
Overall	56		28.5	

H = 2.21 DF = 1 P = 0.137
H = 2.25 DF = 1 P = 0.134 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	13.00	26.3	-2.13
72	10	15.00	38.5	2.13
Overall	56		28.5	

H = 4.53 DF = 1 P = 0.033
H = 4.68 DF = 1 P = 0.031 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
11	46	15.00	28.5	-0.01
72	10	15.50	28.6	0.01
Overall	56		28.5	

H = 0.00 DF = 1 P = 0.991
H = 0.00 DF = 1 P = 0.991 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
11	18	27.50	15.4	1.29
72	9	17.00	11.2	-1.29
Overall	27		14.0	

H = 1.65 DF = 1 P = 0.198
H = 1.67 DF = 1 P = 0.197 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
11	18	32.50	16.8	2.57
72	9	26.00	8.4	-2.57
Overall	27		14.0	

H = 6.61 DF = 1 P = 0.010
H = 6.64 DF = 1 P = 0.010 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
11         18   39.50      10.2  -3.50
72          9   53.00      21.6   3.50
Overall    27              14.0

H = 12.23  DF = 1  P = 0.000
H = 12.28  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.240      27.9  -0.06
72          7   2.240      28.4   0.06
Overall    55              28.0

H = 0.00  DF = 1  P = 0.950
H = 0.00  DF = 1  P = 0.950  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
11         48   2.040      29.0   1.26
72          7   2.000      20.9  -1.26
Overall    55              28.0

H = 1.59  DF = 1  P = 0.207
H = 1.60  DF = 1  P = 0.206  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 22.64    DF = 1    P = 0.000

Domain                            Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
11          55  25   11.00   2.38  (--*
72           4  22   13.00   5.75            (-*-------------------)
                                   --------+---------+---------+--------
                                        12.0      14.0      16.0

Overall median = 11.00

A 95.0% CI for median(11) - median(72): (-6.20,-2.00)


Mood median test for WL (%)

Chi-Square = 2.31    DF = 1    P = 0.128

Domain                            Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          26  20   28.00   4.00     (------*-----)
72           3   7   30.00   5.25     (-------------------*---------------)
                                      +---------+---------+---------+------
                                   27.0      28.5      30.0      31.5

Overall median = 28.00

A 95.0% CI for median(11) - median(72): (-4.42,1.28)
```

```
Mood median test for Wp (%)

Chi-Square = 3.69    DF = 1    P = 0.055

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
11          33  13   13.00   3.00     *---------)
72           4   6   15.00   2.75            (------------*---------------)
                                      +---------+---------+---------+------
                                   13.0      14.0      15.0      16.0

Overall median = 14.00

A 95.0% CI for median(11) - median(72): (-3.27,0.13)


Mood median test for Ip (%)

Chi-Square = 0.11    DF = 1    P = 0.745

Domain                               Individual 95.0% CIs
Reference  N<   N>=  Median  Q3-Q1    +---------+---------+---------+------
11         21   25   15.00   2.00                  (------*
72          4    6   15.50   5.25     (---------------------*------------)
                                      +---------+---------+---------+------
                                   12.0      13.5      15.0      16.5

Overall median = 15.00

A 95.0% CI for median(11) - median(72): (-3.13,3.00)


Mood median test for % GRAVEL

Chi-Square = 1.19    DF = 1    P = 0.276

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
11           8  10    27.5   17.8              (---------------*------)
72           6   3    17.0   13.5   (-----*--------------------)
                                    --+---------+---------+---------+----
                                   15.0      20.0      25.0      30.0

Overall median = 26.5

A 95.0% CI for median(11) - median(72): (-3.0,13.2)


Mood median test for % SAND

Chi-Square = 3.63    DF = 1    P = 0.057

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
11           7  11    32.5    7.8                    (-----*---------)
72           7   2    26.0    7.5  (--------*----------)
                                   ----+---------+---------+---------+--
                                    24.0      28.0      32.0      36.0

Overall median = 30.0

A 95.0% CI for median(11) - median(72): (0.6,12.2)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 10.80    DF = 1    P = 0.001

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
11          14   4    39.5    6.6  (----*-)
72           1   8    53.0   15.5            (-------------*---------)
                                   ---------+---------+---------+-------
                                         42.0      49.0      56.0

Overall median = 41.0

A 95.0% CI for median(11) - median(72): (-20.7,-5.1)


Mood median test for Bulk Density

Chi-Square = 0.06    DF = 1    P = 0.802

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
11          25  23   2.240  0.165   (------------------*---------)
72           4   3   2.240  0.040  (--------------------*--------------)
                                   -----+---------+---------+---------+-
                                      2.190     2.220     2.250     2.280

Overall median = 2.240

A 95.0% CI for median(11) - median(72): (-0.043,0.058)


Mood median test for Dry Density

Chi-Square = 3.50    DF = 1    P = 0.061

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
11          23  25   2.040  0.172                     (------------*--)
72           6   1   2.000  0.070   (----------------------*----)
                                    -+---------+---------+---------+-----
                                   1.860     1.920     1.980     2.040

Overall median = 2.020

A 95.0% CI for median(11) - median(72): (-0.003,0.157)
```

Results for: Domain 12 v 14

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for Natural Moisture Content (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
14	78	11.89	4.13	0.47

Difference = mu (12) - mu (14)
Estimate for difference: 0.496
95% CI for difference: (-0.671, 1.663)
T-Test of difference = 0 (vs not =): T-Value = 0.84 P-Value = 0.402 DF = 147

Two-sample T for Liquid Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	31.49	2.21	0.30
14	51	27.00	5.23	0.73

Difference = mu (12) - mu (14)
Estimate for difference: 4.491
95% CI for difference: (2.912, 6.070)
T-Test of difference = 0 (vs not =): T-Value = 5.68 P-Value = 0.000 DF = 66

Two-sample T for Plastic Limit (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	14.29	2.02	0.27
14	51	13.04	2.58	0.36

Difference = mu (12) - mu (14)
Estimate for difference: 1.252
95% CI for difference: (0.353, 2.150)
T-Test of difference = 0 (vs not =): T-Value = 2.77 P-Value = 0.007 DF = 94

Two-sample T for Plasticity Index (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	17.20	2.08	0.28
14	51	13.96	3.31	0.46

Difference = mu (12) - mu (14)
Estimate for difference: 3.239
95% CI for difference: (2.162, 4.316)
T-Test of difference = 0 (vs not =): T-Value = 5.98 P-Value = 0.000 DF = 82

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	7	28.86	3.66	1.4
14	24	22.67	4.75	0.97

Difference = mu (12) - mu (14)
Estimate for difference: 6.19
95% CI for difference: (2.51, 9.87)
T-Test of difference = 0 (vs not =): T-Value = 3.66 P-Value = 0.003 DF = 12

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
12	7	30.29	4.80	1.8
14	24	42.13	5.88	1.2

Difference = mu (12) - mu (14)
Estimate for difference: -11.84
95% CI for difference: (-16.63, -7.05)
T-Test of difference = 0 (vs not =): T-Value = -5.44 P-Value = 0.000 DF = 11

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
12	7	40.86	5.31	2.0
14	24	35.21	5.14	1.0

Difference = mu (12) - mu (14)
Estimate for difference: 5.65
95% CI for difference: (0.52, 10.77)
T-Test of difference = 0 (vs not =): T-Value = 2.49 P-Value = 0.034 DF = 9

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.279	0.107	0.019
14	36	2.266	0.114	0.019

Difference = mu (12) - mu (14)
Estimate for difference: 0.0133
95% CI for difference: (-0.0403, 0.0668)
T-Test of difference = 0 (vs not =): T-Value = 0.49 P-Value = 0.622 DF = 65

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.060	0.117	0.021
14	36	2.077	0.115	0.019

Difference = mu (12) - mu (14)
Estimate for difference: -0.0167
95% CI for difference: (-0.0729, 0.0396)
T-Test of difference = 0 (vs not =): T-Value = -0.59 P-Value = 0.556 DF = 64

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on Natural Moisture Content (%)

Domain Reference	N	Median	Ave Rank	Z
12	84	11.600	89.1	2.15
14	78	9.850	73.3	-2.15
Overall	162		81.5	

H = 4.61 DF = 1 P = 0.032
H = 4.62 DF = 1 P = 0.032 (adjusted for ties)

Kruskal-Wallis Test on Liquid Limit (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	71.9	6.38
14	51	26.00	33.7	-6.38
Overall	106		53.5	

H = 40.75 DF = 1 P = 0.000
H = 41.16 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Plastic Limit (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	68.4	5.17
14	51	12.00	37.5	-5.17
Overall	106		53.5	

H = 26.75 DF = 1 P = 0.000
H = 28.24 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Plasticity Index (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	69.2	5.47
14	51	14.00	36.5	-5.47
Overall	106		53.5	

H = 29.88 DF = 1 P = 0.000
H = 30.22 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	24.1	2.67
14	24	21.25	13.6	-2.67
Overall	31		16.0	

H = 7.13 DF = 1 P = 0.008
H = 7.17 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	5.7	-3.40
14	24	42.75	19.0	3.40
Overall	31		16.0	

H = 11.57 DF = 1 P = 0.001
H = 11.58 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
12	7	42.00	22.9	2.29
14	24	36.00	14.0	-2.29
Overall	31		16.0	

H = 5.25 DF = 1 P = 0.022
H = 5.28 DF = 1 P = 0.022 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.305	34.9	0.17
14	36	2.280	34.1	-0.17
Overall	68		34.5	

H = 0.03 DF = 1 P = 0.868
H = 0.03 DF = 1 P = 0.868 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.090	31.9	-1.01
14	36	2.115	36.8	1.01
Overall	68		34.5	

H = 1.03 DF = 1 P = 0.311
H = 1.03 DF = 1 P = 0.310 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for Natural Moisture Content (%)

Chi-Square = 2.65   DF = 1   P = 0.104

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12          41  43   11.60   4.00              (---------*------------)
14          48  30    9.85   6.15  (----*-----------)
                                   ------+---------+---------+---------+
                                      10.0      11.0      12.0      13.0
```

Overall median = 11.00

A 95.0% CI for median(12) - median(14): (0.00,2.60)

Mood median test for Liquid Limit (%)

Chi-Square = 32.70   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12          16  39   31.00   3.00                             *----)
14          43   8   26.00   5.00  (----*----)
                                   -----+---------+---------+---------+-
                                     26.0      28.0      30.0      32.0
```

Overall median = 30.00

A 95.0% CI for median(12) - median(14): (4.00,6.03)

```
Mood median test for Plastic Limit (%)

Chi-Square = 27.74    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          15  40   14.00   1.00                                     *
14          40  11   12.00   1.00     *----------------)
                                      +---------+---------+---------+------
                                   12.00     12.60     13.20     13.80

Overall median = 13.00

A 95.0% CI for median(12) - median(14): (1.97,2.00)


Mood median test for Plasticity Index (%)

Chi-Square = 29.96    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          15  40   17.00   2.00                          *------)
14          41  10   14.00   3.00  (-----*
                                   ---+---------+---------+---------+---
                                   13.5      15.0      16.5      18.0

Overall median = 16.00

A 95.0% CI for median(12) - median(14): (3.00,5.00)


Mood median test for % GRAVEL

Chi-Square = 9.64    DF = 1    P = 0.002

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12           0   7    28.5    7.0                 (------*------------)
14          16   8    21.3    6.0     (--*-----------)
                                      +---------+---------+---------+------
                                   20.0      24.0      28.0      32.0

Overall median = 23.0

A 95.0% CI for median(12) - median(14): (2.9,12.1)


Mood median test for % SAND

Chi-Square = 8.48    DF = 1    P = 0.004

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           7   0    28.0    7.5  (--*-----------)
14           9  15    42.8    9.5                      (-----*---)
                                   ------+---------+---------+---------+
                                      30.0      36.0      42.0      48.0

Overall median = 40.0

A 95.0% CI for median(12) - median(14): (-16.4,-6.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.52    DF = 1    P = 0.112

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
12           2   5    42.0   10.0            (-----------------*---------)
14          15   9    36.0    7.6    (----------*--)
                                     -+---------+---------+---------+-----
                                   32.0      36.0      40.0      44.0

Overall median = 36.0

A 95.0% CI for median(12) - median(14): (-0.4,12.0)


Mood median test for Bulk Density

Chi-Square = 0.21    DF = 1    P = 0.647

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          16  16   2.305  0.078                    (----*--------)
14          20  16   2.280  0.137  (----------------*-------------------)
                                   -------+---------+---------+---------
                                        2.250     2.280     2.310

Overall median = 2.300

A 95.0% CI for median(12) - median(14): (-0.050,0.080)


Mood median test for Dry Density

Chi-Square = 0.24    DF = 1    P = 0.627

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          17  15   2.090  0.090           (-----*--------)
14          17  19   2.115  0.158  (---------------------*----------)
                                   --------+---------+---------+--------
                                         2.065     2.100     2.135

Overall median = 2.095

A 95.0% CI for median(12) - median(14): (-0.060,0.060)
```

Results for: Domain 12 v 21

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
21	78	13.72	4.31	0.49

Difference = mu (12) - mu (21)
Estimate for difference: -1.335
95% CI for difference: (-2.533, -0.137)
T-Test of difference = 0 (vs not =): T-Value = -2.20 P-Value = 0.029 DF = 144

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	31.49	2.21	0.30
21	24	29.67	5.51	1.1

Difference = mu (12) - mu (21)
Estimate for difference: 1.82
95% CI for difference: (-0.57, 4.22)
T-Test of difference = 0 (vs not =): T-Value = 1.57 P-Value = 0.129 DF = 26

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	14.29	2.02	0.27
21	24	17.17	3.60	0.73

Difference = mu (12) - mu (21)
Estimate for difference: -2.876
95% CI for difference: (-4.477, -1.274)
T-Test of difference = 0 (vs not =): T-Value = -3.67 P-Value = 0.001 DF = 29

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	17.20	2.08	0.28
21	24	12.50	4.42	0.90

Difference = mu (12) - mu (21)
Estimate for difference: 4.700
95% CI for difference: (2.760, 6.640)
T-Test of difference = 0 (vs not =): T-Value = 4.97 P-Value = 0.000 DF = 27

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	7	28.86	3.66	1.4
21	11	33.64	7.35	2.2

Difference = mu (12) - mu (21)
Estimate for difference: -4.78
95% CI for difference: (-10.35, 0.79)
T-Test of difference = 0 (vs not =): T-Value = -1.83 P-Value = 0.087 DF = 15

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
12          7  30.29   4.80      1.8
21         11  22.64   5.22      1.6

Difference = mu (12) - mu (21)
Estimate for difference:  7.65
95% CI for difference:  (2.46, 12.84)
T-Test of difference = 0 (vs not =): T-Value = 3.18  P-Value = 0.007  DF = 13


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
12          7  40.86   5.31      2.0
21         11  43.73   9.16      2.8

Difference = mu (12) - mu (21)
Estimate for difference:  -2.87
95% CI for difference:  (-10.15, 4.41)
T-Test of difference = 0 (vs not =): T-Value = -0.84  P-Value = 0.414  DF = 15


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
12         32  2.279  0.107    0.019
21         48  2.296  0.131    0.019

Difference = mu (12) - mu (21)
Estimate for difference:  -0.0165
95% CI for difference:  (-0.0697, 0.0367)
T-Test of difference = 0 (vs not =): T-Value = -0.62  P-Value = 0.537  DF = 74


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
12         32  2.060  0.117    0.021
21         48  2.007  0.157    0.023

Difference = mu (12) - mu (21)
Estimate for difference:  0.0525
95% CI for difference:  (-0.0085, 0.1136)
T-Test of difference = 0 (vs not =): T-Value = 1.71  P-Value = 0.091  DF = 76
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
12          84   11.60      71.3  -2.86
21          78   12.90      92.5   2.86
Overall    162              81.5

H = 8.20  DF = 1  P = 0.004
H = 8.22  DF = 1  P = 0.004  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	44.8	2.82
21	24	28.00	29.0	-2.82
Overall	79		40.0	

H = 7.98 DF = 1 P = 0.005
H = 8.12 DF = 1 P = 0.004 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	33.2	-3.99
21	24	17.00	55.6	3.99
Overall	79		40.0	

H = 15.90 DF = 1 P = 0.000
H = 17.09 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	48.7	5.10
21	24	12.00	20.1	-5.10
Overall	79		40.0	

H = 26.02 DF = 1 P = 0.000
H = 26.45 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	7.1	-1.54
21	11	35.00	11.0	1.54
Overall	18		9.5	

H = 2.37 DF = 1 P = 0.124
H = 2.41 DF = 1 P = 0.121 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	13.6	2.58
21	11	24.00	6.9	-2.58
Overall	18		9.5	

H = 6.66 DF = 1 P = 0.010
H = 6.74 DF = 1 P = 0.009 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
12          7   42.00       7.0  -1.58
21         11   47.00      11.1   1.58
Overall    18               9.5

H = 2.51  DF = 1  P = 0.113
H = 2.54  DF = 1  P = 0.111  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.305      38.9  -0.50
21         48   2.305      41.6   0.50
Overall    80              40.5

H = 0.25  DF = 1  P = 0.616
H = 0.25  DF = 1  P = 0.616  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.090      46.5   1.90
21         48   2.043      36.5  -1.90
Overall    80              40.5

H = 3.61  DF = 1  P = 0.057
H = 3.61  DF = 1  P = 0.057  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 4.16    DF = 1    P = 0.042

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          49  35   11.60   4.00  (-----------*----------------)
21          33  45   12.90   3.32                      (------*------)
                                   -------+---------+---------+---------
                                       11.20     12.00     12.80

Overall median = 12.30

A 95.0% CI for median(12) - median(21): (-2.30,-0.30)


Mood median test for WL (%)

Chi-Square = 0.84    DF = 1    P = 0.358

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          33  22   31.00   3.00                               *-----)
21          17   7   28.00   6.50     (------*--------------)
                                      +---------+---------+---------+------
                                   27.0      28.5      30.0      31.5

Overall median = 31.00

A 95.0% CI for median(12) - median(21): (1.00,4.00)
```

```
Mood median test for Wp (%)

Chi-Square = 26.75    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          45  10   14.00   1.00  *
21           5  19   17.00   4.75              (------*------------)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0

Overall median = 14.00

A 95.0% CI for median(12) - median(21): (-5.00,-2.00)
```

```
Mood median test for Ip (%)

Chi-Square = 9.43    DF = 1    P = 0.002

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12          31  24   17.00   2.00                                *----)
21          22   2   12.00   4.25  (----*----)
                                   -----+---------+---------+---------+-
                                     12.0      14.0      16.0      18.0

Overall median = 17.00

A 95.0% CI for median(12) - median(21): (4.00,7.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 2.10    DF = 1    P = 0.147

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
12           5   2    28.5    7.0     (------*------------)
21           4   7    35.0   11.0  (----------------------------*--)
                                   ---------+---------+---------+-------
                                         28.0      31.5      35.0

Overall median = 31.5

A 95.0% CI for median(12) - median(21): (-10.0,3.1)
```

```
Mood median test for % SAND

Chi-Square = 10.57    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12           1   6    28.0    7.5                   (--*-------------)
21          10   1    24.0    8.0  (-----------*---)
                                   ----+---------+---------+---------+--
                                    20.0      25.0      30.0      35.0

Overall median = 26.0

A 95.0% CI for median(12) - median(21): (1.5,15.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.10    DF = 1    P = 0.147

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12           5   2    42.0   10.0  (-----------------*---------)
21           4   7    47.0    9.0               (----------------*----)
                                   ---+---------+---------+---------+---
                                   36.0      40.0      44.0      48.0

Overall median = 44.8

A 95.0% CI for median(12) - median(21): (-13.0,4.0)


Mood median test for Bulk Density

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1  -------+---------+---------+---------
12          16  16  2.3050  0.0775               (-----*---------)
21          24  24  2.3050  0.1195  (------------------*--------------)
                                    -------+---------+---------+---------
                                         2.275     2.300     2.325

Overall median = 2.3050

A 95.0% CI for median(12) - median(21): (-0.0400,0.0500)


Mood median test for Dry Density

Chi-Square = 5.21    DF = 1    P = 0.022

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          11  21   2.090  0.090                      (---*-----)
21          29  19   2.043  0.175  (---------------*-------)
                                   -------+---------+---------+---------
                                        2.000     2.050     2.100

Overall median = 2.077

A 95.0% CI for median(12) - median(21): (0.007,0.101)
```

Results for: Domain 12 v 31

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
31	125	18.47	2.50	0.22

Difference = mu (12) - mu (31)
Estimate for difference: -6.084
95% CI for difference: (-6.921, -5.247)
T-Test of difference = 0 (vs not =): T-Value = -14.37 P-Value = 0.000 DF = 144

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	31.49	2.21	0.30
31	112	33.41	4.86	0.46

Difference = mu (12) - mu (31)
Estimate for difference: -1.920
95% CI for difference: (-3.000, -0.840)
T-Test of difference = 0 (vs not =): T-Value = -3.51 P-Value = 0.001 DF = 164

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	14.29	2.02	0.27
31	111	15.62	1.95	0.19

Difference = mu (12) - mu (31)
Estimate for difference: -1.331
95% CI for difference: (-1.985, -0.676)
T-Test of difference = 0 (vs not =): T-Value = -4.03 P-Value = 0.000 DF = 104

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	17.20	2.08	0.28
31	111	17.89	3.19	0.30

Difference = mu (12) - mu (31)
Estimate for difference: -0.692
95% CI for difference: (-1.507, 0.123)
T-Test of difference = 0 (vs not =): T-Value = -1.68 P-Value = 0.095 DF = 152

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	7	28.86	3.66	1.4
31	35	5.63	5.82	0.98

Difference = mu (12) - mu (31)
Estimate for difference: 23.23
95% CI for difference: (19.56, 26.89)
T-Test of difference = 0 (vs not =): T-Value = 13.69 P-Value = 0.000 DF = 13

Two-sample T for % SAND

```
Domain
Reference   N   Mean  StDev  SE Mean
12          7  30.29   4.80      1.8
31         35  24.29   8.74      1.5
```

Difference = mu (12) - mu (31)
Estimate for difference: 6.00
95% CI for difference: (1.01, 10.99)
T-Test of difference = 0 (vs not =): T-Value = 2.56 P-Value = 0.022 DF = 15

Two-sample T for % Fines (SILT/CLAY)

```
Domain
Reference   N   Mean  StDev  SE Mean
12          7  40.86   5.31      2.0
31         35   70.1   11.4      1.9
```

Difference = mu (12) - mu (31)
Estimate for difference: -29.23
95% CI for difference: (-35.05, -23.40)
T-Test of difference = 0 (vs not =): T-Value = -10.50 P-Value = 0.000 DF = 19

Two-sample T for Particle Density

```
Domain
Reference   N     Mean    StDev  SE Mean
12          2  2.65500  0.00707   0.0050
31         17   2.6735   0.0212   0.0051
```

Difference = mu (12) - mu (31)
Estimate for difference: -0.01853
95% CI for difference: (-0.04135, 0.00429)
T-Test of difference = 0 (vs not =): T-Value = -2.58 P-Value = 0.082 DF = 3

Two-sample T for Bulk Density

```
Domain
Reference   N    Mean   StDev  SE Mean
12         32   2.279   0.107    0.019
31         43  2.2281  0.0640   0.0098
```

Difference = mu (12) - mu (31)
Estimate for difference: 0.0512
95% CI for difference: (0.0085, 0.0940)
T-Test of difference = 0 (vs not =): T-Value = 2.41 P-Value = 0.020 DF = 47

Two-sample T for Dry Density

```
Domain
Reference   N    Mean   StDev  SE Mean
12         32   2.060   0.117    0.021
31         43  1.8845  0.0804    0.012
```

Difference = mu (12) - mu (31)
Estimate for difference: 0.1755
95% CI for difference: (0.1273, 0.2237)
T-Test of difference = 0 (vs not =): T-Value = 7.31 P-Value = 0.000 DF = 51

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
12	84	11.60	53.1	-10.17
31	125	18.00	139.9	10.17
Overall	209		105.0	

H = 103.45 DF = 1 P = 0.000
H = 104.09 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	64.7	-3.62
31	112	34.00	93.5	3.62
Overall	167		84.0	

H = 13.08 DF = 1 P = 0.000
H = 13.18 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	54.0	-5.57
31	111	16.00	98.1	5.57
Overall	166		83.5	

H = 31.06 DF = 1 P = 0.000
H = 32.14 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	74.0	-1.80
31	111	18.00	88.2	1.80
Overall	166		83.5	

H = 3.24 DF = 1 P = 0.072
H = 3.30 DF = 1 P = 0.069 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.500	38.9	4.12
31	35	4.000	18.0	-4.12
Overall	42		21.5	

H = 16.95 DF = 1 P = 0.000
H = 17.07 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % SAND

Domain
Reference   N  Median  Ave Rank      Z
12          7   28.00      30.8   2.19
31         35   23.00      19.6  -2.19
Overall    42              21.5

H = 4.81  DF = 1  P = 0.028
H = 4.82  DF = 1  P = 0.028  (adjusted for ties)


Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
12          7   42.00       4.7  -3.97
31         35   72.00      24.9   3.97
Overall    42              21.5

H = 15.73  DF = 1  P = 0.000
H = 15.75  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Particle Density

Domain
Reference   N  Median  Ave Rank      Z
12          2   2.655       3.5  -1.73
31         17   2.680      10.8   1.73
Overall    19              10.0

H = 2.98  DF = 1  P = 0.084
H = 3.09  DF = 1  P = 0.079  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.305      50.2   4.17
31         43   2.230      28.9  -4.17
Overall    75              38.0

H = 17.41  DF = 1  P = 0.000
H = 17.48  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.090      56.8   6.44
31         43   1.890      24.0  -6.44
Overall    75              38.0

H = 41.45  DF = 1  P = 0.000
H = 41.50  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 58.34    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          75   9   11.60   4.00  (---*-----)
31          45  80   18.00   3.00                               *---)
                                   --------+---------+---------+--------
                                        12.5      15.0      17.5

Overall median = 17.00

A 95.0% CI for median(12) - median(31): (-8.08,-5.72)


Mood median test for WL (%)

Chi-Square = 20.15    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
12          46   9   31.00   3.00   *--------)
31          53  59   34.00   6.00                    (-------*--------)
                                    --+---------+---------+---------+----
                                   31.2      32.4      33.6      34.8

Overall median = 33.00

A 95.0% CI for median(12) - median(31): (-3.00,-1.00)


Mood median test for Wp (%)

Chi-Square = 33.97    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          51   4   14.00   1.00  *
31          51  60   16.00   3.00                   (----------------*
                                   -------+---------+---------+---------
                                       14.40     15.00     15.60

Overall median = 15.00

A 95.0% CI for median(12) - median(31): (-2.00,-1.00)


Mood median test for Ip (%)

Chi-Square = 6.61    DF = 1    P = 0.010

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          42  13   17.00   2.00  *----------------)
31          62  49   18.00   4.00              (----*----------------)
                                   -------+---------+---------+---------
                                       17.40     18.00     18.60

Overall median = 18.00

A 95.0% CI for median(12) - median(31): (-1.00,0.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 8.40    DF = 1    P = 0.004

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12           0   7    28.5    7.0                        (--*---)
31          21  14     4.0    6.0  (-*)
                                   --------+---------+---------+--------
                                          10        20        30

Overall median = 4.5

A 95.0% CI for median(12) - median(31): (21.9,30.2)
```

```
Mood median test for % SAND

Chi-Square = 5.56    DF = 1    P = 0.018

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
12           1   6    28.0    7.5                   (--*-------------)
31          22  13    23.0   10.0    (------*----)
                                     -+---------+---------+---------+-----
                                   20.0      25.0      30.0      35.0

Overall median = 24.0

A 95.0% CI for median(12) - median(31): (3.0,13.1)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 7.64    DF = 1    P = 0.006

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -+---------+---------+---------+-----
12           7   0    42.0   10.0  (-----*--)
31          15  20    72.0   16.0                                (-*--)
                                   -+---------+---------+---------+-----
                                   36        48        60        72

Overall median = 69.0

A 95.0% CI for median(12) - median(31): (-39.5,-23.6)
```

```
Mood median test for Particle Density

Chi-Square = 2.01    DF = 1    P = 0.156

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1  --+---------+---------+---------+----
12           2   0  2.6550  0.0100  (----*---)
31           8   9  2.6800  0.0300           (---------------*-------)
                                    --+---------+---------+---------+----
                                    2.652     2.664     2.676     2.688

Overall median = 2.6700
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.6% CI for median(12) - median(31): (-0.0500,0.0500)
```

```
Mood median test for Bulk Density

Chi-Square = 13.88    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          10  22   2.305  0.078                      (----*------)
31          32  11   2.230  0.090  (---*--------)
                                   -------+---------+---------+---------
                                        2.240     2.275     2.310

Overall median = 2.270

A 95.0% CI for median(12) - median(31): (0.038,0.092)


Mood median test for Dry Density

Chi-Square = 37.39    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12           4  28   2.090  0.090                              (--*---)
31          36   7   1.890  0.119  (--*----)
                                   ---+---------+---------+---------+---
                                    1.890     1.960     2.030     2.100

Overall median = 1.950

A 95.0% CI for median(12) - median(31): (0.160,0.227)
```

Results for: Domain 12 v 41

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
41	57	19.60	8.68	1.1

Difference = mu (12) - mu (41)
Estimate for difference: -7.22
95% CI for difference: (-9.62, -4.81)
T-Test of difference = 0 (vs not =): T-Value = -5.99 P-Value = 0.000 DF = 67

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	31.49	2.21	0.30
41	13	44.5	10.6	2.9

Difference = mu (12) - mu (41)
Estimate for difference: -12.97
95% CI for difference: (-19.42, -6.53)
T-Test of difference = 0 (vs not =): T-Value = -4.38 P-Value = 0.001 DF = 12

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	14.29	2.02	0.27
41	13	21.85	4.38	1.2

Difference = mu (12) - mu (41)
Estimate for difference: -7.56
95% CI for difference: (-10.24, -4.87)
T-Test of difference = 0 (vs not =): T-Value = -6.07 P-Value = 0.000 DF = 13

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	17.20	2.08	0.28
41	13	22.62	6.78	1.9

Difference = mu (12) - mu (41)
Estimate for difference: -5.42
95% CI for difference: (-9.56, -1.28)
T-Test of difference = 0 (vs not =): T-Value = -2.85 P-Value = 0.015 DF = 12

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	7	28.86	3.66	1.4
41	6	22.3	13.5	5.5

Difference = mu (12) - mu (41)
Estimate for difference: 6.52
95% CI for difference: (-8.10, 21.15)
T-Test of difference = 0 (vs not =): T-Value = 1.15 P-Value = 0.303 DF = 5

```
Two-sample T for % SAND

Domain
Reference  N   Mean  StDev  SE Mean
12         7  30.29   4.80      1.8
41         6  27.00   7.01      2.9

Difference = mu (12) - mu (41)
Estimate for difference:  3.29
95% CI for difference:  (-4.53, 11.10)
T-Test of difference = 0 (vs not =): T-Value = 0.97  P-Value = 0.361  DF = 8


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference  N   Mean  StDev  SE Mean
12         7  40.86   5.31      2.0
41         6   50.7   16.1      6.6

Difference = mu (12) - mu (41)
Estimate for difference:  -9.81
95% CI for difference:  (-27.45, 7.83)
T-Test of difference = 0 (vs not =): T-Value = -1.43  P-Value = 0.212  DF = 5


Two-sample T for Particle Density

Domain
Reference  N     Mean    StDev  SE Mean
12         2  2.65500  0.00707   0.0050
41         9   2.7611   0.0237   0.0079

Difference = mu (12) - mu (41)
Estimate for difference:  -0.10611
95% CI for difference:  (-0.12898, -0.08324)
T-Test of difference = 0 (vs not =): T-Value = -11.35  P-Value = 0.000  DF = 6


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
12         32   2.279   0.107    0.019
41          8  2.2000  0.0807    0.029

Difference = mu (12) - mu (41)
Estimate for difference:  0.0794
95% CI for difference:  (0.0055, 0.1533)
T-Test of difference = 0 (vs not =): T-Value = 2.32  P-Value = 0.037  DF = 13


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
12         32   2.060   0.117    0.021
41          8  1.8950  0.0735    0.026

Difference = mu (12) - mu (41)
Estimate for difference:  0.1650
95% CI for difference:  (0.0950, 0.2350)
T-Test of difference = 0 (vs not =): T-Value = 4.97  P-Value = 0.000  DF = 17
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
12	84	11.60	49.2	-7.71
41	57	17.00	103.2	7.71
Overall	141		71.0	

H = 59.43 DF = 1 P = 0.000
H = 59.57 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	29.0	-4.70
41	13	42.00	57.7	4.70
Overall	68		34.5	

H = 22.11 DF = 1 P = 0.000
H = 22.68 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	28.4	-5.21
41	13	21.00	60.2	5.21
Overall	68		34.5	

H = 27.13 DF = 1 P = 0.000
H = 30.00 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	31.4	-2.62
41	13	22.00	47.4	2.62
Overall	68		34.5	

H = 6.87 DF = 1 P = 0.009
H = 7.03 DF = 1 P = 0.008 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	7.4	0.43
41	6	23.50	6.5	-0.43
Overall	13		7.0	

H = 0.18 DF = 1 P = 0.668
H = 0.18 DF = 1 P = 0.668 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	7.7	0.71
41	6	27.50	6.2	-0.71
Overall	13		7.0	

H = 0.51 DF = 1 P = 0.475
H = 0.51 DF = 1 P = 0.474 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
12	7	42.00	6.1	-0.86
41	6	46.00	8.0	0.86
Overall	13		7.0	

H = 0.73 DF = 1 P = 0.391
H = 0.74 DF = 1 P = 0.389 (adjusted for ties)

Kruskal-Wallis Test on Particle Density

Domain Reference	N	Median	Ave Rank	Z
12	2	2.655	1.5	-2.12
41	9	2.770	7.0	2.12
Overall	11		6.0	

H = 4.50 DF = 1 P = 0.034
H = 4.83 DF = 1 P = 0.028 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.305	23.2	2.94
41	8	2.225	9.6	-2.94
Overall	40		20.5	

H = 8.65 DF = 1 P = 0.003
H = 8.70 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.090	24.0	3.82
41	8	1.915	6.4	-3.82
Overall	40		20.5	

H = 14.60 DF = 1 P = 0.000
H = 14.64 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 55.48    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          64  20   11.60   4.00  (----*------)
41           7  50   17.00   4.50                              (---*----)
                                   -------+---------+---------+---------
                                       12.0      14.0      16.0

Overall median = 14.70

A 95.0% CI for median(12) - median(41): (-7.00,-4.50)


Mood median test for WL (%)

Chi-Square = 11.51    DF = 1    P = 0.001

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          33  22    31.0    3.0  *)
41           1  12    42.0   16.5          (---------*-------------)
                                   --------+---------+---------+--------
                                        36.0      42.0      48.0

Overall median = 31.5

A 95.0% CI for median(12) - median(41): (-19.3,-5.8)


Mood median test for Wp (%)

Chi-Square = 31.45    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          45  10   14.00   1.00  *
41           0  13   21.00   5.00                  (------*--------)
                                   ---+---------+---------+---------+---
                                   15.0      18.0      21.0      24.0

Overall median = 14.00

A 95.0% CI for median(12) - median(41): (-9.14,-5.00)


Mood median test for Ip (%)

Chi-Square = 2.76    DF = 1    P = 0.097

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          31  24    17.0    2.0    *-)
41           4   9    22.0   12.0  (---------------*--------------)
                                   ---+---------+---------+---------+---
                                   17.5      21.0      24.5      28.0

Overall median = 17.0

A 95.0% CI for median(12) - median(41): (-10.1,0.3)
```

```
Mood median test for % GRAVEL

Chi-Square = 0.07    DF = 1    P = 0.797

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
12           4   3    28.5    7.0                         (---*-----)
41           3   3    23.5   26.8   (-------------------*----------------)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0

Overall median = 28.5

A 95.0% CI for median(12) - median(41): (-8.4,24.3)


Mood median test for % SAND

Chi-Square = 0.07    DF = 1    P = 0.797

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
12           4   3    28.0    7.5                 (--*-------------)
41           3   3    27.5   11.8   (----------------*--------------)
                                    --+---------+---------+---------+----
                                   20.0      25.0      30.0      35.0

Overall median = 28.0

A 95.0% CI for median(12) - median(41): (-4.1,13.5)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.07    DF = 1    P = 0.797

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12           4   3    42.0   10.0  (------*---)
41           3   3    46.0   29.0   (---------*------------------------)
                                   -----+---------+---------+---------+-
                                       40        50        60        70

Overall median = 42.0

A 95.0% CI for median(12) - median(41): (-29.9,6.7)


Mood median test for Particle Density

Chi-Square = 1.40    DF = 1    P = 0.237

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12           2   0   2.655  0.010  (-*)
41           5   4   2.770  0.050                     (---------*--)
                                   --------+---------+---------+--------
                                         2.680     2.720     2.760

Overall median = 2.770
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.4% CI for median(12) - median(41): (-0.130,-0.070)
```

```
Mood median test for Bulk Density

Chi-Square = 9.05    DF = 1    P = 0.003

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12          13  19   2.305  0.078                      (--*----)
41           8   0   2.225  0.048  (--------*--)
                                   ----+---------+---------+---------+--
                                     2.200     2.250     2.300     2.350

Overall median = 2.290

A 95.0% CI for median(12) - median(41): (0.060,0.120)
```

```
Mood median test for Dry Density

Chi-Square = 8.18    DF = 1    P = 0.004

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          14  18   2.090  0.090                             (--*---)
41           8   0   1.915  0.062  (------*----)
                                   ---+---------+---------+---------+---
                                    1.890     1.960     2.030     2.100

Overall median = 2.080

A 95.0% CI for median(12) - median(41): (0.130,0.220)
```

Results for: Domain 12 v 43

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
12         84  12.39   3.30     0.36
43         50  20.44   7.73      1.1

Difference = mu (12) - mu (43)
Estimate for difference:  -8.05
95% CI for difference:  (-10.35, -5.75)
T-Test of difference = 0 (vs not =): T-Value = -7.00  P-Value = 0.000  DF = 59


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
12         55  31.49   2.21     0.30
43         17  37.35   7.61      1.8

Difference = mu (12) - mu (43)
Estimate for difference:  -5.86
95% CI for difference:  (-9.82, -1.90)
T-Test of difference = 0 (vs not =): T-Value = -3.14  P-Value = 0.006  DF = 16


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
12         55  14.29   2.02     0.27
43         17  20.29   3.53     0.86

Difference = mu (12) - mu (43)
Estimate for difference:  -6.003
95% CI for difference:  (-7.885, -4.122)
T-Test of difference = 0 (vs not =): T-Value = -6.68  P-Value = 0.000  DF = 19


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
12         55  17.20   2.08     0.28
43         17  17.06   5.15      1.2

Difference = mu (12) - mu (43)
Estimate for difference:  0.14
95% CI for difference:  (-2.56, 2.84)
T-Test of difference = 0 (vs not =): T-Value = 0.11  P-Value = 0.914  DF = 17


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
12          7  28.86   3.66      1.4
43         15   38.1   12.9      3.3

Difference = mu (12) - mu (43)
Estimate for difference:  -9.28
95% CI for difference:  (-16.84, -1.71)
T-Test of difference = 0 (vs not =): T-Value = -2.58  P-Value = 0.019  DF = 18
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
12	7	30.29	4.80	1.8
43	15	33.93	7.56	2.0

Difference = mu (12) - mu (43)
Estimate for difference: -3.65
95% CI for difference: (-9.27, 1.98)
T-Test of difference = 0 (vs not =): T-Value = -1.37 P-Value = 0.189 DF = 17

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
12	7	40.86	5.31	2.0
43	15	27.9	11.0	2.8

Difference = mu (12) - mu (43)
Estimate for difference: 12.92
95% CI for difference: (5.64, 20.21)
T-Test of difference = 0 (vs not =): T-Value = 3.71 P-Value = 0.001 DF = 19

Two-sample T for Particle Density

Domain Reference	N	Mean	StDev	SE Mean
12	2	2.65500	0.00707	0.0050
43	6	2.7217	0.0571	0.023

Difference = mu (12) - mu (43)
Estimate for difference: -0.0667
95% CI for difference: (-0.1279, -0.0054)
T-Test of difference = 0 (vs not =): T-Value = -2.80 P-Value = 0.038 DF = 5

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.279	0.107	0.019
43	12	2.112	0.162	0.047

Difference = mu (12) - mu (43)
Estimate for difference: 0.1677
95% CI for difference: (0.0595, 0.2759)
T-Test of difference = 0 (vs not =): T-Value = 3.32 P-Value = 0.005 DF = 14

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.060	0.117	0.021
43	12	1.810	0.176	0.051

Difference = mu (12) - mu (43)
Estimate for difference: 0.2500
95% CI for difference: (0.1322, 0.3678)
T-Test of difference = 0 (vs not =): T-Value = 4.55 P-Value = 0.000 DF = 14

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
12	84	11.60	49.2	-7.09
43	50	17.00	98.3	7.09
Overall	134		67.5	

H = 50.23 DF = 1 P = 0.000
H = 50.36 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	32.9	-2.66
43	17	39.00	48.3	2.66
Overall	72		36.5	

H = 7.07 DF = 1 P = 0.008
H = 7.25 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	28.7	-5.71
43	17	20.00	61.8	5.71
Overall	72		36.5	

H = 32.58 DF = 1 P = 0.000
H = 35.46 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	37.2	0.50
43	17	16.00	34.3	-0.50
Overall	72		36.5	

H = 0.25 DF = 1 P = 0.614
H = 0.26 DF = 1 P = 0.610 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	8.1	-1.69
43	15	41.00	13.1	1.69
Overall	22		11.5	

H = 2.86 DF = 1 P = 0.091
H = 2.87 DF = 1 P = 0.090 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	9.2	-1.13
43	15	33.00	12.6	1.13
Overall	22		11.5	

H = 1.27 DF = 1 P = 0.259
H = 1.28 DF = 1 P = 0.258 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
12	7	42.00	16.5	2.47
43	15	23.00	9.2	-2.47
Overall	22		11.5	

H = 6.09 DF = 1 P = 0.014
H = 6.10 DF = 1 P = 0.014 (adjusted for ties)

Kruskal-Wallis Test on Particle Density

Domain Reference	N	Median	Ave Rank	Z
12	2	2.655	2.5	-1.33
43	6	2.735	5.2	1.33
Overall	8		4.5	

H = 1.78 DF = 1 P = 0.182

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.305	26.7	3.57
43	12	2.155	11.2	-3.57
Overall	44		22.5	

H = 12.75 DF = 1 P = 0.000
H = 12.81 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.090	27.4	4.14
43	12	1.835	9.4	-4.14
Overall	44		22.5	

H = 17.12 DF = 1 P = 0.000
H = 17.16 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 51.05    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          62  22   11.60   4.00  (---*-----)
43           5  45   17.00  11.25                      (---*--------)
                                   --------+---------+---------+--------
                                        12.5      15.0      17.5

Overall median = 13.75

A 95.0% CI for median(12) - median(43): (-8.00,-4.00)


Mood median test for WL (%)

Chi-Square = 3.19    DF = 1    P = 0.074

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
12          33  22    31.0    3.0    *-)
43           6  11    39.0   12.5    (--------------------*-----------)
                                     -+---------+---------+---------+-----
                                   31.5      35.0      38.5      42.0

Overall median = 31.0

A 95.0% CI for median(12) - median(43): (-12.0,0.0)


Mood median test for Wp (%)

Chi-Square = 37.09    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12          45  10   14.00   1.00  *
43           0  17   20.00   7.00              (-----------*----------)
                                   ----+---------+---------+---------+--
                                    15.0      17.5      20.0      22.5

Overall median = 14.00

A 95.0% CI for median(12) - median(43): (-9.00,-3.00)


Mood median test for Ip (%)

Chi-Square = 0.03    DF = 1    P = 0.858

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          31  24   17.00   2.00                        *------)
43          10   7   16.00   5.50  (-------------*------------------)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0

Overall median = 17.00

A 95.0% CI for median(12) - median(43): (-2.00,4.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 1.89    DF = 1    P = 0.170

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12           5   2    28.5    7.0  (----*-------)
43           6   9    41.0   20.0          (----------------*-----------)
                                   -------+---------+---------+---------
                                       30.0      36.0      42.0

Overall median = 32.5

A 95.0% CI for median(12) - median(43): (-17.1,1.1)


Mood median test for % SAND

Chi-Square = 0.03    DF = 1    P = 0.867

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12           4   3    28.0    7.5  (---*-------------------)
43           8   7    33.0   10.0        (-----------*-------------)
                                   ----+---------+---------+---------+--
                                    28.0      31.5      35.0      38.5

Overall median = 33.0

A 95.0% CI for median(12) - median(43): (-8.7,2.3)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 5.24    DF = 1    P = 0.022

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12           1   6    42.0   10.0                     (-------*-----)
43          10   5    23.0   17.0  (---*--------------)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 32.5

A 95.0% CI for median(12) - median(43): (8.3,24.2)


Mood median test for Particle Density

Chi-Square = 2.67    DF = 1    P = 0.102

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12           2   0   2.655  0.010  (-*)
43           2   4   2.735  0.105  (----------------------*-----------)
                                   ---+---------+---------+---------+---
                                    2.660     2.695     2.730     2.765

Overall median = 2.705
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 89.8% CI for median(12) - median(43): (-0.130,0.030)
```

```
Mood median test for Bulk Density

Chi-Square = 9.17    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          13  19   2.305  0.078                             (*-)
43          11   1   2.155  0.265  (-----------------*---)
                                   --------+---------+---------+--------
                                         2.04      2.16      2.28

Overall median = 2.290

A 95.0% CI for median(12) - median(43): (0.099,0.309)


Mood median test for Dry Density

Chi-Square = 11.46    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
12          11  21   2.090  0.090                             (*-)
43          11   1   1.835  0.252    (-----------*---)
                                     +---------+---------+---------+------
                                   1.65      1.80      1.95      2.10

Overall median = 2.075

A 95.0% CI for median(12) - median(43): (0.188,0.428)
```

Results for: Domain 12 v 51

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
51	10	14.36	8.77	2.8

Difference = mu (12) - mu (51)
Estimate for difference: -1.97
95% CI for difference: (-8.29, 4.35)
T-Test of difference = 0 (vs not =): T-Value = -0.71 P-Value = 0.498 DF = 9

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	31.49	2.21	0.30
51	13	27.08	2.90	0.80

Difference = mu (12) - mu (51)
Estimate for difference: 4.414
95% CI for difference: (2.586, 6.242)
T-Test of difference = 0 (vs not =): T-Value = 5.15 P-Value = 0.000 DF = 15

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	14.29	2.02	0.27
51	13	17.08	1.71	0.47

Difference = mu (12) - mu (51)
Estimate for difference: -2.786
95% CI for difference: (-3.925, -1.647)
T-Test of difference = 0 (vs not =): T-Value = -5.10 P-Value = 0.000 DF = 20

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	17.20	2.08	0.28
51	13	10.00	1.83	0.51

Difference = mu (12) - mu (51)
Estimate for difference: 7.200
95% CI for difference: (5.993, 8.407)
T-Test of difference = 0 (vs not =): T-Value = 12.44 P-Value = 0.000 DF = 20

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	7	28.86	3.66	1.4
51	10	38.20	9.73	3.1

Difference = mu (12) - mu (51)
Estimate for difference: -9.34
95% CI for difference: (-16.69, -1.99)
T-Test of difference = 0 (vs not =): T-Value = -2.77 P-Value = 0.017 DF = 12

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
12          7  30.29   4.80      1.8
51         10  16.00   4.71      1.5

Difference = mu (12) - mu (51)
Estimate for difference:  14.29
95% CI for difference:  (9.17, 19.40)
T-Test of difference = 0 (vs not =): T-Value = 6.08  P-Value = 0.000  DF = 12


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
12          7  40.86   5.31      2.0
51         10   38.5   12.7      4.0

Difference = mu (12) - mu (51)
Estimate for difference:  2.36
95% CI for difference:  (-7.41, 12.13)
T-Test of difference = 0 (vs not =): T-Value = 0.53  P-Value = 0.609  DF = 12


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
12         32   2.279   0.107    0.019
51          3  2.3267  0.0379    0.022

Difference = mu (12) - mu (51)
Estimate for difference:  -0.0473
95% CI for difference:  (-0.1215, 0.0269)
T-Test of difference = 0 (vs not =): T-Value = -1.64  P-Value = 0.162  DF = 5


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
12         32   2.060   0.117    0.021
51          3  2.1600  0.0361    0.021


Difference = mu (12) - mu (51)
Estimate for difference:  -0.1000
95% CI for difference:  (-0.1694, -0.0306)
T-Test of difference = 0 (vs not =): T-Value = -3.41  P-Value = 0.011  DF = 7
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
12         84   11.60      47.7   0.22
51         10   12.00      45.7  -0.22
Overall    94              47.5

H = 0.05  DF = 1  P = 0.825
H = 0.05  DF = 1  P = 0.825  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	39.5	4.29
51	13	27.00	13.3	-4.29
Overall	68		34.5	

H = 18.39 DF = 1 P = 0.000
H = 18.89 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	28.9	-4.83
51	13	17.00	58.3	4.83
Overall	68		34.5	

H = 23.30 DF = 1 P = 0.000
H = 25.79 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	40.9	5.47
51	13	10.00	7.5	-5.47
Overall	68		34.5	

H = 29.97 DF = 1 P = 0.000
H = 30.61 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	5.6	-2.34
51	10	39.50	11.4	2.34
Overall	17		9.0	

H = 5.49 DF = 1 P = 0.019
H = 5.50 DF = 1 P = 0.019 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	13.9	3.32
51	10	16.00	5.6	-3.32
Overall	17		9.0	

H = 11.01 DF = 1 P = 0.001
H = 11.08 DF = 1 P = 0.001 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
12          7   42.00      10.8   1.22
51         10   37.50       7.8  -1.22
Overall    17               9.0

H = 1.49  DF = 1  P = 0.223
H = 1.49  DF = 1  P = 0.222  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.305      17.5  -0.91
51          3   2.310      23.2   0.91
Overall    35              18.0

H = 0.83  DF = 1  P = 0.361
H = 0.84  DF = 1  P = 0.359  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.090      16.8  -2.30
51          3   2.150      31.0   2.30
Overall    35              18.0

H = 5.28  DF = 1  P = 0.022
H = 5.30  DF = 1  P = 0.021  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.01    DF = 1    P = 0.943

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
12          43  41    11.6    4.0          (-*--)
51           5   5    12.0   12.2  (-----------*--------------------)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 11.6

A 95.0% CI for median(12) - median(51): (-8.2,4.6)
```

```
Mood median test for WL (%)

Chi-Square = 4.90    DF = 1    P = 0.027

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12          33  22   31.00   3.00                                *----)
51          12   1   27.00   4.50  (---------*-----------)
                                   -----+---------+---------+---------+-
                                     26.0      28.0      30.0      32.0

Overall median = 31.00

A 95.0% CI for median(12) - median(51): (1.93,6.00)


Mood median test for Wp (%)

Chi-Square = 31.45    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          45  10   14.00   1.00  *
51           0  13   17.00   2.50                  (--------*----------)
                                   ---+---------+---------+---------+---
                                   14.4      15.6      16.8      18.0

Overall median = 14.00

A 95.0% CI for median(12) - median(51): (-4.07,-2.00)


Mood median test for Ip (%)

Chi-Square = 8.77    DF = 1    P = 0.003

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12          31  24   17.00   2.00                                  *---)
51          13   0   10.00   2.50  (---*----)
                                   ----+---------+---------+---------+--
                                    10.0      12.5      15.0      17.5

Overall median = 17.00

A 95.0% CI for median(12) - median(51): (5.93,8.16)


Mood median test for % GRAVEL

Chi-Square = 5.13    DF = 1    P = 0.024

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12           6   1    28.5    7.0  (----*-------)
51           3   7    39.5   14.8           (-------------*----------)
                                   -------+---------+---------+---------
                                       30.0      36.0      42.0

Overall median = 33.0

A 95.0% CI for median(12) - median(51): (-18.7,-2.8)
```

```
Mood median test for % SAND

Chi-Square = 13.39    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
12           0   7    28.0    7.5                     (-*---------)
51           9   1    16.0    5.3   (----*--)
                                    --+---------+---------+---------+----
                                   14.0      21.0      28.0      35.0

Overall median = 18.0

A 95.0% CI for median(12) - median(51): (10.1,22.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.84    DF = 1    P = 0.092

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
12           2   5    42.0   10.0           (-------------*-------)
51           7   3    37.5   11.8  (-------------*------------)
                                   ---------+---------+---------+-------
                                         35.0      40.0      45.0

Overall median = 38.0

A 95.0% CI for median(12) - median(51): (-2.4,14.4)


Mood median test for Bulk Density

Chi-Square = 0.06    DF = 1    P = 0.805

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1  ----+---------+---------+---------+--
12          19  13  2.3050  0.0775  (-----*---------)
51           2   1  2.3100  0.0700      (---*-----------------------)
                                    ----+---------+---------+---------+--
                                      2.300     2.325     2.350     2.375

Overall median = 2.3100
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(51): (-0.1100,0.0400)


Mood median test for Dry Density

Chi-Square = 3.90    DF = 1    P = 0.048

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          19  13   2.090  0.090  (----*-------)
51           0   3   2.150  0.070                 (----*-----------)
                                   ---+---------+---------+---------+---
                                    2.080     2.120     2.160     2.200

Overall median = 2.100
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(12) - median(51): (-0.170,-0.010)
```

Results for: Domain 12 v 52

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
52	24	8.48	2.78	0.57

Difference = mu (12) - mu (52)
Estimate for difference: 3.909
95% CI for difference: (2.555, 5.263)
T-Test of difference = 0 (vs not =): T-Value = 5.82 P-Value = 0.000 DF = 43

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	31.49	2.21	0.30
52	24	25.33	2.73	0.56

Difference = mu (12) - mu (52)
Estimate for difference: 6.158
95% CI for difference: (4.876, 7.439)
T-Test of difference = 0 (vs not =): T-Value = 9.75 P-Value = 0.000 DF = 36

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	14.29	2.02	0.27
52	24	16.21	1.61	0.33

Difference = mu (12) - mu (52)
Estimate for difference: -1.917
95% CI for difference: (-2.775, -1.059)
T-Test of difference = 0 (vs not =): T-Value = -4.48 P-Value = 0.000 DF = 54

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	17.20	2.08	0.28
52	24	9.13	2.11	0.43

Difference = mu (12) - mu (52)
Estimate for difference: 8.075
95% CI for difference: (7.038, 9.112)
T-Test of difference = 0 (vs not =): T-Value = 15.71 P-Value = 0.000 DF = 43

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	7	28.86	3.66	1.4
52	15	37.5	13.5	3.5

Difference = mu (12) - mu (52)
Estimate for difference: -8.61
95% CI for difference: (-16.50, -0.72)
T-Test of difference = 0 (vs not =): T-Value = -2.30 P-Value = 0.034 DF = 17

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
12	7	30.29	4.80	1.8
52	15	18.47	6.10	1.6

Difference = mu (12) - mu (52)
Estimate for difference: 11.82
95% CI for difference: (6.66, 16.98)
T-Test of difference = 0 (vs not =): T-Value = 4.92 P-Value = 0.000 DF = 14

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
12	7	40.86	5.31	2.0
52	15	36.7	15.7	4.1

Difference = mu (12) - mu (52)
Estimate for difference: 4.19
95% CI for difference: (-5.29, 13.67)
T-Test of difference = 0 (vs not =): T-Value = 0.93 P-Value = 0.366 DF = 19

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.279	0.107	0.019
52	7	2.364	0.125	0.047

Difference = mu (12) - mu (52)
Estimate for difference: -0.0849
95% CI for difference: (-0.2019, 0.0321)
T-Test of difference = 0 (vs not =): T-Value = -1.67 P-Value = 0.133 DF = 8

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.060	0.117	0.021
52	7	2.196	0.154	0.058

Difference = mu (12) - mu (52)
Estimate for difference: -0.1357
95% CI for difference: (-0.2820, 0.0106)
T-Test of difference = 0 (vs not =): T-Value = -2.19 P-Value = 0.064 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
12	84	11.600	62.0	4.66
52	24	8.450	28.3	-4.66
Overall	108		54.5	

H = 21.67 DF = 1 P = 0.000
H = 21.72 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	51.1	6.52
52	24	25.50	14.5	-6.52
Overall	79		40.0	

H = 42.56 DF = 1 P = 0.000
H = 43.29 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	31.0	-5.27
52	24	16.00	60.6	5.27
Overall	79		40.0	

H = 27.73 DF = 1 P = 0.000
H = 29.91 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.000	51.8	6.93
52	24	9.000	12.9	-6.93
Overall	79		40.0	

H = 48.09 DF = 1 P = 0.000
H = 48.78 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	7.3	-2.08
52	15	36.00	13.5	2.08
Overall	22		11.5	

H = 4.32 DF = 1 P = 0.038
H = 4.34 DF = 1 P = 0.037 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	18.3	3.35
52	15	19.00	8.3	-3.35
Overall	22		11.5	

H = 11.21 DF = 1 P = 0.001
H = 11.24 DF = 1 P = 0.001 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
12          7   42.00      13.6   1.02
52         15   38.00      10.5  -1.02
Overall    22              11.5

H = 1.04  DF = 1  P = 0.307
H = 1.05  DF = 1  P = 0.306  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.305      18.2  -2.09
52          7   2.410      28.1   2.09
Overall    39              20.0

H = 4.35  DF = 1  P = 0.037
H = 4.38  DF = 1  P = 0.036  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.090      18.1  -2.23
52          7   2.200      28.7   2.23
Overall    39              20.0

H = 4.98  DF = 1  P = 0.026
H = 5.00  DF = 1  P = 0.025  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 6.97    DF = 1    P = 0.008

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12          41  43   11.60   4.00                  (----*------)
52          19   5    8.45   4.52  (------*-------)
                                   -----+---------+---------+---------+-
                                      8.0      10.0      12.0      14.0

Overall median = 11.00

A 95.0% CI for median(12) - median(52): (1.00,5.00)


Mood median test for WL (%)

Chi-Square = 29.78    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  ----+---------+---------+---------+--
12         16   39   31.00   3.00                               *---)
52         23    1   25.50   3.75  (-----*-----)
                                   ----+---------+---------+---------+--
                                    25.0      27.5      30.0      32.5

Overall median = 31.00

A 95.0% CI for median(12) - median(52): (4.00,7.00)
```

```
Mood median test for Wp (%)

Chi-Square = 37.44    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          45  10   14.00   1.00  *
52           2  22   16.00   2.75                   (----------------*--)
                                   -------+---------+---------+---------
                                       14.40     15.00     15.60

Overall median = 14.00

A 95.0% CI for median(12) - median(52): (-2.00,-1.00)


Mood median test for Ip (%)

Chi-Square = 35.36    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  ---+---------+---------+---------+---
12         15   40    17.0    2.0                               *--)
52         24    0     9.0    3.0  (--*---)
                                   ---+---------+---------+---------+---
                                    9.0      12.0      15.0      18.0

Overall median = 17.0

A 95.0% CI for median(12) - median(52): (7.0,10.0)


Mood median test for % GRAVEL

Chi-Square = 1.89    DF = 1    P = 0.170

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12           5   2    28.5    7.0  (---*------)
52           6   9    36.0   22.0        (-------*-----------------)
                                   ---+---------+---------+---------+---
                                   28.0      35.0      42.0      49.0

Overall median = 31.0

A 95.0% CI for median(12) - median(52): (-13.5,3.1)


Mood median test for % SAND

Chi-Square = 10.27    DF = 1    P = 0.001

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12           0   7    28.0    7.5                      (--*-----------)
52          11   4    19.0    9.0  (--------*---)
                                   -------+---------+---------+---------
                                       18.0      24.0      30.0

Overall median = 21.5

A 95.0% CI for median(12) - median(52): (7.3,17.3)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 1.12    DF = 1    P = 0.290

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           3   4    42.0   10.0              (-----------*------)
52          10   5    38.0   21.0  (------------------*----------)
                                   ------+---------+---------+---------+
                                      30.0      36.0      42.0      48.0

Overall median = 40.0

A 95.0% CI for median(12) - median(52): (-4.2,17.1)


Mood median test for Bulk Density

Chi-Square = 2.19    DF = 1    P = 0.139

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12          19  13   2.305  0.078        (-*---)
52           2   5   2.410  0.120  (--------------------------*----)
                                   -----+---------+---------+---------+-
                                      2.280     2.340     2.400     2.460

Overall median = 2.310

A 95.0% CI for median(12) - median(52): (-0.126,0.038)


Mood median test for Dry Density

Chi-Square = 2.19    DF = 1    P = 0.139

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12          19  13   2.090  0.090     (-*--)
52           2   5   2.200  0.250  (---------------*--------------)
                                   ------+---------+---------+---------+
                                       2.10      2.20      2.30      2.40

Overall median = 2.100

A 95.0% CI for median(12) - median(52): (-0.257,0.038)
```

Results for: Domain 12 v 61

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
61	9	17.50	6.94	2.3

Difference = mu (12) - mu (61)
Estimate for difference: -5.11
95% CI for difference: (-10.51, 0.29)
T-Test of difference = 0 (vs not =): T-Value = -2.18 P-Value = 0.061 DF = 8

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.279	0.107	0.019
61	9	2.120	0.154	0.051

Difference = mu (12) - mu (61)
Estimate for difference: 0.1594
95% CI for difference: (0.0376, 0.2812)
T-Test of difference = 0 (vs not =): T-Value = 2.91 P-Value = 0.015 DF = 10

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.060	0.117	0.021
61	9	1.817	0.222	0.074

Difference = mu (12) - mu (61)
Estimate for difference: 0.2434
95% CI for difference: (0.0692, 0.4175)
T-Test of difference = 0 (vs not =): T-Value = 3.16 P-Value = 0.012 DF = 9

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
12	84	11.60	44.7	-2.49
61	9	16.30	68.3	2.49
Overall	93		47.0	

H = 6.22 DF = 1 P = 0.013
H = 6.24 DF = 1 P = 0.012 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.305	24.4	3.46
61	9	2.130	8.8	-3.46
Overall	41		21.0	

H = 12.00 DF = 1 P = 0.001
H = 12.05 DF = 1 P = 0.001 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.090      24.5   3.53
61          9   1.790       8.6  -3.53
Overall    41              21.0

H = 12.44  DF = 1  P = 0.000
H = 12.48  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 2.06    DF = 1    P = 0.151

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          49  35    11.6    4.0  (-*--)
61           3   6    16.3   12.1    (-----------*--------------------)
                                   ---+---------+---------+---------+---
                                   12.0      16.0      20.0      24.0

Overall median = 12.0

A 95.0% CI for median(12) - median(61): (-15.1,0.5)


Mood median test for Bulk Density

Chi-Square = 9.96    DF = 1    P = 0.002

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
12          13  19   2.305  0.078                               (*--)
61           9   0   2.130  0.215  (-----------*-----------)
                                   ---------+---------+---------+-------
                                          2.10      2.20      2.30

Overall median = 2.290

A 95.0% CI for median(12) - median(61): (0.039,0.321)


Mood median test for Dry Density

Chi-Square = 9.02    DF = 1    P = 0.003

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12          14  18   2.090  0.090                                    (*-)
61           9   0   1.790  0.380  (-------------*---------------)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10

Overall median = 2.080

A 95.0% CI for median(12) - median(61): (0.040,0.571)
```

Results for: Domain 12 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference    N   Mean  StDev  SE Mean
12          84  12.39   3.30     0.36
62         131  16.88   5.15     0.45

Difference = mu (12) - mu (62)
Estimate for difference:  -4.491
95% CI for difference:  (-5.627, -3.355)
T-Test of difference = 0 (vs not =): T-Value = -7.79  P-Value = 0.000  DF = 212


Two-sample T for WL (%)

Domain
Reference    N   Mean  StDev  SE Mean
12          55  31.49   2.21     0.30
62         113  34.27   6.08     0.57

Difference = mu (12) - mu (62)
Estimate for difference:  -2.775
95% CI for difference:  (-4.048, -1.501)
T-Test of difference = 0 (vs not =): T-Value = -4.30  P-Value = 0.000  DF = 157


Two-sample T for Wp (%)

Domain
Reference    N   Mean  StDev  SE Mean
12          55  14.29   2.02     0.27
62         113  17.70   2.77     0.26

Difference = mu (12) - mu (62)
Estimate for difference:  -3.408
95% CI for difference:  (-4.154, -2.662)
T-Test of difference = 0 (vs not =): T-Value = -9.03  P-Value = 0.000  DF = 140


Two-sample T for Ip (%)

Domain
Reference    N   Mean  StDev  SE Mean
12          55  17.20   2.08     0.28
62         113  16.57   4.48     0.42

Difference = mu (12) - mu (62)
Estimate for difference:  0.634
95% CI for difference:  (-0.366, 1.633)
T-Test of difference = 0 (vs not =): T-Value = 1.25  P-Value = 0.212  DF = 165


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
12          7  28.86   3.66      1.4
62         47   24.9   13.6      2.0

Difference = mu (12) - mu (62)
Estimate for difference:  3.96
95% CI for difference:  (-0.95, 8.87)
T-Test of difference = 0 (vs not =): T-Value = 1.64  P-Value = 0.110  DF = 36
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
12	7	30.29	4.80	1.8
62	47	28.74	7.27	1.1

Difference = mu (12) - mu (62)
Estimate for difference: 1.54
95% CI for difference: (-3.14, 6.23)
T-Test of difference = 0 (vs not =): T-Value = 0.73 P-Value = 0.480 DF = 10

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
12	7	40.86	5.31	2.0
62	47	45.0	16.8	2.5

Difference = mu (12) - mu (62)
Estimate for difference: -4.12
95% CI for difference: (-10.62, 2.38)
T-Test of difference = 0 (vs not =): T-Value = -1.30 P-Value = 0.205 DF = 28

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.279	0.107	0.019
62	29	2.113	0.106	0.020

Difference = mu (12) - mu (62)
Estimate for difference: 0.1667
95% CI for difference: (0.1120, 0.2214)
T-Test of difference = 0 (vs not =): T-Value = 6.10 P-Value = 0.000 DF = 58

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.060	0.117	0.021
62	29	1.800	0.176	0.033

Difference = mu (12) - mu (62)
Estimate for difference: 0.2600
95% CI for difference: (0.1821, 0.3379)
T-Test of difference = 0 (vs not =): T-Value = 6.72 P-Value = 0.000 DF = 47

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
12	84	11.60	70.9	-7.01
62	131	15.87	131.8	7.01
Overall	215		108.0	

H = 49.10 DF = 1 P = 0.000
H = 49.13 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	60.9	-4.39
62	113	34.00	96.0	4.39
Overall	168		84.5	

H = 19.25 DF = 1 P = 0.000
H = 19.49 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	40.3	-8.22
62	113	17.00	106.0	8.22
Overall	168		84.5	

H = 67.60 DF = 1 P = 0.000
H = 68.73 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	96.2	2.18
62	113	16.00	78.8	-2.18
Overall	168		84.5	

H = 4.75 DF = 1 P = 0.029
H = 4.82 DF = 1 P = 0.028 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	33.9	1.15
62	47	24.00	26.6	-1.15
Overall	54		27.5	

H = 1.31 DF = 1 P = 0.252
H = 1.32 DF = 1 P = 0.251 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	30.9	0.61
62	47	28.00	27.0	-0.61
Overall	54		27.5	

H = 0.37 DF = 1 P = 0.545
H = 0.37 DF = 1 P = 0.545 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
12	7	42.00	20.9	-1.18
62	47	47.00	28.5	1.18
Overall	54		27.5	

H = 1.40 DF = 1 P = 0.236
H = 1.41 DF = 1 P = 0.236 (adjusted for ties)

6
Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.305	43.1	5.58
62	29	2.150	17.7	-5.58
Overall	61		31.0	

H = 31.16 DF = 1 P = 0.000
H = 31.22 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.090	43.4	5.74
62	29	1.850	17.3	-5.74
Overall	61		31.0	

H = 32.95 DF = 1 P = 0.000
H = 32.99 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 37.16   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          64  20   11.60   4.00  (----*------)
62          44  87   15.87   5.61                         (--*---)
                                   -------+---------+---------+---------
                                       12.0      14.0      16.0
```

Overall median = 14.23

A 95.0% CI for median(12) - median(62): (-5.45,-2.80)

Mood median test for WL (%)

Chi-Square = 18.86   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          46   9   31.00   3.00     *---------)
62          55  58   34.00   4.00                         (---------*
                                      +---------+---------+---------+------
                                   31.0      32.0      33.0      34.0
```

Overall median = 33.00

A 95.0% CI for median(12) - median(62): (-3.00,-1.00)

```
Mood median test for Wp (%)

Chi-Square = 52.24    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          52   3   14.00   1.00  *
62          40  73   17.00   3.00                           *-------)
                                   ---+---------+---------+---------+---
                                   14.4      15.6      16.8      18.0

Overall median = 16.00

A 95.0% CI for median(12) - median(62): (-4.00,-3.00)


Mood median test for Ip (%)

Chi-Square = 1.31    DF = 1    P = 0.252

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          31  24   17.00   2.00                      *-------------)
62          74  39   16.00   4.00  (-----*-------------)
                                   -------+---------+---------+---------
                                       16.10     16.80     17.50

Overall median = 17.00

A 95.0% CI for median(12) - median(62): (0.00,2.00)


Mood median test for % GRAVEL

Chi-Square = 0.70    DF = 1    P = 0.404

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12           3   4    28.5    7.0                   (------*------------)
62          28  19    24.0   19.0     (---------*-----------)
                                      +---------+---------+---------+------
                                   20.0      24.0      28.0      32.0

Overall median = 26.0

A 95.0% CI for median(12) - median(62): (-0.2,9.6)


Mood median test for % SAND

Chi-Square = 0.01    DF = 1    P = 0.928

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12           4   3   28.00   7.50     (----*-----------------------)
62          26  21   28.00   9.00  (-------*------)
                                   -----+---------+---------+---------+-
                                     27.0      30.0      33.0      36.0

Overall median = 28.00

A 95.0% CI for median(12) - median(62): (-1.52,8.08)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.31    DF = 1    P = 0.069

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
12           6   1    42.0   10.0    (------------*-------)
62          23  24    47.0   20.0                  (---------*------)
                                     +---------+---------+---------+------
                                   35.0      40.0      45.0      50.0

Overall median = 46.0

A 95.0% CI for median(12) - median(62): (-13.6,0.5)


Mood median test for Bulk Density

Chi-Square = 33.87    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           6  26   2.305  0.078                                (-*--)
62          27   2   2.150  0.196  (--------------*-----)
                                   ------+---------+---------+---------+
                                       2.080     2.160     2.240     2.320

Overall median = 2.230

A 95.0% CI for median(12) - median(62): (0.090,0.270)


Mood median test for Dry Density

Chi-Square = 28.15    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           7  25   2.090  0.090                              (-*--)
62          26   3   1.850  0.315  (---------*------)
                                   ------+---------+---------+---------+
                                       1.80      1.92      2.04      2.16

Overall median = 1.980

A 95.0% CI for median(12) - median(62): (0.150,0.360)
```

Results for: Domain 12 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
63	55	17.40	5.42	0.73

Difference = mu (12) - mu (63)
Estimate for difference: -5.009
95% CI for difference: (-6.631, -3.386)
T-Test of difference = 0 (vs not =): T-Value = -6.14 P-Value = 0.000 DF = 80

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	31.49	2.21	0.30
63	58	34.88	4.40	0.58

Difference = mu (12) - mu (63)
Estimate for difference: -3.388
95% CI for difference: (-4.681, -2.095)
T-Test of difference = 0 (vs not =): T-Value = -5.21 P-Value = 0.000 DF = 84

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	14.29	2.02	0.27
63	58	17.98	2.92	0.38

Difference = mu (12) - mu (63)
Estimate for difference: -3.692
95% CI for difference: (-4.625, -2.759)
T-Test of difference = 0 (vs not =): T-Value = -7.85 P-Value = 0.000 DF = 101

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	17.20	2.08	0.28
63	58	16.90	3.05	0.40

Difference = mu (12) - mu (63)
Estimate for difference: 0.303
95% CI for difference: (-0.665, 1.272)
T-Test of difference = 0 (vs not =): T-Value = 0.62 P-Value = 0.536 DF = 100

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	7	28.86	3.66	1.4
63	30	26.9	11.7	2.1

Difference = mu (12) - mu (63)
Estimate for difference: 1.92
95% CI for difference: (-3.28, 7.13)
T-Test of difference = 0 (vs not =): T-Value = 0.75 P-Value = 0.456 DF = 31

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
12          7  30.29   4.80      1.8
63         30  29.70   8.47      1.5

Difference = mu (12) - mu (63)
Estimate for difference:  0.59
95% CI for difference:  (-4.47, 5.64)
T-Test of difference = 0 (vs not =): T-Value = 0.25  P-Value = 0.809  DF = 16


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
12          7  40.86   5.31      2.0
63         30   43.4   11.2      2.1

Difference = mu (12) - mu (63)
Estimate for difference:  -2.51
95% CI for difference:  (-8.50, 3.48)
T-Test of difference = 0 (vs not =): T-Value = -0.87  P-Value = 0.392  DF = 20


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
12         32  2.279  0.107    0.019
63         11  2.081  0.118    0.036

Difference = mu (12) - mu (63)
Estimate for difference:  0.1984
95% CI for difference:  (0.1131, 0.2837)
T-Test of difference = 0 (vs not =): T-Value = 4.93  P-Value = 0.000  DF = 16


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
12         32  2.060  0.117    0.021
63         11  1.806  0.147    0.044

Difference = mu (12) - mu (63)
Estimate for difference:  0.2536
95% CI for difference:  (0.1489, 0.3584)
T-Test of difference = 0 (vs not =): T-Value = 5.20  P-Value = 0.000  DF = 14
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
12          84   11.60      53.5  -5.95
63          55   15.38      95.1   5.95
Overall    139              70.0

H = 35.46  DF = 1  P = 0.000
H = 35.50  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	41.4	-4.94
63	58	34.00	71.8	4.94
Overall	113		57.0	

H = 24.38 DF = 1 P = 0.000
H = 24.77 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	34.6	-7.08
63	58	18.00	78.3	7.08
Overall	113		57.0	

H = 50.17 DF = 1 P = 0.000
H = 51.77 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	61.0	1.26
63	58	16.00	53.2	-1.26
Overall	113		57.0	

H = 1.59 DF = 1 P = 0.207
H = 1.62 DF = 1 P = 0.203 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	22.4	0.93
63	30	25.50	18.2	-0.93
Overall	37		19.0	

H = 0.87 DF = 1 P = 0.352
H = 0.87 DF = 1 P = 0.352 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	21.1	0.56
63	30	29.00	18.5	-0.56
Overall	37		19.0	

H = 0.32 DF = 1 P = 0.574
H = 0.32 DF = 1 P = 0.573 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
12          7   42.00      16.5  -0.68
63         30   42.50      19.6   0.68
Overall    37              19.0

H = 0.46  DF = 1  P = 0.497
H = 0.46  DF = 1  P = 0.497  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.305      26.8   4.26
63         11   2.090       8.1  -4.26
Overall    43              22.0

H = 18.14  DF = 1  P = 0.000
H = 18.19  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.090      26.9   4.40
63         11   1.840       7.6  -4.40
Overall    43              22.0

H = 19.34  DF = 1  P = 0.000
H = 19.38  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 32.76    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          60  24   11.60   4.00  (----*------)
63          12  43   15.38   5.92                    (---*--------)
                                   -------+---------+---------+---------
                                       12.0      14.0      16.0

Overall median = 13.00

A 95.0% CI for median(12) - median(63): (-6.01,-2.86)


Mood median test for WL (%)

Chi-Square = 18.07    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
12          40  15   31.00   3.00   *--------)
63          19  39   34.00   5.00                  (-------*--------)
                                    --+---------+---------+---------+----
                                   31.2      32.4      33.6      34.8

Overall median = 32.00

A 95.0% CI for median(12) - median(63): (-3.00,-1.83)
```

```
Mood median test for Wp (%)

Chi-Square = 54.35    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          51   4   14.00   1.00  *
63          14  44   18.00   4.25                      (------*-----)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0

Overall median = 15.00

A 95.0% CI for median(12) - median(63): (-4.00,-3.00)


Mood median test for Ip (%)

Chi-Square = 0.38    DF = 1    P = 0.537

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          31  24   17.00   2.00                   *----------------)
63          36  22   16.00   4.00  *------------------------------)
                                   ---+---------+---------+---------+---
                                   16.20     16.80     17.40     18.00

Overall median = 17.00

A 95.0% CI for median(12) - median(63): (0.00,2.00)


Mood median test for % GRAVEL

Chi-Square = 0.44    DF = 1    P = 0.509

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12           3   4    28.5    7.0             (------*-------------)
63          17  13    25.5   15.3  (---------*-----------------)
                                   -------+---------+---------+---------
                                       24.5      28.0      31.5

Overall median = 27.0

A 95.0% CI for median(12) - median(63): (-2.1,10.2)


Mood median test for % SAND

Chi-Square = 0.03    DF = 1    P = 0.855

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           4   3   28.00   7.50    (-----*----------------------------)
63          16  14   29.00   9.00  (-----------*----------)
                                   ------+---------+---------+---------+
                                      27.5      30.0      32.5      35.0

Overall median = 29.00

A 95.0% CI for median(12) - median(63): (-3.95,9.06)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.12    DF = 1    P = 0.734

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12           4   3    42.0   10.0  (-----------------*---------)
63          15  15    42.5   15.5            (--------*----------------)
                                   ---+---------+---------+---------+---
                                   36.0      40.0      44.0      48.0

Overall median = 42.0

A 95.0% CI for median(12) - median(63): (-11.5,6.1)


Mood median test for Bulk Density

Chi-Square = 11.70    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          13  19   2.305  0.078                             (*-)
63          11   0   2.090  0.260  (-----------*---------)
                                   --------+---------+---------+--------
                                         2.04      2.16      2.28

Overall median = 2.290

A 95.0% CI for median(12) - median(63): (0.087,0.363)


Mood median test for Dry Density

Chi-Square = 14.11    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          11  21   2.090  0.090                          (*-)
63          11   0   1.840  0.250  (----------*-----)
                                   --------+---------+---------+--------
                                         1.80      1.95      2.10

Overall median = 2.070

A 95.0% CI for median(12) - median(63): (0.150,0.423)
```

Results for: Domain 12 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

```
Domain
Reference   N   Mean  StDev  SE Mean
12         84  12.39   3.30     0.36
64         24  15.34   2.86     0.58
```

Difference = mu (12) - mu (64)
Estimate for difference: -2.952
95% CI for difference: (-4.336, -1.568)
T-Test of difference = 0 (vs not =): T-Value = -4.30 P-Value = 0.000 DF = 42

Two-sample T for WL (%)

```
Domain
Reference   N   Mean  StDev  SE Mean
12         55  31.49   2.21     0.30
64         27  34.44   2.34     0.45
```

Difference = mu (12) - mu (64)
Estimate for difference: -2.954
95% CI for difference: (-4.040, -1.868)
T-Test of difference = 0 (vs not =): T-Value = -5.47 P-Value = 0.000 DF = 49

Two-sample T for Wp (%)

```
Domain
Reference   N   Mean  StDev  SE Mean
12         55  14.29   2.02     0.27
64         27  17.81   2.24     0.43
```

Difference = mu (12) - mu (64)
Estimate for difference: -3.524
95% CI for difference: (-4.549, -2.498)
T-Test of difference = 0 (vs not =): T-Value = -6.91 P-Value = 0.000 DF = 47

Two-sample T for Ip (%)

```
Domain
Reference   N   Mean  StDev  SE Mean
12         55  17.20   2.08     0.28
64         27  16.63   2.39     0.46
```

Difference = mu (12) - mu (64)
Estimate for difference: 0.570
95% CI for difference: (-0.514, 1.654)
T-Test of difference = 0 (vs not =): T-Value = 1.06 P-Value = 0.295 DF = 45

Two-sample T for % GRAVEL

```
Domain
Reference  N   Mean  StDev  SE Mean
12         7  28.86   3.66      1.4
64         2   19.0   11.3      8.0
```

Difference = mu (12) - mu (64)
Estimate for difference: 9.86
95% CI for difference: (-93.30, 113.01)
T-Test of difference = 0 (vs not =): T-Value = 1.21 P-Value = 0.439 DF = 1

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
12	7	30.29	4.80	1.8
64	2	27.50	2.12	1.5

Difference = mu (12) - mu (64)
Estimate for difference: 2.79
95% CI for difference: (-3.75, 9.32)
T-Test of difference = 0 (vs not =): T-Value = 1.18 P-Value = 0.302 DF = 4

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
12	7	40.86	5.31	2.0
64	2	53.50	9.19	6.5

Difference = mu (12) - mu (64)
Estimate for difference: -12.64
95% CI for difference: (-99.08, 73.80)
T-Test of difference = 0 (vs not =): T-Value = -1.86 P-Value = 0.314 DF = 1

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.279	0.107	0.019
64	13	2.1462	0.0859	0.024

Difference = mu (12) - mu (64)
Estimate for difference: 0.1332
95% CI for difference: (0.0709, 0.1956)
T-Test of difference = 0 (vs not =): T-Value = 4.38 P-Value = 0.000 DF = 27

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.060	0.117	0.021
64	13	1.8731	0.0910	0.025

Difference = mu (12) - mu (64)
Estimate for difference: 0.1869
95% CI for difference: (0.1201, 0.2537)
T-Test of difference = 0 (vs not =): T-Value = 5.73 P-Value = 0.000 DF = 28

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
12	84	11.60	48.1	-3.96
64	24	15.44	76.8	3.96
Overall	108		54.5	

H = 15.69 DF = 1 P = 0.000
H = 15.74 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	32.6	-4.85
64	27	34.00	59.7	4.85
Overall	82		41.5	

H = 23.52 DF = 1 P = 0.000
H = 24.03 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	30.4	-6.02
64	27	18.00	64.1	6.02
Overall	82		41.5	

H = 36.23 DF = 1 P = 0.000
H = 38.44 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	43.7	1.18
64	27	17.00	37.1	-1.18
Overall	82		41.5	

H = 1.39 DF = 1 P = 0.238
H = 1.44 DF = 1 P = 0.230 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	5.6	1.17
64	2	19.00	3.0	-1.17
Overall	9		5.0	

H = 1.37 DF = 1 P = 0.242
H = 1.38 DF = 1 P = 0.240 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	5.3	0.59
64	2	27.50	4.0	-0.59
Overall	9		5.0	

H = 0.34 DF = 1 P = 0.558
H = 0.35 DF = 1 P = 0.555 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
12	7	42.00	4.0	-2.05
64	2	53.50	8.5	2.05
Overall	9		5.0	

H = 4.20 DF = 1 P = 0.040

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.305	28.3	4.21
64	13	2.180	10.1	-4.21
Overall	45		23.0	

H = 17.70 DF = 1 P = 0.000
H = 17.76 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.090	28.6	4.48
64	13	1.900	9.2	-4.48
Overall	45		23.0	

H = 20.09 DF = 1 P = 0.000
H = 20.15 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 10.50   DF = 1   P = 0.001

```
Domain                           Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          49  35   11.60   4.00  (----*------)
64           5  19   15.44   4.00               (----------*-------)
                                   -------+---------+---------+---------
                                       12.0      14.0      16.0
```

Overall median = 12.35

A 95.0% CI for median(12) - median(64): (-6.00,-1.13)

Mood median test for WL (%)

Chi-Square = 18.76   DF = 1   P = 0.000

```
Domain                           Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
12          40  15   31.00   3.00   *--------)
64           6  21   34.00   4.00                    (-------*--------)
                                    --+---------+---------+---------+----
                                   31.2      32.4      33.6      34.8
```

Overall median = 32.00

A 95.0% CI for median(12) - median(64): (-4.00,-2.89)

```
Mood median test for Wp (%)

Chi-Square = 44.87    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          45  10   14.00   1.00  *
64           1  26   18.00   2.00                           (-------*
                                   ---+---------+---------+---------+---
                                   14.4      15.6      16.8      18.0

Overall median = 14.00

A 95.0% CI for median(12) - median(64): (-4.00,-3.00)


Mood median test for Ip (%)

Chi-Square = 1.49    DF = 1    P = 0.222

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12          31  24   17.00   2.00                   *----------------)
64          19   8   17.00   3.00  (----------------*)
                                   ----+---------+---------+---------+--
                                    16.20     16.80     17.40     18.00

Overall median = 17.00

A 95.0% CI for median(12) - median(64): (0.00,2.00)


Mood median test for % GRAVEL

Chi-Square = 2.06    DF = 1    P = 0.151

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12           3   4    28.5    7.0                      (---*------)
64           2   0    19.0   16.0  (----------*-----------)
                                   ----+---------+---------+---------+--
                                    14.0      21.0      28.0      35.0

Overall median = 27.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 90.9% CI for median(12) - median(64): (-2.0,23.5)


Mood median test for % SAND

Chi-Square = 0.03    DF = 1    P = 0.858

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           4   3   28.00   7.50    (-----*---------------------------)
64           1   1   27.50   3.00  (-----*-----)
                                   ------+---------+---------+---------+
                                      27.5      30.0      32.5      35.0

Overall median = 28.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 90.9% CI for median(12) - median(64): (-5.50,9.50)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.21    DF = 1    P = 0.073

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12           5   2    42.0   10.0     (---------*-----)
64           0   2    53.5   13.0                      (--------*---------)
                                      +---------+---------+---------+------
                                   35.0      42.0      49.0      56.0

Overall median = 43.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 90.9% CI for median(12) - median(64): (-28.0,-0.5)


Mood median test for Bulk Density

Chi-Square = 17.49    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
12          10  22   2.305  0.078                                (-*---)
64          13   0   2.180  0.140  (-------------*---)
                                   ---+---------+---------+---------+---
                                    2.100     2.170     2.240     2.310

Overall median = 2.280

A 95.0% CI for median(12) - median(64): (0.096,0.224)


Mood median test for Dry Density

Chi-Square = 17.49    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
12          10  22   2.090  0.090                           (-*--)
64          13   0   1.900  0.145  (--------*----)
                                   ---------+---------+---------+-------
                                          1.90      2.00      2.10

Overall median = 2.050

A 95.0% CI for median(12) - median(64): (0.130,0.294)
```

Results for: Domain 12 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
12         84  12.39   3.30     0.36
65          7  17.71   4.27      1.6

Difference = mu (12) - mu (65)
Estimate for difference:  -5.33
95% CI for difference:  (-9.37, -1.28)
T-Test of difference = 0 (vs not =): T-Value = -3.22  P-Value = 0.018  DF = 6


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
12         55  31.49   2.21     0.30
65          8  35.25   5.60      2.0

Difference = mu (12) - mu (65)
Estimate for difference:  -3.76
95% CI for difference:  (-8.49, 0.98)
T-Test of difference = 0 (vs not =): T-Value = -1.88  P-Value = 0.103  DF = 7


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
12         55  14.29   2.02     0.27
65          8  18.88   1.46     0.52

Difference = mu (12) - mu (65)
Estimate for difference:  -4.584
95% CI for difference:  (-5.868, -3.300)
T-Test of difference = 0 (vs not =): T-Value = -7.86  P-Value = 0.000  DF = 11


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
12         55  17.20   2.08     0.28
65          8  16.38   4.41      1.6

Difference = mu (12) - mu (65)
Estimate for difference:  0.83
95% CI for difference:  (-2.92, 4.57)
T-Test of difference = 0 (vs not =): T-Value = 0.52  P-Value = 0.618  DF = 7


Two-sample T for % GRAVEL

Domain
Reference  N   Mean  StDev  SE Mean
12         7  28.86   3.66      1.4
65         2   20.0   11.3      8.0

Difference = mu (12) - mu (65)
Estimate for difference:  8.86
95% CI for difference:  (-94.30, 112.01)
T-Test of difference = 0 (vs not =): T-Value = 1.09  P-Value = 0.472  DF = 1
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
12	7	30.29	4.80	1.8
65	2	34.00	1.41	1.0

Difference = mu (12) - mu (65)
Estimate for difference: -3.71
95% CI for difference: (-8.79, 1.36)
T-Test of difference = 0 (vs not =): T-Value = -1.79 P-Value = 0.123 DF = 6

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
12	7	40.86	5.31	2.0
65	2	46.0	12.7	9.0

Difference = mu (12) - mu (65)
Estimate for difference: -5.14
95% CI for difference: (-122.31, 112.02)
T-Test of difference = 0 (vs not =): T-Value = -0.56 P-Value = 0.676 DF = 1

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.279	0.107	0.019
65	7	2.0929	0.0496	0.019

Difference = mu (12) - mu (65)
Estimate for difference: 0.1865
95% CI for difference: (0.1311, 0.2420)
T-Test of difference = 0 (vs not =): T-Value = 7.01 P-Value = 0.000 DF = 20

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
12	32	2.060	0.117	0.021
65	7	1.7800	0.0995	0.038

Difference = mu (12) - mu (65)
Estimate for difference: 0.2800
95% CI for difference: (0.1829, 0.3771)
T-Test of difference = 0 (vs not =): T-Value = 6.53 P-Value = 0.000 DF = 9

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
12	84	11.60	43.5	-3.16
65	7	17.00	76.4	3.16
Overall	91		46.0	

H = 10.02 DF = 1 P = 0.002
H = 10.05 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	29.8	-2.45
65	8	37.50	46.8	2.45
Overall	63		32.0	

H = 5.98 DF = 1 P = 0.014
H = 6.18 DF = 1 P = 0.013 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	28.4	-4.07
65	8	19.00	56.6	4.07
Overall	63		32.0	

H = 16.54 DF = 1 P = 0.000
H = 18.79 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	31.7	-0.37
65	8	18.50	34.3	0.37
Overall	63		32.0	

H = 0.14 DF = 1 P = 0.710
H = 0.14 DF = 1 P = 0.706 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	5.6	1.17
65	2	20.00	3.0	-1.17
Overall	9		5.0	

H = 1.37 DF = 1 P = 0.242
H = 1.38 DF = 1 P = 0.240 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	4.7	-0.59
65	2	34.00	6.0	0.59
Overall	9		5.0	

H = 0.34 DF = 1 P = 0.558
H = 0.36 DF = 1 P = 0.550 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

```
Domain                 Ave
Reference  N  Median  Rank      Z
12         7   42.00   4.7  -0.59
65         2   46.00   6.0   0.59
Overall    9           5.0
```

H = 0.34 DF = 1 P = 0.558

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

```
Domain
Reference   N  Median  Ave Rank      Z
12         32   2.305      23.3   3.84
65          7   2.100       5.0  -3.84
Overall    39              20.0
```

H = 14.77 DF = 1 P = 0.000
H = 14.83 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

```
Domain
Reference   N  Median  Ave Rank      Z
12         32   2.090      23.3   3.84
65          7   1.810       5.0  -3.84
Overall    39              20.0
```

H = 14.77 DF = 1 P = 0.000
H = 14.80 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 8.85   DF = 1   P = 0.003

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12          49  35    11.6    4.0  (---*---)
65           0   7    17.0    4.0              (--------*------------)
                                   -----+---------+---------+---------+-
                                     12.0      15.0      18.0      21.0
```

Overall median = 12.0

A 95.0% CI for median(12) - median(65): (-9.4,-2.6)

Mood median test for WL (%)

Chi-Square = 3.46   DF = 1   P = 0.063

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          33  22   31.00   3.00   *---)
65           2   6   37.50   8.25  (----------------------*-------)
                                   --------+---------+---------+--------
                                        33.0      36.0      39.0
```

Overall median = 31.00

A 95.0% CI for median(12) - median(65): (-9.00,0.05)

```
Mood median test for Wp (%)

Chi-Square = 22.91    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          45  10   14.00   1.00     *
65           0   8   19.00   1.50                       (-----*----)
                                      +---------+---------+---------+------
                                   14.0      16.0      18.0      20.0

Overall median = 14.00

A 95.0% CI for median(12) - median(65): (-6.01,-3.98)


Mood median test for Ip (%)

Chi-Square = 1.00    DF = 1    P = 0.317

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
12          31  24   17.00   2.00                             *----)
65           3   5   18.50   6.25    (--------------------------------*--)
                                     -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 17.00

A 95.0% CI for median(12) - median(65): (-2.02,5.03)


Mood median test for % GRAVEL

Chi-Square = 2.06    DF = 1    P = 0.151

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12           3   4    28.5    7.0                           (----*-------)
65           2   0    20.0   16.0     (------------*-------------)
                                      +---------+---------+---------+------
                                   12.0      18.0      24.0      30.0

Overall median = 28.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 90.9% CI for median(12) - median(65): (-3.0,22.5)


Mood median test for % SAND

Chi-Square = 0.03    DF = 1    P = 0.858

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12           4   3   28.00   7.50  (-----*---------------------------)
65           1   1   34.00   2.00                           (---*---)
                                   ----+---------+---------+---------+--
                                    27.5      30.0      32.5      35.0

Overall median = 33.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 90.9% CI for median(12) - median(65): (-11.50,2.50)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.03    DF = 1    P = 0.858

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
12           4   3    42.0   10.0   (-----------*------)
65           1   1    46.0   18.0       (--------------*--------------)
                                    --+---------+---------+---------+----
                                   36.0      42.0      48.0      54.0

Overall median = 42.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 90.9% CI for median(12) - median(65): (-23.0,9.5)


Mood median test for Bulk Density

Chi-Square = 8.10    DF = 1    P = 0.004

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12          13  19   2.305  0.078                                (-*--)
65           7   0   2.100  0.070  (-------*--)
                                   -----+---------+---------+---------+-
                                      2.080     2.160     2.240     2.320

Overall median = 2.290

A 95.0% CI for median(12) - median(65): (0.175,0.265)


Mood median test for Dry Density

Chi-Square = 7.31    DF = 1    P = 0.007

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
12          14  18   2.090  0.090                                (-*--)
65           7   0   1.810  0.120  (---------*---)
                                   ---------+---------+---------+-------
                                          1.80      1.92      2.04

Overall median = 2.080

A 95.0% CI for median(12) - median(65): (0.232,0.394)
```

Results for: Domain 12 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
71	44	14.56	5.80	0.87

Difference = mu (12) - mu (71)
Estimate for difference: -2.173
95% CI for difference: (-4.065, -0.281)
T-Test of difference = 0 (vs not =): T-Value = -2.30 P-Value = 0.025 DF = 57

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	31.49	2.21	0.30
71	17	31.24	2.61	0.63

Difference = mu (12) - mu (71)
Estimate for difference: 0.256
95% CI for difference: (-1.192, 1.703)
T-Test of difference = 0 (vs not =): T-Value = 0.37 P-Value = 0.718 DF = 23

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	14.29	2.02	0.27
71	17	15.35	1.73	0.42

Difference = mu (12) - mu (71)
Estimate for difference: -1.062
95% CI for difference: (-2.084, -0.040)
T-Test of difference = 0 (vs not =): T-Value = -2.12 P-Value = 0.042 DF = 30

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	17.20	2.08	0.28
71	17	15.88	1.96	0.48

Difference = mu (12) - mu (71)
Estimate for difference: 1.318
95% CI for difference: (0.184, 2.452)
T-Test of difference = 0 (vs not =): T-Value = 2.38 P-Value = 0.024 DF = 27

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	7	28.86	3.66	1.4
71	16	20.69	6.81	1.7

Difference = mu (12) - mu (71)
Estimate for difference: 8.17
95% CI for difference: (3.58, 12.76)
T-Test of difference = 0 (vs not =): T-Value = 3.72 P-Value = 0.001 DF = 19

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
12          7  30.29   4.80      1.8
71         16  24.37   7.67      1.9

Difference = mu (12) - mu (71)
Estimate for difference:  5.91
95% CI for difference:  (0.34, 11.48)
T-Test of difference = 0 (vs not =): T-Value = 2.24  P-Value = 0.039  DF = 17


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
12          7  40.86   5.31      2.0
71         16   52.1   11.3      2.8

Difference = mu (12) - mu (71)
Estimate for difference:  -11.27
95% CI for difference:  (-18.50, -4.03)
T-Test of difference = 0 (vs not =): T-Value = -3.25  P-Value = 0.004  DF = 20


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
12         32   2.279   0.107    0.019
71         12  2.2583  0.0486    0.014

Difference = mu (12) - mu (71)
Estimate for difference:  0.0210
95% CI for difference:  (-0.0265, 0.0686)
T-Test of difference = 0 (vs not =): T-Value = 0.89  P-Value = 0.376  DF = 40


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
12         32   2.060   0.117    0.021
71         12  1.9937  0.0718    0.021

Difference = mu (12) - mu (71)
Estimate for difference:  0.0663
95% CI for difference:  (0.0067, 0.1259)
T-Test of difference = 0 (vs not =): T-Value = 2.26  P-Value = 0.030  DF = 32
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
12          84   11.60      57.2  -3.08
71          44   13.00      78.5   3.08
Overall    128              64.5

H = 9.50  DF = 1  P = 0.002
H = 9.56  DF = 1  P = 0.002  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

```
Domain
Reference   N  Median  Ave Rank      Z
12         55   31.00      37.0   0.35
71         17   31.00      34.9  -0.35
Overall    72              36.5

H = 0.12  DF = 1  P = 0.725
H = 0.13  DF = 1  P = 0.721  (adjusted for ties)
```

Kruskal-Wallis Test on Wp (%)

```
Domain
Reference   N  Median  Ave Rank      Z
12         55   14.00      32.1  -3.20
71         17   16.00      50.7   3.20
Overall    72              36.5

H = 10.21  DF = 1  P = 0.001
H = 11.45  DF = 1  P = 0.001  (adjusted for ties)
```

Kruskal-Wallis Test on Ip (%)

```
Domain
Reference   N  Median  Ave Rank      Z
12         55   17.00      39.9   2.51
71         17   16.00      25.4  -2.51
Overall    72              36.5

H = 6.28  DF = 1  P = 0.012
H = 6.48  DF = 1  P = 0.011  (adjusted for ties)
```

Kruskal-Wallis Test on % GRAVEL

```
Domain
Reference   N  Median  Ave Rank      Z
12          7   28.50      18.9   3.21
71         16   19.00       9.0  -3.21
Overall    23              12.0

H = 10.29  DF = 1  P = 0.001
H = 10.34  DF = 1  P = 0.001  (adjusted for ties)
```

Kruskal-Wallis Test on % SAND

```
Domain
Reference   N  Median  Ave Rank      Z
12          7   28.00      15.4   1.60
71         16   23.50      10.5  -1.60
Overall    23              12.0

H = 2.57  DF = 1  P = 0.109
H = 2.59  DF = 1  P = 0.108  (adjusted for ties)
```

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
12	7	42.00	6.5	-2.57
71	16	53.00	14.4	2.57
Overall	23		12.0	

H = 6.62 DF = 1 P = 0.010
H = 6.62 DF = 1 P = 0.010 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.305	25.0	2.11
71	12	2.260	15.8	-2.11
Overall	44		22.5	

H = 4.44 DF = 1 P = 0.035
H = 4.47 DF = 1 P = 0.035 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
12	32	2.090	25.7	2.66
71	12	1.991	14.1	-2.66
Overall	44		22.5	

H = 7.08 DF = 1 P = 0.008
H = 7.10 DF = 1 P = 0.008 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 4.65   DF = 1   P = 0.031

```
Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
12          60  24   11.60   4.00  (---------*------------)
71          23  21   13.00   3.75                        *---------)
                                   ----+---------+---------+---------+--
                                    11.0      12.0      13.0      14.0
```

Overall median = 13.00

A 95.0% CI for median(12) - median(71): (-3.00,-1.00)

Mood median test for WL (%)

Chi-Square = 0.27   DF = 1   P = 0.606

```
Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          33  22   31.00   3.00                      *---------------)
71           9   8   31.00   3.50     (---------------*---------------)
                                      +---------+---------+---------+------
                                   30.00     30.60     31.20     31.80
```

Overall median = 31.00

A 95.0% CI for median(12) - median(71): (-1.00,1.00)

```
Mood median test for Wp (%)

Chi-Square = 16.81    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          45  10   14.00   1.00     *
71           5  12   16.00   3.00     (-------------------*---------)
                                      +---------+---------+---------+------
                                   14.0      15.0      16.0      17.0

Overall median = 14.00

A 95.0% CI for median(12) - median(71): (-3.00,0.00)


Mood median test for Ip (%)

Chi-Square = 3.74    DF = 1    P = 0.053

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          31  24   17.00   2.00                         *---------)
71          14   3   16.00   2.50     (---------*---------)
                                      +---------+---------+---------+------
                                   15.0      16.0      17.0      18.0

Overall median = 17.00

A 95.0% CI for median(12) - median(71): (0.00,3.00)


Mood median test for % GRAVEL

Chi-Square = 10.98    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           0   7    28.5    7.0                   (-----*---------)
71          12   4    19.0    7.5  (---*-------)
                                   ------+---------+---------+---------+
                                      20.0      25.0      30.0      35.0

Overall median = 23.0

A 95.0% CI for median(12) - median(71): (5.0,15.1)


Mood median test for % SAND

Chi-Square = 0.35    DF = 1    P = 0.554

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           3   4    28.0    7.5                     (--*-------------)
71           9   7    23.5   14.0  (------------*-------------)
                                   ------+---------+---------+---------+
                                      20.0      25.0      30.0      35.0

Overall median = 27.5

A 95.0% CI for median(12) - median(71): (-2.7,15.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 9.22    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
12           7   0    42.0   10.0    (---------*-----)
71           5  11    53.0   15.5                     (--------*--------)
                                     +---------+---------+---------+------
                                   35.0      42.0      49.0      56.0

Overall median = 48.0

A 95.0% CI for median(12) - median(71): (-20.2,-4.0)


Mood median test for Bulk Density

Chi-Square = 6.38    DF = 1    P = 0.012

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1  ------+---------+---------+---------+
12          13  19  2.3050  0.0775                     (----*--------)
71          10   2  2.2600  0.0575  (--------*---------)
                                    ------+---------+---------+---------+
                                        2.250     2.280     2.310     2.340

Overall median = 2.2900

A 95.0% CI for median(12) - median(71): (0.0065,0.0758)


Mood median test for Dry Density

Chi-Square = 5.52    DF = 1    P = 0.019

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          14  18   2.090  0.090                      (---*-----)
71          10   2   1.991  0.067  (----*--------)
                                   -------+---------+---------+---------
                                        2.000     2.050     2.100

Overall median = 2.080

A 95.0% CI for median(12) - median(71): (0.051,0.132)
```

Results for: Domain 12 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
12	84	12.39	3.30	0.36
72	26	15.13	4.24	0.83

Difference = mu (12) - mu (72)
Estimate for difference: -2.739
95% CI for difference: (-4.582, -0.896)
T-Test of difference = 0 (vs not =): T-Value = -3.02 P-Value = 0.005 DF = 34

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	31.49	2.21	0.30
72	10	30.50	4.84	1.5

Difference = mu (12) - mu (72)
Estimate for difference: 0.99
95% CI for difference: (-2.53, 4.52)
T-Test of difference = 0 (vs not =): T-Value = 0.64 P-Value = 0.541 DF = 9

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	14.29	2.02	0.27
72	10	15.20	1.99	0.63

Difference = mu (12) - mu (72)
Estimate for difference: -0.909
95% CI for difference: (-2.403, 0.585)
T-Test of difference = 0 (vs not =): T-Value = -1.33 P-Value = 0.210 DF = 12

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
12	55	17.20	2.08	0.28
72	10	15.30	3.71	1.2

Difference = mu (12) - mu (72)
Estimate for difference: 1.90
95% CI for difference: (-0.79, 4.59)
T-Test of difference = 0 (vs not =): T-Value = 1.57 P-Value = 0.147 DF = 10
Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
12	7	28.86	3.66	1.4
72	9	20.56	7.14	2.4

Difference = mu (12) - mu (72)
Estimate for difference: 8.30
95% CI for difference: (2.30, 14.30)
T-Test of difference = 0 (vs not =): T-Value = 3.01 P-Value = 0.011 DF = 12

```
Two-sample T for % SAND

Domain
Reference  N   Mean  StDev  SE Mean
12         7  30.29   4.80      1.8
72         9  27.56   7.20      2.4

Difference = mu (12) - mu (72)
Estimate for difference:  2.73
95% CI for difference:  (-3.77, 9.23)
T-Test of difference = 0 (vs not =): T-Value = 0.91  P-Value = 0.381  DF = 13


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference  N   Mean  StDev  SE Mean
12         7  40.86   5.31      2.0
72         9  51.89   7.66      2.6

Difference = mu (12) - mu (72)
Estimate for difference:  -11.03
95% CI for difference:  (-18.05, -4.02)
T-Test of difference = 0 (vs not =): T-Value = -3.40  P-Value = 0.005  DF = 13


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
12         32  2.279  0.107    0.019
72          7  2.221  0.100    0.038

Difference = mu (12) - mu (72)
Estimate for difference:  0.0579
95% CI for difference:  (-0.0379, 0.1538)
T-Test of difference = 0 (vs not =): T-Value = 1.37  P-Value = 0.205  DF = 9


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
12         32  2.060  0.117    0.021
72          7  1.944  0.155    0.059

Difference = mu (12) - mu (72)
Estimate for difference:  0.1157
95% CI for difference:  (-0.0314, 0.2628)
T-Test of difference = 0 (vs not =): T-Value = 1.86  P-Value = 0.105  DF = 7
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
12          84   11.60      50.0  -3.23
72          26   13.00      73.1   3.23
Overall    110              55.5

H = 10.41  DF = 1  P = 0.001
H = 10.45  DF = 1  P = 0.001  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	31.00	34.6	1.58
72	10	30.00	24.3	-1.58
Overall	65		33.0	

H = 2.50 DF = 1 P = 0.114
H = 2.58 DF = 1 P = 0.108 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	14.00	31.2	-1.83
72	10	15.00	43.0	1.83
Overall	65		33.0	

H = 3.34 DF = 1 P = 0.068
H = 3.87 DF = 1 P = 0.049 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
12	55	17.00	35.1	2.09
72	10	15.50	21.5	-2.09
Overall	65		33.0	

H = 4.37 DF = 1 P = 0.037
H = 4.52 DF = 1 P = 0.034 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
12	7	28.50	11.4	2.17
72	9	17.00	6.2	-2.17
Overall	16		8.5	

H = 4.71 DF = 1 P = 0.030
H = 4.72 DF = 1 P = 0.030 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
12	7	28.00	10.1	1.16
72	9	26.00	7.3	-1.16
Overall	16		8.5	

H = 1.36 DF = 1 P = 0.244
H = 1.36 DF = 1 P = 0.243 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
12          7   42.00       5.3  -2.38
72          9   53.00      11.0   2.38
Overall    16               8.5

H = 5.67  DF = 1  P = 0.017
H = 5.70  DF = 1  P = 0.017  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.305      21.9   2.20
72          7   2.240      11.4  -2.20
Overall    39              20.0

H = 4.82  DF = 1  P = 0.028
H = 4.85  DF = 1  P = 0.028  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
12         32   2.090      22.2   2.56
72          7   2.000      10.0  -2.56
Overall    39              20.0

H = 6.56  DF = 1  P = 0.010
H = 6.58  DF = 1  P = 0.010  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 6.04    DF = 1    P = 0.014

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
12          49  35   11.60   4.00  (----*------)
72           8  18   13.00   5.75            (-*-------------------)
                                   -------+---------+---------+---------
                                       12.0      14.0      16.0

Overall median = 12.00

A 95.0% CI for median(12) - median(72): (-6.00,-1.00)


Mood median test for WL (%)

Chi-Square = 0.36    DF = 1    P = 0.550

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          33  22   31.00   3.00                               *-----)
72           7   3   30.00   5.25     (-------------------*---------------)
                                      +---------+---------+---------+------
                                   27.0      28.5      30.0      31.5

Overall median = 31.00

A 95.0% CI for median(12) - median(72): (-1.16,4.00)
```

```
Mood median test for Wp (%)

Chi-Square = 0.23    DF = 1    P = 0.630

Domain                                 Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  ---+---------+---------+---------+---
12         15   40   14.00   1.00     *
72          2    8   15.00   2.75  (------------*----------------)
                                   ---+---------+---------+---------+---
                                   14.0      15.0      16.0      17.0

Overall median = 14.00

A 95.0% CI for median(12) - median(72): (-2.32,0.16)


Mood median test for Ip (%)

Chi-Square = 1.97    DF = 1    P = 0.160

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
12          31  24   17.00   2.00                              *----)
72           8   2   15.50   5.25     (----------------*---------)
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 17.00

A 95.0% CI for median(12) - median(72): (-0.16,5.00)


Mood median test for % GRAVEL

Chi-Square = 0.91    DF = 1    P = 0.341

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           3   4    28.5    7.0                    (----*-------)
72           6   3    17.0   13.5  (---*------------------)
                                   ------+---------+---------+---------+
                                      18.0      24.0      30.0      36.0

Overall median = 26.0

A 95.0% CI for median(12) - median(72): (-2.0,18.0)


Mood median test for % SAND

Chi-Square = 0.25    DF = 1    P = 0.614

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
12           3   4    28.0    7.5              (---*-------------------)
72           5   4    26.0    7.5  (---------*------------)
                                   ------+---------+---------+---------+
                                      24.5      28.0      31.5      35.0

Overall median = 27.8

A 95.0% CI for median(12) - median(72): (-1.5,12.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 4.39    DF = 1    P = 0.036

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
12           6   1    42.0   10.0   (---------*-----)
72           3   6    53.0   15.5             (--------------*---------)
                                    +---------+---------+---------+------
                                  35.0      42.0      49.0      56.0

Overall median = 46.0

A 95.0% CI for median(12) - median(72): (-22.0,0.0)
```

```
Mood median test for Bulk Density

Chi-Square = 5.93    DF = 1    P = 0.015

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
12          16  16   2.305  0.078                        (--*----)
72           7   0   2.240  0.040  (------------*--------)
                                   -----+---------+---------+---------+-
                                      2.200     2.250     2.300     2.350

Overall median = 2.300

A 95.0% CI for median(12) - median(72): (0.018,0.099)
```

```
Mood median test for Dry Density

Chi-Square = 7.31    DF = 1    P = 0.007

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
12          14  18   2.090  0.090                            (-*---)
72           7   0   2.000  0.070  (-----------------*--)
                                   --------+---------+---------+--------
                                         1.920     2.000     2.080

Overall median = 2.080

A 95.0% CI for median(12) - median(72): (0.058,0.194)
```

Results for: Domain 14 v 21

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
14	78	11.89	4.13	0.47
21	78	13.72	4.31	0.49

Difference = mu (14) - mu (21)
Estimate for difference: -1.831
95% CI for difference: (-3.166, -0.495)
T-Test of difference = 0 (vs not =): T-Value = -2.71 P-Value = 0.008 DF = 153

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	27.00	5.23	0.73
21	24	29.67	5.51	1.1

Difference = mu (14) - mu (21)
Estimate for difference: -2.67
95% CI for difference: (-5.37, 0.04)
T-Test of difference = 0 (vs not =): T-Value = -1.99 P-Value = 0.053 DF = 43

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.04	2.58	0.36
21	24	17.17	3.60	0.73

Difference = mu (14) - mu (21)
Estimate for difference: -4.127
95% CI for difference: (-5.789, -2.465)
T-Test of difference = 0 (vs not =): T-Value = -5.05 P-Value = 0.000 DF = 34

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.96	3.31	0.46
21	24	12.50	4.42	0.90

Difference = mu (14) - mu (21)
Estimate for difference: 1.46
95% CI for difference: (-0.60, 3.52)
T-Test of difference = 0 (vs not =): T-Value = 1.44 P-Value = 0.159 DF = 35

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
14	24	22.67	4.75	0.97
21	11	33.64	7.35	2.2

Difference = mu (14) - mu (21)
Estimate for difference: -10.97
95% CI for difference: (-16.20, -5.74)
T-Test of difference = 0 (vs not =): T-Value = -4.53 P-Value = 0.001 DF = 13

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
14         24  42.13   5.88      1.2
21         11  22.64   5.22      1.6

Difference = mu (14) - mu (21)
Estimate for difference:  19.49
95% CI for difference:  (15.37, 23.61)
T-Test of difference = 0 (vs not =): T-Value = 9.84  P-Value = 0.000  DF = 21


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
14         24  35.21   5.14      1.0
21         11  43.73   9.16      2.8

Difference = mu (14) - mu (21)
Estimate for difference:  -8.52
95% CI for difference:  (-14.95, -2.08)
T-Test of difference = 0 (vs not =): T-Value = -2.88  P-Value = 0.014  DF = 12


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
14         36  2.266  0.114    0.019
21         48  2.296  0.131    0.019

Difference = mu (14) - mu (21)
Estimate for difference:  -0.0298
95% CI for difference:  (-0.0832, 0.0236)
T-Test of difference = 0 (vs not =): T-Value = -1.11  P-Value = 0.270  DF = 80


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
14         36  2.077  0.115    0.019
21         48  2.007  0.157    0.023

Difference = mu (14) - mu (21)
Estimate for difference:  0.0692
95% CI for difference:  (0.0102, 0.1282)
T-Test of difference = 0 (vs not =): T-Value = 2.33  P-Value = 0.022  DF = 81
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
14          78   9.850      65.0  -3.74
21          78  12.900      92.0   3.74
Overall    156              78.5

H = 14.00  DF = 1  P = 0.000
H = 14.01  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	33.7	-2.52
21	24	28.00	47.2	2.52
Overall	75		38.0	

H = 6.33 DF = 1 P = 0.012
H = 6.38 DF = 1 P = 0.012 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	29.6	-4.86
21	24	17.00	55.8	4.86
Overall	75		38.0	

H = 23.63 DF = 1 P = 0.000
H = 24.56 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	41.3	1.89
21	24	12.00	31.1	-1.89
Overall	75		38.0	

H = 3.55 DF = 1 P = 0.059
H = 3.60 DF = 1 P = 0.058 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	13.6	-3.77
21	11	35.00	27.6	3.77
Overall	35		18.0	

H = 14.19 DF = 1 P = 0.000
H = 14.23 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	23.5	4.69
21	11	24.00	6.0	-4.69
Overall	35		18.0	

H = 22.00 DF = 1 P = 0.000
H = 22.04 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
14         24   36.00      14.0  -3.41
21         11   47.00      26.7   3.41
Overall    35              18.0

H = 11.64  DF = 1  P = 0.001
H = 11.67  DF = 1  P = 0.001  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.280      39.7  -0.92
21         48   2.305      44.6   0.92
Overall    84              42.5

H = 0.84  DF = 1  P = 0.359
H = 0.84  DF = 1  P = 0.359  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.115      49.0   2.11
21         48   2.043      37.6  -2.11
Overall    84              42.5

H = 4.45  DF = 1  P = 0.035
H = 4.46  DF = 1  P = 0.035  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 12.42    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
14          51  27    9.85   6.15  (---*---------)
21          29  49   12.90   3.32                        (-----*---)
                                   --+---------+---------+---------+----
                                   9.6      10.8      12.0      13.2

Overall median = 12.00

A 95.0% CI for median(14) - median(21): (-3.90,-1.30)


Mood median test for WL (%)

Chi-Square = 5.76    DF = 1    P = 0.016

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          36  15   26.00   5.00  (-----*------)
21          10  14   28.00   6.50              (------*-------------)
                                   ---+---------+---------+---------+---
                                   25.5      27.0      28.5      30.0

Overall median = 27.00

A 95.0% CI for median(14) - median(21): (-5.00,-1.00)
```

```
Mood median test for Wp (%)

Chi-Square = 25.67    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          40  11   12.00   1.00     *----)
21           4  20   17.00   4.75                        (-----*---------)
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 13.00

A 95.0% CI for median(14) - median(21): (-6.35,-4.00)


Mood median test for Ip (%)

Chi-Square = 4.50    DF = 1    P = 0.034

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          25  26   14.00   3.00                         (---------*
21          18   6   12.00   4.25     (---------*---------)
                                      +---------+---------+---------+------
                                   11.0      12.0      13.0      14.0

Overall median = 13.00

A 95.0% CI for median(14) - median(21): (0.00,3.00)


Mood median test for % GRAVEL

Chi-Square = 4.72    DF = 1    P = 0.030

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          16   8    21.3    6.0     (--*--------)
21           3   8    35.0   11.0               (------------------*-)
                                      +---------+---------+---------+------
                                   20.0      25.0      30.0      35.0

Overall median = 25.0

A 95.0% CI for median(14) - median(21): (-15.1,-2.0)


Mood median test for % SAND

Chi-Square = 15.15    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14           7  17    42.8    9.5                              (---*---)
21          11   0    24.0    8.0   (------*--)
                                   --------+---------+---------+--------
                                        24.0      32.0      40.0

Overall median = 38.5

A 95.0% CI for median(14) - median(21): (14.8,25.6)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 11.51    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14          17   7    36.0    7.6  (--------*-)
21           1  10    47.0    9.0                   (-------------*---)
                                   -------+---------+---------+---------
                                       35.0      40.0      45.0

Overall median = 37.0

A 95.0% CI for median(14) - median(21): (-15.0,-3.8)


Mood median test for Bulk Density

Chi-Square = 0.19    DF = 1    P = 0.659

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          19  17   2.280  0.137  (-------------*-----------------)
21          23  25   2.305  0.119          (-------------*---------)
                                   ---+---------+---------+---------+---
                                    2.240     2.275     2.310     2.345

Overall median = 2.295

A 95.0% CI for median(14) - median(21): (-0.090,0.070)


Mood median test for Dry Density

Chi-Square = 0.78    DF = 1    P = 0.378

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          16  20   2.115  0.158              (------------*-----)
21          26  22   2.043  0.175  (------------*------)
                                   ---+---------+---------+---------+---
                                    1.980     2.040     2.100     2.160

Overall median = 2.064

A 95.0% CI for median(14) - median(21): (-0.023,0.131)
```

Results for: Domain 14 v 31

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference    N   Mean  StDev  SE Mean
14          78  11.89   4.13     0.47
31         125  18.47   2.50     0.22

Difference = mu (14) - mu (31)
Estimate for difference:  -6.580
95% CI for difference:  (-7.607, -5.552)
T-Test of difference = 0 (vs not =): T-Value = -12.69  P-Value = 0.000  DF =
     112


Two-sample T for WL (%)

Domain
Reference    N   Mean  StDev  SE Mean
14          51  27.00   5.23     0.73
31         112  33.41   4.86     0.46

Difference = mu (14) - mu (31)
Estimate for difference:  -6.411
95% CI for difference:  (-8.128, -4.694)
T-Test of difference = 0 (vs not =): T-Value = -7.42  P-Value = 0.000  DF = 90


Two-sample T for Wp (%)

Domain
Reference    N   Mean  StDev  SE Mean
14          51  13.04   2.58     0.36
31         111  15.62   1.95     0.19

Difference = mu (14) - mu (31)
Estimate for difference:  -2.582
95% CI for difference:  (-3.390, -1.775)
T-Test of difference = 0 (vs not =): T-Value = -6.37  P-Value = 0.000  DF = 77


Two-sample T for Ip (%)

Domain
Reference    N   Mean  StDev  SE Mean
14          51  13.96   3.31     0.46
31         111  17.89   3.19     0.30

Difference = mu (14) - mu (31)
Estimate for difference:  -3.931
95% CI for difference:  (-5.030, -2.832)
T-Test of difference = 0 (vs not =): T-Value = -7.10  P-Value = 0.000  DF = 93


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
14         24  22.67   4.75     0.97
31         35   5.63   5.82     0.98

Difference = mu (14) - mu (31)
Estimate for difference:  17.04
95% CI for difference:  (14.27, 19.81)
T-Test of difference = 0 (vs not =): T-Value = 12.34  P-Value = 0.000  DF = 55
```

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
14         24  42.13   5.88      1.2
31         35  24.29   8.74      1.5

Difference = mu (14) - mu (31)
Estimate for difference:  17.84
95% CI for difference:  (14.03, 21.65)
T-Test of difference = 0 (vs not =): T-Value = 9.37  P-Value = 0.000  DF = 56


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
14         24  35.21   5.14      1.0
31         35   70.1   11.4      1.9

Difference = mu (14) - mu (31)
Estimate for difference:  -34.88
95% CI for difference:  (-39.29, -30.47)
T-Test of difference = 0 (vs not =): T-Value = -15.89  P-Value = 0.000  DF = 50


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
14         36   2.266   0.114    0.019
31         43  2.2281  0.0640   0.0098

Difference = mu (14) - mu (31)
Estimate for difference:  0.0380
95% CI for difference:  (-0.0050, 0.0809)
T-Test of difference = 0 (vs not =): T-Value = 1.77  P-Value = 0.082  DF = 52


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
14         36   2.077   0.115    0.019
31         43  1.8845  0.0804    0.012

Difference = mu (14) - mu (31)
Estimate for difference:  0.1922
95% CI for difference:  (0.1467, 0.2376)
T-Test of difference = 0 (vs not =): T-Value = 8.45  P-Value = 0.000  DF = 61
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
14          78   9.850      52.4  -9.50
31         125  18.000     132.9   9.50
Overall    203             102.0

H = 90.17  DF = 1  P = 0.000
H = 90.72  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	44.2	-6.90
31	112	34.00	99.2	6.90
Overall	163		82.0	

H = 47.64 DF = 1 P = 0.000
H = 47.81 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	43.0	-7.08
31	111	16.00	99.2	7.08
Overall	162		81.5	

H = 50.11 DF = 1 P = 0.000
H = 51.19 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	46.4	-6.46
31	111	18.00	97.6	6.46
Overall	162		81.5	

H = 41.71 DF = 1 P = 0.000
H = 42.06 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.250	46.5	6.11
31	35	4.000	18.7	-6.11
Overall	59		30.0	

H = 37.34 DF = 1 P = 0.000
H = 37.44 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	45.3	5.66
31	35	23.00	19.5	-5.66
Overall	59		30.0	

H = 32.07 DF = 1 P = 0.000
H = 32.10 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
14         24   36.00      12.7  -6.40
31         35   72.00      41.8   6.40
Overall    59              30.0

H = 40.91  DF = 1  P = 0.000
H = 40.95  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.280      47.3   2.57
31         43   2.230      33.9  -2.57
Overall    79              40.0

H = 6.60  DF = 1  P = 0.010
H = 6.62  DF = 1  P = 0.010  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.115      57.9   6.34
31         43   1.890      25.0  -6.34
Overall    79              40.0

H = 40.25  DF = 1  P = 0.000
H = 40.28  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 53.69    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
14          69   9    9.85   6.15  (-*---)
31          45  80   18.00   3.00                               *--)
                                   ---------+---------+---------+-------
                                         12.0      15.0      18.0

Overall median = 17.00

A 95.0% CI for median(14) - median(31): (-9.60,-7.00)


Mood median test for WL (%)

Chi-Square = 43.06    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14          46   5    26.0    5.0  (---*--)
31          39  73    34.0    6.0                             (--*---)
                                   -------+---------+---------+---------
                                       27.0      30.0      33.0

Overall median = 32.0

A 95.0% CI for median(14) - median(31): (-9.0,-6.0)
```

```
Mood median test for Wp (%)

Chi-Square = 25.89    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          45   6   12.00   1.00     *-------)
31          51  60   16.00   3.00                               (-------*
                                      +---------+---------+---------+------
                                   12.0      13.2      14.4      15.6

Overall median = 15.00

A 95.0% CI for median(14) - median(31): (-4.00,-2.00)


Mood median test for Ip (%)

Chi-Square = 26.98    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
14          43   8   14.00   3.00  (----*
31          45  66   18.00   4.00                          (*----)
                                   -----+---------+---------+---------+-
                                     14.0      16.0      18.0      20.0

Overall median = 17.00

A 95.0% CI for median(14) - median(31): (-5.00,-4.00)


Mood median test for % GRAVEL

Chi-Square = 44.79    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14           0  24    21.3    6.0                            (*------)
31          31   4     4.0    6.0  (--*)
                                   -------+---------+---------+---------
                                        7.0      14.0      21.0

Overall median = 10.0

A 95.0% CI for median(14) - median(31): (15.4,20.4)


Mood median test for % SAND

Chi-Square = 35.27    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14           1  23    42.8    9.5                          (---*---)
31          29   6    23.0   10.0  (----*--)
                                   ------+---------+---------+---------+
                                      24.0      32.0      40.0      48.0

Overall median = 32.5

A 95.0% CI for median(14) - median(31): (15.9,22.1)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 36.54    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
14          24   0    36.0    7.6  (--*)
31           7  28    72.0   16.0                          (-*--)
                                   ---------+---------+---------+-------
                                           45        60        75

Overall median = 58.0

A 95.0% CI for median(14) - median(31): (-42.3,-32.0)


Mood median test for Bulk Density

Chi-Square = 2.77    DF = 1    P = 0.096

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14          15  21   2.280  0.137      (-------------*-----------------)
31          26  17   2.230  0.090  (---*--------)
                                   -------+---------+---------+---------
                                        2.240     2.275     2.310

Overall median = 2.250

A 95.0% CI for median(14) - median(31): (-0.013,0.113)


Mood median test for Dry Density

Chi-Square = 38.28    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14           5  31   2.115  0.158                      (--------*----)
31          36   7   1.890  0.119  (-*----)
                                   ------+---------+---------+---------+
                                       1.920     2.000     2.080     2.160

Overall median = 1.950

A 95.0% CI for median(14) - median(31): (0.130,0.258)
```

Results for: Domain 14 v 41

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
14	78	11.89	4.13	0.47
41	57	19.60	8.68	1.1

Difference = mu (14) - mu (41)
Estimate for difference: -7.71
95% CI for difference: (-10.18, -5.24)
T-Test of difference = 0 (vs not =): T-Value = -6.21 P-Value = 0.000 DF = 74

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	27.00	5.23	0.73
41	13	44.5	10.6	2.9

Difference = mu (14) - mu (41)
Estimate for difference: -17.46
95% CI for difference: (-24.01, -10.91)
T-Test of difference = 0 (vs not =): T-Value = -5.76 P-Value = 0.000 DF = 13

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.04	2.58	0.36
41	13	21.85	4.38	1.2

Difference = mu (14) - mu (41)
Estimate for difference: -8.81
95% CI for difference: (-11.52, -6.09)
T-Test of difference = 0 (vs not =): T-Value = -6.96 P-Value = 0.000 DF = 14

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.96	3.31	0.46
41	13	22.62	6.78	1.9

Difference = mu (14) - mu (41)
Estimate for difference: -8.65
95% CI for difference: (-12.84, -4.47)
T-Test of difference = 0 (vs not =): T-Value = -4.47 P-Value = 0.001 DF = 13

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
14	24	22.67	4.75	0.97
41	6	22.3	13.5	5.5

Difference = mu (14) - mu (41)
Estimate for difference: 0.33
95% CI for difference: (-14.07, 14.73)
T-Test of difference = 0 (vs not =): T-Value = 0.06 P-Value = 0.955 DF = 5

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
14         24  42.13   5.88      1.2
41          6  27.00   7.01      2.9

Difference = mu (14) - mu (41)
Estimate for difference:  15.13
95% CI for difference:  (7.53, 22.72)
T-Test of difference = 0 (vs not =): T-Value = 4.87  P-Value = 0.003  DF = 6


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
14         24  35.21   5.14      1.0
41          6   50.7   16.1      6.6

Difference = mu (14) - mu (41)
Estimate for difference:  -15.46
95% CI for difference:  (-32.54, 1.62)
T-Test of difference = 0 (vs not =): T-Value = -2.33  P-Value = 0.067  DF = 5


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
14         36   2.266   0.114    0.019
41          8  2.2000  0.0807    0.029

Difference = mu (14) - mu (41)
Estimate for difference:  0.0661
95% CI for difference:  (-0.0075, 0.1397)
T-Test of difference = 0 (vs not =): T-Value = 1.93  P-Value = 0.075  DF = 14


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
14         36   2.077   0.115    0.019
41          8  1.8950  0.0735    0.026

Difference = mu (14) - mu (41)
Estimate for difference:  0.1817
95% CI for difference:  (0.1129, 0.2505)
T-Test of difference = 0 (vs not =): T-Value = 5.63  P-Value = 0.000  DF = 15
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
14          78   9.850      46.8  -7.36
41          57  17.000      97.0   7.36
Overall    135              68.0

H = 54.16  DF = 1  P = 0.000
H = 54.28  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	26.5	-5.06
41	13	42.00	55.8	5.06
Overall	64		32.5	

H = 25.65 DF = 1 P = 0.000
H = 25.80 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	26.4	-5.19
41	13	21.00	56.4	5.19
Overall	64		32.5	

H = 26.93 DF = 1 P = 0.000
H = 28.37 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	27.7	-4.11
41	13	22.00	51.5	4.11
Overall	64		32.5	

H = 16.92 DF = 1 P = 0.000
H = 17.10 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	15.5	-0.03
41	6	23.50	15.6	0.03
Overall	30		15.5	

H = 0.00 DF = 1 P = 0.979
H = 0.00 DF = 1 P = 0.979 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	18.3	3.45
41	6	27.50	4.4	-3.45
Overall	30		15.5	

H = 11.89 DF = 1 P = 0.001
H = 11.90 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
14	24	36.00	13.5	-2.44
41	6	46.00	23.3	2.44
Overall	30		15.5	

H = 5.94 DF = 1 P = 0.015
H = 5.96 DF = 1 P = 0.015 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
14	36	2.280	24.3	1.98
41	8	2.225	14.4	-1.98
Overall	44		22.5	

H = 3.91 DF = 1 P = 0.048
H = 3.93 DF = 1 P = 0.048 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
14	36	2.115	25.8	3.64
41	8	1.915	7.6	-3.64
Overall	44		22.5	

H = 13.22 DF = 1 P = 0.000
H = 13.24 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 48.04   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
14          62  16    9.85   6.15   (*----)
41          11  46   17.00   4.50                              (--*---)
                                    --+---------+---------+---------+----
                                   10.0      12.5      15.0      17.5
```

Overall median = 15.00

A 95.0% CI for median(14) - median(41): (-8.60,-5.50)

Mood median test for WL (%)

Chi-Square = 20.97   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
14          36  15    26.0    5.0  (-*)
41           0  13    42.0   16.5                (-------*----------)
                                   ---------+---------+---------+-------
                                         32.0      40.0      48.0
```

Overall median = 27.0

A 95.0% CI for median(14) - median(41): (-25.2,-10.8)

```
Mood median test for Wp (%)

Chi-Square = 27.19    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14          40  11    12.0    1.0  *--)
41           0  13    21.0    5.0                     (-----*-------)
                                   ------+---------+---------+---------+
                                      14.0      17.5      21.0      24.5

Overall median = 13.0

A 95.0% CI for median(14) - median(41): (-11.1,-7.0)


Mood median test for Ip (%)

Chi-Square = 12.04    DF = 1    P = 0.001

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14          35  16    14.0    3.0   (-*
41           2  11    22.0   12.0           (-------------*-------------)
                                   --------+---------+---------+--------
                                        16.0      20.0      24.0

Overall median = 14.0

A 95.0% CI for median(14) - median(41): (-14.1,-2.9)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
14          12  12    21.3    6.0                   (-*----)
41           3   3    23.5   26.8   (------------------*----------------)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0

Overall median = 21.3

A 95.0% CI for median(14) - median(41): (-17.0,17.0)


Mood median test for % SAND

Chi-Square = 7.50    DF = 1    P = 0.006

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14           9  15    42.8    9.5                           (---*---)
41           6   0    27.5   11.8  (----------*---------)
                                   -------+---------+---------+---------
                                       24.0      32.0      40.0

Overall median = 40.5

A 95.0% CI for median(14) - median(41): (4.0,26.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 4.05    DF = 1    P = 0.044

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
14          15   9    36.0    7.6  (---*)
41           1   5    46.0   29.0      (-------*--------------------)
                                   ----+---------+---------+---------+--
                                      36        48        60        72

Overall median = 36.0

A 95.0% CI for median(14) - median(41): (-40.0,3.0)


Mood median test for Bulk Density

Chi-Square = 5.50    DF = 1    P = 0.019

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
14          15  21   2.280  0.137            (---------*-----------)
41           7   1   2.225  0.048  (--------*--)
                                   ----+---------+---------+---------+--
                                     2.200     2.250     2.300     2.350

Overall median = 2.255

A 95.0% CI for median(14) - median(41): (0.020,0.140)


Mood median test for Dry Density

Chi-Square = 9.78    DF = 1    P = 0.002

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14          14  22   2.115  0.158                      (--------*----)
41           8   0   1.915  0.062  (----*----)
                                   ------+---------+---------+---------+
                                       1.920     2.000     2.080     2.160

Overall median = 2.055

A 95.0% CI for median(14) - median(41): (0.110,0.250)
```

Results for: Domain 14 v 43

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         78  11.89   4.13     0.47
43         50  20.44   7.73      1.1

Difference = mu (14) - mu (43)
Estimate for difference:  -8.55
95% CI for difference:  (-10.92, -6.17)
T-Test of difference = 0 (vs not =): T-Value = -7.19  P-Value = 0.000  DF = 67


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  27.00   5.23     0.73
43         17  37.35   7.61      1.8

Difference = mu (14) - mu (43)
Estimate for difference:  -10.35
95% CI for difference:  (-14.48, -6.22)
T-Test of difference = 0 (vs not =): T-Value = -5.22  P-Value = 0.000  DF = 21


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  13.04   2.58     0.36
43         17  20.29   3.53     0.86

Difference = mu (14) - mu (43)
Estimate for difference:  -7.255
95% CI for difference:  (-9.188, -5.322)
T-Test of difference = 0 (vs not =): T-Value = -7.81  P-Value = 0.000  DF = 21


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  13.96   3.31     0.46
43         17  17.06   5.15      1.2

Difference = mu (14) - mu (43)
Estimate for difference:  -3.10
95% CI for difference:  (-5.88, -0.32)
T-Test of difference = 0 (vs not =): T-Value = -2.32  P-Value = 0.031  DF = 20


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
14         24  22.67   4.75     0.97
43         15   38.1   12.9      3.3

Difference = mu (14) - mu (43)
Estimate for difference:  -15.47
95% CI for difference:  (-22.81, -8.12)
T-Test of difference = 0 (vs not =): T-Value = -4.47  P-Value = 0.000  DF = 16
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
14	24	42.13	5.88	1.2
43	15	33.93	7.56	2.0

Difference = mu (14) - mu (43)
Estimate for difference: 8.19
95% CI for difference: (3.46, 12.92)
T-Test of difference = 0 (vs not =): T-Value = 3.57 P-Value = 0.002 DF = 24

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
14	24	35.21	5.14	1.0
43	15	27.9	11.0	2.8

Difference = mu (14) - mu (43)
Estimate for difference: 7.27
95% CI for difference: (0.88, 13.67)
T-Test of difference = 0 (vs not =): T-Value = 2.40 P-Value = 0.028 DF = 17

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.266	0.114	0.019
43	12	2.112	0.162	0.047

Difference = mu (14) - mu (43)
Estimate for difference: 0.1544
95% CI for difference: (0.0461, 0.2628)
T-Test of difference = 0 (vs not =): T-Value = 3.06 P-Value = 0.009 DF = 14

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.077	0.115	0.019
43	12	1.810	0.176	0.051

Difference = mu (14) - mu (43)
Estimate for difference: 0.2667
95% CI for difference: (0.1501, 0.3833)
T-Test of difference = 0 (vs not =): T-Value = 4.90 P-Value = 0.000 DF = 14

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
14	78	9.850	46.2	-6.98
43	50	17.000	93.1	6.98
Overall	128		64.5	

H = 48.71 DF = 1 P = 0.000
H = 48.82 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	27.9	-4.77
43	17	39.00	54.3	4.77
Overall	68		34.5	

H = 22.71 DF = 1 P = 0.000
H = 22.85 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	26.8	-5.58
43	17	20.00	57.7	5.58
Overall	68		34.5	

H = 31.14 DF = 1 P = 0.000
H = 32.53 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	30.8	-2.69
43	17	16.00	45.7	2.69
Overall	68		34.5	

H = 7.24 DF = 1 P = 0.007
H = 7.32 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	14.5	-3.84
43	15	41.00	28.9	3.84
Overall	39		20.0	

H = 14.74 DF = 1 P = 0.000
H = 14.78 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	24.6	3.22
43	15	33.00	12.6	-3.22
Overall	39		20.0	

H = 10.36 DF = 1 P = 0.001
H = 10.37 DF = 1 P = 0.001 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
14         24   36.00      23.7   2.54
43         15   23.00      14.1  -2.54
Overall    39              20.0

H = 6.45  DF = 1  P = 0.011
H = 6.47  DF = 1  P = 0.011  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.280      28.3   3.23
43         12   2.155      13.2  -3.23
Overall    48              24.5

H = 10.41  DF = 1  P = 0.001
H = 10.43  DF = 1  P = 0.001  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.115      29.3   4.15
43         12   1.835      10.0  -4.15
Overall    48              24.5

H = 17.26  DF = 1  P = 0.000
H = 17.28  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 36.15    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
14          58  20    9.85   6.15  (-*---)
43          10  40   17.00  11.25                       (---*------)
                                   ---------+---------+---------+-------
                                         12.0      15.0      18.0

Overall median = 14.00

A 95.0% CI for median(14) - median(43): (-9.60,-5.00)


Mood median test for WL (%)

Chi-Square = 17.89    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          36  15    26.0    5.0     (-*-)
43           2  15    39.0   12.5                 (---------------*-------)
                                      +---------+---------+---------+------
                                   25.0      30.0      35.0      40.0

Overall median = 27.0

A 95.0% CI for median(14) - median(43): (-16.7,-5.0)
```

```
Mood median test for Wp (%)

Chi-Square = 32.38    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          40  11    12.0    1.0     *--)
43           0  17    20.0    7.0                      (---------*---------)
                                      +---------+---------+---------+------
                                   12.0      15.0      18.0      21.0

Overall median = 13.0

A 95.0% CI for median(14) - median(43): (-11.0,-5.6)


Mood median test for Ip (%)

Chi-Square = 8.10    DF = 1    P = 0.004

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
14          35  16   14.00   3.00  (----*
43           5  12   16.00   5.50       (---------*--------------)
                                   -----+---------+---------+---------+-
                                     14.0      16.0      18.0      20.0

Overall median = 14.00

A 95.0% CI for median(14) - median(43): (-6.00,-0.64)


Mood median test for % GRAVEL

Chi-Square = 13.14    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
14          19   5    21.3    6.0  (-*----)
43           3  12    41.0   20.0               (------------*--------)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 26.0

A 95.0% CI for median(14) - median(43): (-23.2,-9.0)


Mood median test for % SAND

Chi-Square = 10.57    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14           8  16    42.8    9.5                       (-------*----)
43          13   2    33.0   10.0  (--------*--------)
                                   ---+---------+---------+---------+---
                                   30.0      35.0      40.0      45.0

Overall median = 39.0

A 95.0% CI for median(14) - median(43): (3.6,13.7)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.72    DF = 1    P = 0.054

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          10  14    36.0    7.6                           (--------*-)
43          11   4    23.0   17.0     (-----*------------------------)
                                      +---------+---------+---------+------
                                   20.0      25.0      30.0      35.0

Overall median = 34.0

A 95.0% CI for median(14) - median(43): (1.0,16.4)


Mood median test for Bulk Density

Chi-Square = 7.11    DF = 1    P = 0.008

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14          14  22   2.280  0.137                        (---*----)
43          10   2   2.155  0.265  (-----------------*---)
                                   --------+---------+---------+--------
                                         2.04      2.16      2.28

Overall median = 2.245

A 95.0% CI for median(14) - median(43): (0.058,0.330)


Mood median test for Dry Density

Chi-Square = 11.11    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
14          13  23   2.115  0.158                             (----*--)
43          11   1   1.835  0.252    (-----------*---)
                                     +---------+---------+---------+------
                                   1.65      1.80      1.95      2.10

Overall median = 2.045

A 95.0% CI for median(14) - median(43): (0.167,0.456)
```

Results for: Domain 14 v 51

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
14	78	11.89	4.13	0.47
51	10	14.36	8.77	2.8

Difference = mu (14) - mu (51)
Estimate for difference: -2.47
95% CI for difference: (-8.83, 3.89)
T-Test of difference = 0 (vs not =): T-Value = -0.88 P-Value = 0.403 DF = 9

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	27.00	5.23	0.73
51	13	27.08	2.90	0.80

Difference = mu (14) - mu (51)
Estimate for difference: -0.08
95% CI for difference: (-2.29, 2.13)
T-Test of difference = 0 (vs not =): T-Value = -0.07 P-Value = 0.944 DF = 34

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.04	2.58	0.36
51	13	17.08	1.71	0.47

Difference = mu (14) - mu (51)
Estimate for difference: -4.038
95% CI for difference: (-5.259, -2.817)
T-Test of difference = 0 (vs not =): T-Value = -6.79 P-Value = 0.000 DF = 27

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.96	3.31	0.46
51	13	10.00	1.83	0.51

Difference = mu (14) - mu (51)
Estimate for difference: 3.961
95% CI for difference: (2.566, 5.356)
T-Test of difference = 0 (vs not =): T-Value = 5.77 P-Value = 0.000 DF = 34

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
14	24	22.67	4.75	0.97
51	10	38.20	9.73	3.1

Difference = mu (14) - mu (51)
Estimate for difference: -15.53
95% CI for difference: (-22.72, -8.35)
T-Test of difference = 0 (vs not =): T-Value = -4.82 P-Value = 0.001 DF = 10

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
14	24	42.13	5.88	1.2
51	10	16.00	4.71	1.5

Difference = mu (14) - mu (51)
Estimate for difference: 26.13
95% CI for difference: (22.14, 30.11)
T-Test of difference = 0 (vs not =): T-Value = 13.65 P-Value = 0.000 DF = 21

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
14	24	35.21	5.14	1.0
51	10	38.5	12.7	4.0

Difference = mu (14) - mu (51)
Estimate for difference: -3.29
95% CI for difference: (-12.53, 5.94)
T-Test of difference = 0 (vs not =): T-Value = -0.79 P-Value = 0.445 DF = 10

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.266	0.114	0.019
51	3	2.3267	0.0379	0.022

Difference = mu (14) - mu (51)
Estimate for difference: -0.0606
95% CI for difference: (-0.1351, 0.0140)
T-Test of difference = 0 (vs not =): T-Value = -2.09 P-Value = 0.091 DF = 5

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.077	0.115	0.019
51	3	2.1600	0.0361	0.021

Difference = mu (14) - mu (51)
Estimate for difference: -0.0833
95% CI for difference: (-0.1525, -0.0141)
T-Test of difference = 0 (vs not =): T-Value = -2.95 P-Value = 0.026 DF = 6

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
14	78	9.850	44.4	-0.10
51	10	12.000	45.3	0.10
Overall	88		44.5	

H = 0.01 DF = 1 P = 0.921
H = 0.01 DF = 1 P = 0.921 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	31.4	-0.94
51	13	27.00	36.8	0.94
Overall	64		32.5	

H = 0.89 DF = 1 P = 0.346
H = 0.90 DF = 1 P = 0.343 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	27.0	-4.65
51	13	17.00	53.9	4.65
Overall	64		32.5	

H = 21.60 DF = 1 P = 0.000
H = 22.78 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	37.4	4.15
51	13	10.00	13.4	-4.15
Overall	64		32.5	

H = 17.20 DF = 1 P = 0.000
H = 17.41 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	13.5	-3.61
51	10	39.50	27.1	3.61
Overall	34		17.5	

H = 13.03 DF = 1 P = 0.000
H = 13.06 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	22.5	4.54
51	10	16.00	5.5	-4.54
Overall	34		17.5	

H = 20.57 DF = 1 P = 0.000
H = 20.59 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
14	24	36.00	16.8	-0.64
51	10	37.50	19.2	0.64
Overall	34		17.5	

H = 0.41 DF = 1 P = 0.521
H = 0.41 DF = 1 P = 0.520 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
14	36	2.280	19.6	-0.84
51	3	2.310	25.3	0.84
Overall	39		20.0	

H = 0.71 DF = 1 P = 0.399
H = 0.71 DF = 1 P = 0.398 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
14	36	2.115	19.4	-1.19
51	3	2.150	27.5	1.19
Overall	39		20.0	

H = 1.41 DF = 1 P = 0.236
H = 1.41 DF = 1 P = 0.235 (adjusted for ties)

* NOTE * One or more small samples

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.45   DF = 1   P = 0.502

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
14          40  38     9.9    6.1       (-*--)
51           4   6    12.0   12.2  (-----------*--------------------)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0
```

Overall median = 9.9

A 95.0% CI for median(14) - median(51): (-9.3,3.0)

```
Mood median test for WL (%)

Chi-Square = 1.73    DF = 1    P = 0.188

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
14          30  21   26.00   5.00   (--------*-------)
51           5   8   27.00   4.50   (----------------*-----------------)
                                    --+---------+---------+---------+----
                                   25.2      26.4      27.6      28.8

Overall median = 26.00

A 95.0% CI for median(14) - median(51): (-4.06,1.00)


Mood median test for Wp (%)

Chi-Square = 27.19    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          40  11   12.00   1.00     *----)
51           0  13   17.00   2.50                         (----*------)
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 13.00

A 95.0% CI for median(14) - median(51): (-6.06,-4.00)


Mood median test for Ip (%)

Chi-Square = 11.16    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
14          25  26   14.00   3.00                               (-----*
51          13   0   10.00   2.50    (------*-------)
                                     +---------+---------+---------+------
                                   9.0      10.5      12.0      13.5

Overall median = 13.00

A 95.0% CI for median(14) - median(51): (1.94,5.00)


Mood median test for % GRAVEL

Chi-Square = 9.07    DF = 1    P = 0.003

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
14          16   8    21.3    6.0  (-*----)
51           1   9    39.5   14.8                (---------*--------)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 24.5

A 95.0% CI for median(14) - median(51): (-25.1,-8.9)
```

```
Mood median test for % SAND

Chi-Square = 14.17    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14           7  17    42.8    9.5                            (---*-)
51          10   0    16.0    5.3  (--*-)
                                   -------+---------+---------+---------
                                         20        30        40

Overall median = 38.8

A 95.0% CI for median(14) - median(51): (22.9,30.6)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 1.45    DF = 1    P = 0.229

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          15   9    36.0    7.6    (----------*--)
51           4   6    37.5   11.8  (----------------*--------------)
                                   ---+---------+---------+---------+---
                                   32.0      36.0      40.0      44.0

Overall median = 36.0

A 95.0% CI for median(14) - median(51): (-5.4,5.1)


Mood median test for Bulk Density

Chi-Square = 0.55    DF = 1    P = 0.458

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          20  16   2.280  0.137  (------------*--------------)
51           1   2   2.310  0.070                   (-*--------------)
                                   ---+---------+---------+---------+---
                                    2.240     2.280     2.320     2.360

Overall median = 2.300
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(14) - median(51): (-0.150,0.060)


Mood median test for Dry Density

Chi-Square = 0.88    DF = 1    P = 0.347

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          22  14   2.115  0.158  (---------------*-------)
51           1   2   2.150  0.070                    (---*---------)
                                   ---+---------+---------+---------+---
                                    2.050     2.100     2.150     2.200

Overall median = 2.130
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(14) - median(51): (-0.190,0.040)
```

Results for: Domain 14 v 52

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
14	78	11.89	4.13	0.47
52	24	8.48	2.78	0.57

Difference = mu (14) - mu (52)
Estimate for difference: 3.413
95% CI for difference: (1.941, 4.885)
T-Test of difference = 0 (vs not =): T-Value = 4.64 P-Value = 0.000 DF = 57

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	27.00	5.23	0.73
52	24	25.33	2.73	0.56

Difference = mu (14) - mu (52)
Estimate for difference: 1.667
95% CI for difference: (-0.168, 3.501)
T-Test of difference = 0 (vs not =): T-Value = 1.81 P-Value = 0.074 DF = 72

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.04	2.58	0.36
52	24	16.21	1.61	0.33

Difference = mu (14) - mu (52)
Estimate for difference: -3.169
95% CI for difference: (-4.145, -2.193)
T-Test of difference = 0 (vs not =): T-Value = -6.49 P-Value = 0.000 DF = 66

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.96	3.31	0.46
52	24	9.13	2.11	0.43

Difference = mu (14) - mu (52)
Estimate for difference: 4.836
95% CI for difference: (3.572, 6.100)
T-Test of difference = 0 (vs not =): T-Value = 7.64 P-Value = 0.000 DF = 66

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
14	24	22.67	4.75	0.97
52	15	37.5	13.5	3.5

Difference = mu (14) - mu (52)
Estimate for difference: -14.80
95% CI for difference: (-22.44, -7.16)
T-Test of difference = 0 (vs not =): T-Value = -4.10 P-Value = 0.001 DF = 16

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
14	24	42.13	5.88	1.2
52	15	18.47	6.10	1.6

Difference = mu (14) - mu (52)
Estimate for difference: 23.66
95% CI for difference: (19.61, 27.71)
T-Test of difference = 0 (vs not =): T-Value = 11.94 P-Value = 0.000 DF = 29

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
14	24	35.21	5.14	1.0
52	15	36.7	15.7	4.1

Difference = mu (14) - mu (52)
Estimate for difference: -1.46
95% CI for difference: (-10.39, 7.48)
T-Test of difference = 0 (vs not =): T-Value = -0.35 P-Value = 0.733 DF = 15

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.266	0.114	0.019
52	7	2.364	0.125	0.047

Difference = mu (14) - mu (52)
Estimate for difference: -0.0982
95% CI for difference: (-0.2153, 0.0190)
T-Test of difference = 0 (vs not =): T-Value = -1.93 P-Value = 0.089 DF = 8

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.077	0.115	0.019
52	7	2.196	0.154	0.058

Difference = mu (14) - mu (52)
Estimate for difference: -0.1190
95% CI for difference: (-0.2642, 0.0261)
T-Test of difference = 0 (vs not =): T-Value = -1.94 P-Value = 0.094 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
14	78	9.850	57.0	3.38
52	24	8.450	33.6	-3.38
Overall	102		51.5	

H = 11.45 DF = 1 P = 0.001
H = 11.47 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	39.5	0.86
52	24	25.50	34.8	-0.86
Overall	75		38.0	

H = 0.75 DF = 1 P = 0.388
H = 0.75 DF = 1 P = 0.385 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	28.5	-5.48
52	24	16.00	58.1	5.48
Overall	75		38.0	

H = 30.03 DF = 1 P = 0.000
H = 31.18 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.000	47.7	5.63
52	24	9.000	17.4	-5.63
Overall	75		38.0	

H = 31.67 DF = 1 P = 0.000
H = 31.96 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	14.2	-4.04
52	15	36.00	29.3	4.04
Overall	39		20.0	

H = 16.33 DF = 1 P = 0.000
H = 16.37 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	27.5	5.20
52	15	19.00	8.0	-5.20
Overall	39		20.0	

H = 27.00 DF = 1 P = 0.000
H = 27.01 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
14         24   36.00      19.6  -0.30
52         15   38.00      20.7   0.30
Overall    39              20.0

H = 0.09  DF = 1  P = 0.762
H = 0.09  DF = 1  P = 0.761  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.280      20.1  -2.20
52          7   2.410      31.6   2.20
Overall    43              22.0

H = 4.86  DF = 1  P = 0.028
H = 4.87  DF = 1  P = 0.027  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.115      20.2  -2.17
52          7   2.200      31.4   2.17
Overall    43              22.0

H = 4.71  DF = 1  P = 0.030
H = 4.72  DF = 1  P = 0.030  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 1.15    DF = 1    P = 0.283

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
14          39  39    9.85   6.15                     (---*---------)
52          15   9    8.45   4.52  (-----------*------------)
                                   --+---------+---------+---------+----
                                   7.2       8.4       9.6      10.8

Overall median = 9.80

A 95.0% CI for median(14) - median(52): (-0.30,4.00)


Mood median test for WL (%)

Chi-Square = 0.09    DF = 1    P = 0.762

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          30  21   26.00   5.00               (---------*---------)
52          15   9   25.50   3.75     (--------------*--------------)
                                      +---------+---------+---------+------
                                   24.0      25.0      26.0      27.0

Overall median = 26.00

A 95.0% CI for median(14) - median(52): (-2.00,2.00)
```

```
Mood median test for Wp (%)

Chi-Square = 36.32    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          40  11   12.00   1.00     *-------)
52           1  23   16.00   2.75                              (-------*-)
                                      +---------+---------+---------+------
                                   12.0      13.2      14.4      15.6

Overall median = 13.00

A 95.0% CI for median(14) - median(52): (-4.00,-3.65)


Mood median test for Ip (%)

Chi-Square = 20.84    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
14          18  33   14.00   3.00                              (----*
52          22   2    9.00   3.00    (----*-----)
                                     +---------+---------+---------+------
                                   8.0      10.0      12.0      14.0

Overall median = 12.00

A 95.0% CI for median(14) - median(52): (3.65,6.00)


Mood median test for % GRAVEL
Chi-Square = 19.42    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
14          19   5    21.3    6.0  (-*----)
52           1  14    36.0   22.0             (-------*---------------)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 26.0

A 95.0% CI for median(14) - median(52): (-23.2,-7.0)


Mood median test for % SAND

Chi-Square = 23.16    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14           5  19    42.8    9.5                          (---*-)
52          15   0    19.0    9.0  (----*--)
                                   ------+---------+---------+---------+
                                        20        30        40        50

Overall median = 36.0

A 95.0% CI for median(14) - median(52): (19.6,28.7)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.94    DF = 1    P = 0.332

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14          15   9    36.0    7.6            (--------*-)
52           7   8    38.0   21.0  (----------------------*-----------)
                                   --------+---------+---------+--------
                                        30.0      35.0      40.0

Overall median = 36.0

A 95.0% CI for median(14) - median(52): (-7.0,8.4)


Mood median test for Bulk Density

Chi-Square = 1.71    DF = 1    P = 0.191

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14          20  16   2.280  0.137  (-------*---------)
52           2   5   2.410  0.120     (-------------------------*----)
                                   --------+---------+---------+--------
                                         2.280     2.340     2.400

Overall median = 2.300

A 95.0% CI for median(14) - median(52): (-0.167,0.060)


Mood median test for Dry Density

Chi-Square = 2.52    DF = 1    P = 0.113

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14          22  14   2.115  0.158  (-------*--)
52           2   5   2.200  0.250  (---------------*--------------)
                                   ------+---------+---------+---------+
                                       2.10      2.20      2.30      2.40

Overall median = 2.130

A 95.0% CI for median(14) - median(52): (-0.278,0.070)
```

Results for: Domain 14 v 61

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
14	78	11.89	4.13	0.47
61	9	17.50	6.94	2.3

Difference = mu (14) - mu (61)
Estimate for difference: -5.61
95% CI for difference: (-11.05, -0.16)
T-Test of difference = 0 (vs not =): T-Value = -2.38 P-Value = 0.045 DF = 8

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.266	0.114	0.019
61	9	2.120	0.154	0.051

Difference = mu (14) - mu (61)
Estimate for difference: 0.1461
95% CI for difference: (0.0242, 0.2681)
T-Test of difference = 0 (vs not =): T-Value = 2.67 P-Value = 0.024 DF = 10

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.077	0.115	0.019
61	9	1.817	0.222	0.074

Difference = mu (14) - mu (61)
Estimate for difference: 0.2600
95% CI for difference: (0.0868, 0.4333)
T-Test of difference = 0 (vs not =): T-Value = 3.39 P-Value = 0.008 DF = 9

Kruskal-Wallis Test: (Parameter)) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
14	78	9.850	41.4	-2.86
61	9	16.300	66.8	2.86
Overall	87		44.0	

H = 8.16 DF = 1 P = 0.004
H = 8.18 DF = 1 P = 0.004 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
14	36	2.280	25.7	2.72
61	9	2.130	12.3	-2.72
Overall	45		23.0	

H = 7.42 DF = 1 P = 0.006
H = 7.44 DF = 1 P = 0.006 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.115      26.3   3.38
61          9   1.790       9.8  -3.38
Overall    45              23.0

H = 11.40  DF = 1  P = 0.001
H = 11.42  DF = 1  P = 0.001  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 8.34    DF = 1    P = 0.004

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
14          48  30     9.9    6.1    (*-)
61           1   8    16.3   12.1        (---------*----------------)
                                     -+---------+---------+---------+-----
                                   10.0      15.0      20.0      25.0

Overall median = 11.0

A 95.0% CI for median(14) - median(61): (-16.3,-1.2)


Mood median test for Bulk Density

Chi-Square = 5.06    DF = 1    P = 0.024

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
14          17  19   2.280  0.137                      (----*-----)
61           8   1   2.130  0.215  (-----------*------------)
                                   ---------+---------+---------+-------
                                          2.10      2.20      2.30

Overall median = 2.260

A 95.0% CI for median(14) - median(61): (-0.001,0.340)


Mood median test for Dry Density

Chi-Square = 10.76    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
14          14  22   2.115  0.158                              (----*--)
61           9   0   1.790  0.380   (------------*--------------)
                                    -+---------+---------+---------+-----
                                   1.60      1.76      1.92      2.08

Overall median = 2.050

A 95.0% CI for median(14) - median(61): (0.020,0.600)
```

Results for: Domain 14 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
14	78	11.89	4.13	0.47
62	131	16.88	5.15	0.45

Difference = mu (14) - mu (62)
Estimate for difference: -4.987
95% CI for difference: (-6.268, -3.706)
T-Test of difference = 0 (vs not =): T-Value = -7.68 P-Value = 0.000 DF = 189

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	27.00	5.23	0.73
62	113	34.27	6.08	0.57

Difference = mu (14) - mu (62)
Estimate for difference: -7.265
95% CI for difference: (-9.107, -5.424)
T-Test of difference = 0 (vs not =): T-Value = -7.82 P-Value = 0.000 DF = 111

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.04	2.58	0.36
62	113	17.70	2.77	0.26

Difference = mu (14) - mu (62)
Estimate for difference: -4.660
95% CI for difference: (-5.542, -3.778)
T-Test of difference = 0 (vs not =): T-Value = -10.47 P-Value = 0.000 DF = 103

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.96	3.31	0.46
62	113	16.57	4.48	0.42

Difference = mu (14) - mu (62)
Estimate for difference: -2.606
95% CI for difference: (-3.846, -1.365)
T-Test of difference = 0 (vs not =): T-Value = -4.16 P-Value = 0.000 DF = 127

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
14	24	22.67	4.75	0.97
62	47	24.9	13.6	2.0

Difference = mu (14) - mu (62)
Estimate for difference: -2.23
95% CI for difference: (-6.65, 2.19)
T-Test of difference = 0 (vs not =): T-Value = -1.01 P-Value = 0.318 DF = 63

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
14	24	42.13	5.88	1.2
62	47	28.74	7.27	1.1

Difference = mu (14) - mu (62)
Estimate for difference: 13.38
95% CI for difference: (10.17, 16.59)
T-Test of difference = 0 (vs not =): T-Value = 8.35 P-Value = 0.000 DF = 55

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
14	24	35.21	5.14	1.0
62	47	45.0	16.8	2.5

Difference = mu (14) - mu (62)
Estimate for difference: -9.77
95% CI for difference: (-15.11, -4.43)
T-Test of difference = 0 (vs not =): T-Value = -3.66 P-Value = 0.001 DF = 60

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.266	0.114	0.019
62	29	2.113	0.106	0.020

Difference = mu (14) - mu (62)
Estimate for difference: 0.1534
95% CI for difference: (0.0986, 0.2083)
T-Test of difference = 0 (vs not =): T-Value = 5.59 P-Value = 0.000 DF = 61

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.077	0.115	0.019
62	29	1.800	0.176	0.033

Difference = mu (14) - mu (62)
Estimate for difference: 0.2767
95% CI for difference: (0.2003, 0.3530)
T-Test of difference = 0 (vs not =): T-Value = 7.29 P-Value = 0.000 DF = 46

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
14	78	9.850	66.5	-7.11
62	131	15.870	127.9	7.11
Overall	209		105.0	

H = 50.52 DF = 1 P = 0.000
H = 50.53 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	41.0	-7.52
62	113	34.00	101.2	7.52
Overall	164		82.5	

H = 56.56 DF = 1 P = 0.000
H = 56.85 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	35.2	-8.57
62	113	17.00	103.8	8.57
Overall	164		82.5	

H = 73.45 DF = 1 P = 0.000
H = 74.24 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	58.7	-4.32
62	113	16.00	93.3	4.32
Overall	164		82.5	

H = 18.66 DF = 1 P = 0.000
H = 18.81 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	33.9	-0.62
62	47	24.00	37.1	0.62
Overall	71		36.0	

H = 0.38 DF = 1 P = 0.535
H = 0.38 DF = 1 P = 0.535 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	56.0	5.85
62	47	28.00	25.8	-5.85
Overall	71		36.0	

H = 34.18 DF = 1 P = 0.000
H = 34.23 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
14         24   36.00      25.5  -3.06
62         47   47.00      41.4   3.06
Overall    71              36.0

H = 9.38  DF = 1  P = 0.002
H = 9.40  DF = 1  P = 0.002  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.280      43.4   4.96
62         29   2.150      20.1  -4.96
Overall    65              33.0

H = 24.56  DF = 1  P = 0.000
H = 24.60  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.115      45.3   5.85
62         29   1.850      17.7  -5.85
Overall    65              33.0

H = 34.18  DF = 1  P = 0.000
H = 34.21  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 28.96    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          58  20    9.85   6.15  (-*-----)
62          47  84   15.87   5.61                              (--*---)
                                   ---+---------+---------+---------+---
                                   10.0      12.0      14.0      16.0

Overall median = 14.48

A 95.0% CI for median(14) - median(62): (-6.85,-4.50)


Mood median test for WL (%)

Chi-Square = 42.31    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          46   5   26.00   5.00     (---*---)
62          40  73   34.00   4.00                                    (---*
                                      +---------+---------+---------+------
                                   25.0      27.5      30.0      32.5

Overall median = 32.00

A 95.0% CI for median(14) - median(62): (-9.00,-6.00)
```

```
Mood median test for Wp (%)

Chi-Square = 45.45    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          47   4   12.00   1.00     *----)
62          40  73   17.00   3.00                               *----)
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 16.00

A 95.0% CI for median(14) - median(62): (-6.00,-4.00)


Mood median test for Ip (%)

Chi-Square = 18.00    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
14          39  12   14.00   3.00   (--------*
62          46  67   16.00   4.00                          (--*--------)
                                    --+---------+---------+---------+----
                                   13.2      14.4      15.6      16.8

Overall median = 15.00

A 95.0% CI for median(14) - median(62): (-4.00,-2.00)


Mood median test for % GRAVEL

Chi-Square = 3.08    DF = 1    P = 0.079

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          16   8   21.25   6.00     (----*------------------)
62          21  26   24.00  19.00     (---------------*-------------------)
                                      +---------+---------+---------+------
                                   20.0      22.5      25.0      27.5

Overall median = 23.00

A 95.0% CI for median(14) - median(62): (-5.65,1.91)


Mood median test for % SAND

Chi-Square = 33.40    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14           1  23    42.8    9.5                        (-----*---)
62          36  11    28.0    9.0  (----*--)
                                   --------+---------+---------+--------
                                        30.0      36.0      42.0

Overall median = 33.0

A 95.0% CI for median(14) - median(62): (10.7,17.3)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 14.16    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14          20   4    36.0    7.6  (-------*-)
62          17  30    47.0   20.0                    (-------*-----)
                                   --------+---------+---------+--------
                                        36.0      42.0      48.0

Overall median = 41.0

A 95.0% CI for median(14) - median(62): (-15.8,-8.0)


Mood median test for Bulk Density

Chi-Square = 22.06    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14          10  26   2.280  0.137                     (----*-----)
62          25   4   2.150  0.196  (----------*----)
                                   ------+---------+---------+---------+
                                       2.10      2.20      2.30      2.40

Overall median = 2.220

A 95.0% CI for median(14) - median(62): (0.046,0.284)


Mood median test for Dry Density

Chi-Square = 34.93    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14           7  29   2.115  0.158                            (-----*--)
62          27   2   1.850  0.315  (---------*------)
                                   ------+---------+---------+---------+
                                       1.80      1.92      2.04      2.16

Overall median = 1.990

A 95.0% CI for median(14) - median(62): (0.126,0.384)
```

Results for: Domain 14 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         78  11.89   4.13     0.47
63         55  17.40   5.42     0.73

Difference = mu (14) - mu (63)
Estimate for difference:  -5.504
95% CI for difference:  (-7.228, -3.781)
T-Test of difference = 0 (vs not =): T-Value = -6.34  P-Value = 0.000  DF = 96


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  27.00   5.23     0.73
63         58  34.88   4.40     0.58

Difference = mu (14) - mu (63)
Estimate for difference:  -7.879
95% CI for difference:  (-9.731, -6.028)
T-Test of difference = 0 (vs not =): T-Value = -8.45  P-Value = 0.000  DF = 98


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  13.04   2.58     0.36
63         58  17.98   2.92     0.38

Difference = mu (14) - mu (63)
Estimate for difference:  -4.944
95% CI for difference:  (-5.987, -3.900)
T-Test of difference = 0 (vs not =): T-Value = -9.40  P-Value = 0.000  DF = 106


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  13.96   3.31     0.46
63         58  16.90   3.05     0.40

Difference = mu (14) - mu (63)
Estimate for difference:  -2.936
95% CI for difference:  (-4.150, -1.721)
T-Test of difference = 0 (vs not =): T-Value = -4.79  P-Value = 0.000  DF = 102
Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
14         24  22.67   4.75     0.97
63         30   26.9   11.7      2.1

Difference = mu (14) - mu (63)
Estimate for difference:  -4.27
95% CI for difference:  (-9.03, 0.49)
T-Test of difference = 0 (vs not =): T-Value = -1.81  P-Value = 0.077  DF = 39
```

Two-sample T for % SAND

```
Domain
Reference   N   Mean  StDev  SE Mean
14         24  42.13   5.88      1.2
63         30  29.70   8.47      1.5

Difference = mu (14) - mu (63)
Estimate for difference:  12.42
95% CI for difference:  (8.49, 16.36)
T-Test of difference = 0 (vs not =): T-Value = 6.35  P-Value = 0.000  DF = 51
```

Two-sample T for % Fines (SILT/CLAY)

```
Domain
Reference   N   Mean  StDev  SE Mean
14         24  35.21   5.14      1.0
63         30   43.4   11.2      2.1

Difference = mu (14) - mu (63)
Estimate for difference:  -8.16
95% CI for difference:  (-12.81, -3.51)
T-Test of difference = 0 (vs not =): T-Value = -3.54  P-Value = 0.001  DF = 42
```

Two-sample T for Bulk Density

```
Domain
Reference   N   Mean  StDev  SE Mean
14         36  2.266  0.114    0.019
63         11  2.081  0.118    0.036

Difference = mu (14) - mu (63)
Estimate for difference:  0.1851
95% CI for difference:  (0.0997, 0.2706)
T-Test of difference = 0 (vs not =): T-Value = 4.59  P-Value = 0.000  DF = 16
```

Two-sample T for Dry Density

```
Domain
Reference   N   Mean  StDev  SE Mean
14         36  2.077  0.115    0.019
63         11  1.806  0.147    0.044

Difference = mu (14) - mu (63)
Estimate for difference:  0.2703
95% CI for difference:  (0.1662, 0.3744)
T-Test of difference = 0 (vs not =): T-Value = 5.61  P-Value = 0.000  DF = 13
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

```
Domain
Reference    N  Median  Ave Rank      Z
14          78   9.850      50.2  -5.97
63          55  15.380      90.8   5.97
Overall    133              67.0

H = 35.66  DF = 1  P = 0.000
H = 35.68  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	31.6	-7.24
63	58	34.00	75.6	7.24
Overall	109		55.0	

H = 52.40 DF = 1 P = 0.000
H = 52.58 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	31.2	-7.37
63	58	18.00	75.9	7.37
Overall	109		55.0	

H = 54.31 DF = 1 P = 0.000
H = 55.23 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	39.5	-4.79
63	58	16.00	68.6	4.79
Overall	109		55.0	

H = 22.96 DF = 1 P = 0.000
H = 23.18 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	23.5	-1.65
63	30	25.50	30.7	1.65
Overall	54		27.5	

H = 2.73 DF = 1 P = 0.098
H = 2.74 DF = 1 P = 0.098 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	39.3	4.94
63	30	29.00	18.0	-4.94
Overall	54		27.5	

H = 24.44 DF = 1 P = 0.000
H = 24.49 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
14         24   36.00      19.9  -3.19
63         30   42.50      33.6   3.19
Overall    54              27.5

H = 10.15  DF = 1  P = 0.001
H = 10.17  DF = 1  P = 0.001  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.280      28.3   3.88
63         11   2.090      10.0  -3.88
Overall    47              24.0

H = 15.07  DF = 1  P = 0.000
H = 15.11  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.115      28.9   4.40
63         11   1.840       8.1  -4.40
Overall    47              24.0

H = 19.33  DF = 1  P = 0.000
H = 19.36  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 17.00    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
14          51  27    9.85   6.15   (*----)
63          16  39   15.38   5.92                         (--*------)
                                     --+---------+---------+---------+----
                                   10.0      12.5      15.0      17.5

Overall median = 13.79

A 95.0% CI for median(14) - median(63): (-7.61,-3.86)


Mood median test for WL (%)

Chi-Square = 55.19    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -------+---------+---------+---------
14          46   5    26.0    5.0   (---*--)
63          11  47    34.0    5.0                            (--*---)
                                    -------+---------+---------+---------
                                       27.0      30.0      33.0

Overall median = 31.0

A 95.0% CI for median(14) - median(63): (-9.0,-6.0)
```

```
Mood median test for Wp (%)

Chi-Square = 44.90    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
14          45   6   12.00   1.00    *----)
63          14  44   18.00   4.25                             (----*----)
                                     +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 15.00

A 95.0% CI for median(14) - median(63): (-6.00,-4.91)


Mood median test for Ip (%)

Chi-Square = 24.16    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          39  12   14.00   3.00  (-----*
63          17  41   16.00   4.00                      *------------)
                                   ---+---------+---------+---------+---
                                   13.5      15.0      16.5      18.0

Overall median = 15.00

A 95.0% CI for median(14) - median(63): (-4.00,-2.00)


Mood median test for % GRAVEL

Chi-Square = 2.92    DF = 1    P = 0.088

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          16   8    21.3    6.0  (---*------------)
63          13  17    25.5   15.3        (---------*-----------------)
                                   ---+---------+---------+---------+---
                                   21.0      24.5      28.0      31.5

Overall median = 23.0

A 95.0% CI for median(14) - median(63): (-7.7,0.2)


Mood median test for % SAND

Chi-Square = 23.83    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14           4  20    42.8    9.5                        (-----*---)
63          25   5    29.0    9.0  (----*----)
                                   -------+---------+---------+---------
                                       30.0      36.0      42.0

Overall median = 34.0

A 95.0% CI for median(14) - median(63): (9.0,18.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 10.80    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14          18   6    36.0    7.6  (--------*-)
63           9  21    42.5   15.5                (------*------------)
                                   -------+---------+---------+---------
                                       35.0      40.0      45.0

Overall median = 38.5

A 95.0% CI for median(14) - median(63): (-13.2,-2.9)


Mood median test for Bulk Density

Chi-Square = 13.76    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14          13  23   2.280  0.137                        (---*----)
63          11   0   2.090  0.260  (-----------*---------)
                                   --------+---------+---------+--------
                                         2.04      2.16      2.28

Overall median = 2.230

A 95.0% CI for median(14) - median(63): (0.047,0.380)


Mood median test for Dry Density

Chi-Square = 13.76    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14          13  23   2.115  0.158                        (----*--)
63          11   0   1.840  0.250  (----------*-----)
                                   --------+---------+---------+--------
                                         1.80      1.95      2.10

Overall median = 2.040

A 95.0% CI for median(14) - median(63): (0.130,0.450)
```

Results for: Domain 14 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         78  11.89   4.13     0.47
64         24  15.34   2.86     0.58

Difference = mu (14) - mu (64)
Estimate for difference:  -3.448
95% CI for difference:  (-4.948, -1.948)
T-Test of difference = 0 (vs not =): T-Value = -4.61  P-Value = 0.000  DF = 55


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  27.00   5.23     0.73
64         27  34.44   2.34     0.45

Difference = mu (14) - mu (64)
Estimate for difference:  -7.444
95% CI for difference:  (-9.158, -5.731)
T-Test of difference = 0 (vs not =): T-Value = -8.66  P-Value = 0.000  DF = 74


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  13.04   2.58     0.36
64         27  17.81   2.24     0.43

Difference = mu (14) - mu (64)
Estimate for difference:  -4.776
95% CI for difference:  (-5.899, -3.652)
T-Test of difference = 0 (vs not =): T-Value = -8.50  P-Value = 0.000  DF = 59


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  13.96   3.31     0.46
64         27  16.63   2.39     0.46

Difference = mu (14) - mu (64)
Estimate for difference:  -2.669
95% CI for difference:  (-3.971, -1.366)
T-Test of difference = 0 (vs not =): T-Value = -4.09  P-Value = 0.000  DF = 68


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
14         24  22.67   4.75     0.97
64          2   19.0   11.3      8.0

Difference = mu (14) - mu (64)
Estimate for difference:  3.67
95% CI for difference:  (-98.73, 106.06)
T-Test of difference = 0 (vs not =): T-Value = 0.46  P-Value = 0.728  DF = 1
```

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
14         24  42.13   5.88      1.2
64          2  27.50   2.12      1.5

Difference = mu (14) - mu (64)
Estimate for difference:  14.63
95% CI for difference:  (6.36, 22.89)
T-Test of difference = 0 (vs not =): T-Value = 7.61  P-Value = 0.017  DF = 2


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
14         24  35.21   5.14      1.0
64          2  53.50   9.19      6.5

Difference = mu (14) - mu (64)
Estimate for difference:  -18.29
95% CI for difference:  (-101.95, 65.37)
T-Test of difference = 0 (vs not =): T-Value = -2.78  P-Value = 0.220  DF = 1


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
14         36   2.266   0.114    0.019
64         13  2.1462  0.0859    0.024

Difference = mu (14) - mu (64)
Estimate for difference:  0.1200
95% CI for difference:  (0.0575, 0.1824)
T-Test of difference = 0 (vs not =): T-Value = 3.93  P-Value = 0.001  DF = 28


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
14         36   2.077   0.115    0.019
64         13  1.8731  0.0910    0.025

Difference = mu (14) - mu (64)
Estimate for difference:  0.2036
95% CI for difference:  (0.1385, 0.2687)
T-Test of difference = 0 (vs not =): T-Value = 6.43  P-Value = 0.000  DF = 26
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
14          78   9.850      45.0  -4.00
64          24  15.440      72.6   4.00
Overall    102              51.5

H = 16.03  DF = 1  P = 0.000
H = 16.06  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	28.6	-5.85
64	27	34.00	60.1	5.85
Overall	78		39.5	

H = 34.22 DF = 1 P = 0.000
H = 34.37 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	28.0	-6.18
64	27	18.00	61.3	6.18
Overall	78		39.5	

H = 38.14 DF = 1 P = 0.000
H = 39.35 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	32.2	-3.91
64	27	17.00	53.3	3.91
Overall	78		39.5	

H = 15.31 DF = 1 P = 0.000
H = 15.47 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	13.7	0.43
64	2	19.00	11.3	-0.43
Overall	26		13.5	

H = 0.19 DF = 1 P = 0.665
H = 0.19 DF = 1 P = 0.664 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	14.5	2.31
64	2	27.50	1.5	-2.31
Overall	26		13.5	

H = 5.33 DF = 1 P = 0.021
H = 5.34 DF = 1 P = 0.021 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
14         24   36.00      12.5  -2.31
64          2   53.50      25.5   2.31
Overall    26              13.5

H = 5.33  DF = 1  P = 0.021
H = 5.36  DF = 1  P = 0.021  (adjusted for ties)

* NOTE * One or more small samples
```

```
Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.280      29.3   3.53
64         13   2.180      13.0  -3.53
Overall    49              25.0

H = 12.48  DF = 1  P = 0.000
H = 12.51  DF = 1  P = 0.000  (adjusted for ties)
```

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.115      30.5   4.46
64         13   1.900       9.8  -4.46
Overall    49              25.0

H = 19.90  DF = 1  P = 0.000
H = 19.94  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 21.79    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
14          49  29    9.85   6.15   (*----)
64           2  22   15.44   4.00                 (---------*-----)
                                    --+---------+---------+---------+----
                                   10.0      12.5      15.0      17.5

Overall median = 11.83

A 95.0% CI for median(14) - median(64): (-7.30,-2.13)
```

```
Mood median test for WL (%)

Chi-Square = 48.18    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14          42   9    26.0    5.0  (---*--)
64           0  27    34.0    4.0                             (--*---)
                                   -------+---------+---------+---------
                                       27.0      30.0      33.0

Overall median = 29.0

A 95.0% CI for median(14) - median(64): (-10.0,-7.8)


Mood median test for Wp (%)

Chi-Square = 39.54    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          40  11   12.00   1.00     *----)
64           1  26   18.00   2.00                              (----*
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 13.00

A 95.0% CI for median(14) - median(64): (-6.00,-5.00)


Mood median test for Ip (%)

Chi-Square = 20.45    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
14          35  16   14.00   3.00   (--------*
64           4  23   17.00   3.00                             (--------*
                                    --+---------+---------+---------+----
                                   13.2      14.4      15.6      16.8

Overall median = 14.50

A 95.0% CI for median(14) - median(64): (-4.00,-2.00)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14          12  12    21.3    6.0                   (--*--------)
64           1   1    19.0   16.0  (---------------*---------------)
                                   --------+---------+---------+--------
                                        15.0      20.0      25.0

Overall median = 21.3
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(14) - median(64): (-12.0,22.5)
```

```
Mood median test for % SAND

Chi-Square = 2.17    DF = 1    P = 0.141

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14          11  13    42.8    9.5                       (-----*---)
64           2   0    27.5    3.0  (--*-)
                                   -------+---------+---------+---------
                                       30.0      36.0      42.0

Overall median = 41.8
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(14) - median(64): (3.5,27.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.95    DF = 1    P = 0.086

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
14          15   9    36.0    7.6    (-----*)
64           0   2    53.5   13.0                       (-------*-------)
                                     -+---------+---------+---------+-----
                                   32.0      40.0      48.0      56.0

Overall median = 36.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(14) - median(64): (-35.0,-2.0)
```

```
Mood median test for Bulk Density

Chi-Square = 12.07    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
14          13  23   2.280  0.137                      (-----*------)
64          12   1   2.180  0.140    (------------*--)
                                     +---------+---------+---------+------
                                   2.080     2.160     2.240     2.320

Overall median = 2.230

A 95.0% CI for median(14) - median(64): (0.050,0.240)
```

```
Mood median test for Dry Density

Chi-Square = 16.99    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
14          12  24   2.115  0.158                        (-------*--)
64          13   0   1.900  0.145  (--------*----)
                                   ---------+---------+---------+-------
                                          1.90      2.00      2.10

Overall median = 2.030

A 95.0% CI for median(14) - median(64): (0.110,0.320)
```

Results for: Domain 14 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
14	78	11.89	4.13	0.47
65	7	17.71	4.27	1.6

Difference = mu (14) - mu (65)
Estimate for difference: -5.82
95% CI for difference: (-9.80, -1.85)
T-Test of difference = 0 (vs not =): T-Value = -3.46 P-Value = 0.010 DF = 7

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	27.00	5.23	0.73
65	8	35.25	5.60	2.0

Difference = mu (14) - mu (65)
Estimate for difference: -8.25
95% CI for difference: (-13.03, -3.47)
T-Test of difference = 0 (vs not =): T-Value = -3.91 P-Value = 0.004 DF = 9

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.04	2.58	0.36
65	8	18.88	1.46	0.52

Difference = mu (14) - mu (65)
Estimate for difference: -5.836
95% CI for difference: (-7.177, -4.495)
T-Test of difference = 0 (vs not =): T-Value = -9.28 P-Value = 0.000 DF = 15

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.96	3.31	0.46
65	8	16.38	4.41	1.6

Difference = mu (14) - mu (65)
Estimate for difference: -2.41
95% CI for difference: (-6.16, 1.33)
T-Test of difference = 0 (vs not =): T-Value = -1.49 P-Value = 0.176 DF = 8

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
14	24	22.67	4.75	0.97
65	2	20.0	11.3	8.0

Difference = mu (14) - mu (65)
Estimate for difference: 2.67
95% CI for difference: (-99.73, 105.06)
T-Test of difference = 0 (vs not =): T-Value = 0.33 P-Value = 0.797 DF = 1

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
14         24  42.13   5.88      1.2
65          2  34.00   1.41      1.0

Difference = mu (14) - mu (65)
Estimate for difference:  8.13
95% CI for difference:  (4.11, 12.14)
T-Test of difference = 0 (vs not =): T-Value = 5.20  P-Value = 0.003  DF = 5


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
14         24  35.21   5.14      1.0
65          2   46.0   12.7      9.0

Difference = mu (14) - mu (65)
Estimate for difference:  -10.79
95% CI for difference:  (-125.92, 104.34)
T-Test of difference = 0 (vs not =): T-Value = -1.19  P-Value = 0.445  DF = 1


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
14         36   2.266   0.114    0.019
65          7  2.0929  0.0496    0.019

Difference = mu (14) - mu (65)
Estimate for difference:  0.1733
95% CI for difference:  (0.1175, 0.2290)
T-Test of difference = 0 (vs not =): T-Value = 6.49  P-Value = 0.000  DF = 20


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
14         36   2.077   0.115    0.019
65          7  1.7800  0.0995    0.038

Difference = mu (14) - mu (65)
Estimate for difference:  0.2967
95% CI for difference:  (0.2012, 0.3921)
T-Test of difference = 0 (vs not =): T-Value = 7.03  P-Value = 0.000  DF = 9
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
14         78   9.850      40.6  -3.04
65          7  17.000      70.1   3.04
Overall    85              43.0

H = 9.23  DF = 1  P = 0.002
H = 9.24  DF = 1  P = 0.002  (adjusted for ties)
```

```
Kruskal-Wallis Test on WL (%)

Domain
Reference   N  Median  Ave Rank      Z
14         51   26.00      27.3  -3.06
65          8   37.50      47.3   3.06
Overall    59              30.0

H = 9.34  DF = 1  P = 0.002
H = 9.41  DF = 1  P = 0.002  (adjusted for ties)


Kruskal-Wallis Test on Wp (%)

Domain
Reference   N  Median  Ave Rank      Z
14         51   12.00      26.4  -4.08
65          8   19.00      53.1   4.08
Overall    59              30.0

H = 16.69  DF = 1  P = 0.000
H = 17.84  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Ip (%)

Domain
Reference   N  Median  Ave Rank      Z
14         51   14.00      28.4  -1.77
65          8   18.50      40.0   1.77
Overall    59              30.0

H = 3.14  DF = 1  P = 0.077
H = 3.17  DF = 1  P = 0.075  (adjusted for ties)


Kruskal-Wallis Test on % GRAVEL

Domain
Reference   N  Median  Ave Rank      Z
14         24   21.25      13.6   0.29
65          2   20.00      12.0  -0.29
Overall    26              13.5

H = 0.08  DF = 1  P = 0.773
H = 0.08  DF = 1  P = 0.772  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on % SAND

Domain
Reference   N  Median  Ave Rank      Z
14         24   42.75      14.3   1.83
65          2   34.00       4.0  -1.83
Overall    26              13.5

H = 3.34  DF = 1  P = 0.068
H = 3.35  DF = 1  P = 0.067  (adjusted for ties)

* NOTE * One or more small samples
```

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
14	24	36.00	12.8	-1.54
65	2	46.00	21.5	1.54
Overall	26		13.5	

H = 2.37 DF = 1 P = 0.124
H = 2.38 DF = 1 P = 0.123 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
14	36	2.280	24.9	3.42
65	7	2.100	7.1	-3.42
Overall	43		22.0	

H = 11.71 DF = 1 P = 0.001
H = 11.74 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
14	36	2.115	25.3	3.88
65	7	1.810	5.1	-3.88
Overall	43		22.0	

H = 15.07 DF = 1 P = 0.000
H = 15.09 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 9.90   DF = 1   P = 0.002

```
Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          48  30     9.9    6.1  (*---)
65           0   7    17.0    4.0                (-------*----------)
                                   ---+---------+---------+---------+---
                                    10.5      14.0      17.5      21.0
```

Overall median = 11.0

A 95.0% CI for median(14) - median(65): (-10.6,-4.6)

```
Mood median test for WL (%)

Chi-Square = 5.95    DF = 1    P = 0.015

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
14          30  21    26.0    5.0    (-*-)
65           1   7    37.5    8.3               (-------------*----)
                                     +---------+---------+---------+------
                                  25.0      30.0      35.0      40.0

Overall median = 26.0

A 95.0% CI for median(14) - median(65): (-15.0,-5.0)


Mood median test for Wp (%)

Chi-Square = 10.25    DF = 1    P = 0.001

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
14          31  20   12.00   1.00   *---)
65           0   8   19.00   1.50                         (----*---)
                                    --+---------+---------+---------+----
                                  12.5      15.0      17.5      20.0

Overall median = 12.00

A 95.0% CI for median(14) - median(65): (-8.00,-5.99)


Mood median test for Ip (%)

Chi-Square = 5.63    DF = 1    P = 0.018

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
14          35  16   14.00   3.00         (----*
65           2   6   18.50   6.25   (---------------------------------*--)
                                    -+---------+---------+---------+-----
                                  12.0      14.0      16.0      18.0

Overall median = 14.00

A 95.0% CI for median(14) - median(65): (-6.01,2.02)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14          12  12    21.3    6.0                 (--*--------)
65           1   1    20.0   16.0  (---------------*---------------)
                                   ------+---------+---------+---------+
                                      15.0      20.0      25.0      30.0

Overall median = 21.3
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(14) - median(65): (-13.0,21.5)
```

```
Mood median test for % SAND

Chi-Square = 2.17    DF = 1    P = 0.141

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14          11  13    42.8    9.5                   (----------*------)
65           2   0    34.0    2.0  (--*--)
                                   ------+---------+---------+---------+
                                      35.0      38.5      42.0      45.5

Overall median = 41.8
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(14) - median(65): (-2.5,20.5)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.95    DF = 1    P = 0.086

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
14          15   9    36.0    7.6  (-----*-)
65           0   2    46.0   18.0          (------------*-----------)
                                   -----+---------+---------+---------+-
                                     35.0      42.0      49.0      56.0

Overall median = 36.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(14) - median(65): (-30.0,8.0)


Mood median test for Bulk Density

Chi-Square = 7.98    DF = 1    P = 0.005

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
14          15  21   2.280  0.137                     (----*-----)
65           7   0   2.100  0.070  (-----*--)
                                   ------+---------+---------+---------+
                                       2.10      2.20      2.30      2.40

Overall median = 2.250

A 95.0% CI for median(14) - median(65): (0.135,0.285)


Mood median test for Dry Density

Chi-Square = 7.27    DF = 1    P = 0.007

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14          16  20   2.115  0.158                         (----*--)
65           7   0   1.810  0.120  (-------*--)
                                   -------+---------+---------+---------
                                        1.80      1.95      2.10

Overall median = 2.060

A 95.0% CI for median(14) - median(65): (0.211,0.426)
```

Results for: Domain 14 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
14	78	11.89	4.13	0.47
71	44	14.56	5.80	0.87

Difference = mu (14) - mu (71)
Estimate for difference: -2.669
95% CI for difference: (-4.647, -0.691)
T-Test of difference = 0 (vs not =): T-Value = -2.69 P-Value = 0.009 DF = 68

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	27.00	5.23	0.73
71	17	31.24	2.61	0.63

Difference = mu (14) - mu (71)
Estimate for difference: -4.235
95% CI for difference: (-6.176, -2.295)
T-Test of difference = 0 (vs not =): T-Value = -4.37 P-Value = 0.000 DF = 55

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.04	2.58	0.36
71	17	15.35	1.73	0.42

Difference = mu (14) - mu (71)
Estimate for difference: -2.314
95% CI for difference: (-3.431, -1.196)
T-Test of difference = 0 (vs not =): T-Value = -4.18 P-Value = 0.000 DF = 41

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
14	51	13.96	3.31	0.46
71	17	15.88	1.96	0.48

Difference = mu (14) - mu (71)
Estimate for difference: -1.922
95% CI for difference: (-3.259, -0.584)
T-Test of difference = 0 (vs not =): T-Value = -2.89 P-Value = 0.006 DF = 47

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
14	24	22.67	4.75	0.97
71	16	20.69	6.81	1.7

Difference = mu (14) - mu (71)
Estimate for difference: 1.98
95% CI for difference: (-2.06, 6.02)
T-Test of difference = 0 (vs not =): T-Value = 1.01 P-Value = 0.322 DF = 24

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
14	24	42.13	5.88	1.2
71	16	24.37	7.67	1.9

Difference = mu (14) - mu (71)
Estimate for difference: 17.75
95% CI for difference: (13.10, 22.40)
T-Test of difference = 0 (vs not =): T-Value = 7.85 P-Value = 0.000 DF = 26

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
14	24	35.21	5.14	1.0
71	16	52.1	11.3	2.8

Difference = mu (14) - mu (71)
Estimate for difference: -16.92
95% CI for difference: (-23.23, -10.61)
T-Test of difference = 0 (vs not =): T-Value = -5.61 P-Value = 0.000 DF = 19

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.266	0.114	0.019
71	12	2.2583	0.0486	0.014

Difference = mu (14) - mu (71)
Estimate for difference: 0.0078
95% CI for difference: (-0.0399, 0.0555)
T-Test of difference = 0 (vs not =): T-Value = 0.33 P-Value = 0.744 DF = 43

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
14	36	2.077	0.115	0.019
71	12	1.9937	0.0718	0.021

Difference = mu (14) - mu (71)
Estimate for difference: 0.0830
95% CI for difference: (0.0253, 0.1406)
T-Test of difference = 0 (vs not =): T-Value = 2.94 P-Value = 0.006 DF = 30

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
14	78	9.850	52.9	-3.60
71	44	13.000	76.8	3.60
Overall	122		61.5	

H = 12.93 DF = 1 P = 0.000
H = 12.98 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	28.7	-4.21
71	17	31.00	52.0	4.21
Overall	68		34.5	

H = 17.69 DF = 1 P = 0.000
H = 17.82 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	28.9	-4.05
71	17	16.00	51.3	4.05
Overall	68		34.5	

H = 16.41 DF = 1 P = 0.000
H = 17.20 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	30.6	-2.81
71	17	16.00	46.2	2.81
Overall	68		34.5	

H = 7.90 DF = 1 P = 0.005
H = 8.00 DF = 1 P = 0.005 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	23.0	1.68
71	16	19.00	16.7	-1.68
Overall	40		20.5	

H = 2.84 DF = 1 P = 0.092
H = 2.85 DF = 1 P = 0.091 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	28.2	5.09
71	16	23.50	9.0	-5.09
Overall	40		20.5	

H = 25.95 DF = 1 P = 0.000
H = 25.98 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
14	24	36.00	13.9	-4.39
71	16	53.00	30.4	4.39
Overall	40		20.5	

H = 19.27 DF = 1 P = 0.000
H = 19.30 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
14	36	2.280	25.4	0.80
71	12	2.260	21.7	-0.80
Overall	48		24.5	

H = 0.64 DF = 1 P = 0.425
H = 0.64 DF = 1 P = 0.424 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
14	36	2.115	27.7	2.73
71	12	1.991	15.0	-2.73
Overall	48		24.5	

H = 7.43 DF = 1 P = 0.006
H = 7.44 DF = 1 P = 0.006 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 16.36   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14          51  27    9.85   6.15  (--*-------)
71          12  32   13.00   3.75                          *-----)
                                   -------+---------+---------+---------
                                       10.5      12.0      13.5
```

Overall median = 12.00

A 95.0% CI for median(14) - median(71): (-4.60,-2.00)

Mood median test for WL (%)
hi-Square = 17.89   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
14          36  15   26.00   5.00  (----*----)
71           2  15   31.00   3.50                           (----*----)
                                   -----+---------+---------+---------+-
                                     26.0      28.0      30.0      32.0
```

Overall median = 27.00

A 95.0% CI for median(14) - median(71): (-7.00,-4.00)

```
Mood median test for Wp (%)

Chi-Square = 24.00    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
14          40  11   12.00   1.00     *------)
71           2  15   16.00   3.00                  (------------*-----)
                                      +---------+---------+---------+------
                                   12.0      13.5      15.0      16.5

Overall median = 13.00

A 95.0% CI for median(14) - median(71): (-5.00,-2.64)


Mood median test for Ip (%)

Chi-Square = 10.60    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
14          35  16   14.00   3.00   (--------*
71           4  13   16.00   2.50                    (-------*--------)
                                    --+---------+---------+---------+----
                                   13.2      14.4      15.6      16.8

Overall median = 14.00

A 95.0% CI for median(14) - median(71): (-4.00,-1.00)


Mood median test for % GRAVEL

Chi-Square = 1.38    DF = 1    P = 0.240

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
14          12  12   21.25   6.00              (----*------------------)
71          11   5   19.00   7.50  (--------*----------------)
                                   ---+---------+---------+---------+---
                                   17.5      20.0      22.5      25.0

Overall median = 21.00

A 95.0% CI for median(14) - median(71): (-2.50,6.00)


Mood median test for % SAND

Chi-Square = 20.42    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
14           5  19    42.8    9.5                             (---*---)
71          15   1    23.5   14.0  (-------*---------)
                                   ---------+---------+---------+-------
                                         24.0      32.0      40.0

Overall median = 36.5

A 95.0% CI for median(14) - median(71): (9.0,27.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 20.42    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
14          19   5    36.0    7.6   (-----*)
71           1  15    53.0   15.5                       (------*-------)
                                    -+---------+---------+---------+-----
                                   32.0      40.0      48.0      56.0

Overall median = 39.5

A 95.0% CI for median(14) - median(71): (-25.0,-11.0)


Mood median test for Bulk Density

Chi-Square = 0.44    DF = 1    P = 0.505

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
14          17  19   2.280  0.137  (---------------*------------------)
71           7   5   2.260  0.058   (--------*---------)
                                   -------+---------+---------+---------
                                        2.250     2.280     2.310

Overall median = 2.265

A 95.0% CI for median(14) - median(71): (-0.034,0.093)


Mood median test for Dry Density

Chi-Square = 7.11    DF = 1    P = 0.008

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
14          14  22   2.115  0.158              (------------*-----)
71          10   2   1.991  0.067  (---*------)
                                   --+---------+---------+---------+----
                                   1.980     2.040     2.100     2.160

Overall median = 2.055

A 95.0% CI for median(14) - median(71): (0.031,0.159)
```

Results for: Domain 14 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         78  11.89   4.13     0.47
72         26  15.13   4.24     0.83

Difference = mu (14) - mu (72)
Estimate for difference:  -3.235
95% CI for difference:  (-5.163, -1.306)
T-Test of difference = 0 (vs not =): T-Value = -3.39  P-Value = 0.002  DF = 41


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  27.00   5.23     0.73
72         10  30.50   4.84      1.5

Difference = mu (14) - mu (72)
Estimate for difference:  -3.50
95% CI for difference:  (-7.16, 0.16)
T-Test of difference = 0 (vs not =): T-Value = -2.06  P-Value = 0.060  DF = 13


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  13.04   2.58     0.36
72         10  15.20   1.99     0.63

Difference = mu (14) - mu (72)
Estimate for difference:  -2.161
95% CI for difference:  (-3.706, -0.615)
T-Test of difference = 0 (vs not =): T-Value = -2.98  P-Value = 0.009  DF = 15


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
14         51  13.96   3.31     0.46
72         10  15.30   3.71      1.2

Difference = mu (14) - mu (72)
Estimate for difference:  -1.34
95% CI for difference:  (-4.12, 1.44)
T-Test of difference = 0 (vs not =): T-Value = -1.06  P-Value = 0.312  DF = 11


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
14         24  22.67   4.75     0.97
72          9  20.56   7.14      2.4

Difference = mu (14) - mu (72)
Estimate for difference:  2.11
95% CI for difference:  (-3.62, 7.84)
T-Test of difference = 0 (vs not =): T-Value = 0.82  P-Value = 0.431  DF = 10
```

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
14         24  42.13   5.88      1.2
72          9  27.56   7.20      2.4

Difference = mu (14) - mu (72)
Estimate for difference:  14.57
95% CI for difference:  (8.72, 20.41)
T-Test of difference = 0 (vs not =): T-Value = 5.43  P-Value = 0.000  DF = 12


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
14         24  35.21   5.14      1.0
72          9  51.89   7.66      2.6

Difference = mu (14) - mu (72)
Estimate for difference:  -16.68
95% CI for difference:  (-22.83, -10.53)
T-Test of difference = 0 (vs not =): T-Value = -6.05  P-Value = 0.000  DF = 10


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
14         36  2.266  0.114    0.019
72          7  2.221  0.100    0.038

Difference = mu (14) - mu (72)
Estimate for difference:  0.0447
95% CI for difference:  (-0.0514, 0.1407)
T-Test of difference = 0 (vs not =): T-Value = 1.05  P-Value = 0.320  DF = 9


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
14         36  2.077  0.115    0.019
72          7  1.944  0.155    0.059

Difference = mu (14) - mu (72)
Estimate for difference:  0.1323
95% CI for difference:  (-0.0136, 0.2783)
T-Test of difference = 0 (vs not =): T-Value = 2.14  P-Value = 0.069  DF = 7
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
14          78   9.850      46.5  -3.53
72          26  13.000      70.6   3.53
Overall    104              52.5

H = 12.48  DF = 1  P = 0.000
H = 12.50  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	26.00	28.3	-2.64
72	10	30.00	44.5	2.64
Overall	61		31.0	

H = 6.97 DF = 1 P = 0.008
H = 7.03 DF = 1 P = 0.008 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	12.00	27.6	-3.40
72	10	15.00	48.5	3.40
Overall	61		31.0	

H = 11.56 DF = 1 P = 0.001
H = 12.32 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
14	51	14.00	30.0	-0.98
72	10	15.50	36.0	0.98
Overall	61		31.0	

H = 0.97 DF = 1 P = 0.325
H = 0.98 DF = 1 P = 0.322 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
14	24	21.25	18.0	0.99
72	9	17.00	14.3	-0.99
Overall	33		17.0	

H = 0.98 DF = 1 P = 0.322
H = 0.98 DF = 1 P = 0.321 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
14	24	42.75	20.9	3.74
72	9	26.00	6.7	-3.74
Overall	33		17.0	

H = 13.98 DF = 1 P = 0.000
H = 13.99 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
14         24   36.00      12.8  -4.08
72          9   53.00      28.2   4.08
Overall    33              17.0

H = 16.67  DF = 1  P = 0.000
H = 16.71  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.280      22.9   1.05
72          7   2.240      17.4  -1.05
Overall    43              22.0

H = 1.11  DF = 1  P = 0.292
H = 1.11  DF = 1  P = 0.292  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
14         36   2.115      24.1   2.48
72          7   2.000      11.2  -2.48
Overall    43              22.0

H = 6.17  DF = 1  P = 0.013
H = 6.18  DF = 1  P = 0.013  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 16.62    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
14          48  30    9.85   6.15   (*----)
72           4  22   13.00   5.75                (*---------------)
                                    --+---------+---------+---------+----
                                   10.0      12.5      15.0      17.5

Overall median = 11.20

A 95.0% CI for median(14) - median(72): (-7.30,-2.00)


Mood median test for WL (%)

Chi-Square = 7.97    DF = 1    P = 0.005

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
14          30  21   26.00   5.00  (----*----)
72           1   9   30.00   5.25            (--------------*-----------)
                                   -----+---------+---------+---------+-
                                     26.0      28.0      30.0      32.0

Overall median = 26.00

A 95.0% CI for median(14) - median(72): (-7.15,-1.00)
```

```
Mood median test for Wp (%)

Chi-Square = 12.36    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
14          31  20   12.00   1.00    *------)
72           0  10   15.00   2.75               (--------*----------)
                                     +---------+---------+---------+------
                                    12.0      13.5      15.0      16.5

Overall median = 12.00

A 95.0% CI for median(14) - median(72): (-4.30,-1.85)


Mood median test for Ip (%)

Chi-Square = 2.97    DF = 1    P = 0.085

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
14          35  16   14.00   3.00           (-----*
72           4   6   15.50   5.25    (---------------------*------------)
                                     +---------+---------+---------+------
                                    12.0      13.5      15.0      16.5

Overall median = 14.00

A 95.0% CI for median(14) - median(72): (-4.15,2.00)


Mood median test for % GRAVEL

Chi-Square = 0.08    DF = 1    P = 0.776

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
14          12  12    21.3    6.0              (--*-----------)
72           5   4    17.0   13.5  (------*-------------------------)
                                   ----+---------+---------+---------+--
                                     16.0      20.0      24.0      28.0

Overall median = 21.0

A 95.0% CI for median(14) - median(72): (-7.0,9.0)


Mood median test for % SAND

Chi-Square = 6.92    DF = 1    P = 0.009

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
14           9  15    42.8    9.5                        (----*---)
72           8   1    26.0    7.5  (----*------)
                                   --------+---------+---------+--------
                                        28.0      35.0      42.0

Overall median = 40.0

A 95.0% CI for median(14) - median(72): (10.0,21.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 13.15    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
14          17   7    36.0    7.6    (-----*)
72           0   9    53.0   15.5                   (-----------*--------)
                                     -+---------+---------+---------+-----
                                   32.0      40.0      48.0      56.0

Overall median = 37.0

A 95.0% CI for median(14) - median(72): (-27.0,-6.0)


Mood median test for Bulk Density

Chi-Square = 1.37    DF = 1    P = 0.241

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
14          17  19   2.280  0.137             (---------*-----------)
72           5   2   2.240  0.040  (------------*--------)
                                   -----+---------+---------+---------+-
                                      2.200     2.250     2.300     2.350

Overall median = 2.260

A 95.0% CI for median(14) - median(72): (-0.023,0.122)


Mood median test for Dry Density

Chi-Square = 7.27    DF = 1    P = 0.007

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
14          16  20   2.115  0.158                    (-------*--)
72           7   0   2.000  0.070  (-------------*--)
                                   ----+---------+---------+---------+--
                                     1.90      2.00      2.10      2.20

Overall median = 2.060

A 95.0% CI for median(14) - median(72): (0.038,0.228)
```

Results for: Domain 21 v 31

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference    N   Mean  StDev  SE Mean
21          78  13.72   4.31     0.49
31         125  18.47   2.50     0.22

Difference = mu (21) - mu (31)
Estimate for difference:  -4.749
95% CI for difference:  (-5.812, -3.686)
T-Test of difference = 0 (vs not =): T-Value = -8.85  P-Value = 0.000  DF = 109


Two-sample T for WL (%)

Domain
Reference    N   Mean  StDev  SE Mean
21          24  29.67   5.51      1.1
31         112  33.41   4.86     0.46

Difference = mu (21) - mu (31)
Estimate for difference:  -3.74
95% CI for difference:  (-6.22, -1.27)
T-Test of difference = 0 (vs not =): T-Value = -3.08  P-Value = 0.004  DF = 31


Two-sample T for Wp (%)

Domain
Reference    N   Mean  StDev  SE Mean
21          24  17.17   3.60     0.73
31         111  15.62   1.95     0.19

Difference = mu (21) - mu (31)
Estimate for difference:  1.545
95% CI for difference:  (-0.011, 3.101)
T-Test of difference = 0 (vs not =): T-Value = 2.04  P-Value = 0.052  DF = 26


Two-sample T for Ip (%)

Domain
Reference    N   Mean  StDev  SE Mean
21          24  12.50   4.42     0.90
31         111  17.89   3.19     0.30

Difference = mu (21) - mu (31)
Estimate for difference:  -5.392
95% CI for difference:  (-7.343, -3.441)
T-Test of difference = 0 (vs not =): T-Value = -5.66  P-Value = 0.000  DF = 28


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
21         11  33.64   7.35      2.2
31         35   5.63   5.82     0.98

Difference = mu (21) - mu (31)
Estimate for difference:  28.01
95% CI for difference:  (22.81, 33.21)
T-Test of difference = 0 (vs not =): T-Value = 11.55  P-Value = 0.000  DF = 14
```

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
21         11  22.64   5.22      1.6
31         35  24.29   8.74      1.5

Difference = mu (21) - mu (31)
Estimate for difference:  -1.65
95% CI for difference:  (-6.07, 2.77)
T-Test of difference = 0 (vs not =): T-Value = -0.76  P-Value = 0.451  DF = 28


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
21         11  43.73   9.16      2.8
31         35   70.1   11.4      1.9

Difference = mu (21) - mu (31)
Estimate for difference:  -26.36
95% CI for difference:  (-33.38, -19.34)
T-Test of difference = 0 (vs not =): T-Value = -7.83  P-Value = 0.000  DF = 20


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
21         48   2.296   0.131    0.019
31         43  2.2281  0.0640   0.0098

Difference = mu (21) - mu (31)
Estimate for difference:  0.0678
95% CI for difference:  (0.0254, 0.1102)
T-Test of difference = 0 (vs not =): T-Value = 3.19  P-Value = 0.002  DF = 69


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
21         48   2.007   0.157    0.023
31         43  1.8845  0.0804    0.012

Difference = mu (21) - mu (31)
Estimate for difference:  0.1230
95% CI for difference:  (0.0716, 0.1743)
T-Test of difference = 0 (vs not =): T-Value = 4.78  P-Value = 0.000  DF = 71
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
21          78   12.90      51.6  -9.66
31         125   18.00     133.5   9.66
Overall    203             102.0

H = 93.25  DF = 1  P = 0.000
H = 93.75  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	42.8	-3.52
31	112	34.00	74.0	3.52
Overall	136		68.5	

H = 12.43 DF = 1 P = 0.000
H = 12.49 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	85.0	2.34
31	111	16.00	64.3	-2.34
Overall	135		68.0	

H = 5.49 DF = 1 P = 0.019
H = 5.65 DF = 1 P = 0.017 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	28.3	-5.48
31	111	18.00	76.6	5.48
Overall	135		68.0	

H = 30.05 DF = 1 P = 0.000
H = 30.32 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.000	40.9	4.92
31	35	4.000	18.0	-4.92
Overall	46		23.5	

H = 24.19 DF = 1 P = 0.000
H = 24.34 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	23.6	0.03
31	35	23.00	23.5	-0.03
Overall	46		23.5	

H = 0.00 DF = 1 P = 0.979
H = 0.00 DF = 1 P = 0.979 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
21         11   47.00       7.2  -4.61
31         35   72.00      28.6   4.61
Overall    46              23.5

H = 21.25  DF = 1  P = 0.000
H = 21.29  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.305      55.3   3.55
31         43   2.230      35.6  -3.55
Overall    91              46.0

H = 12.57  DF = 1  P = 0.000
H = 12.59  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.043      58.1   4.60
31         43   1.890      32.5  -4.60
Overall    91              46.0

H = 21.15  DF = 1  P = 0.000
H = 21.16  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 59.38    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
21          71   7   12.90   3.32  (---*-)
31          45  80   18.00   3.00                               *----)
                                   ---------+---------+---------+-------
                                         14.0      16.0      18.0

Overall median = 17.00

A 95.0% CI for median(21) - median(31): (-6.70,-4.67)


Mood median test for WL (%)

Chi-Square = 8.05    DF = 1    P = 0.005

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
21          19   5   28.00   6.50   (---*--------)
31          53  59   34.00   6.00                           (---*---)
                                    --+---------+---------+---------+----
                                   27.5      30.0      32.5      35.0

Overall median = 33.00

A 95.0% CI for median(21) - median(31): (-7.00,-3.00)
```

```
Mood median test for Wp (%)

Chi-Square = 2.27    DF = 1    P = 0.132

Domain                             Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  -----+---------+---------+---------+-
21          7   17   17.00   4.75         (---------*---------------)
31         51   60   16.00   3.00  (-------*
                                   -----+---------+---------+---------+-
                                     15.6      16.8      18.0      19.2

Overall median = 16.00

A 95.0% CI for median(21) - median(31): (0.00,3.33)
```

```
Mood median test for Ip (%)

Chi-Square = 10.77    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21          22   2   12.00   4.25  (---*---)
31          62  49   18.00   4.00                             (*---)
                                   ------+---------+---------+---------+
                                      12.5      15.0      17.5      20.0

Overall median = 18.00

A 95.0% CI for median(21) - median(31): (-7.00,-5.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 15.77    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21           0  11    35.0   11.0                         (---------*)
31          24  11     4.0    6.0  (-*)
                                   --------+---------+---------+--------
                                          10        20        30

Overall median = 5.0

A 95.0% CI for median(21) - median(31): (21.0,33.0)
```

```
Mood median test for % SAND

Chi-Square = 1.08    DF = 1    P = 0.300

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21           4   7   24.00   8.00  (----------------------*-------)
31          19  16   23.00  10.00       (--------------*----------)
                                   --------+---------+---------+--------
                                        20.0      22.5      25.0

Overall median = 23.50

A 95.0% CI for median(21) - median(31): (-6.00,4.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 11.12    DF = 1    P = 0.001

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
21          11   0    47.0    9.0   (------*-)
31          15  20    72.0   16.0                                (--*---)
                                    +---------+---------+---------+------
                                   40        50        60        70

Overall median = 69.0

A 95.0% CI for median(21) - median(31): (-35.0,-20.0)


Mood median test for Bulk Density

Chi-Square = 7.06    DF = 1    P = 0.008

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
21          19  29   2.305  0.119              (-------------*---------)
31          29  14   2.230  0.090  (---*--------)
                                   -------+---------+---------+---------
                                        2.240     2.275     2.310

Overall median = 2.260

A 95.0% CI for median(21) - median(31): (0.009,0.111)


Mood median test for Dry Density

Chi-Square = 16.93    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          15  33   2.043  0.175                 (-------------*------)
31          32  11   1.890  0.119  (--*-----)
                                   --------+---------+---------+--------
                                         1.920     1.980     2.040

Overall median = 1.940

A 95.0% CI for median(21) - median(31): (0.087,0.194)
```

Results for: Domain 21 v 41

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
21	78	13.72	4.31	0.49
41	57	19.60	8.68	1.1

Difference = mu (21) - mu (41)
Estimate for difference: -5.88
95% CI for difference: (-8.37, -3.39)
T-Test of difference = 0 (vs not =): T-Value = -4.71 P-Value = 0.000 DF = 76

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	29.67	5.51	1.1
41	13	44.5	10.6	2.9

Difference = mu (21) - mu (41)
Estimate for difference: -14.79
95% CI for difference: (-21.51, -8.08)
T-Test of difference = 0 (vs not =): T-Value = -4.70 P-Value = 0.000 DF = 15

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	17.17	3.60	0.73
41	13	21.85	4.38	1.2

Difference = mu (21) - mu (41)
Estimate for difference: -4.68
95% CI for difference: (-7.64, -1.72)
T-Test of difference = 0 (vs not =): T-Value = -3.30 P-Value = 0.004 DF = 20

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	12.50	4.42	0.90
41	13	22.62	6.78	1.9

Difference = mu (21) - mu (41)
Estimate for difference: -10.12
95% CI for difference: (-14.51, -5.72)
T-Test of difference = 0 (vs not =): T-Value = -4.85 P-Value = 0.000 DF = 17

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
21	11	33.64	7.35	2.2
41	6	22.3	13.5	5.5

Difference = mu (21) - mu (41)
Estimate for difference: 11.30
95% CI for difference: (-3.25, 25.85)
T-Test of difference = 0 (vs not =): T-Value = 1.90 P-Value = 0.106 DF = 6

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
21         11  22.64   5.22      1.6
41          6  27.00   7.01      2.9

Difference = mu (21) - mu (41)
Estimate for difference:  -4.36
95% CI for difference:  (-11.90, 3.17)
T-Test of difference = 0 (vs not =): T-Value = -1.34  P-Value = 0.218  DF = 8


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
21         11  43.73   9.16      2.8
41          6   50.7   16.1      6.6

Difference = mu (21) - mu (41)
Estimate for difference:  -6.94
95% CI for difference:  (-24.36, 10.48)
T-Test of difference = 0 (vs not =): T-Value = -0.97  P-Value = 0.367  DF = 6


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
21         48   2.296   0.131    0.019
41          8  2.2000  0.0807    0.029

Difference = mu (21) - mu (41)
Estimate for difference:  0.0959
95% CI for difference:  (0.0225, 0.1693)
T-Test of difference = 0 (vs not =): T-Value = 2.80  P-Value = 0.014  DF = 14


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
21         48   2.007   0.157    0.023
41          8  1.8950  0.0735    0.026

Difference = mu (21) - mu (41)
Estimate for difference:  0.1125
95% CI for difference:  (0.0403, 0.1846)
T-Test of difference = 0 (vs not =): T-Value = 3.26  P-Value = 0.004  DF = 19
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
21          78   12.90      47.1  -7.28
41          57   17.00      96.7   7.28
Overall    135              68.0

H = 52.99  DF = 1  P = 0.000
H = 53.07  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	13.5	-4.17
41	13	42.00	29.1	4.17
Overall	37		19.0	

H = 17.37 DF = 1 P = 0.000
H = 17.43 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	14.9	-3.10
41	13	21.00	26.5	3.10
Overall	37		19.0	

H = 9.62 DF = 1 P = 0.002
H = 9.73 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	13.8	-3.99
41	13	22.00	28.7	3.99
Overall	37		19.0	

H = 15.94 DF = 1 P = 0.000
H = 16.06 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.00	10.5	1.61
41	6	23.50	6.3	-1.61
Overall	17		9.0	

H = 2.59 DF = 1 P = 0.108
H = 2.62 DF = 1 P = 0.105 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	7.9	-1.21
41	6	27.50	11.0	1.21
Overall	17		9.0	

H = 1.45 DF = 1 P = 0.228
H = 1.48 DF = 1 P = 0.223 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
21	11	47.00	8.6	-0.40
41	6	46.00	9.7	0.40
Overall	17		9.0	

H = 0.16 DF = 1 P = 0.688
H = 0.16 DF = 1 P = 0.685 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
21	48	2.305	30.8	2.59
41	8	2.225	14.7	-2.59
Overall	56		28.5	

H = 6.69 DF = 1 P = 0.010
H = 6.70 DF = 1 P = 0.010 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
21	48	2.043	30.6	2.39
41	8	1.915	15.8	-2.39
Overall	56		28.5	

H = 5.70 DF = 1 P = 0.017
H = 5.70 DF = 1 P = 0.017 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 45.92   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
21          61  17   12.90   3.32  (---*--)
41          11  46   17.00   4.50                          (---*------)
                                   ---+---------+---------+---------+---
                                   12.8      14.4      16.0      17.6
```

Overall median = 15.00

A 95.0% CI for median(21) - median(41): (-5.61,-3.20)

Mood median test for WL (%)

Chi-Square = 12.07   DF = 1   P = 0.001

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
21          18   6    28.0    6.5    (*--)
41           2  11    42.0   16.5                (-------*-----------)
                                     -+---------+---------+---------+-----
                                   28.0      35.0      42.0      49.0
```

Overall median = 32.0

A 95.0% CI for median(21) - median(41): (-23.0,-7.0)

```
Mood median test for Wp (%)

Chi-Square = 4.79    DF = 1    P = 0.029

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
21          18   6   17.00   4.75  (----*-------)
41           5   8   21.00   5.00               (-------*----------)
                                   -------+---------+---------+---------
                                       17.5      20.0      22.5

Overall median = 19.00

A 95.0% CI for median(21) - median(41): (-7.00,-1.72)
```

```
Mood median test for Ip (%)

Chi-Square = 15.29    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          18   6    12.0    4.3  (-*-)
41           1  12    22.0   12.0             (----------*----------)
                                   --------+---------+---------+--------
                                        15.0      20.0      25.0

Overall median = 13.0

A 95.0% CI for median(21) - median(41): (-15.3,-4.0)
```

```
Mood median test for % GRAVEL

Chi-Square = 3.44    DF = 1    P = 0.064

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
21           4   7    35.0   11.0                          (------------*)
41           5   1    23.5   26.8   (------------------*----------------)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0

Overall median = 34.0

A 95.0% CI for median(21) - median(41): (-4.8,27.6)
```

```
Mood median test for % SAND

Chi-Square = 1.43    DF = 1    P = 0.232

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
21           7   4    24.0    8.0  (-----------*---)
41           2   4    27.5   11.8    (----------------*--------------)
                                   ----+---------+---------+---------+--
                                    20.0      25.0      30.0      35.0

Overall median = 24.0

A 95.0% CI for median(21) - median(41): (-12.2,5.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.30    DF = 1    P = 0.585

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
21           7   4    47.0    9.0      (------*-)
41           3   3    46.0   29.0  (---------*-----------------------)
                                   ----+---------+---------+---------+--
                                      40        50        60        70

Overall median = 47.0

A 95.0% CI for median(21) - median(41): (-24.8,10.4)


Mood median test for Bulk Density

Chi-Square = 9.33    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
21          20  28   2.305  0.119                 (--------*------)
41           8   0   2.225  0.048  (--------*--)
                                   ----+---------+---------+---------+--
                                     2.200     2.250     2.300     2.350

Overall median = 2.277

A 95.0% CI for median(21) - median(41): (0.050,0.131)


Mood median test for Dry Density

Chi-Square = 9.33    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          20  28   2.043  0.175                (-------------*------)
41           8   0   1.915  0.062  (------*-----)
                                   --------+---------+---------+--------
                                         1.920     1.980     2.040

Overall median = 2.011

A 95.0% CI for median(21) - median(41): (0.063,0.186)
```

Results for: Domain 21 v 43

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
21	78	13.72	4.31	0.49
43	50	20.44	7.73	1.1

Difference = mu (21) - mu (43)
Estimate for difference: -6.72
95% CI for difference: (-9.11, -4.33)
T-Test of difference = 0 (vs not =): T-Value = -5.61 P-Value = 0.000 DF = 68

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	29.67	5.51	1.1
43	17	37.35	7.61	1.8

Difference = mu (21) - mu (43)
Estimate for difference: -7.69
95% CI for difference: (-12.12, -3.25)
T-Test of difference = 0 (vs not =): T-Value = -3.56 P-Value = 0.001 DF = 27

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	17.17	3.60	0.73
43	17	20.29	3.53	0.86

Difference = mu (21) - mu (43)
Estimate for difference: -3.13
95% CI for difference: (-5.42, -0.84)
T-Test of difference = 0 (vs not =): T-Value = -2.77 P-Value = 0.009 DF = 34

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	12.50	4.42	0.90
43	17	17.06	5.15	1.2

Difference = mu (21) - mu (43)
Estimate for difference: -4.56
95% CI for difference: (-7.70, -1.41)
T-Test of difference = 0 (vs not =): T-Value = -2.96 P-Value = 0.006 DF = 31

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
21	11	33.64	7.35	2.2
43	15	38.1	12.9	3.3

Difference = mu (21) - mu (43)
Estimate for difference: -4.50
95% CI for difference: (-12.78, 3.79)
T-Test of difference = 0 (vs not =): T-Value = -1.13 P-Value = 0.273 DF = 22

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
21	11	22.64	5.22	1.6
43	15	33.93	7.56	2.0

Difference = mu (21) - mu (43)
Estimate for difference: -11.30
95% CI for difference: (-16.49, -6.11)
T-Test of difference = 0 (vs not =): T-Value = -4.50 P-Value = 0.000 DF = 23

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
21	11	43.73	9.16	2.8
43	15	27.9	11.0	2.8

Difference = mu (21) - mu (43)
Estimate for difference: 15.79
95% CI for difference: (7.60, 23.99)
T-Test of difference = 0 (vs not =): T-Value = 3.99 P-Value = 0.001 DF = 23

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.296	0.131	0.019
43	12	2.112	0.162	0.047

Difference = mu (21) - mu (43)
Estimate for difference: 0.1842
95% CI for difference: (0.0760, 0.2925)
T-Test of difference = 0 (vs not =): T-Value = 3.65 P-Value = 0.003 DF = 14

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.007	0.157	0.023
43	12	1.810	0.176	0.051

Difference = mu (21) - mu (43)
Estimate for difference: 0.1975
95% CI for difference: (0.0787, 0.3162)
T-Test of difference = 0 (vs not =): T-Value = 3.55 P-Value = 0.003 DF = 15

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
21	78	12.90	47.6	-6.42
43	50	17.00	90.8	6.42
Overall	128		64.5	

H = 41.28 DF = 1 P = 0.000
H = 41.35 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	16.0	-3.18
43	17	39.00	28.1	3.18
Overall	41		21.0	

H = 10.08 DF = 1 P = 0.001
H = 10.13 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	17.3	-2.34
43	17	20.00	26.2	2.34
Overall	41		21.0	

H = 5.48 DF = 1 P = 0.019
H = 5.53 DF = 1 P = 0.019 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	16.2	-3.04
43	17	16.00	27.8	3.04
Overall	41		21.0	

H = 9.26 DF = 1 P = 0.002
H = 9.33 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.00	12.0	-0.86
43	15	41.00	14.6	0.86
Overall	26		13.5	

H = 0.73 DF = 1 P = 0.392
H = 0.74 DF = 1 P = 0.391 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	7.4	-3.48
43	15	33.00	18.0	3.48
Overall	26		13.5	

H = 12.09 DF = 1 P = 0.001
H = 12.17 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
21         11   47.00      18.7   2.96
43         15   23.00       9.7  -2.96
Overall    26              13.5

H = 8.75  DF = 1  P = 0.003
H = 8.79  DF = 1  P = 0.003  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.305      34.5   3.57
43         12   2.155      14.4  -3.57
Overall    60              30.5

H = 12.72  DF = 1  P = 0.000
H = 12.73  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.043      34.2   3.30
43         12   1.835      15.6  -3.30
Overall    60              30.5

H = 10.88  DF = 1  P = 0.001
H = 10.88  DF = 1  P = 0.001  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 36.15    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
21          58  20   12.90   3.32  (---*-)
43          10  40   17.00  11.25                    (----*-----------)
                                   ---------+---------+---------+-------
                                         14.0      16.0      18.0

Overall median = 14.00

A 95.0% CI for median(21) - median(43): (-6.60,-2.70)


Mood median test for WL (%)

Chi-Square = 8.91    DF = 1    P = 0.003

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21          17   7    28.0    6.5  (-*----)
43           4  13    39.0   12.5          (---------------*-------)
                                   ------+---------+---------+---------+
                                      30.0      35.0      40.0      45.0

Overall median = 30.0

A 95.0% CI for median(21) - median(43): (-14.1,-1.0)
```

```
Mood median test for Wp (%)

Chi-Square = 3.94    DF = 1    P = 0.047

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
21          16   8   17.00   4.75    (-----*---------)
43           6  11   20.00   7.00          (--------------*--------------)
                                     -+---------+---------+---------+-----
                                   16.0      18.0      20.0      22.0

Overall median = 18.00

A 95.0% CI for median(21) - median(43): (-7.00,0.05)
```

```
Mood median test for Ip (%)

Chi-Square = 13.10    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21          18   6   12.00   4.25  (---*---)
43           3  14   16.00   5.50              (-------*-----------)
                                   ------+---------+---------+---------+
                                      12.5      15.0      17.5      20.0

Overall median = 13.00

A 95.0% CI for median(21) - median(43): (-8.00,-1.95)
```

```
Mood median test for % GRAVEL

Chi-Square = 0.74    DF = 1    P = 0.391

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
21           7   4    35.0   11.0  (-------------*-)
43           7   8    41.0   20.0          (--------------*--------)
                                   ----+---------+---------+---------+--
                                    28.0      35.0      42.0      49.0

Overall median = 35.0

A 95.0% CI for median(21) - median(43): (-15.0,4.0)
```

```
Mood median test for % SAND

Chi-Square = 12.76    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
21          10   1    24.0    8.0     (---------*--)
43           3  12    33.0   10.0                       (------*-------)
                                      +---------+---------+---------+------
                                   18.0      24.0      30.0      36.0

Overall median = 27.0

A 95.0% CI for median(21) - median(43): (-17.0,-5.9)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 12.76    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21           1  10    47.0    9.0                           (--------*-)
43          12   3    23.0   17.0  (---*--------------)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 38.5

A 95.0% CI for median(21) - median(43): (12.1,27.7)


Mood median test for Bulk Density

Chi-Square = 6.67    DF = 1    P = 0.010

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          20  28   2.305  0.119                            (---*--)
43          10   2   2.155  0.265  (-----------------*---)
                                   --------+---------+---------+--------
                                         2.04      2.16      2.28

Overall median = 2.277

A 95.0% CI for median(21) - median(43): (0.064,0.410)


Mood median test for Dry Density

Chi-Square = 6.67    DF = 1    P = 0.010

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
21          20  28   2.043  0.175                             (-----*---)
43          10   2   1.835  0.252  (---------------*----)
                                   ---+---------+---------+---------+---
                                    1.68      1.80      1.92      2.04

Overall median = 2.011

A 95.0% CI for median(21) - median(43): (0.112,0.441)
```

Results for: Domain 21 v 51

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         78  13.72   4.31     0.49
51         10  14.36   8.77      2.8

Difference = mu (21) - mu (51)
Estimate for difference:  -0.64
95% CI for difference:  (-7.00, 5.73)
T-Test of difference = 0 (vs not =): T-Value = -0.23  P-Value = 0.826  DF = 9


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         24  29.67   5.51      1.1
51         13  27.08   2.90     0.80

Difference = mu (21) - mu (51)
Estimate for difference:  2.59
95% CI for difference:  (-0.22, 5.40)
T-Test of difference = 0 (vs not =): T-Value = 1.87  P-Value = 0.070  DF = 34


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         24  17.17   3.60     0.73
51         13  17.08   1.71     0.47

Difference = mu (21) - mu (51)
Estimate for difference:  0.090
95% CI for difference:  (-1.685, 1.864)
T-Test of difference = 0 (vs not =): T-Value = 0.10  P-Value = 0.919  DF = 34


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         24  12.50   4.42     0.90
51         13  10.00   1.83     0.51

Difference = mu (21) - mu (51)
Estimate for difference:  2.50
95% CI for difference:  (0.39, 4.61)
T-Test of difference = 0 (vs not =): T-Value = 2.42  P-Value = 0.021  DF = 33


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
21         11  33.64   7.35      2.2
51         10  38.20   9.73      3.1

Difference = mu (21) - mu (51)
Estimate for difference:  -4.56
95% CI for difference:  (-12.60, 3.47)
T-Test of difference = 0 (vs not =): T-Value = -1.20  P-Value = 0.246  DF = 16
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
21	11	22.64	5.22	1.6
51	10	16.00	4.71	1.5

Difference = mu (21) - mu (51)
Estimate for difference: 6.64
95% CI for difference: (2.08, 11.19)
T-Test of difference = 0 (vs not =): T-Value = 3.06 P-Value = 0.007 DF = 18

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
21	11	43.73	9.16	2.8
51	10	38.5	12.7	4.0

Difference = mu (21) - mu (51)
Estimate for difference: 5.23
95% CI for difference: (-5.09, 15.55)
T-Test of difference = 0 (vs not =): T-Value = 1.07 P-Value = 0.299 DF = 16

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.296	0.131	0.019
51	3	2.3267	0.0379	0.022

Difference = mu (21) - mu (51)
Estimate for difference: -0.0308
95% CI for difference: (-0.1050, 0.0435)
T-Test of difference = 0 (vs not =): T-Value = -1.06 P-Value = 0.336 DF = 5

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.007	0.157	0.023
51	3	2.1600	0.0361	0.021

Difference = mu (21) - mu (51)
Estimate for difference: -0.1525
95% CI for difference: (-0.2235, -0.0816)
T-Test of difference = 0 (vs not =): T-Value = -4.96 P-Value = 0.001 DF = 8

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
21	78	12.90	45.1	0.57
51	10	12.00	40.1	-0.57
Overall	88		44.5	

H = 0.33 DF = 1 P = 0.567
H = 0.33 DF = 1 P = 0.567 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	20.7	1.32
51	13	27.00	15.8	-1.32
Overall	37		19.0	

H = 1.74 DF = 1 P = 0.187
H = 1.76 DF = 1 P = 0.184 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	19.1	0.06
51	13	17.00	18.8	-0.06
Overall	37		19.0	

H = 0.00 DF = 1 P = 0.949
H = 0.00 DF = 1 P = 0.949 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	21.7	2.08
51	13	10.00	14.0	-2.08
Overall	37		19.0	

H = 4.34 DF = 1 P = 0.037
H = 4.40 DF = 1 P = 0.036 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.00	9.0	-1.51
51	10	39.50	13.2	1.51
Overall	21		11.0	

H = 2.29 DF = 1 P = 0.130
H = 2.31 DF = 1 P = 0.128 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	14.2	2.50
51	10	16.00	7.5	-2.50
Overall	21		11.0	

H = 6.25 DF = 1 P = 0.012
H = 6.34 DF = 1 P = 0.012 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
21	11	47.00	13.3	1.80
51	10	37.50	8.4	-1.80
Overall	21		11.0	

H = 3.22 DF = 1 P = 0.073
H = 3.24 DF = 1 P = 0.072 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.305      25.7  -0.52
51          3   2.310      30.3   0.52
Overall    51              26.0

H = 0.27  DF = 1  P = 0.603
H = 0.27  DF = 1  P = 0.603  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.043      24.9  -2.08
51          3   2.150      43.3   2.08
Overall    51              26.0

H = 4.33  DF = 1  P = 0.037
H = 4.33  DF = 1  P = 0.037  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.01    DF = 1    P = 0.939

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
21          40  38    12.9    3.3              (*-)
51           5   5    12.0   12.2  (-----------*--------------------)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 12.9

A 95.0% CI for median(21) - median(51): (-6.4,5.6)


Mood median test for WL (%)

Chi-Square = 0.79    DF = 1    P = 0.373

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
21          13  11   28.00   6.50              (------*--------------)
51           9   4   27.00   4.50  (------------*--------------)
                                   ---+---------+---------+---------+---
                                   25.5      27.0      28.5      30.0

Overall median = 28.00

A 95.0% CI for median(21) - median(51): (-2.00,5.00)
```

```
Mood median test for Wp (%)

Chi-Square = 0.17    DF = 1    P = 0.682

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
21          15   9   17.00   4.75   (-----------*-------------------)
51           9   4   17.00   2.50     (---------*------------)
                                    --+---------+---------+---------+----
                                   16.0      17.0      18.0      19.0

Overall median = 17.00

A 95.0% CI for median(21) - median(51): (-2.00,1.28)


Mood median test for Ip (%)

Chi-Square = 5.25    DF = 1    P = 0.022

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21           9  15   12.00   4.25                   (-------*-------)
51          10   3   10.00   2.50  (-------*----------)
                                   -----+---------+---------+---------+-
                                      9.6      10.8      12.0      13.2

Overall median = 11.00

A 95.0% CI for median(21) - median(51): (0.72,4.00)


Mood median test for % GRAVEL

Chi-Square = 5.74    DF = 1    P = 0.017

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21           9   2    35.0   11.0  (---------------*-)
51           3   7    39.5   14.8            (-------------*----------)
                                   --------+---------+---------+--------
                                        30.0      36.0      42.0

Overall median = 36.0

A 95.0% CI for median(21) - median(51): (-16.7,4.0)


Mood median test for % SAND

Chi-Square = 8.42    DF = 1    P = 0.004

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21           3   8    24.0    8.0               (--------------*----)
51           9   1    16.0    5.3  (-------*----)
                                   --------+---------+---------+--------
                                        16.0      20.0      24.0

Overall median = 18.0

A 95.0% CI for median(21) - median(51): (1.7,13.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 5.84    DF = 1    P = 0.016

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
21           3   8    47.0    9.0                     (-------------*---)
51           8   2    37.5   11.8  (-------------*------------)
                                   ---------+---------+---------+-------
                                         35.0      40.0      45.0

Overall median = 40.0

A 95.0% CI for median(21) - median(51): (2.7,18.0)


Mood median test for Bulk Density

Chi-Square = 0.24    DF = 1    P = 0.623

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          25  23   2.305  0.119  (-------------*---------)
51           2   1   2.310  0.070              (--*----------------)
                                   -----+---------+---------+---------+-
                                      2.275     2.310     2.345     2.380

Overall median = 2.310
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(21) - median(51): (-0.130,0.058)


Mood median test for Dry Density

Chi-Square = 3.32    DF = 1    P = 0.069

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
21          26  22   2.043  0.175    (-----------*-----)
51           0   3   2.150  0.070                            (--*------)
                                     +---------+---------+---------+------
                                   1.960     2.030     2.100     2.170

Overall median = 2.063
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(21) - median(51): (-0.268,-0.028)
```

Results for: Domain 21 v 52

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
21	78	13.72	4.31	0.49
52	24	8.48	2.78	0.57

Difference = mu (21) - mu (52)
Estimate for difference: 5.244
95% CI for difference: (3.747, 6.740)
T-Test of difference = 0 (vs not =): T-Value = 7.01 P-Value = 0.000 DF = 59

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	29.67	5.51	1.1
52	24	25.33	2.73	0.56

Difference = mu (21) - mu (52)
Estimate for difference: 4.33
95% CI for difference: (1.78, 6.89)
T-Test of difference = 0 (vs not =): T-Value = 3.45 P-Value = 0.002 DF = 33

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	17.17	3.60	0.73
52	24	16.21	1.61	0.33

Difference = mu (21) - mu (52)
Estimate for difference: 0.958
95% CI for difference: (-0.683, 2.599)
T-Test of difference = 0 (vs not =): T-Value = 1.19 P-Value = 0.243 DF = 31

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	12.50	4.42	0.90
52	24	9.13	2.11	0.43

Difference = mu (21) - mu (52)
Estimate for difference: 3.37
95% CI for difference: (1.34, 5.41)
T-Test of difference = 0 (vs not =): T-Value = 3.37 P-Value = 0.002 DF = 32

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
21	11	33.64	7.35	2.2
52	15	37.5	13.5	3.5

Difference = mu (21) - mu (52)
Estimate for difference: -3.83
95% CI for difference: (-12.38, 4.72)
T-Test of difference = 0 (vs not =): T-Value = -0.93 P-Value = 0.363 DF = 22

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
21         11  22.64   5.22      1.6
52         15  18.47   6.10      1.6

Difference = mu (21) - mu (52)
Estimate for difference:  4.17
95% CI for difference:  (-0.44, 8.78)
T-Test of difference = 0 (vs not =): T-Value = 1.87  P-Value = 0.074  DF = 23


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
21         11  43.73   9.16      2.8
52         15   36.7   15.7      4.1

Difference = mu (21) - mu (52)
Estimate for difference:  7.06
95% CI for difference:  (-3.09, 17.21)
T-Test of difference = 0 (vs not =): T-Value = 1.44  P-Value = 0.164  DF = 23


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
21         48  2.296  0.131    0.019
52          7  2.364  0.125    0.047

Difference = mu (21) - mu (52)
Estimate for difference:  -0.0684
95% CI for difference:  (-0.1854, 0.0486)
T-Test of difference = 0 (vs not =): T-Value = -1.35  P-Value = 0.215  DF = 8


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
21         48  2.007  0.157    0.023
52          7  2.196  0.154    0.058

Difference = mu (21) - mu (52)
Estimate for difference:  -0.1883
95% CI for difference:  (-0.3362, -0.0404)
T-Test of difference = 0 (vs not =): T-Value = -3.01  P-Value = 0.020  DF = 7
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
21          78  12.900      61.1   5.89
52          24   8.450      20.4  -5.89
Overall    102              51.5

H = 34.64  DF = 1  P = 0.000
H = 34.66  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain

Reference	N	Median	Ave Rank	Z
21	24	28.00	30.9	3.18
52	24	25.50	18.1	-3.18
Overall	48		24.5	

H = 10.08 DF = 1 P = 0.001
H = 10.21 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain

Reference	N	Median	Ave Rank	Z
21	24	17.00	26.9	1.19
52	24	16.00	22.1	-1.19
Overall	48		24.5	

H = 1.41 DF = 1 P = 0.236
H = 1.44 DF = 1 P = 0.230 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain

Reference	N	Median	Ave Rank	Z
21	24	12.000	30.7	3.06
52	24	9.000	18.3	-3.06
Overall	48		24.5	

H = 9.38 DF = 1 P = 0.002
H = 9.50 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain

Reference	N	Median	Ave Rank	Z
21	11	35.00	11.7	-1.01
52	15	36.00	14.8	1.01
Overall	26		13.5	

H = 1.02 DF = 1 P = 0.312
H = 1.03 DF = 1 P = 0.310 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain

Reference	N	Median	Ave Rank	Z
21	11	24.00	16.5	1.71
52	15	19.00	11.3	-1.71
Overall	26		13.5	

H = 2.93 DF = 1 P = 0.087
H = 2.95 DF = 1 P = 0.086 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
21         11   47.00      16.6   1.79
52         15   38.00      11.2  -1.79
Overall    26              13.5

H = 3.21  DF = 1  P = 0.073
H = 3.23  DF = 1  P = 0.072  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.305      26.8  -1.41
52          7   2.410      36.0   1.41
Overall    55              28.0

H = 2.00  DF = 1  P = 0.157
H = 2.00  DF = 1  P = 0.157  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.043      25.9  -2.60
52          7   2.200      42.7   2.60
Overall    55              28.0

H = 6.77  DF = 1  P = 0.009
H = 6.77  DF = 1  P = 0.009  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 21.79    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          29  49   12.90   3.32                          (---*-)
52          22   2    8.45   4.52  (------*-------)
                                   -----+---------+---------+---------+-
                                      8.0      10.0      12.0      14.0

Overall median = 12.15

A 95.0% CI for median(21) - median(52): (2.50,6.20)


Mood median test for WL (%)

Chi-Square = 11.02    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
21          10  14   28.00   6.50                    (----*-----------)
52          21   3   25.50   3.75     (-------*------)
                                      +---------+---------+---------+------
                                   24.0      26.0      28.0      30.0

Overall median = 27.00

A 95.0% CI for median(21) - median(52): (0.00,6.00)
```

```
Mood median test for Wp (%)

Chi-Square = 4.15    DF = 1    P = 0.042

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          10  14   17.00   4.75         (---------*---------------)
52          17   7   16.00   2.75  (-------*-)
                                   -----+---------+---------+---------+-
                                     15.6      16.8      18.0      19.2

Overall median = 16.00

A 95.0% CI for median(21) - median(52): (0.00,2.00)


Mood median test for Ip (%)

Chi-Square = 12.80    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
21           9  15   12.00   4.25                      (------*------)
52          21   3    9.00   3.00  (------*-------)
                                   -------+---------+---------+---------
                                        9.0      10.5      12.0

Overall median = 11.00

A 95.0% CI for median(21) - median(52): (2.00,5.00)


Mood median test for % GRAVEL

Chi-Square = 0.74    DF = 1    P = 0.391

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
21           7   4    35.0   11.0  (-------------*-)
52           7   8    36.0   22.0         (-------*------------------)
                                   ----+---------+---------+---------+--
                                    28.0      35.0      42.0      49.0

Overall median = 35.0

A 95.0% CI for median(21) - median(52): (-12.5,6.0)


Mood median test for % SAND

Chi-Square = 2.34    DF = 1    P = 0.126

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
21           4   7    24.0    8.0               (-----------------*----)
52          10   5    19.0    9.0    (--------------*-------)
                                     -+---------+---------+---------+-----
                                   14.0      17.5      21.0      24.5

Overall median = 20.0

A 95.0% CI for median(21) - median(52): (-1.0,9.1)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.94    DF = 1    P = 0.047

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
21           3   8    47.0    9.0                     (---------*--)
52          10   5    38.0   21.0  (----------------*--------)
                                   ---+---------+---------+---------+---
                                   28.0      35.0      42.0      49.0

Overall median = 40.5

A 95.0% CI for median(21) - median(52): (1.0,20.4)


Mood median test for Bulk Density

Chi-Square = 1.88    DF = 1    P = 0.171

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          27  21   2.305  0.119   (-------*-----)
52           2   5   2.410  0.120  (--------------------------*----)
                                   -----+---------+---------+---------+-
                                      2.280     2.340     2.400     2.460

Overall median = 2.320

A 95.0% CI for median(21) - median(52): (-0.141,0.054)


Mood median test for Dry Density

Chi-Square = 4.30    DF = 1    P = 0.038

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21          27  21   2.043  0.175  (-----*---)
52           1   6   2.200  0.250        (------------*------------)
                                   ------+---------+---------+---------+
                                       2.04      2.16      2.28      2.40

Overall median = 2.065

A 95.0% CI for median(21) - median(52): (-0.326,0.009)
```

Results for: Domain 21 v 61

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

```
Domain
Reference   N   Mean  StDev  SE Mean
21         78  13.72   4.31     0.49
61          9  17.50   6.94      2.3

Difference = mu (21) - mu (61)
Estimate for difference:  -3.78
95% CI for difference:  (-9.23, 1.68)
T-Test of difference = 0 (vs not =): T-Value = -1.60  P-Value = 0.149  DF = 8
```

Two-sample T for Bulk Density

```
Domain
Reference   N   Mean  StDev  SE Mean
21         48  2.296  0.131    0.019
61          9  2.120  0.154    0.051

Difference = mu (21) - mu (61)
Estimate for difference:  0.1759
95% CI for difference:  (0.0541, 0.2978)
T-Test of difference = 0 (vs not =): T-Value = 3.22  P-Value = 0.009  DF = 10
```

Two-sample T for Dry Density

```
Domain
Reference   N   Mean  StDev  SE Mean
21         48  2.007  0.157    0.023
61          9  1.817  0.222    0.074

Difference = mu (21) - mu (61)
Estimate for difference:  0.1908
95% CI for difference:  (0.0154, 0.3663)
T-Test of difference = 0 (vs not =): T-Value = 2.46  P-Value = 0.036  DF = 9
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

```
Domain
Reference   N  Median  Ave Rank      Z
21         78   12.90      42.7  -1.41
61          9   16.30      55.3   1.41
Overall    87              44.0

H = 2.00  DF = 1  P = 0.157
H = 2.00  DF = 1  P = 0.157  (adjusted for ties)
```

Kruskal-Wallis Test on Bulk Density

```
Domain
Reference   N  Median  Ave Rank      Z
21         48   2.305      32.0   3.15
61          9   2.130      13.0  -3.15
Overall    57              29.0

H = 9.93  DF = 1  P = 0.002
H = 9.94  DF = 1  P = 0.002  (adjusted for ties)
```

Kruskal-Wallis Test on Dry Density

```
Domain
Reference   N  Median  Ave Rank      Z
21         48   2.043      31.5   2.58
61          9   1.790      15.9  -2.58
Overall    57              29.0

H = 6.67  DF = 1  P = 0.010
H = 6.67  DF = 1  P = 0.010  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 1.36   DF = 1   P = 0.244

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
21          42  36    12.9    3.3      (*-)
61           3   6    16.3   12.1    (-----------*--------------------)
                                     -+---------+---------+---------+-----
                                   12.0      16.0      20.0      24.0
```

Overall median = 13.0

A 95.0% CI for median(21) - median(61): (-13.4,1.5)

Mood median test for Bulk Density

Chi-Square = 10.32   DF = 1   P = 0.001

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
21          20  28   2.305  0.119                         (---*---)
61           9   0   2.130  0.215  (-----------*------------)
                                   ---------+---------+---------+-------
                                          2.10      2.20      2.30
```

Overall median = 2.280

A 95.0% CI for median(21) - median(61): (0.029,0.332)

Mood median test for Dry Density

Chi-Square = 3.09   DF = 1   P = 0.079

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          22  26   2.043  0.175                          (----*--)
61           7   2   1.790  0.380  (-------------*----------------)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10
```

Overall median = 2.013

A 95.0% CI for median(21) - median(61): (-0.027,0.536)

Results for: Domain 21 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
21	78	13.72	4.31	0.49
62	131	16.88	5.15	0.45

Difference = mu (21) - mu (62)
Estimate for difference: -3.156
95% CI for difference: (-4.466, -1.846)
T-Test of difference = 0 (vs not =): T-Value = -4.75 P-Value = 0.000 DF = 184

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	29.67	5.51	1.1
62	113	34.27	6.08	0.57

Difference = mu (21) - mu (62)
Estimate for difference: -4.60
95% CI for difference: (-7.16, -2.04)
T-Test of difference = 0 (vs not =): T-Value = -3.64 P-Value = 0.001 DF = 35

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	17.17	3.60	0.73
62	113	17.70	2.77	0.26

Difference = mu (21) - mu (62)
Estimate for difference: -0.532
95% CI for difference: (-2.125, 1.060)
T-Test of difference = 0 (vs not =): T-Value = -0.68 P-Value = 0.500 DF = 29

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	12.50	4.42	0.90
62	113	16.57	4.48	0.42

Difference = mu (21) - mu (62)
Estimate for difference: -4.066
95% CI for difference: (-6.094, -2.039)
T-Test of difference = 0 (vs not =): T-Value = -4.08 P-Value = 0.000 DF = 33

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
21	11	33.64	7.35	2.2
62	47	24.9	13.6	2.0

Difference = mu (21) - mu (62)
Estimate for difference: 8.74
95% CI for difference: (2.64, 14.84)
T-Test of difference = 0 (vs not =): T-Value = 2.94 P-Value = 0.007 DF = 28

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
21	11	22.64	5.22	1.6
62	47	28.74	7.27	1.1

Difference = mu (21) - mu (62)
Estimate for difference: -6.11
95% CI for difference: (-10.07, -2.15)
T-Test of difference = 0 (vs not =): T-Value = -3.22 P-Value = 0.004 DF = 20

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
21	11	43.73	9.16	2.8
62	47	45.0	16.8	2.5

Difference = mu (21) - mu (62)
Estimate for difference: -1.25
95% CI for difference: (-8.82, 6.32)
T-Test of difference = 0 (vs not =): T-Value = -0.34 P-Value = 0.737 DF = 28

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.296	0.131	0.019
62	29	2.113	0.106	0.020

Difference = mu (21) - mu (62)
Estimate for difference: 0.1832
95% CI for difference: (0.1287, 0.2378)
T-Test of difference = 0 (vs not =): T-Value = 6.70 P-Value = 0.000 DF = 68

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.007	0.157	0.023
62	29	1.800	0.176	0.033

Difference = mu (21) - mu (62)
Estimate for difference: 0.2075
95% CI for difference: (0.1276, 0.2873)
T-Test of difference = 0 (vs not =): T-Value = 5.21 P-Value = 0.000 DF = 53

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
21	78	12.90	75.1	-5.51
62	131	15.87	122.8	5.51
Overall	209		105.0	

H = 30.36 DF = 1 P = 0.000
H = 30.37 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	39.6	-3.99
62	113	34.00	75.2	3.99
Overall	137		69.0	

H = 15.91 DF = 1 P = 0.000
H = 16.05 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	63.8	-0.71
62	113	17.00	70.1	0.71
Overall	137		69.0	

H = 0.51 DF = 1 P = 0.477
H = 0.51 DF = 1 P = 0.474 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	36.9	-4.37
62	113	16.00	75.8	4.37
Overall	137		69.0	

H = 19.06 DF = 1 P = 0.000
H = 19.21 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.00	40.1	2.32
62	47	24.00	27.0	-2.32
Overall	58		29.5	

H = 5.39 DF = 1 P = 0.020
H = 5.40 DF = 1 P = 0.020 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	17.5	-2.63
62	47	28.00	32.3	2.63
Overall	58		29.5	

H = 6.91 DF = 1 P = 0.009
H = 6.93 DF = 1 P = 0.008 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
21         11   47.00      27.4  -0.47
62         47   47.00      30.0   0.47
Overall    58              29.5

H = 0.22  DF = 1  P = 0.641
H = 0.22  DF = 1  P = 0.641  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.305      50.1   5.61
62         29   2.150      20.6  -5.61
Overall    77              39.0

H = 31.52  DF = 1  P = 0.000
H = 31.54  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.043      48.4   4.74
62         29   1.850      23.5  -4.74
Overall    77              39.0

H = 22.43  DF = 1  P = 0.000
H = 22.44  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 28.96    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          58  20   12.90   3.32  (-----*---)
62          47  84   15.87   5.61                         (----*------)
                                   --------+---------+---------+--------
                                        13.2      14.4      15.6

Overall median = 14.48

A 95.0% CI for median(21) - median(62): (-3.95,-2.17)


Mood median test for WL (%)

Chi-Square = 7.41    DF = 1    P = 0.006

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          19   5   28.00   6.50  (----*-----------)
62          55  58   34.00   4.00                              (----*
                                   -----+---------+---------+---------+-
                                     28.0      30.0      32.0      34.0

Overall median = 33.00

A 95.0% CI for median(21) - median(62): (-7.00,-3.00)
```

```
Mood median test for Wp (%)

Chi-Square = 0.58    DF = 1    P = 0.446

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
21          15   9   17.00   4.75   (-----------*-------------------)
62          61  52   17.00   3.00               *---------)
                                    --+---------+---------+---------+----
                                   16.0      17.0      18.0      19.0

Overall median = 17.00

A 95.0% CI for median(21) - median(62): (-1.34,2.00)


Mood median test for Ip (%)

Chi-Square = 10.15    DF = 1    P = 0.001

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          21   3   12.00   4.25  (----*----)
62          59  54   16.00   4.00                        (-*----)
                                   -----+---------+---------+---------+-
                                     12.0      14.0      16.0      18.0

Overall median = 16.00

A 95.0% CI for median(21) - median(62): (-6.00,-3.00)


Mood median test for % GRAVEL

Chi-Square = 3.74    DF = 1    P = 0.053

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
21           3   8    35.0   11.0               (-------------------*-)
62          28  19    24.0   19.0     (-------*---------)
                                      +---------+---------+---------+------
                                   20.0      25.0      30.0      35.0

Overall median = 26.0

A 95.0% CI for median(21) - median(62): (-1.0,13.0)


Mood median test for % SAND

Chi-Square = 7.01    DF = 1    P = 0.008

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
21          10   1    24.0    8.0  (-----------------*----)
62          22  25    28.0    9.0                       (------*-----)
                                   ---------+---------+---------+-------
                                         21.0      24.5      28.0

Overall median = 27.0

A 95.0% CI for median(21) - median(62): (-11.0,-1.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.57    DF = 1    P = 0.452

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
21           7   4    47.0    9.0  (-----------------------*-----)
62          24  23    47.0   20.0         (----------------*-----------)
                                   -------+---------+---------+---------
                                       42.0      45.0      48.0

Overall median = 47.0

A 95.0% CI for median(21) - median(62): (-9.0,4.0)


Mood median test for Bulk Density

Chi-Square = 35.04    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21          13  35   2.305  0.119                        (---*---)
62          28   1   2.150  0.196  (----------*----)
                                   ------+---------+---------+---------+
                                       2.10      2.20      2.30      2.40

Overall median = 2.240

A 95.0% CI for median(21) - median(62): (0.070,0.281)


Mood median test for Dry Density

Chi-Square = 11.83    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
21          17  31   2.043  0.175                         (-------*----)
62          22   7   1.850  0.315  (-----------*-------)
                                   -------+---------+---------+---------
                                        1.80      1.90      2.00

Overall median = 1.957

A 95.0% CI for median(21) - median(62): (0.079,0.325)
```

Results for: Domain 21 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         78  13.72   4.31     0.49
63         55  17.40   5.42     0.73

Difference = mu (21) - mu (63)
Estimate for difference:  -3.674
95% CI for difference:  (-5.418, -1.929)
T-Test of difference = 0 (vs not =): T-Value = -4.18  P-Value = 0.000  DF = 98


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         24  29.67   5.51      1.1
63         58  34.88   4.40     0.58

Difference = mu (21) - mu (63)
Estimate for difference:  -5.21
95% CI for difference:  (-7.78, -2.64)
T-Test of difference = 0 (vs not =): T-Value = -4.12  P-Value = 0.000  DF = 35


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         24  17.17   3.60     0.73
63         58  17.98   2.92     0.38

Difference = mu (21) - mu (63)
Estimate for difference:  -0.816
95% CI for difference:  (-2.495, 0.863)
T-Test of difference = 0 (vs not =): T-Value = -0.99  P-Value = 0.331  DF = 36


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         24  12.50   4.42     0.90
63         58  16.90   3.05     0.40

Difference = mu (21) - mu (63)
Estimate for difference:  -4.397
95% CI for difference:  (-6.408, -2.385)
T-Test of difference = 0 (vs not =): T-Value = -4.45  P-Value = 0.000  DF = 32


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
21         11  33.64   7.35      2.2
63         30   26.9   11.7      2.1

Difference = mu (21) - mu (63)
Estimate for difference:  6.70
95% CI for difference:  (0.39, 13.02)
T-Test of difference = 0 (vs not =): T-Value = 2.17  P-Value = 0.038  DF = 28
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
21	11	22.64	5.22	1.6
63	30	29.70	8.47	1.5

Difference = mu (21) - mu (63)
Estimate for difference: -7.06
95% CI for difference: (-11.58, -2.55)
T-Test of difference = 0 (vs not =): T-Value = -3.20 P-Value = 0.003 DF = 29

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
21	11	43.73	9.16	2.8
63	30	43.4	11.2	2.1

Difference = mu (21) - mu (63)
Estimate for difference: 0.36
95% CI for difference: (-6.79, 7.51)
T-Test of difference = 0 (vs not =): T-Value = 0.10 P-Value = 0.917 DF = 21

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.296	0.131	0.019
63	11	2.081	0.118	0.036

Difference = mu (21) - mu (63)
Estimate for difference: 0.2149
95% CI for difference: (0.1296, 0.3003)
T-Test of difference = 0 (vs not =): T-Value = 5.34 P-Value = 0.000 DF = 16

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.007	0.157	0.023
63	11	1.806	0.147	0.044

Difference = mu (21) - mu (63)
Estimate for difference: 0.2011
95% CI for difference: (0.0952, 0.3070)
T-Test of difference = 0 (vs not =): T-Value = 4.05 P-Value = 0.001 DF = 15

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
21	78	12.90	53.6	-4.79
63	55	15.38	86.0	4.79
Overall	133		67.0	

H = 22.90 DF = 1 P = 0.000
H = 22.92 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	23.9	-4.32
63	58	34.00	48.8	4.32
Overall	82		41.5	

H = 18.63 DF = 1 P = 0.000
H = 18.74 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	37.1	-1.08
63	58	18.00	43.3	1.08
Overall	82		41.5	

H = 1.16 DF = 1 P = 0.282
H = 1.17 DF = 1 P = 0.280 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	22.5	-4.65
63	58	16.00	49.4	4.65
Overall	82		41.5	

H = 21.60 DF = 1 P = 0.000
H = 21.83 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.00	27.7	2.16
63	30	25.50	18.6	-2.16
Overall	41		21.0	

H = 4.68 DF = 1 P = 0.031
H = 4.69 DF = 1 P = 0.030 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	12.4	-2.78
63	30	29.00	24.1	2.78
Overall	41		21.0	

H = 7.73 DF = 1 P = 0.005
H = 7.81 DF = 1 P = 0.005 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
21         11   47.00      21.9   0.29
63         30   42.50      20.7  -0.29
Overall    41              21.0

H = 0.09  DF = 1  P = 0.769
H = 0.09  DF = 1  P = 0.768  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.305      34.5   4.18
63         11   2.090      10.5  -4.18
Overall    59              30.0

H = 17.51  DF = 1  P = 0.000
H = 17.52  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.043      33.8   3.55
63         11   1.840      13.4  -3.55
Overall    59              30.0

H = 12.62  DF = 1  P = 0.000
H = 12.62  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 19.51    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          53  25   12.90   3.32  (---*---)
63          16  39   15.38   5.92                  (----*----------)
                                   --------+---------+---------+--------
                                        13.5      15.0      16.5

Overall median = 13.80

A 95.0% CI for median(21) - median(63): (-4.62,-1.56)


Mood median test for WL (%)

Chi-Square = 8.88    DF = 1    P = 0.003

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
21          19   5   28.00   6.50   (---*--------)
63          25  33   34.00   5.00                         (---*---)
                                    --+---------+---------+---------+----
                                   27.5      30.0      32.5      35.0

Overall median = 33.00

A 95.0% CI for median(21) - median(63): (-7.00,-3.00)
```

```
Mood median test for Wp (%)

Chi-Square = 0.15    DF = 1    P = 0.694

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
21          16   8   17.00   4.75   (-----------*-------------------)
63          36  22   18.00   4.25               (---------*---------)
                                    --+---------+---------+---------+----
                                   16.0      17.0      18.0      19.0

Overall median = 18.00

A 95.0% CI for median(21) - median(63): (-2.00,1.00)
```

```
Mood median test for Ip (%)

Chi-Square = 9.24    DF = 1    P = 0.002

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          21   3   12.00   4.25  (----*----)
63          30  28   16.00   4.00                            *---------)
                                   -----+---------+---------+---------+-
                                     12.0      14.0      16.0      18.0

Overall median = 16.00

A 95.0% CI for median(21) - median(63): (-6.00,-3.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 4.21    DF = 1    P = 0.040

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21           3   8    35.0   11.0         (-----------------------*--)
63          19  11    25.5   15.3  (--------*--------------)
                                   -----+---------+---------+---------+-
                                     24.0      28.0      32.0      36.0

Overall median = 28.0

A 95.0% CI for median(21) - median(63): (-3.0,13.0)
```

```
Mood median test for % SAND

Chi-Square = 7.40    DF = 1    P = 0.007

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          10   1    24.0    8.0  (--------------*----)
63          13  17    29.0    9.0                      (------*------)
                                   -----+---------+---------+---------+-
                                     20.0      24.0      28.0      32.0

Overall median = 26.0

A 95.0% CI for median(21) - median(63): (-13.0,0.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 1.33    DF = 1    P = 0.249

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
21           4   7    47.0    9.0       (-----------------------*-----)
63          17  13    42.5   15.5    (-----------*---------------------)
                                     +---------+---------+---------+------
                                   39.0      42.0      45.0      48.0

Overall median = 45.0

A 95.0% CI for median(21) - median(63): (-7.0,9.0)


Mood median test for Bulk Density

Chi-Square = 13.07    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          19  29   2.305  0.119                          (---*--)
63          11   0   2.090  0.260  (-----------*---------)
                                   --------+---------+---------+--------
                                         2.04      2.16      2.28

Overall median = 2.260

A 95.0% CI for median(21) - median(63): (0.078,0.374)


Mood median test for Dry Density

Chi-Square = 13.07    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
21          19  29   2.043  0.175                          (-----*---)
63          11   0   1.840  0.250    (------------*-------)
                                     +---------+---------+---------+------
                                   1.68      1.80      1.92      2.04

Overall median = 1.991

A 95.0% CI for median(21) - median(63): (0.083,0.387)
```

Results for: Domain 21 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         78  13.72   4.31     0.49
64         24  15.34   2.86     0.58

Difference = mu (21) - mu (64)
Estimate for difference:  -1.617
95% CI for difference:  (-3.141, -0.094)
T-Test of difference = 0 (vs not =): T-Value = -2.13  P-Value = 0.038  DF = 57


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         24  29.67   5.51      1.1
64         27  34.44   2.34     0.45

Difference = mu (21) - mu (64)
Estimate for difference:  -4.78
95% CI for difference:  (-7.25, -2.30)
T-Test of difference = 0 (vs not =): T-Value = -3.94  P-Value = 0.000  DF = 30


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         24  17.17   3.60     0.73
64         27  17.81   2.24     0.43

Difference = mu (21) - mu (64)
Estimate for difference:  -0.648
95% CI for difference:  (-2.372, 1.076)
T-Test of difference = 0 (vs not =): T-Value = -0.76  P-Value = 0.451  DF = 37


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
21         24  12.50   4.42     0.90
64         27  16.63   2.39     0.46

Difference = mu (21) - mu (64)
Estimate for difference:  -4.13
95% CI for difference:  (-6.19, -2.07)
T-Test of difference = 0 (vs not =): T-Value = -4.08  P-Value = 0.000  DF = 34


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
21         11  33.64   7.35      2.2
64          2   19.0   11.3      8.0

Difference = mu (21) - mu (64)
Estimate for difference:  14.64
95% CI for difference:  (-90.84, 120.12)
T-Test of difference = 0 (vs not =): T-Value = 1.76  P-Value = 0.328  DF = 1
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
21	11	22.64	5.22	1.6
64	2	27.50	2.12	1.5

Difference = mu (21) - mu (64)
Estimate for difference: -4.86
95% CI for difference: (-11.78, 2.06)
T-Test of difference = 0 (vs not =): T-Value = -2.24 P-Value = 0.111 DF = 3

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
21	11	43.73	9.16	2.8
64	2	53.50	9.19	6.5

Difference = mu (21) - mu (64)
Estimate for difference: -9.77
95% CI for difference: (-99.50, 79.96)
T-Test of difference = 0 (vs not =): T-Value = -1.38 P-Value = 0.398 DF = 1

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.296	0.131	0.019
64	13	2.1462	0.0859	0.024

Difference = mu (21) - mu (64)
Estimate for difference: 0.1498
95% CI for difference: (0.0875, 0.2120)
T-Test of difference = 0 (vs not =): T-Value = 4.93 P-Value = 0.000 DF = 28

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.007	0.157	0.023
64	13	1.8731	0.0910	0.025

Difference = mu (21) - mu (64)
Estimate for difference: 0.1344
95% CI for difference: (0.0654, 0.2033)
T-Test of difference = 0 (vs not =): T-Value = 3.96 P-Value = 0.000 DF = 33

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
21	78	12.90	46.8	-2.88
64	24	15.44	66.7	2.88
Overall	102		51.5	

H = 8.31 DF = 1 P = 0.004
H = 8.33 DF = 1 P = 0.004 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	17.3	-3.93
64	27	34.00	33.7	3.93
Overall	51		26.0	

H = 15.41 DF = 1 P = 0.000
H = 15.50 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	23.9	-0.95
64	27	18.00	27.9	0.95
Overall	51		26.0	

H = 0.91 DF = 1 P = 0.341
H = 0.93 DF = 1 P = 0.336 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	17.0	-4.08
64	27	17.00	34.0	4.08
Overall	51		26.0	

H = 16.62 DF = 1 P = 0.000
H = 16.78 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.00	7.7	1.58
64	2	19.00	3.0	-1.58
Overall	13		7.0	

H = 2.49 DF = 1 P = 0.114
H = 2.56 DF = 1 P = 0.110 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	6.3	-1.48
64	2	27.50	10.8	1.48
Overall	13		7.0	

H = 2.19 DF = 1 P = 0.139
H = 2.29 DF = 1 P = 0.131 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
21	11	47.00	6.5	-1.18
64	2	53.50	10.0	1.18
Overall	13		7.0	

H = 1.40 DF = 1 P = 0.236
H = 1.44 DF = 1 P = 0.230 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
21	48	2.305	35.6	3.92
64	13	2.180	13.9	-3.92
Overall	61		31.0	

H = 15.36 DF = 1 P = 0.000
H = 15.37 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
21	48	2.043	34.8	3.17
64	13	1.900	17.2	-3.17
Overall	61		31.0	

H = 10.05 DF = 1 P = 0.002
H = 10.05 DF = 1 P = 0.002 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 3.49   DF = 1   P = 0.062

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          43  35   12.90   3.32  (---*---)
64           8  16   15.44   4.00       (--------------*---------)
                                   --------+---------+---------+--------
                                        13.5      15.0      16.5
```

Overall median = 13.17

A 95.0% CI for median(21) - median(64): (-4.50,0.07)

```
Mood median test for WL (%)

Chi-Square = 10.78    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
21          19   5   28.00   6.50   (---*--------)
64           9  18   34.00   4.00                           (---*---)
                                    --+---------+---------+---------+----
                                   27.5      30.0      32.5      35.0

Overall median = 33.00

A 95.0% CI for median(21) - median(64): (-8.00,-4.00)


Mood median test for Wp (%)

Chi-Square = 1.06    DF = 1    P = 0.304

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
21          15   9   17.00   4.75   (-----------*-------------------)
64          13  14   18.00   2.00               (---------*
                                    --+---------+---------+---------+----
                                   16.0      17.0      18.0      19.0

Overall median = 17.00

A 95.0% CI for median(21) - median(64): (-2.00,1.00)


Mood median test for Ip (%)

Chi-Square = 12.51    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          19   5   12.00   4.25  (----*----)
64           8  19   17.00   3.00                          (----*
                                   -----+---------+---------+---------+-
                                     12.0      14.0      16.0      18.0

Overall median = 15.00

A 95.0% CI for median(21) - median(64): (-6.00,-3.00)


Mood median test for % GRAVEL

Chi-Square = 1.05    DF = 1    P = 0.305

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
21           7   4    35.0   11.0                      (-------------*-)
64           2   0    19.0   16.0  (----------*-----------)
                                   ----+---------+---------+---------+--
                                    14.0      21.0      28.0      35.0

Overall median = 35.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.3% CI for median(21) - median(64): (-2.0,39.0)
```

```
Mood median test for % SAND

Chi-Square = 2.76    DF = 1    P = 0.097

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
21           7   4    24.0    8.0     (-------------------*------)
64           0   2    27.5    3.0                              (----*----)
                                      +---------+---------+---------+------
                                   18.0      21.0      24.0      27.0

Overall median = 24.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.3% CI for median(21) - median(64): (-17.0,5.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.13    DF = 1    P = 0.715

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
21           7   4    47.0    9.0  (----------*---)
64           1   1    53.5   13.0             (----------*----------)
                                   ---+---------+---------+---------+---
                                   42.0      48.0      54.0      60.0

Overall median = 47.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.3% CI for median(21) - median(64): (-41.0,6.0)


Mood median test for Bulk Density

Chi-Square = 11.38    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
21          19  29   2.305  0.119                          (-----*----)
64          12   1   2.180  0.140    (------------*--)
                                     +---------+---------+---------+------
                                   2.080     2.160     2.240     2.320

Overall median = 2.260

A 95.0% CI for median(21) - median(64): (0.083,0.242)


Mood median test for Dry Density

Chi-Square = 15.99    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
21          18  30   2.043  0.175                     (---------*-----)
64          13   0   1.900  0.145  (-----------*-----)
                                   ----+---------+---------+---------+--
                                     1.840     1.920     2.000     2.080

Overall median = 1.990

A 95.0% CI for median(21) - median(64): (0.062,0.261)
```

Results for: Domain 21 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
21	78	13.72	4.31	0.49
65	7	17.71	4.27	1.6

Difference = mu (21) - mu (65)
Estimate for difference: -3.99
95% CI for difference: (-7.98, -0.00)
T-Test of difference = 0 (vs not =): T-Value = -2.37 P-Value = 0.050 DF = 7

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	29.67	5.51	1.1
65	8	35.25	5.60	2.0

Difference = mu (21) - mu (65)
Estimate for difference: -5.58
95% CI for difference: (-10.60, -0.57)
T-Test of difference = 0 (vs not =): T-Value = -2.45 P-Value = 0.032 DF = 11

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	17.17	3.60	0.73
65	8	18.88	1.46	0.52

Difference = mu (21) - mu (65)
Estimate for difference: -1.708
95% CI for difference: (-3.545, 0.129)
T-Test of difference = 0 (vs not =): T-Value = -1.90 P-Value = 0.067 DF = 28

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	12.50	4.42	0.90
65	8	16.38	4.41	1.6

Difference = mu (21) - mu (65)
Estimate for difference: -3.88
95% CI for difference: (-7.80, 0.05)
T-Test of difference = 0 (vs not =): T-Value = -2.15 P-Value = 0.052 DF = 12

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
21	11	33.64	7.35	2.2
65	2	20.0	11.3	8.0

Difference = mu (21) - mu (65)
Estimate for difference: 13.64
95% CI for difference: (-91.84, 119.12)
T-Test of difference = 0 (vs not =): T-Value = 1.64 P-Value = 0.348 DF = 1

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
21	11	22.64	5.22	1.6
65	2	34.00	1.41	1.0

Difference = mu (21) - mu (65)
Estimate for difference: -11.36
95% CI for difference: (-15.77, -6.95)
T-Test of difference = 0 (vs not =): T-Value = -6.09 P-Value = 0.000 DF = 7

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
21	11	43.73	9.16	2.8
65	2	46.0	12.7	9.0

Difference = mu (21) - mu (65)
Estimate for difference: -2.27
95% CI for difference: (-121.89, 117.34)
T-Test of difference = 0 (vs not =): T-Value = -0.24 P-Value = 0.849 DF = 1

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.296	0.131	0.019
65	7	2.0929	0.0496	0.019

Difference = mu (21) - mu (65)
Estimate for difference: 0.2031
95% CI for difference: (0.1477, 0.2584)
T-Test of difference = 0 (vs not =): T-Value = 7.63 P-Value = 0.000 DF = 21

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.007	0.157	0.023
65	7	1.7800	0.0995	0.038

Difference = mu (21) - mu (65)
Estimate for difference: 0.2275
95% CI for difference: (0.1297, 0.3253)
T-Test of difference = 0 (vs not =): T-Value = 5.18 P-Value = 0.000 DF = 10

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
21	78	12.90	40.7	-2.85
65	7	17.00	68.5	2.85
Overall	85		43.0	

H = 8.14 DF = 1 P = 0.004
H = 8.15 DF = 1 P = 0.004 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	14.3	-2.28
65	8	37.50	23.1	2.28
Overall	32		16.5	

H = 5.22 DF = 1 P = 0.022
H = 5.24 DF = 1 P = 0.022 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	15.0	-1.57
65	8	19.00	21.0	1.57
Overall	32		16.5	

H = 2.45 DF = 1 P = 0.117
H = 2.49 DF = 1 P = 0.115 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	14.5	-2.11
65	8	18.50	22.6	2.11
Overall	32		16.5	

H = 4.46 DF = 1 P = 0.035
H = 4.51 DF = 1 P = 0.034 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.00	7.7	1.58
65	2	20.00	3.0	-1.58
Overall	13		7.0	

H = 2.49 DF = 1 P = 0.114
H = 2.56 DF = 1 P = 0.110 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	6.0	-2.17
65	2	34.00	12.5	2.17
Overall	13		7.0	

H = 4.71 DF = 1 P = 0.030
H = 4.83 DF = 1 P = 0.028 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain                  Ave
Reference   N  Median  Rank      Z
21         11   47.00   6.9  -0.20
65          2   46.00   7.5   0.20
Overall    13           7.0

H = 0.04  DF = 1  P = 0.844
H = 0.04  DF = 1  P = 0.842  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.305      31.0   3.61
65          7   2.100       7.6  -3.61
Overall    55              28.0

H = 13.04  DF = 1  P = 0.000
H = 13.05  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
21         48   2.043      30.8   3.33
65          7   1.810       9.1  -3.33
Overall    55              28.0

H = 11.11  DF = 1  P = 0.001
H = 11.11  DF = 1  P = 0.001  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 4.02    DF = 1    P = 0.045

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
21          42  36   12.90   3.32    (--*-)
65           1   6   17.00   4.00             (---------*-------------)
                                     -+---------+---------+---------+-----
                                   12.5      15.0      17.5      20.0

Overall median = 13.00

A 95.0% CI for median(21) - median(65): (-7.66,-1.61)
```

```
Mood median test for WL (%)

Chi-Square = 8.30    DF = 1    P = 0.004

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
21          17   7    28.0    6.5  (--*-----)
65           1   7    37.5    8.3           (-----------------*-----)
                                   ---+---------+---------+---------+---
                                   28.0      32.0      36.0      40.0

Overall median = 30.0

A 95.0% CI for median(21) - median(65): (-13.0,-1.0)


Mood median test for Wp (%)

Chi-Square = 6.00    DF = 1    P = 0.014

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          15   9   17.00   4.75  (---------*---------------)
65           1   7   19.00   1.50                   (--------*--------)
                                   --------+---------+---------+--------
                                        16.8      18.0      19.2

Overall median = 17.50

A 95.0% CI for median(21) - median(65): (-4.00,-1.00)


Mood median test for Ip (%)

Chi-Square = 2.67    DF = 1    P = 0.102

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21          14  10   12.00   4.25  (---*---)
65           2   6   18.50   6.25     (-------------------------*--)
                                   ------+---------+---------+---------+
                                      12.5      15.0      17.5      20.0

Overall median = 12.50

A 95.0% CI for median(21) - median(65): (-7.00,1.00)


Mood median test for % GRAVEL

Chi-Square = 1.05    DF = 1    P = 0.305

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
21           7   4    35.0   11.0                     (-------------*-)
65           2   0    20.0   16.0  (-----------*----------)
                                   ---+---------+---------+---------+---
                                   14.0      21.0      28.0      35.0

Overall median = 35.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.3% CI for median(21) - median(65): (-3.0,38.0)
```

```
Mood median test for % SAND

Chi-Square = 2.76    DF = 1    P = 0.097

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
21           7   4    24.0    8.0  (-----------*---)
65           0   2    34.0    2.0                                (-*-)
                                   ----+---------+---------+---------+--
                                    20.0      25.0      30.0      35.0

Overall median = 24.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.3% CI for median(21) - median(65): (-23.0,-2.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.13    DF = 1    P = 0.715

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21           7   4    47.0    9.0        (-------------*---)
65           1   1    46.0   18.0  (-----------------*-----------------)
                                   ------+---------+---------+---------+
                                      40.0      45.0      50.0      55.0

Overall median = 47.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 93.3% CI for median(21) - median(65): (-36.0,16.0)


Mood median test for Bulk Density

Chi-Square = 7.73    DF = 1    P = 0.005

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21          21  27   2.305  0.119                        (---*---)
65           7   0   2.100  0.070  (-----*--)
                                   ------+---------+---------+---------+
                                       2.10      2.20      2.30      2.40

Overall median = 2.284

A 95.0% CI for median(21) - median(65): (0.164,0.276)


Mood median test for Dry Density

Chi-Square = 7.73    DF = 1    P = 0.005

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
21          21  27   2.043  0.175                         (-----*---)
65           7   0   1.810  0.120  (---------*---)
                                   ---------+---------+---------+-------
                                          1.80      1.92      2.04

Overall median = 2.012

A 95.0% CI for median(21) - median(65): (0.162,0.364)
```

Results for: Domain 21 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
21	78	13.72	4.31	0.49
71	44	14.56	5.80	0.87

Difference = mu (21) - mu (71)
Estimate for difference: -0.84
95% CI for difference: (-2.83, 1.16)
T-Test of difference = 0 (vs not =): T-Value = -0.84 P-Value = 0.405 DF = 70

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	29.67	5.51	1.1
71	17	31.24	2.61	0.63

Difference = mu (21) - mu (71)
Estimate for difference: -1.57
95% CI for difference: (-4.19, 1.06)
T-Test of difference = 0 (vs not =): T-Value = -1.21 P-Value = 0.233 DF = 34

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	17.17	3.60	0.73
71	17	15.35	1.73	0.42

Difference = mu (21) - mu (71)
Estimate for difference: 1.814
95% CI for difference: (0.097, 3.530)
T-Test of difference = 0 (vs not =): T-Value = 2.15 P-Value = 0.039 DF = 35

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	12.50	4.42	0.90
71	17	15.88	1.96	0.48

Difference = mu (21) - mu (71)
Estimate for difference: -3.38
95% CI for difference: (-5.46, -1.31)
T-Test of difference = 0 (vs not =): T-Value = -3.31 P-Value = 0.002 DF = 33

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
21	11	33.64	7.35	2.2
71	16	20.69	6.81	1.7

Difference = mu (21) - mu (71)
Estimate for difference: 12.95
95% CI for difference: (7.12, 18.78)
T-Test of difference = 0 (vs not =): T-Value = 4.63 P-Value = 0.000 DF = 20

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
21         11  22.64   5.22      1.6
71         16  24.37   7.67      1.9

Difference = mu (21) - mu (71)
Estimate for difference:  -1.74
95% CI for difference:  (-6.86, 3.38)
T-Test of difference = 0 (vs not =): T-Value = -0.70  P-Value = 0.490  DF = 24


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
21         11  43.73   9.16      2.8
71         16   52.1   11.3      2.8

Difference = mu (21) - mu (71)
Estimate for difference:  -8.40
95% CI for difference:  (-16.55, -0.24)
T-Test of difference = 0 (vs not =): T-Value = -2.13  P-Value = 0.044  DF = 24


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
21         48   2.296   0.131    0.019
71         12  2.2583  0.0486    0.014

Difference = mu (21) - mu (71)
Estimate for difference:  0.0376
95% CI for difference:  (-0.0097, 0.0849)
T-Test of difference = 0 (vs not =): T-Value = 1.60  P-Value = 0.117  DF = 49


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
21         48   2.007   0.157    0.023
71         12  1.9937  0.0718    0.021

Difference = mu (21) - mu (71)
Estimate for difference:  0.0137
95% CI for difference:  (-0.0484, 0.0759)
T-Test of difference = 0 (vs not =): T-Value = 0.45  P-Value = 0.657  DF = 39
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
21          78   12.90      58.5  -1.26
71          44   13.00      66.9   1.26
Overall    122              61.5

H = 1.58  DF = 1  P = 0.209
H = 1.58  DF = 1  P = 0.209  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	18.1	-1.85
71	17	31.00	25.1	1.85
Overall	41		21.0	

H = 3.43 DF = 1 P = 0.064
H = 3.46 DF = 1 P = 0.063 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	23.8	1.80
71	17	16.00	17.0	-1.80
Overall	41		21.0	

H = 3.24 DF = 1 P = 0.072
H = 3.32 DF = 1 P = 0.068 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	15.7	-3.36
71	17	16.00	28.5	3.36
Overall	41		21.0	

H = 11.29 DF = 1 P = 0.001
H = 11.43 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.00	20.8	3.70
71	16	19.00	9.3	-3.70
Overall	27		14.0	

H = 13.70 DF = 1 P = 0.000
H = 13.83 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	13.0	-0.52
71	16	23.50	14.7	0.52
Overall	27		14.0	

H = 0.27 DF = 1 P = 0.604
H = 0.27 DF = 1 P = 0.603 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
21	11	47.00	9.7	-2.32
71	16	53.00	16.9	2.32
Overall	27		14.0	

H = 5.38 DF = 1 P = 0.020
H = 5.40 DF = 1 P = 0.020 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
21	48	2.305	32.2	1.53
71	12	2.260	23.6	-1.53
Overall	60		30.5	

H = 2.35 DF = 1 P = 0.125
H = 2.36 DF = 1 P = 0.125 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
21	48	2.043	31.4	0.83
71	12	1.991	26.8	-0.83
Overall	60		30.5	

H = 0.69 DF = 1 P = 0.406
H = 0.69 DF = 1 P = 0.406 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.03   DF = 1   P = 0.867

```
Domain                              Individual 95.0% CIs
Reference   N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
21           42  36   12.90   3.32  (-----------*----------)
71           23  21   13.00   3.75              *-------------------)
                                    ----+---------+---------+---------+--
                                     12.50     13.00     13.50     14.00
```

Overall median = 13.00

A 95.0% CI for median(21) - median(71): (-1.60,0.30)

Mood median test for WL (%)

Chi-Square = 3.61   DF = 1   P = 0.058

```
Domain                              Individual 95.0% CIs
Reference   N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
21           17   7   28.00   6.50     (------*--------------)
71            7  10   31.00   3.50                         (------*-----)
                                       +---------+---------+---------+------
                                    27.0      28.5      30.0      31.5
```

Overall median = 30.00

A 95.0% CI for median(21) - median(71): (-5.00,0.00)

Mood median test for Wp (%)

Chi-Square = 2.11   DF = 1   P = 0.146

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
21          10  14   17.00   4.75              (------*-------------)
71          11   6   16.00   3.00  (-------------*-----)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0
```

Overall median = 16.00

A 95.0% CI for median(21) - median(71): (-1.00,3.05)

Mood median test for Ip (%)

Chi-Square = 10.60   DF = 1   P = 0.001

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          18   6   12.00   4.25  (----*----)
71           4  13   16.00   2.50                    (----*----)
                                   -----+---------+---------+---------+-
                                     12.0      14.0      16.0      18.0
```

Overall median = 14.00

A 95.0% CI for median(21) - median(71): (-6.00,-2.00)

Mood median test for % GRAVEL

Chi-Square = 12.96   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
21           3   8    35.0   11.0                 (---------------*-)
71          15   1    19.0    7.5   (---*------)
                                    --+---------+---------+---------+----
                                   18.0      24.0      30.0      36.0
```

Overall median = 25.0

A 95.0% CI for median(21) - median(71): (4.0,18.0)

Mood median test for % SAND

Chi-Square = 0.49   DF = 1   P = 0.484

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21           7   4    24.0    8.0     (--------------*----)
71           8   8    23.5   14.0  (----------------*----------------)
                                   --------+---------+---------+--------
                                        20.0      24.0      28.0
```

Overall median = 24.0

A 95.0% CI for median(21) - median(71): (-12.0,6.0)

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 9.40    DF = 1    P = 0.002

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
21          10   1    47.0    9.0  (----------*---)
71           5  11    53.0   15.5            (---------*----------)
                                   ---+---------+---------+---------+---
                                   42.0      48.0      54.0      60.0

Overall median = 49.0

A 95.0% CI for median(21) - median(71): (-16.0,-1.0)


Mood median test for Bulk Density

Chi-Square = 4.87    DF = 1    P = 0.027

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21          23  25   2.305  0.119           (--------------*------------)
71          10   2   2.260  0.058  (--------*---------)
                                   ------+---------+---------+---------+
                                       2.250     2.280     2.310     2.340

Overall median = 2.290

A 95.0% CI for median(21) - median(71): (-0.006,0.100)


Mood median test for Dry Density

Chi-Square = 1.67    DF = 1    P = 0.197

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
21          22  26   2.043  0.175  (----------------------*-----------)
71           8   4   1.991  0.067   (------*-----------)
                                   ---------+---------+---------+-------
                                          1.995     2.030     2.065

Overall median = 2.015

A 95.0% CI for median(21) - median(71): (-0.024,0.106)
```

Results for: Domain 21 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
21	78	13.72	4.31	0.49
72	26	15.13	4.24	0.83

Difference = mu (21) - mu (72)
Estimate for difference: -1.404
95% CI for difference: (-3.350, 0.542)
T-Test of difference = 0 (vs not =): T-Value = -1.45 P-Value = 0.153 DF = 43

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	29.67	5.51	1.1
72	10	30.50	4.84	1.5

Difference = mu (21) - mu (72)
Estimate for difference: -0.83
95% CI for difference: (-4.81, 3.14)
T-Test of difference = 0 (vs not =): T-Value = -0.44 P-Value = 0.666 DF = 19

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	17.17	3.60	0.73
72	10	15.20	1.99	0.63

Difference = mu (21) - mu (72)
Estimate for difference: 1.967
95% CI for difference: (-0.010, 3.943)
T-Test of difference = 0 (vs not =): T-Value = 2.03 P-Value = 0.051 DF = 29

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
21	24	12.50	4.42	0.90
72	10	15.30	3.71	1.2

Difference = mu (21) - mu (72)
Estimate for difference: -2.80
95% CI for difference: (-5.89, 0.29)
T-Test of difference = 0 (vs not =): T-Value = -1.89 P-Value = 0.073 DF = 20

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
21	11	33.64	7.35	2.2
72	9	20.56	7.14	2.4

Difference = mu (21) - mu (72)
Estimate for difference: 13.08
95% CI for difference: (6.22, 19.94)
T-Test of difference = 0 (vs not =): T-Value = 4.02 P-Value = 0.001 DF = 17

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
21	11	22.64	5.22	1.6
72	9	27.56	7.20	2.4

Difference = mu (21) - mu (72)
Estimate for difference: -4.92
95% CI for difference: (-11.07, 1.23)
T-Test of difference = 0 (vs not =): T-Value = -1.71 P-Value = 0.108 DF = 14

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
21	11	43.73	9.16	2.8
72	9	51.89	7.66	2.6

Difference = mu (21) - mu (72)
Estimate for difference: -8.16
95% CI for difference: (-16.09, -0.23)
T-Test of difference = 0 (vs not =): T-Value = -2.17 P-Value = 0.044 DF = 17

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.296	0.131	0.019
72	7	2.221	0.100	0.038

Difference = mu (21) - mu (72)
Estimate for difference: 0.0745
95% CI for difference: (-0.0214, 0.1704)
T-Test of difference = 0 (vs not =): T-Value = 1.76 P-Value = 0.113 DF = 9

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
21	48	2.007	0.157	0.023
72	7	1.944	0.155	0.059

Difference = mu (21) - mu (72)
Estimate for difference: 0.0631
95% CI for difference: (-0.0856, 0.2118)
T-Test of difference = 0 (vs not =): T-Value = 1.00 P-Value = 0.349 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
21	78	12.90	49.8	-1.61
72	26	13.00	60.7	1.61
Overall	104		52.5	

H = 2.58 DF = 1 P = 0.108
H = 2.59 DF = 1 P = 0.108 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	28.00	16.7	-0.74
72	10	30.00	19.4	0.74
Overall	34		17.5	

H = 0.54 DF = 1 P = 0.461
H = 0.55 DF = 1 P = 0.459 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	17.00	19.4	1.74
72	10	15.00	12.9	-1.74
Overall	34		17.5	

H = 3.02 DF = 1 P = 0.082
H = 3.06 DF = 1 P = 0.080 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
21	24	12.00	15.5	-1.83
72	10	15.50	22.4	1.83
Overall	34		17.5	

H = 3.36 DF = 1 P = 0.067
H = 3.42 DF = 1 P = 0.064 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
21	11	35.00	14.1	3.00
72	9	17.00	6.1	-3.00
Overall	20		10.5	

H = 9.01 DF = 1 P = 0.003
H = 9.07 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
21	11	24.00	8.7	-1.52
72	9	26.00	12.7	1.52
Overall	20		10.5	

H = 2.31 DF = 1 P = 0.129
H = 2.35 DF = 1 P = 0.125 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
21	11	47.00	8.1	-1.98
72	9	53.00	13.4	1.98
Overall	20		10.5	

H = 3.90 DF = 1 P = 0.048
H = 3.93 DF = 1 P = 0.047 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
21	48	2.305	29.5	1.81
72	7	2.240	17.8	-1.81
Overall	55		28.0	

H = 3.26 DF = 1 P = 0.071
H = 3.27 DF = 1 P = 0.071 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
21	48	2.043	29.1	1.29
72	7	2.000	20.7	-1.29
Overall	55		28.0	

H = 1.66 DF = 1 P = 0.198
H = 1.66 DF = 1 P = 0.198 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.00   DF = 1   P = 1.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
21          42  36   12.90   3.32  (---*---)
72          14  12   13.00   5.75    (--*-------------------------)
                                   --------+---------+---------+--------
                                       13.5      15.0      16.5
```

Overall median = 13.00

A 95.0% CI for median(21) - median(72): (-4.50,0.20)

Mood median test for WL (%)

Chi-Square = 0.95   DF = 1   P = 0.329

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
21          14  10   28.00   6.50     (------*--------------)
72           4   6   30.00   5.25     (-------------------*---------------)
                                      +---------+---------+---------+------
                                   27.0      28.5      30.0      31.5
```

Overall median = 29.00

A 95.0% CI for median(21) - median(72): (-5.03,3.00)

```
Mood median test for Wp (%)

Chi-Square = 4.16    DF = 1    P = 0.041

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
21          10  14   17.00   4.75                 (------*------------)
72           8   2   15.00   2.75  (--------*----------)
                                   ---------+---------+---------+-------
                                         15.0      16.5      18.0

Overall median = 16.00

A 95.0% CI for median(21) - median(72): (-0.06,3.11)
```

```
Mood median test for Ip (%)

Chi-Square = 0.95    DF = 1    P = 0.329

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          14  10   12.00   4.25  (----*----)
72           4   6   15.50   5.25       (----------------*---------)
                                   -----+---------+---------+---------+-
                                     12.0      14.0      16.0      18.0

Overall median = 12.00

A 95.0% CI for median(21) - median(72): (-5.11,1.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 7.59    DF = 1    P = 0.006

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
21           3   8    35.0   11.0                    (---------------*-)
72           8   1    17.0   13.5  (---*------------------)
                                   ------+---------+---------+---------+
                                      18.0      24.0      30.0      36.0

Overall median = 28.0

A 95.0% CI for median(21) - median(72): (1.5,21.1)
```

```
Mood median test for % SAND

Chi-Square = 1.82    DF = 1    P = 0.178

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
21           7   4    24.0    8.0  (-----------------*----)
72           3   6    26.0    7.5               (---------*-----------)
                                   ---------+---------+---------+-------
                                         21.0      24.5      28.0

Overall median = 25.0

A 95.0% CI for median(21) - median(72): (-9.4,3.1)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 1.82    DF = 1    P = 0.178

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
21           7   4    47.0    9.0  (----------*---)
72           3   6    53.0   15.5       (---------------*-----------)
                                   ---+---------+---------+---------+---
                                   42.0      48.0      54.0      60.0

Overall median = 48.0

A 95.0% CI for median(21) - median(72): (-16.5,3.3)


Mood median test for Bulk Density

Chi-Square = 3.50    DF = 1    P = 0.061

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          23  25   2.305  0.119                   (---------*------)
72           6   1   2.240  0.040  (------------*--------)
                                   -----+---------+---------+---------+-
                                      2.200     2.250     2.300     2.350

Overall median = 2.290

A 95.0% CI for median(21) - median(72): (0.007,0.118)


Mood median test for Dry Density

Chi-Square = 3.89    DF = 1    P = 0.049

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
21          22  26   2.043  0.175                 (-----------*-----)
72           6   1   2.000  0.070  (--------------------*---)
                                   -----+---------+---------+---------+-
                                      1.890     1.960     2.030     2.100

Overall median = 2.018

A 95.0% CI for median(21) - median(72): (-0.010,0.172)
```

Results for: Domain 31 v 41

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
31	125	18.47	2.50	0.22
41	57	19.60	8.68	1.1

Difference = mu (31) - mu (41)
Estimate for difference: -1.13
95% CI for difference: (-3.47, 1.21)
T-Test of difference = 0 (vs not =): T-Value = -0.97 P-Value = 0.338 DF = 60

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
31	112	33.41	4.86	0.46
41	13	44.5	10.6	2.9

Difference = mu (31) - mu (41)
Estimate for difference: -11.05
95% CI for difference: (-17.54, -4.56)
T-Test of difference = 0 (vs not =): T-Value = -3.71 P-Value = 0.003 DF = 12

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	15.62	1.95	0.19
41	13	21.85	4.38	1.2

Difference = mu (31) - mu (41)
Estimate for difference: -6.22
95% CI for difference: (-8.90, -3.55)
T-Test of difference = 0 (vs not =): T-Value = -5.07 P-Value = 0.000 DF = 12

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	17.89	3.19	0.30
41	13	22.62	6.78	1.9

Difference = mu (31) - mu (41)
Estimate for difference: -4.72
95% CI for difference: (-8.87, -0.58)
T-Test of difference = 0 (vs not =): T-Value = -2.48 P-Value = 0.029 DF = 12

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
31	35	5.63	5.82	0.98
41	6	22.3	13.5	5.5

Difference = mu (31) - mu (41)
Estimate for difference: -16.70
95% CI for difference: (-31.11, -2.30)
T-Test of difference = 0 (vs not =): T-Value = -2.98 P-Value = 0.031 DF = 5

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
31	35	24.29	8.74	1.5
41	6	27.00	7.01	2.9

Difference = mu (31) - mu (41)
Estimate for difference: -2.71
95% CI for difference: (-10.33, 4.90)
T-Test of difference = 0 (vs not =): T-Value = -0.84 P-Value = 0.427 DF = 7

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
31	35	70.1	11.4	1.9
41	6	50.7	16.1	6.6

Difference = mu (31) - mu (41)
Estimate for difference: 19.42
95% CI for difference: (1.84, 37.00)
T-Test of difference = 0 (vs not =): T-Value = 2.84 P-Value = 0.036 DF = 5

Two-sample T for Particle Density

Domain Reference	N	Mean	StDev	SE Mean
31	17	2.6735	0.0212	0.0051
41	9	2.7611	0.0237	0.0079

Difference = mu (31) - mu (41)
Estimate for difference: -0.08758
95% CI for difference: (-0.10779, -0.06737)
T-Test of difference = 0 (vs not =): T-Value = -9.30 P-Value = 0.000 DF = 14

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	2.2281	0.0640	0.0098
41	8	2.2000	0.0807	0.029

Difference = mu (31) - mu (41)
Estimate for difference: 0.0281
95% CI for difference: (-0.0414, 0.0977)
T-Test of difference = 0 (vs not =): T-Value = 0.93 P-Value = 0.378 DF = 8

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	1.8845	0.0804	0.012
41	8	1.8950	0.0735	0.026

Difference = mu (31) - mu (41)
Estimate for difference: -0.0105
95% CI for difference: (-0.0745, 0.0535)
T-Test of difference = 0 (vs not =): T-Value = -0.37 P-Value = 0.722 DF = 10

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
31	125	18.00	95.3	1.45
41	57	17.00	83.1	-1.45
Overall	182		91.5	

H = 2.11 DF = 1 P = 0.147
H = 2.13 DF = 1 P = 0.144 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
31	112	34.00	58.8	-3.83
41	13	42.00	99.4	3.83
Overall	125		63.0	

H = 14.67 DF = 1 P = 0.000
H = 14.75 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	16.00	56.6	-5.31
41	13	21.00	112.6	5.31
Overall	124		62.5	

H = 28.24 DF = 1 P = 0.000
H = 29.03 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.00	59.7	-2.57
41	13	22.00	86.7	2.57
Overall	124		62.5	

H = 6.58 DF = 1 P = 0.010
H = 6.66 DF = 1 P = 0.010 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.00	59.7	-2.57
41	13	22.00	86.7	2.57
Overall	124		62.5	

H = 6.58 DF = 1 P = 0.010
H = 6.66 DF = 1 P = 0.010 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
31	35	4.000	18.6	-3.12
41	6	23.500	35.1	3.12
Overall	41		21.0	

H = 9.71 DF = 1 P = 0.002
H = 9.79 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
31	35	23.00	20.2	-0.98
41	6	27.50	25.4	0.98
Overall	41		21.0	

H = 0.96 DF = 1 P = 0.328
H = 0.96 DF = 1 P = 0.328 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
31	35	72.00	23.0	2.64
41	6	46.00	9.1	-2.64
Overall	41		21.0	

H = 6.96 DF = 1 P = 0.008
H = 6.97 DF = 1 P = 0.008 (adjusted for ties)

Kruskal-Wallis Test on Particle Density

Domain Reference	N	Median	Ave Rank	Z
31	17	2.680	9.0	-4.12
41	9	2.770	22.0	4.12
Overall	26		13.5	

Kruskal-Wallis Test on Bulk Density

H = 17.00 DF = 1 P = 0.000
H = 17.26 DF = 1 P = 0.000 (adjusted for ties)

Domain Reference	N	Median	Ave Rank	Z
31	43	2.230	26.9	1.00
41	8	2.225	21.2	-1.00
Overall	51		26.0	

H = 0.99 DF = 1 P = 0.319
H = 1.00 DF = 1 P = 0.317 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   1.890      25.7  -0.31
41          8   1.915      27.5   0.31
Overall    51              26.0

H = 0.10  DF = 1  P = 0.756
H = 0.10  DF = 1  P = 0.756  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 3.33    DF = 1    P = 0.068

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
31          63  62   18.00   3.00                       *------------)
41          37  20   17.00   4.50  (---------*-----------)
                                   -------+---------+---------+---------
                                       16.80     17.60     18.40

Overall median = 18.00

A 95.0% CI for median(31) - median(41): (0.00,2.52)


Mood median test for WL (%)

Chi-Square = 5.74    DF = 1    P = 0.017

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
31          65  47    34.0    6.0  (-*-)
41           3  10    42.0   16.5        (-----------*------------------)
                                   ----+---------+---------+---------+--
                                    35.0      40.0      45.0      50.0

Overall median = 34.0

A 95.0% CI for median(31) - median(41): (-17.7,-2.5)


Mood median test for Wp (%)

Chi-Square = 28.35    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          82  29   16.00   3.00     (---*
41           0  13   21.00   5.00                     (-------*----------)
                                      +---------+---------+---------+------
                                   15.0      17.5      20.0      22.5

Overall median = 16.00

A 95.0% CI for median(31) - median(41): (-7.34,-3.00)
```

```
Mood median test for Ip (%)

Chi-Square = 2.94    DF = 1    P = 0.086

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
31          62  49    18.0    4.0      *--)
41           4   9    22.0   12.0  (---------------*---------------)
                                   ---+---------+---------+---------+---
                                   17.5      21.0      24.5      28.0

Overall median = 18.0

A 95.0% CI for median(31) - median(41): (-9.3,1.3)


Mood median test for % GRAVEL

Chi-Square = 7.38    DF = 1    P = 0.007

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          21  14     4.0    6.0  (-*)
41           0   6    23.5   26.8       (----------------*------------)
                                   --------+---------+---------+--------
                                          10        20        30

Overall median = 4.0

A 95.0% CI for median(31) - median(41): (-35.0,-2.0)


Mood median test for % SAND

Chi-Square = 0.90    DF = 1    P = 0.343

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
31          19  16    23.0   10.0    (------*----)
41           2   4    27.5   11.8   (----------------*--------------)
                                    --+---------+---------+---------+----
                                   20.0      25.0      30.0      35.0

Overall median = 23.0

A 95.0% CI for median(31) - median(41): (-15.0,7.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.90    DF = 1    P = 0.089

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
31          16  19    72.0   16.0                              (-*--)
41           5   1    46.0   29.0   (-------*-------------------)
                                    +---------+---------+---------+------
                                   36        48        60        72

Overall median = 70.0

A 95.0% CI for median(31) - median(41): (-4.2,42.0)
```

```
Mood median test for Particle Density

Chi-Square = 18.77    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
31          15   2   2.680  0.030   (-----*--)
41           0   9   2.770  0.050                       (----------*--)
                                    +---------+---------+---------+------
                                  2.660     2.695     2.730     2.765

Overall median = 2.690

A 95.0% CI for median(31) - median(41): (-0.110,-0.050)


Mood median test for Bulk Density

Chi-Square = 0.35    DF = 1    P = 0.555

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1  ---------+---------+---------+-------
31          22  21  2.2300  0.0900                 (----*-----------)
41           5   3  2.2250  0.0475  (------------------*------)
                                    ---------+---------+---------+-------
                                           2.200     2.225     2.250

Overall median = 2.2300

A 95.0% CI for median(31) - median(41): (-0.0100,0.0600)


Mood median test for Dry Density

Chi-Square = 0.09    DF = 1    P = 0.762

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1  --+---------+---------+---------+----
31          24  19  1.8900  0.1187   (------*--------------)
41           4   4  1.9150  0.0625  (-----------------*--------------)
                                    --+---------+---------+---------+----
                                    1.875     1.900     1.925     1.950

Overall median = 1.9100

A 95.0% CI for median(31) - median(41): (-0.0602,0.0400)
```

Results for: Domain 31 v 43

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference    N   Mean  StDev  SE Mean
31         125  18.47   2.50     0.22
43          50  20.44   7.73      1.1

Difference = mu (31) - mu (43)
Estimate for difference:  -1.97
95% CI for difference:  (-4.21, 0.27)
T-Test of difference = 0 (vs not =): T-Value = -1.76  P-Value = 0.083  DF = 53


Two-sample T for WL (%)

Domain
Reference    N   Mean  StDev  SE Mean
31         112  33.41   4.86     0.46
43          17  37.35   7.61      1.8

Difference = mu (31) - mu (43)
Estimate for difference:  -3.94
95% CI for difference:  (-7.94, 0.05)
T-Test of difference = 0 (vs not =): T-Value = -2.07  P-Value = 0.053  DF = 18


Two-sample T for Wp (%)

Domain
Reference    N   Mean  StDev  SE Mean
31         111  15.62   1.95     0.19
43          17  20.29   3.53     0.86

Difference = mu (31) - mu (43)
Estimate for difference:  -4.672
95% CI for difference:  (-6.521, -2.824)
T-Test of difference = 0 (vs not =): T-Value = -5.33  P-Value = 0.000  DF = 17


Two-sample T for Ip (%)

Domain
Reference    N   Mean  StDev  SE Mean
31         111  17.89   3.19     0.30
43          17  17.06   5.15      1.2

Difference = mu (31) - mu (43)
Estimate for difference:  0.83
95% CI for difference:  (-1.88, 3.55)
T-Test of difference = 0 (vs not =): T-Value = 0.65  P-Value = 0.526  DF = 17


Two-sample T for % GRAVEL

Domain
Reference   N  Mean  StDev  SE Mean
31         35  5.63   5.82     0.98
43         15  38.1   12.9      3.3

Difference = mu (31) - mu (43)
Estimate for difference:  -32.50
95% CI for difference:  (-39.86, -25.15)
T-Test of difference = 0 (vs not =): T-Value = -9.37  P-Value = 0.000  DF = 16
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
31	35	24.29	8.74	1.5
43	15	33.93	7.56	2.0

Difference = mu (31) - mu (43)
Estimate for difference: -9.65
95% CI for difference: (-14.65, -4.65)
T-Test of difference = 0 (vs not =): T-Value = -3.94 P-Value = 0.000 DF = 30

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
31	35	70.1	11.4	1.9
43	15	27.9	11.0	2.8

Difference = mu (31) - mu (43)
Estimate for difference: 42.15
95% CI for difference: (35.10, 49.20)
T-Test of difference = 0 (vs not =): T-Value = 12.27 P-Value = 0.000 DF = 27

Two-sample T for Particle Density

Domain Reference	N	Mean	StDev	SE Mean
31	17	2.6735	0.0212	0.0051
43	6	2.7217	0.0571	0.023

Difference = mu (31) - mu (43)
Estimate for difference: -0.0481
95% CI for difference: (-0.1095, 0.0132)
T-Test of difference = 0 (vs not =): T-Value = -2.02 P-Value = 0.100 DF = 5

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	2.2281	0.0640	0.0098
43	12	2.112	0.162	0.047

Difference = mu (31) - mu (43)
Estimate for difference: 0.1165
95% CI for difference: (0.0113, 0.2217)
T-Test of difference = 0 (vs not =): T-Value = 2.44 P-Value = 0.033 DF = 11

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	1.8845	0.0804	0.012
43	12	1.810	0.176	0.051

Difference = mu (31) - mu (43)
Estimate for difference: 0.0745
95% CI for difference: (-0.0395, 0.1885)
T-Test of difference = 0 (vs not =): T-Value = 1.42 P-Value = 0.180 DF = 12

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
31	125	18.00	89.3	0.55
43	50	17.00	84.7	-0.55
Overall	175		88.0	

H = 0.30 DF = 1 P = 0.585
H = 0.30 DF = 1 P = 0.582 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
31	112	34.00	62.4	-2.04
43	17	39.00	82.2	2.04
Overall	129		65.0	

H = 4.16 DF = 1 P = 0.041
H = 4.18 DF = 1 P = 0.041 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	16.00	58.3	-4.82
43	17	20.00	104.9	4.82
Overall	128		64.5	

H = 23.27 DF = 1 P = 0.000
H = 23.98 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.00	65.9	1.11
43	17	16.00	55.2	-1.11
Overall	128		64.5	

H = 1.24 DF = 1 P = 0.266
H = 1.26 DF = 1 P = 0.263 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
31	35	4.000	18.2	-5.43
43	15	41.000	42.6	5.43
Overall	50		25.5	

H = 29.49 DF = 1 P = 0.000
H = 29.61 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
31	35	23.00	20.8	-3.45
43	15	33.00	36.4	3.45
Overall	50		25.5	

H = 11.91 DF = 1 P = 0.001
H = 11.93 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
31	35	72.00	32.9	5.45
43	15	23.00	8.3	-5.45
Overall	50		25.5	

H = 29.72 DF = 1 P = 0.000
H = 29.75 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Particle Density

Domain Reference	N	Median	Ave Rank	Z
31	17	2.680	10.4	-1.96
43	6	2.735	16.7	1.96
Overall	23		12.0	

H = 3.84 DF = 1 P = 0.050
H = 3.92 DF = 1 P = 0.048 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
31	43	2.230	31.0	2.63
43	12	2.155	17.3	-2.63
Overall	55		28.0	

H = 6.91 DF = 1 P = 0.009
H = 6.94 DF = 1 P = 0.008 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
31	43	1.890	29.8	1.61
43	12	1.835	21.4	-1.61
Overall	55		28.0	

H = 2.59 DF = 1 P = 0.107
H = 2.60 DF = 1 P = 0.107 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 1.32   DF = 1   P = 0.250

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          63  62   18.00   3.00                         *---------)
43          30  20   17.00  11.25     (---------*----------------------)
                                      +---------+---------+---------+------
                                   16.0      17.0      18.0      19.0
```

Overall median = 18.00

A 95.0% CI for median(31) - median(43): (-1.00,3.00)

Mood median test for WL (%)

Chi-Square = 1.70   DF = 1   P = 0.192

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
31          65  47    34.0    6.0         (--*--)
43           7  10    39.0   12.5    (---------------------*-----------)
                                     -+---------+---------+---------+-----
                                   31.5      35.0      38.5      42.0
```

Overall median = 34.0

A 95.0% CI for median(31) - median(43): (-10.0,3.0)

Mood median test for Wp (%)

Chi-Square = 16.95   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          82  29   16.00   3.00     (---*
43           4  13   20.00   7.00             (-----------*----------)
                                      +---------+---------+---------+------
                                   15.0      17.5      20.0      22.5
```

Overall median = 16.00

A 95.0% CI for median(31) - median(43): (-7.00,-1.00)

Mood median test for Ip (%)

Chi-Square = 0.05   DF = 1   P = 0.818

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
31          62  49   18.00   4.00                            (-*------)
43          10   7   16.00   5.50  (-------------*------------------)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0
```

Overall median = 18.00

A 95.0% CI for median(31) - median(43): (-1.00,4.00)

```
Mood median test for % GRAVEL

Chi-Square = 21.43    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
31          25  10     4.0    6.0  (-*
43           0  15    41.0   20.0                    (------*----)
                                   ---------+---------+---------+-------
                                           15        30        45

Overall median = 7.0

A 95.0% CI for median(31) - median(43): (-41.5,-27.7)


Mood median test for % SAND

Chi-Square = 11.52    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
31          23  12    23.0   10.0    (------*----)
43           2  13    33.0   10.0                      (--------*--------)
                                     -+---------+---------+---------+-----
                                   20.0      25.0      30.0      35.0

Overall median = 25.5

A 95.0% CI for median(31) - median(43): (-15.1,-5.8)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 21.43    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          10  25    72.0   16.0                                (-*--)
43          15   0    23.0   17.0   (*-------)
                                   --------+---------+---------+--------
                                          32        48        64

Overall median = 64.0

A 95.0% CI for median(31) - median(43): (35.6,55.1)


Mood median test for Particle Density

Chi-Square = 2.58    DF = 1    P = 0.108

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
31          12   5   2.680  0.030     (-----*--)
43           2   4   2.735  0.105  (----------------------*-----------)
                                   ---+---------+---------+---------+---
                                    2.660     2.695     2.730     2.765

Overall median = 2.680

A 95.0% CI for median(31) - median(43): (-0.110,0.050)
```

```
Mood median test for Bulk Density

Chi-Square = 3.99    DF = 1    P = 0.046

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          22  21   2.230  0.090                          (*--)
43          10   2   2.155  0.265  (--------------------*----)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.230

A 95.0% CI for median(31) - median(43): (0.010,0.330)


Mood median test for Dry Density

Chi-Square = 2.17    DF = 1    P = 0.141

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
31          22  21   1.890  0.119                           (-*----)
43           9   3   1.835  0.252  (----------------------*-------)
                                   ----+---------+---------+---------+--
                                     1.680     1.760     1.840     1.920

Overall median = 1.890

A 95.0% CI for median(31) - median(43): (-0.010,0.290)
```

Results for: Domain 31 v 51

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
31	125	18.47	2.50	0.22
51	10	14.36	8.77	2.8

Difference = mu (31) - mu (51)
Estimate for difference: 4.11
95% CI for difference: (-2.18, 10.40)
T-Test of difference = 0 (vs not =): T-Value = 1.48 P-Value = 0.173 DF = 9

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
31	112	33.41	4.86	0.46
51	13	27.08	2.90	0.80

Difference = mu (31) - mu (51)
Estimate for difference: 6.334
95% CI for difference: (4.402, 8.265)
T-Test of difference = 0 (vs not =): T-Value = 6.84 P-Value = 0.000 DF = 20

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	15.62	1.95	0.19
51	13	17.08	1.71	0.47

Difference = mu (31) - mu (51)
Estimate for difference: -1.455
95% CI for difference: (-2.539, -0.372)
T-Test of difference = 0 (vs not =): T-Value = -2.86 P-Value = 0.012 DF = 15

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	17.89	3.19	0.30
51	13	10.00	1.83	0.51

Difference = mu (31) - mu (51)
Estimate for difference: 7.892
95% CI for difference: (6.665, 9.119)
T-Test of difference = 0 (vs not =): T-Value = 13.38 P-Value = 0.000 DF = 21

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
31	35	5.63	5.82	0.98
51	10	38.20	9.73	3.1

Difference = mu (31) - mu (51)
Estimate for difference: -32.57
95% CI for difference: (-39.77, -25.38)
T-Test of difference = 0 (vs not =): T-Value = -10.09 P-Value = 0.000 DF = 10

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
31	35	24.29	8.74	1.5
51	10	16.00	4.71	1.5

Difference = mu (31) - mu (51)
Estimate for difference: 8.29
95% CI for difference: (3.99, 12.58)
T-Test of difference = 0 (vs not =): T-Value = 3.95 P-Value = 0.000 DF = 28

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
31	35	70.1	11.4	1.9
51	10	38.5	12.7	4.0

Difference = mu (31) - mu (51)
Estimate for difference: 31.59
95% CI for difference: (21.98, 41.20)
T-Test of difference = 0 (vs not =): T-Value = 7.10 P-Value = 0.000 DF = 13

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	2.2281	0.0640	0.0098
51	3	2.3267	0.0379	0.022

Difference = mu (31) - mu (51)
Estimate for difference: -0.0985
95% CI for difference: (-0.2015, 0.0045)
T-Test of difference = 0 (vs not =): T-Value = -4.12 P-Value = 0.054 DF = 2

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	1.8845	0.0804	0.012
51	3	2.1600	0.0361	0.021

Difference = mu (31) - mu (51)
Estimate for difference: -0.2755
95% CI for difference: (-0.3524, -0.1986)
T-Test of difference = 0 (vs not =): T-Value = -11.40 P-Value = 0.001 DF = 3

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
31	125	18.00	70.6	2.70
51	10	12.00	35.9	-2.70
Overall	135		68.0	

H = 7.27 DF = 1 P = 0.007
H = 7.38 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
31	112	34.00	67.9	4.42
51	13	27.00	21.0	-4.42
Overall	125		63.0	

H = 19.50 DF = 1 P = 0.000
H = 19.61 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	16.00	59.7	-2.54
51	13	17.00	86.5	2.54
Overall	124		62.5	

H = 6.48 DF = 1 P = 0.011
H = 6.72 DF = 1 P = 0.010 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.00	68.7	5.66
51	13	10.00	9.2	-5.66
Overall	124		62.5	

H = 32.00 DF = 1 P = 0.000
H = 32.34 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
31	35	4.000	18.1	-4.70
51	10	39.500	40.2	4.70
Overall	45		23.0	

H = 22.05 DF = 1 P = 0.000
H = 22.17 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
31	35	23.00	26.2	3.04
51	10	16.00	11.9	-3.04
Overall	45		23.0	

H = 9.27 DF = 1 P = 0.002
H = 9.29 DF = 1 P = 0.002 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
31         35   72.00      27.6   4.38
51         10   37.50       7.0  -4.38
Overall    45              23.0

H = 19.20  DF = 1  P = 0.000
H = 19.23  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   2.230      22.1  -2.60
51          3   2.310      43.0   2.60
Overall    46              23.5

H = 6.77  DF = 1  P = 0.009
H = 6.81  DF = 1  P = 0.009  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   1.890      22.0  -2.87
51          3   2.150      45.0   2.87
Overall    46              23.5

H = 8.23  DF = 1  P = 0.004
H = 8.25  DF = 1  P = 0.004  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 3.25    DF = 1    P = 0.071

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
31          63  62    18.0    3.0                             *--)
51           8   2    12.0   12.2  (-----------*--------------------)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 18.0

A 95.0% CI for median(31) - median(51): (-1.6,11.6)
```

```
Mood median test for WL (%)

Chi-Square = 12.97    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
31          53  59    34.0    6.0                             (--*---)
51          13   0    27.0    4.5  (------*-------)
                                   -------+---------+---------+---------
                                       27.0      30.0      33.0

Overall median = 33.0

A 95.0% CI for median(31) - median(51): (3.8,9.0)


Mood median test for Wp (%)

Chi-Square = 4.44    DF = 1    P = 0.035

Domain                              Individual 95.0% CIs
Reference  N<   N>=  Median  Q3-Q1     +---------+---------+---------+------
31         51   60   16.00   3.00     (---------*
51          2   11   17.00   2.50               (---------*------------)
                                      +---------+---------+---------+------
                                   15.0      16.0      17.0      18.0

Overall median = 16.00

A 95.0% CI for median(31) - median(51): (-2.17,0.00)


Mood median test for Ip (%)

Chi-Square = 9.49    DF = 1    P = 0.002

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
31          62  49    18.0    4.0                                (*--)
51          13   0    10.0    2.5    (--*----)
                                     +---------+---------+---------+------
                                   9.0      12.0      15.0      18.0

Overall median = 18.0

A 95.0% CI for median(31) - median(51): (6.8,9.0)


Mood median test for % GRAVEL

Chi-Square = 14.69    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          24  11     4.0    6.0  (*)
51           0  10    39.5   14.8                         (------*-----)
                                   --------+---------+---------+--------
                                          12        24        36

Overall median = 5.0

A 95.0% CI for median(31) - median(51): (-43.1,-27.8)
```

```
Mood median test for % SAND

Chi-Square = 6.18    DF = 1    P = 0.013

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          16  19    23.0   10.0                  (---------*-----)
51           9   1    16.0    5.3  (-------*----)
                                   --------+---------+---------+--------
                                        16.0      20.0      24.0

Overall median = 22.0

A 95.0% CI for median(31) - median(51): (4.0,11.1)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 10.29    DF = 1    P = 0.001

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
31          15  20    72.0   16.0                              (-*--)
51          10   0    37.5   11.8   (----*---)
                                    +---------+---------+---------+------
                                   30        45        60        75

Overall median = 69.0

A 95.0% CI for median(31) - median(51): (28.7,44.1)


Mood median test for Bulk Density

Chi-Square = 3.21    DF = 1    P = 0.073

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
31          23  20   2.230  0.090  (--*-----)
51           0   3   2.310  0.070                   (-*-----------)
                                   -------+---------+---------+---------
                                        2.250     2.300     2.350

Overall median = 2.245
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(31) - median(51): (-0.180,-0.020)


Mood median test for Dry Density

Chi-Square = 3.50    DF = 1    P = 0.061

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
31          24  19   1.890  0.119  (-*---)
51           0   3   2.150  0.070                             (-*----)
                                   ---+---------+---------+---------+---
                                    1.90      2.00      2.10      2.20

Overall median = 1.910
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(31) - median(51): (-0.370,-0.181)
```

Results for: Domain 31 v 52

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
31	125	18.47	2.50	0.22
52	24	8.48	2.78	0.57

Difference = mu (31) - mu (52)
Estimate for difference: 9.993
95% CI for difference: (8.749, 11.237)
T-Test of difference = 0 (vs not =): T-Value = 16.40 P-Value = 0.000 DF = 30

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
31	112	33.41	4.86	0.46
52	24	25.33	2.73	0.56

Difference = mu (31) - mu (52)
Estimate for difference: 8.077
95% CI for difference: (6.633, 9.522)
T-Test of difference = 0 (vs not =): T-Value = 11.19 P-Value = 0.000 DF = 59

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	15.62	1.95	0.19
52	24	16.21	1.61	0.33

Difference = mu (31) - mu (52)
Estimate for difference: -0.587
95% CI for difference: (-1.352, 0.178)
T-Test of difference = 0 (vs not =): T-Value = -1.55 P-Value = 0.129 DF = 39

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	17.89	3.19	0.30
52	24	9.13	2.11	0.43

Difference = mu (31) - mu (52)
Estimate for difference: 8.767
95% CI for difference: (7.708, 9.826)
T-Test of difference = 0 (vs not =): T-Value = 16.64 P-Value = 0.000 DF = 48

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
31	35	5.63	5.82	0.98
52	15	37.5	13.5	3.5

Difference = mu (31) - mu (52)
Estimate for difference: -31.84
95% CI for difference: (-39.49, -24.19)
T-Test of difference = 0 (vs not =): T-Value = -8.82 P-Value = 0.000 DF = 16

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
31	35	24.29	8.74	1.5
52	15	18.47	6.10	1.6

Difference = mu (31) - mu (52)
Estimate for difference: 5.82
95% CI for difference: (1.44, 10.20)
T-Test of difference = 0 (vs not =): T-Value = 2.69 P-Value = 0.011 DF = 37

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
31	35	70.1	11.4	1.9
52	15	36.7	15.7	4.1

Difference = mu (31) - mu (52)
Estimate for difference: 33.42
95% CI for difference: (24.05, 42.79)
T-Test of difference = 0 (vs not =): T-Value = 7.44 P-Value = 0.000 DF = 20

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	2.2281	0.0640	0.0098
52	7	2.364	0.125	0.047

Difference = mu (31) - mu (52)
Estimate for difference: -0.1361
95% CI for difference: (-0.2538, -0.0184)
T-Test of difference = 0 (vs not =): T-Value = -2.83 P-Value = 0.030 DF = 6

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	1.8845	0.0804	0.012
52	7	2.196	0.154	0.058

Difference = mu (31) - mu (52)
Estimate for difference: -0.3112
95% CI for difference: (-0.4570, -0.1654)
T-Test of difference = 0 (vs not =): T-Value = -5.22 P-Value = 0.002 DF = 6

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
31	125	18.000	87.0	7.73
52	24	8.450	12.6	-7.73
Overall	149		75.0	

H = 59.76 DF = 1 P = 0.000
H = 60.39 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
31	112	34.00	78.7	6.49
52	24	25.50	21.1	-6.49
Overall	136		68.5	

H = 42.13 DF = 1 P = 0.000
H = 42.32 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	16.00	65.9	-1.36
52	24	16.00	77.8	1.36
Overall	135		68.0	

H = 1.84 DF = 1 P = 0.174
H = 1.92 DF = 1 P = 0.166 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.000	79.6	7.43
52	24	9.000	14.2	-7.43
Overall	135		68.0	

H = 55.25 DF = 1 P = 0.000
H = 55.71 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
31	35	4.000	18.2	-5.41
52	15	36.000	42.5	5.41
Overall	50		25.5	

H = 29.26 DF = 1 P = 0.000
H = 29.39 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
31	35	23.00	28.4	2.13
52	15	19.00	18.8	-2.13
Overall	50		25.5	

H = 4.53 DF = 1 P = 0.033
H = 4.54 DF = 1 P = 0.033 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
31         35   72.00      32.1   4.92
52         15   38.00      10.0  -4.92
Overall    50              25.5

H = 24.23  DF = 1  P = 0.000
H = 24.26  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   2.230      23.0  -2.98
52          7   2.410      40.7   2.98
Overall    50              25.5

H = 8.87  DF = 1  P = 0.003
H = 8.91  DF = 1  P = 0.003  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   1.890      22.3  -3.79
52          7   2.200      44.9   3.79
Overall    50              25.5

H = 14.35  DF = 1  P = 0.000
H = 14.38  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 20.39    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
31          63  62    18.0    3.0                                *--)
52          24   0     8.4    4.5    (---*----)
                                     +---------+---------+---------+------
                                   7.0      10.5      14.0      17.5

Overall median = 18.0

A 95.0% CI for median(31) - median(52): (8.0,12.0)


Mood median test for WL (%)

Chi-Square = 22.33    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          53  59    34.0    6.0                                (--*---)
52          24   0    25.5    3.8     (----*----)
                                      +---------+---------+---------+------
                                   24.0      27.0      30.0      33.0

Overall median = 33.0

A 95.0% CI for median(31) - median(52): (6.0,10.0)
```

```
Mood median test for Wp (%)

Chi-Square = 1.28    DF = 1    P = 0.259

Domain                              Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1    -+---------+---------+---------+-----
31         51   60   16.00   3.00    (---------------------------*
52          8   16   16.00   2.75    (---------------------------*----)
                                     -+---------+---------+---------+-----
                                   15.05     15.40     15.75     16.10

Overall median = 16.00

A 95.0% CI for median(31) - median(52): (-0.33,1.00)


Mood median test for Ip (%)

Chi-Square = 27.92    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
31          45  66    18.0    4.0                                (*--)
52          24   0     9.0    3.0  (--*---)
                                   ---+---------+---------+---------+---
                                    9.0      12.0      15.0      18.0

Overall median = 17.0

A 95.0% CI for median(31) - median(52): (8.0,10.0)


Mood median test for % GRAVEL

Chi-Square = 21.43    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
31          25  10     4.0    6.0  (-*
52           0  15    36.0   22.0                    (---*--------)
                                   ---------+---------+---------+-------
                                           15        30        45

Overall median = 7.0

A 95.0% CI for median(31) - median(52): (-41.7,-25.9)


Mood median test for % SAND

Chi-Square = 5.01    DF = 1    P = 0.025

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
31          16  19    23.0   10.0                   (----------*------)
52          12   3    19.0    9.0    (--------------*-------)
                                     -+---------+---------+---------+-----
                                   14.0      17.5      21.0      24.5

Overall median = 22.0

A 95.0% CI for median(31) - median(52): (0.9,9.2)
```

Mood median test for % Fines (SILT/CLAY)

Chi-Square = 16.10   DF = 1   P = 0.000

```
Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
31          11  24    72.0   16.0                             (-*--)
52          14   1    38.0   21.0  (-------*---)
                                   ---+---------+---------+---------+---
                                     30        45        60        75
```

Overall median = 67.0

A 95.0% CI for median(31) - median(52): (27.6,47.4)

Mood median test for Bulk Density

Chi-Square = 5.17   DF = 1   P = 0.023

```
Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
31          26  17   2.230  0.090  (-*---)
52           1   6   2.410  0.120      (----------------------*----)
                                   ---+---------+---------+---------+---
                                    2.240     2.310     2.380     2.450
```

Overall median = 2.250

A 95.0% CI for median(31) - median(52): (-0.199,-0.018)

Mood median test for Dry Density

Chi-Square = 9.56   DF = 1   P = 0.002

```
Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          27  16   1.890  0.119  (*-)
52           0   7   2.200  0.250            (----------*--------)
                                   -----+---------+---------+---------+-
                                      1.95      2.10      2.25      2.40
```

Overall median = 1.920

A 95.0% CI for median(31) - median(52): (-0.449,-0.144)

Results for: Domain 31 v 61

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference    N   Mean  StDev  SE Mean
31         125  18.47   2.50     0.22
61           9  17.50   6.94      2.3

Difference = mu (31) - mu (61)
Estimate for difference:  0.97
95% CI for difference:  (-4.39, 6.33)
T-Test of difference = 0 (vs not =): T-Value = 0.42  P-Value = 0.687  DF = 8


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
31         43  2.2281  0.0640   0.0098
61          9   2.120   0.154    0.051

Difference = mu (31) - mu (61)
Estimate for difference:  0.1081
95% CI for difference:  (-0.0123, 0.2286)
T-Test of difference = 0 (vs not =): T-Value = 2.07  P-Value = 0.072  DF = 8


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
31         43  1.8845  0.0804    0.012
61          9   1.817   0.222    0.074

Difference = mu (31) - mu (61)
Estimate for difference:  0.0679
95% CI for difference:  (-0.1055, 0.2412)
T-Test of difference = 0 (vs not =): T-Value = 0.90  P-Value = 0.393  DF = 8
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
31         125   18.00      68.6   1.26
61           9   16.30      51.8  -1.26
Overall    134              67.5

H = 1.58  DF = 1  P = 0.208
H = 1.60  DF = 1  P = 0.205  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   2.230      28.6   2.18
61          9   2.130      16.5  -2.18
Overall    52              26.5

H = 4.74  DF = 1  P = 0.029
H = 4.76  DF = 1  P = 0.029  (adjusted for ties)
```

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   1.890      26.9   0.41
61          9   1.790      24.6  -0.41
Overall    52              26.5

H = 0.17  DF = 1  P = 0.681
H = 0.17  DF = 1  P = 0.681  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.89    DF = 1    P = 0.346

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
31          63  62    18.0    3.0                    *-)
61           6   3    16.3   12.1    (-----------*--------------------)
                                     -+---------+---------+---------+-----
                                    12.0      16.0      20.0      24.0

Overall median = 18.0

A 95.0% CI for median(31) - median(61): (-8.1,7.5)


Mood median test for Bulk Density

Chi-Square = 0.72    DF = 1    P = 0.396

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
31          22  21   2.230  0.090                               (-*---)
61           6   3   2.130  0.215  (----------------*-----------------)
                                   ---+---------+---------+---------+---
                                    2.030     2.100     2.170     2.240

Overall median = 2.230

A 95.0% CI for median(31) - median(61): (-0.030,0.260)


Mood median test for Dry Density

Chi-Square = 0.06    DF = 1    P = 0.810

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          22  21   1.890  0.119                      (*-)
61           5   4   1.790  0.380  (-------------*----------------)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10

Overall median = 1.890

A 95.0% CI for median(31) - median(61): (-0.150,0.390)
```

Results for: Domain 31 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
31	125	18.47	2.50	0.22
62	131	16.88	5.15	0.45

Difference = mu (31) - mu (62)
Estimate for difference: 1.593
95% CI for difference: (0.601, 2.584)
T-Test of difference = 0 (vs not =): T-Value = 3.17 P-Value = 0.002 DF = 189

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
31	112	33.41	4.86	0.46
62	113	34.27	6.08	0.57

Difference = mu (31) - mu (62)
Estimate for difference: -0.855
95% CI for difference: (-2.300, 0.590)
T-Test of difference = 0 (vs not =): T-Value = -1.17 P-Value = 0.245 DF = 213

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	15.62	1.95	0.19
62	113	17.70	2.77	0.26

Difference = mu (31) - mu (62)
Estimate for difference: -2.077
95% CI for difference: (-2.708, -1.447)
T-Test of difference = 0 (vs not =): T-Value = -6.50 P-Value = 0.000 DF = 201

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	17.89	3.19	0.30
62	113	16.57	4.48	0.42

Difference = mu (31) - mu (62)
Estimate for difference: 1.326
95% CI for difference: (0.302, 2.349)
T-Test of difference = 0 (vs not =): T-Value = 2.55 P-Value = 0.011 DF = 202

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
31	35	5.63	5.82	0.98
62	47	24.9	13.6	2.0

Difference = mu (31) - mu (62)
Estimate for difference: -19.27
95% CI for difference: (-23.69, -14.84)
T-Test of difference = 0 (vs not =): T-Value = -8.69 P-Value = 0.000 DF = 65

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
31	35	24.29	8.74	1.5
62	47	28.74	7.27	1.1

Difference = mu (31) - mu (62)
Estimate for difference: -4.46
95% CI for difference: (-8.09, -0.83)
T-Test of difference = 0 (vs not =): T-Value = -2.45 P-Value = 0.017 DF = 65

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
31	35	70.1	11.4	1.9
62	47	45.0	16.8	2.5

Difference = mu (31) - mu (62)
Estimate for difference: 25.11
95% CI for difference: (18.89, 31.32)
T-Test of difference = 0 (vs not =): T-Value = 8.04 P-Value = 0.000 DF = 79

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	2.2281	0.0640	0.0098
62	29	2.113	0.106	0.020

Difference = mu (31) - mu (62)
Estimate for difference: 0.1155
95% CI for difference: (0.0710, 0.1600)
T-Test of difference = 0 (vs not =): T-Value = 5.24 P-Value = 0.000 DF = 41

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	1.8845	0.0804	0.012
62	29	1.800	0.176	0.033

Difference = mu (31) - mu (62)
Estimate for difference: 0.0845
95% CI for difference: (0.0135, 0.1555)
T-Test of difference = 0 (vs not =): T-Value = 2.42 P-Value = 0.021 DF = 35

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
31	125	18.00	151.9	4.94
62	131	15.87	106.1	-4.94
Overall	256		128.5	

H = 24.45 DF = 1 P = 0.000
H = 24.51 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
31	112	34.00	112.8	-0.06
62	113	34.00	113.2	0.06
Overall	225		113.0	

H = 0.00 DF = 1 P = 0.954
H = 0.00 DF = 1 P = 0.954 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	16.00	85.8	-6.11
62	113	17.00	138.7	6.11
Overall	224		112.5	

H = 37.31 DF = 1 P = 0.000
H = 38.13 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.00	128.7	3.72
62	113	16.00	96.5	-3.72
Overall	224		112.5	

H = 13.82 DF = 1 P = 0.000
H = 13.97 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
31	35	4.000	22.2	-6.33
62	47	24.000	55.9	6.33
Overall	82		41.5	

H = 40.04 DF = 1 P = 0.000
H = 40.12 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
31	35	23.00	32.2	-3.06
62	47	28.00	48.4	3.06
Overall	82		41.5	

H = 9.34 DF = 1 P = 0.002
H = 9.36 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

```
Domain
Reference   N  Median  Ave Rank      Z
31         35   72.00      60.2   6.13
62         47   47.00      27.6  -6.13
Overall    82              41.5

H = 37.53  DF = 1  P = 0.000
H = 37.56  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on Bulk Density

```
Domain
Reference   N  Median  Ave Rank      Z
31         43   2.230      45.9   4.66
62         29   2.150      22.5  -4.66
Overall    72              36.5

H = 21.73  DF = 1  P = 0.000
H = 21.80  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on Dry Density

```
Domain
Reference   N  Median  Ave Rank      Z
31         43   1.890      39.4   1.44
62         29   1.850      32.2  -1.44
Overall    72              36.5

H = 2.08  DF = 1  P = 0.150
H = 2.08  DF = 1  P = 0.149  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 19.15   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
31          45  80   18.00   3.00                         *-------)
62          83  48   15.87   5.61  (----*------)
                                   ---+---------+---------+---------+---
                                   15.6      16.8      18.0      19.2
```

Overall median = 17.29

A 95.0% CI for median(31) - median(62): (1.36,3.68)

Mood median test for WL (%)

Chi-Square = 0.54   DF = 1   P = 0.462

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          65  47   34.00   6.00     (----------------*---------------)
62          71  42   34.00   4.00     (----------------*
                                      +---------+---------+---------+------
                                   33.00     33.60     34.20     34.80
```

Overall median = 34.00

A 95.0% CI for median(31) - median(62): (-1.00,1.00)

Mood median test for Wp (%)

Chi-Square = 33.42   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          82  29   16.00   3.00     (---------*
62          40  73   17.00   3.00                         *---------)
                                      +---------+---------+---------+------
                                   15.0      16.0      17.0      18.0
```

Overall median = 16.00

A 95.0% CI for median(31) - median(62): (-3.00,-1.00)

Mood median test for Ip (%)

Chi-Square = 13.99   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
31          45  66   18.00   4.00                      (--*---------)
62          74  39   16.00   4.00  (---*---------)
                                   ----+---------+---------+---------+--
                                    16.0      17.0      18.0      19.0
```

Overall median = 17.00

A 95.0% CI for median(31) - median(62): (1.00,3.00)

Mood median test for % GRAVEL

Chi-Square = 31.96   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          31   4     4.0    6.0   (-*)
62          12  35    24.0   19.0                        (----*-----)
                                   --------+---------+---------+--------
                                         8.0      16.0      24.0
```

Overall median = 13.0

A 95.0% CI for median(31) - median(62): (-23.7,-16.7)

Mood median test for % SAND

Chi-Square = 10.45   DF = 1   P = 0.001

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
31          26   9    23.0   10.0  (------------*--------)
62          18  29    28.0    9.0                      (-------*------)
                                   ------+---------+---------+---------+
                                      21.0      24.0      27.0      30.0
```

Overall median = 26.0

A 95.0% CI for median(31) - median(62): (-8.0,-2.7)

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 41.18    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31           4  31    72.0   16.0                            (--*---)
62          39   8    47.0   20.0  (----*---)
                                   --------+---------+---------+--------
                                          50        60        70

Overall median = 55.0

A 95.0% CI for median(31) - median(62): (19.7,31.0)


Mood median test for Bulk Density

Chi-Square = 12.99    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
31          14  29   2.230  0.090                           (-*---)
62          22   7   2.150  0.196  (---------------*------)
                                   ---------+---------+---------+-------
                                          2.100     2.170     2.240

Overall median = 2.204

A 95.0% CI for median(31) - median(62): (0.029,0.201)


Mood median test for Dry Density

Chi-Square = 1.44    DF = 1    P = 0.230

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
31          19  24   1.890  0.119                        (--*-----)
62          17  12   1.850  0.315  (-------------------*-------------)
                                   --+---------+---------+---------+----
                                   1.740     1.800     1.860     1.920

Overall median = 1.890

A 95.0% CI for median(31) - median(62): (-0.047,0.171)
```

Results for: Domain 31 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
31	125	18.47	2.50	0.22
63	55	17.40	5.42	0.73

Difference = mu (31) - mu (63)
Estimate for difference: 1.075
95% CI for difference: (-0.453, 2.603)
T-Test of difference = 0 (vs not =): T-Value = 1.41 P-Value = 0.165 DF = 64

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
31	112	33.41	4.86	0.46
63	58	34.88	4.40	0.58

Difference = mu (31) - mu (63)
Estimate for difference: -1.469
95% CI for difference: (-2.929, -0.008)
T-Test of difference = 0 (vs not =): T-Value = -1.99 P-Value = 0.049 DF = 125

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	15.62	1.95	0.19
63	58	17.98	2.92	0.38

Difference = mu (31) - mu (63)
Estimate for difference: -2.361
95% CI for difference: (-3.207, -1.515)
T-Test of difference = 0 (vs not =): T-Value = -5.55 P-Value = 0.000 DF = 84

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	17.89	3.19	0.30
63	58	16.90	3.05	0.40

Difference = mu (31) - mu (63)
Estimate for difference: 0.995
95% CI for difference: (0.002, 1.989)
T-Test of difference = 0 (vs not =): T-Value = 1.98 P-Value = 0.050 DF = 120

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
31	35	5.63	5.82	0.98
63	30	26.9	11.7	2.1

Difference = mu (31) - mu (63)
Estimate for difference: -21.30
95% CI for difference: (-26.07, -16.54)
T-Test of difference = 0 (vs not =): T-Value = -9.03 P-Value = 0.000 DF = 40

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
31	35	24.29	8.74	1.5
63	30	29.70	8.47	1.5

Difference = mu (31) - mu (63)
Estimate for difference: -5.41
95% CI for difference: (-9.69, -1.14)
T-Test of difference = 0 (vs not =): T-Value = -2.53 P-Value = 0.014 DF = 62

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
31	35	70.1	11.4	1.9
63	30	43.4	11.2	2.1

Difference = mu (31) - mu (63)
Estimate for difference: 26.72
95% CI for difference: (21.09, 32.35)
T-Test of difference = 0 (vs not =): T-Value = 9.49 P-Value = 0.000 DF = 61

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	2.2281	0.0640	0.0098
63	11	2.081	0.118	0.036

Difference = mu (31) - mu (63)
Estimate for difference: 0.1472
95% CI for difference: (0.0660, 0.2283)
T-Test of difference = 0 (vs not =): T-Value = 3.99 P-Value = 0.002 DF = 11

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	1.8845	0.0804	0.012
63	11	1.806	0.147	0.044

Difference = mu (31) - mu (63)
Estimate for difference: 0.0781
95% CI for difference: (-0.0229, 0.1792)
T-Test of difference = 0 (vs not =): T-Value = 1.70 P-Value = 0.117 DF = 11

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
31	125	18.00	99.0	3.29
63	55	15.38	71.3	-3.29
Overall	180		90.5	

H = 10.79 DF = 1 P = 0.001
H = 10.86 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
31	112	34.00	82.2	-1.20
63	58	34.00	91.8	1.20
Overall	170		85.5	

H = 1.44 DF = 1 P = 0.231
H = 1.45 DF = 1 P = 0.229 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	16.00	71.0	-5.13
63	58	18.00	111.7	5.13
Overall	169		85.0	

H = 26.34 DF = 1 P = 0.000
H = 26.91 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.00	91.7	2.47
63	58	16.00	72.2	-2.47
Overall	169		85.0	

H = 6.09 DF = 1 P = 0.014
H = 6.17 DF = 1 P = 0.013 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
31	35	4.000	19.3	-6.31
63	30	25.500	49.0	6.31
Overall	65		33.0	

H = 39.81 DF = 1 P = 0.000
H = 39.90 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
31	35	23.00	26.6	-2.93
63	30	29.00	40.4	2.93
Overall	65		33.0	

H = 8.61 DF = 1 P = 0.003
H = 8.64 DF = 1 P = 0.003 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
31         35   72.00      46.4   6.17
63         30   42.50      17.4  -6.17
Overall    65              33.0

H = 38.01  DF = 1  P = 0.000
H = 38.04  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   2.230      31.7   3.87
63         11   2.090      11.1  -3.87
Overall    54              27.5

H = 14.95  DF = 1  P = 0.000
H = 15.00  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   1.890      29.2   1.61
63         11   1.840      20.7  -1.61
Overall    54              27.5

H = 2.59  DF = 1  P = 0.107
H = 2.60  DF = 1  P = 0.107  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 3.50    DF = 1    P = 0.061

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          63  62   18.00   3.00                               *-------)
63          36  19   15.38   5.92  (-----*--------------)
                                   --------+---------+---------+--------
                                        15.6      16.8      18.0

Overall median = 18.00

A 95.0% CI for median(31) - median(63): (0.99,4.15)


Mood median test for WL (%)

Chi-Square = 0.08    DF = 1    P = 0.772

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          65  47   34.00   6.00     (----------------*---------------)
63          35  23   34.00   5.00     (----------------*---------------)
                                      +---------+---------+---------+------
                                   33.00     33.60     34.20     34.80

Overall median = 34.00

A 95.0% CI for median(31) - median(63): (-2.00,1.00)
```

```
Mood median test for Wp (%)

Chi-Square = 24.70    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          82  29   16.00   3.00  (-------*
63          20  38   18.00   4.25                   (-------*-------)
                                   -----+---------+---------+---------+-
                                     15.6      16.8      18.0      19.2

Overall median = 16.00

A 95.0% CI for median(31) - median(63): (-3.00,-1.00)


Mood median test for Ip (%)

Chi-Square = 4.41    DF = 1    P = 0.036

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          62  49   18.00   4.00                     (--*---------)
63          42  16   16.00   4.00     *-------------------)
                                      +---------+---------+---------+------
                                   16.0      17.0      18.0      19.0

Overall median = 18.00

A 95.0% CI for median(31) - median(63): (1.00,2.04)


Mood median test for % GRAVEL

Chi-Square = 39.98    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          31   4     4.0    6.0  (-*)
63           3  27    25.5   15.3                     (---*-----)
                                   --------+---------+---------+--------
                                          10        20        30

Overall median = 10.0

A 95.0% CI for median(31) - median(63): (-26.1,-17.6)


Mood median test for % SAND

Chi-Square = 6.45    DF = 1    P = 0.011

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          26   9    23.0   10.0  (----------*------)
63          13  17    29.0    9.0                    (--------*-------)
                                   -----+---------+---------+---------+-
                                     21.0      24.5      28.0      31.5

Overall median = 26.0

A 95.0% CI for median(31) - median(63): (-9.0,-2.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 34.96    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -+---------+---------+---------+-----
31           7  28    72.0   16.0                               (--*---)
63          28   2    42.5   15.5  (---*------)
                                   -+---------+---------+---------+-----
                                   40        50        60        70

Overall median = 58.0

A 95.0% CI for median(31) - median(63): (21.6,36.4)


Mood median test for Bulk Density

Chi-Square = 12.83    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          17  26   2.230  0.090                            (*--)
63          11   0   2.090  0.260  (-------------*-----------)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.220

A 95.0% CI for median(31) - median(63): (0.020,0.300)


Mood median test for Dry Density

Chi-Square = 2.85    DF = 1    P = 0.091

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
31          19  24   1.890  0.119                              (--*----)
63           8   3   1.840  0.250   (----------------------*------------)
                                    -+---------+---------+---------+-----
                                   1.680     1.750     1.820     1.890

Overall median = 1.890

A 95.0% CI for median(31) - median(63): (-0.040,0.240)
```

Results for: Domain 31 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
31	125	18.47	2.50	0.22
64	24	15.34	2.86	0.58

Difference = mu (31) - mu (64)
Estimate for difference: 3.132
95% CI for difference: (1.855, 4.408)
T-Test of difference = 0 (vs not =): T-Value = 5.01 P-Value = 0.000 DF = 30

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
31	112	33.41	4.86	0.46
64	27	34.44	2.34	0.45

Difference = mu (31) - mu (64)
Estimate for difference: -1.034
95% CI for difference: (-2.312, 0.245)
T-Test of difference = 0 (vs not =): T-Value = -1.61 P-Value = 0.112 DF = 86

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	15.62	1.95	0.19
64	27	17.81	2.24	0.43

Difference = mu (31) - mu (64)
Estimate for difference: -2.193
95% CI for difference: (-3.144, -1.243)
T-Test of difference = 0 (vs not =): T-Value = -4.68 P-Value = 0.000 DF = 36

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	17.89	3.19	0.30
64	27	16.63	2.39	0.46

Difference = mu (31) - mu (64)
Estimate for difference: 1.262
95% CI for difference: (0.157, 2.367)
T-Test of difference = 0 (vs not =): T-Value = 2.29 P-Value = 0.026 DF = 51

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
31	35	5.63	5.82	0.98
64	2	19.0	11.3	8.0

Difference = mu (31) - mu (64)
Estimate for difference: -13.37
95% CI for difference: (-115.79, 89.04)
T-Test of difference = 0 (vs not =): T-Value = -1.66 P-Value = 0.345 DF = 1

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
31         35  24.29   8.74      1.5
64          2  27.50   2.12      1.5

Difference = mu (31) - mu (64)
Estimate for difference:  -3.21
95% CI for difference:  (-9.91, 3.49)
T-Test of difference = 0 (vs not =): T-Value = -1.53  P-Value = 0.224  DF = 3


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
31         35   70.1   11.4      1.9
64          2  53.50   9.19      6.5

Difference = mu (31) - mu (64)
Estimate for difference:  16.59
95% CI for difference:  (-69.56, 102.73)
T-Test of difference = 0 (vs not =): T-Value = 2.45  P-Value = 0.247  DF = 1


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
31         43  2.2281  0.0640   0.0098
64         13  2.1462  0.0859    0.024

Difference = mu (31) - mu (64)
Estimate for difference:  0.0820
95% CI for difference:  (0.0274, 0.1366)
T-Test of difference = 0 (vs not =): T-Value = 3.18  P-Value = 0.006  DF = 16


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
31         43  1.8845  0.0804    0.012
64         13  1.8731  0.0910    0.025

Difference = mu (31) - mu (64)
Estimate for difference:  0.0114
95% CI for difference:  (-0.0475, 0.0703)
T-Test of difference = 0 (vs not =): T-Value = 0.41  P-Value = 0.689  DF = 18
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
31         125   18.00      82.3   4.72
64          24   15.44      36.9  -4.72
Overall    149              75.0

H = 22.30  DF = 1  P = 0.000
H = 22.58  DF = 1  P = 0.000  (adjusted for ties)
```

```
Kruskal-Wallis Test on WL (%)

Domain
Reference    N  Median  Ave Rank      Z
31         112   34.00      68.1  -1.16
64          27   34.00      78.1   1.16
Overall    139              70.0

H = 1.35  DF = 1  P = 0.246
H = 1.36  DF = 1  P = 0.244  (adjusted for ties)


Kruskal-Wallis Test on Wp (%)

Domain
Reference    N  Median  Ave Rank      Z
31         111   16.00      61.8  -4.59
64          27   18.00     101.2   4.59
Overall    138              69.5

H = 21.11  DF = 1  P = 0.000
H = 21.70  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Ip (%)

Domain
Reference    N  Median  Ave Rank      Z
31         111   18.00      73.1   2.15
64          27   17.00      54.7  -2.15
Overall    138              69.5

H = 4.61  DF = 1  P = 0.032
H = 4.67  DF = 1  P = 0.031  (adjusted for ties)


Kruskal-Wallis Test on % GRAVEL

Domain
Reference   N  Median  Ave Rank      Z
31         35   4.000      18.1  -2.08
64          2  19.000      34.5   2.08
Overall    37              19.0

H = 4.34  DF = 1  P = 0.037
H = 4.38  DF = 1  P = 0.036  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on % SAND

Domain
Reference   N  Median  Ave Rank      Z
31         35   23.00      18.5  -1.14
64          2   27.50      27.5   1.14
Overall    37              19.0

H = 1.30  DF = 1  P = 0.254
H = 1.31  DF = 1  P = 0.253  (adjusted for ties)

* NOTE * One or more small samples
```

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
31	35	72.00	19.8	1.78
64	2	53.50	5.8	-1.78
Overall	37		19.0	

H = 3.17 DF = 1 P = 0.075
H = 3.18 DF = 1 P = 0.075 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
31	43	2.230	32.2	3.11
64	13	2.180	16.2	-3.11
Overall	56		28.5	

H = 9.64 DF = 1 P = 0.002
H = 9.68 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
31	43	1.890	28.9	0.33
64	13	1.900	27.2	-0.33
Overall	56		28.5	

H = 0.11 DF = 1 P = 0.741
H = 0.11 DF = 1 P = 0.741 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 11.27   DF = 1   P = 0.001

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          63  62   18.00   3.00                              *------)
64          21   3   15.44   4.00  (--------------*--------)
                                   --------+---------+---------+--------
                                        14.4      16.0      17.6
```

Overall median = 18.00

A 95.0% CI for median(31) - median(64): (1.00,5.87)

```
Mood median test for WL (%)

Chi-Square = 0.05    DF = 1    P = 0.815

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          65  47   34.00   6.00     (----------------*---------------)
64          15  12   34.00   4.00     (----------------*----------------)
                                      +---------+---------+---------+------
                                   33.00     33.60     34.20     34.80

Overall median = 34.00

A 95.0% CI for median(31) - median(64): (-2.00,1.00)


Mood median test for Wp (%)

Chi-Square = 25.08    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          82  29   16.00   3.00     (---------*
64           6  21   18.00   2.00                         (---------*
                                      +---------+---------+---------+------
                                   15.0      16.0      17.0      18.0

Overall median = 16.00

A 95.0% CI for median(31) - median(64): (-3.00,-1.00)


Mood median test for Ip (%)

Chi-Square = 5.99    DF = 1    P = 0.014

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          62  49   18.00   4.00                        (--*---------)
64          22   5   17.00   3.00     (---------*
                                      +---------+---------+---------+------
                                   16.0      17.0      18.0      19.0

Overall median = 18.00

A 95.0% CI for median(31) - median(64): (1.00,2.00)


Mood median test for % GRAVEL

Chi-Square = 2.78    DF = 1    P = 0.096

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
31          21  14     4.0    6.0  (--*)
64           0   2    19.0   16.0              (----------*----------)
                                   -------+---------+---------+---------
                                        7.0      14.0      21.0

Overall median = 4.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(31) - median(64): (-27.0,7.0)
```

```
Mood median test for % SAND

Chi-Square = 2.23    DF = 1    P = 0.135

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
31          19  16   23.00  10.00  (------------*--------)
64           0   2   27.50   3.00                        (----*----)
                                   ------+---------+---------+---------+
                                      21.0      24.0      27.0      30.0

Overall median = 23.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(31) - median(64): (-18.00,16.00)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.00    DF = 1    P = 0.157

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
31          17  18    72.0   16.0                               (---*----)
64           2   0    53.5   13.0    (-------*-------)
                                     -+---------+---------+---------+-----
                                   48.0      56.0      64.0      72.0

Overall median = 71.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(31) - median(64): (-11.0,40.0)


Mood median test for Bulk Density

Chi-Square = 8.11    DF = 1    P = 0.004

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          17  26   2.230  0.090                              (--*-----)
64          11   2   2.180  0.140  (--------------------*----)
                                   -----+---------+---------+---------+-
                                      2.100     2.150     2.200     2.250

Overall median = 2.225

A 95.0% CI for median(31) - median(64): (0.029,0.161)


Mood median test for Dry Density

Chi-Square = 0.10    DF = 1    P = 0.752

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          22  21   1.890  0.119                 (----*--------)
64           6   7   1.900  0.145  (----------------------*-----------)
                                   --------+---------+---------+--------
                                         1.840     1.880     1.920

Overall median = 1.895

A 95.0% CI for median(31) - median(64): (-0.061,0.110)
```

Results for: Domain 31 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference    N   Mean  StDev  SE Mean
31         125  18.47   2.50     0.22
65           7  17.71   4.27      1.6

Difference = mu (31) - mu (65)
Estimate for difference:  0.76
95% CI for difference:  (-3.23, 4.74)
T-Test of difference = 0 (vs not =): T-Value = 0.46  P-Value = 0.658  DF = 6


Two-sample T for WL (%)

Domain
Reference    N   Mean  StDev  SE Mean
31         112  33.41   4.86     0.46
65           8  35.25   5.60      2.0

Difference = mu (31) - mu (65)
Estimate for difference:  -1.84
95% CI for difference:  (-6.64, 2.97)
T-Test of difference = 0 (vs not =): T-Value = -0.91  P-Value = 0.396  DF = 7


Two-sample T for Wp (%)

Domain
Reference    N   Mean  StDev  SE Mean
31         111  15.62   1.95     0.19
65           8  18.88   1.46     0.52

Difference = mu (31) - mu (65)
Estimate for difference:  -3.253
95% CI for difference:  (-4.516, -1.990)
T-Test of difference = 0 (vs not =): T-Value = -5.94  P-Value = 0.000  DF = 8


Two-sample T for Ip (%)

Domain
Reference    N   Mean  StDev  SE Mean
31         111  17.89   3.19     0.30
65           8  16.38   4.41      1.6

Difference = mu (31) - mu (65)
Estimate for difference:  1.52
95% CI for difference:  (-2.24, 5.27)
T-Test of difference = 0 (vs not =): T-Value = 0.96  P-Value = 0.371  DF = 7


Two-sample T for % GRAVEL

Domain
Reference   N  Mean  StDev  SE Mean
31         35  5.63   5.82     0.98
65          2  20.0   11.3      8.0

Difference = mu (31) - mu (65)
Estimate for difference:  -14.37
95% CI for difference:  (-116.79, 88.04)
T-Test of difference = 0 (vs not =): T-Value = -1.78  P-Value = 0.325  DF = 1
```

Two-sample T for % SAND

```
Domain
Reference   N   Mean  StDev  SE Mean
31         35  24.29   8.74      1.5
65          2  34.00   1.41      1.0

Difference = mu (31) - mu (65)
Estimate for difference:  -9.71
95% CI for difference:  (-13.83, -5.60)
T-Test of difference = 0 (vs not =): T-Value = -5.45  P-Value = 0.001  DF = 8
```

Two-sample T for % Fines (SILT/CLAY)

```
Domain
Reference   N  Mean  StDev  SE Mean
31         35  70.1   11.4      1.9
65          2  46.0   12.7      9.0

Difference = mu (31) - mu (65)
Estimate for difference:  24.09
95% CI for difference:  (-92.86, 141.04)
T-Test of difference = 0 (vs not =): T-Value = 2.62  P-Value = 0.232  DF = 1
```

Two-sample T for Bulk Density

```
Domain
Reference   N    Mean   StDev  SE Mean
31         43  2.2281  0.0640   0.0098
65          7  2.0929  0.0496    0.019

Difference = mu (31) - mu (65)
Estimate for difference:  0.1353
95% CI for difference:  (0.0875, 0.1831)
T-Test of difference = 0 (vs not =): T-Value = 6.40  P-Value = 0.000  DF = 9
```

Two-sample T for Dry Density

```
Domain
Reference   N    Mean   StDev  SE Mean
31         43  1.8845  0.0804    0.012
65          7  1.7800  0.0995    0.038

Difference = mu (31) - mu (65)
Estimate for difference:  0.1045
95% CI for difference:  (0.0110, 0.1980)
T-Test of difference = 0 (vs not =): T-Value = 2.64  P-Value = 0.033  DF = 7
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

```
Domain
Reference    N  Median  Ave Rank      Z
31         125   18.00      67.4   1.13
65           7   17.00      50.6  -1.13
Overall    132              66.5

H = 1.27  DF = 1  P = 0.260
H = 1.29  DF = 1  P = 0.256  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
31	112	34.00	59.3	-1.37
65	8	37.50	76.8	1.37
Overall	120		60.5	

H = 1.88 DF = 1 P = 0.170
H = 1.90 DF = 1 P = 0.168 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	16.00	56.8	-3.73
65	8	19.00	103.9	3.73
Overall	119		60.0	

H = 13.91 DF = 1 P = 0.000
H = 14.37 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.00	60.5	0.57
65	8	18.50	53.3	-0.57
Overall	119		60.0	

H = 0.33 DF = 1 P = 0.567
H = 0.33 DF = 1 P = 0.564 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
31	35	4.000	18.1	-2.08
65	2	20.000	34.5	2.08
Overall	37		19.0	

H = 4.34 DF = 1 P = 0.037
H = 4.38 DF = 1 P = 0.036 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
31	35	23.00	18.3	-1.61
65	2	34.00	31.0	1.61
Overall	37		19.0	

H = 2.60 DF = 1 P = 0.107
H = 2.61 DF = 1 P = 0.107 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
31         35   72.00      19.9   2.12
65          2   46.00       3.3  -2.12
Overall    37              19.0

H = 4.48  DF = 1  P = 0.034
H = 4.49  DF = 1  P = 0.034  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   2.230      28.6   3.77
65          7   2.100       6.2  -3.77
Overall    50              25.5

H = 14.25  DF = 1  P = 0.000
H = 14.31  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   1.890      27.8   2.78
65          7   1.810      11.3  -2.78
Overall    50              25.5

H = 7.74  DF = 1  P = 0.005
H = 7.75  DF = 1  P = 0.005  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.12    DF = 1    P = 0.728

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          63  62   18.00   3.00                    *----)
65           4   3   17.00   4.00  (------------*-----------------)
                                   --------+---------+---------+--------
                                        16.0      18.0      20.0

Overall median = 18.00

A 95.0% CI for median(31) - median(65): (-8.00,6.00)
```

```
Mood median test for WL (%)

Chi-Square = 1.28    DF = 1    P = 0.257

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          65  47   34.00   6.00          (--*---)
65           3   5   37.50   8.25  (----------------------*-------)
                                   --------+---------+---------+--------
                                       33.0      36.0      39.0

Overall median = 34.00

A 95.0% CI for median(31) - median(65): (-6.17,3.23)


Mood median test for Wp (%)

Chi-Square = 6.43    DF = 1    P = 0.011

Domain                              Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1     +---------+---------+---------+------
31         51   60   16.00   3.00     (------*
65          0    8   19.00   1.50                        (-------*------)
                                      +---------+---------+---------+------
                                   15.0      16.5      18.0      19.5

Overall median = 16.00

A 95.0% CI for median(31) - median(65): (-4.03,-1.93)


Mood median test for Ip (%)

Chi-Square = 0.10    DF = 1    P = 0.748

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
31          62  49   18.00   4.00                                (*----)
65           4   4   18.50   6.25    (----------------------------------*--)
                                     -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 18.00

A 95.0% CI for median(31) - median(65): (-1.07,6.13)


Mood median test for % GRAVEL

Chi-Square = 2.78    DF = 1    P = 0.096

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          21  14     4.0    6.0   (-*)
65           0   2    20.0   16.0              (---------*---------)
                                   --------+---------+---------+--------
                                        8.0      16.0      24.0

Overall median = 4.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(31) - median(65): (-28.0,6.0)
```

```
Mood median test for % SAND

Chi-Square = 2.23    DF = 1    P = 0.135

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
31          19  16    23.0   10.0   (------*----)
65           0   2    34.0    2.0                               (-*-)
                                    -+---------+---------+---------+-----
                                   20.0      25.0      30.0      35.0

Overall median = 23.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(31) - median(65): (-24.0,9.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.00    DF = 1    P = 0.157

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
31          17  18    72.0   16.0                             (-*--)
65           2   0    46.0   18.0  (------*-------)
                                   ---------+---------+---------+-------
                                           48        60        72

Overall median = 71.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(31) - median(65): (-6.0,50.0)
```

```
Mood median test for Bulk Density

Chi-Square = 5.89    DF = 1    P = 0.015

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
31          22  21   2.230  0.090                                 (--*----)
65           7   0   2.100  0.070   (---------*----)
                                    +---------+---------+---------+------
                                   2.040     2.100     2.160     2.220

Overall median = 2.230

A 95.0% CI for median(31) - median(65): (0.104,0.206)
```

```
Mood median test for Dry Density

Chi-Square = 4.15    DF = 1    P = 0.042

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
31          19  24   1.890  0.119                           (--*----)
65           6   1   1.810  0.120  (-----------------*------)
                                   ---------+---------+---------+-------
                                          1.750     1.820     1.890

Overall median = 1.890

A 95.0% CI for median(31) - median(65): (0.040,0.212)
```

Results for: Domain 31 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
31	125	18.47	2.50	0.22
71	44	14.56	5.80	0.87

Difference = mu (31) - mu (71)
Estimate for difference: 3.911
95% CI for difference: (2.098, 5.724)
T-Test of difference = 0 (vs not =): T-Value = 4.34 P-Value = 0.000 DF = 48

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
31	112	33.41	4.86	0.46
71	17	31.24	2.61	0.63

Difference = mu (31) - mu (71)
Estimate for difference: 2.175
95% CI for difference: (0.588, 3.763)
T-Test of difference = 0 (vs not =): T-Value = 2.78 P-Value = 0.009 DF = 35

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	15.62	1.95	0.19
71	17	15.35	1.73	0.42

Difference = mu (31) - mu (71)
Estimate for difference: 0.269
95% CI for difference: (-0.683, 1.220)
T-Test of difference = 0 (vs not =): T-Value = 0.59 P-Value = 0.564 DF = 22

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	17.89	3.19	0.30
71	17	15.88	1.96	0.48

Difference = mu (31) - mu (71)
Estimate for difference: 2.010
95% CI for difference: (0.857, 3.162)
T-Test of difference = 0 (vs not =): T-Value = 3.56 P-Value = 0.001 DF = 30

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
31	35	5.63	5.82	0.98
71	16	20.69	6.81	1.7

Difference = mu (31) - mu (71)
Estimate for difference: -15.06
95% CI for difference: (-19.11, -11.01)
T-Test of difference = 0 (vs not =): T-Value = -7.66 P-Value = 0.000 DF = 25

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
31	35	24.29	8.74	1.5
71	16	24.37	7.67	1.9

Difference = mu (31) - mu (71)
Estimate for difference: -0.09
95% CI for difference: (-5.02, 4.84)
T-Test of difference = 0 (vs not =): T-Value = -0.04 P-Value = 0.971 DF = 32

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
31	35	70.1	11.4	1.9
71	16	52.1	11.3	2.8

Difference = mu (31) - mu (71)
Estimate for difference: 17.96
95% CI for difference: (10.96, 24.96)
T-Test of difference = 0 (vs not =): T-Value = 5.25 P-Value = 0.000 DF = 29

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	2.2281	0.0640	0.0098
71	12	2.2583	0.0486	0.014

Difference = mu (31) - mu (71)
Estimate for difference: -0.0302
95% CI for difference: (-0.0656, 0.0053)
T-Test of difference = 0 (vs not =): T-Value = -1.77 P-Value = 0.091 DF = 22

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
31	43	1.8845	0.0804	0.012
71	12	1.9937	0.0718	0.021

Difference = mu (31) - mu (71)
Estimate for difference: -0.1092
95% CI for difference: (-0.1596, -0.0588)
T-Test of difference = 0 (vs not =): T-Value = -4.53 P-Value = 0.000 DF = 19

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
31	125	18.00	100.9	7.13
71	44	13.00	39.8	-7.13
Overall	169		85.0	

H = 50.85 DF = 1 P = 0.000
H = 51.36 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
31	112	34.00	68.0	2.35
71	17	31.00	45.1	-2.35
Overall	129		65.0	

H = 5.52 DF = 1 P = 0.019
H = 5.56 DF = 1 P = 0.018 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	16.00	64.6	0.05
71	17	16.00	64.1	-0.05
Overall	128		64.5	

H = 0.00 DF = 1 P = 0.961
H = 0.00 DF = 1 P = 0.960 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.00	68.3	2.95
71	17	16.00	39.8	-2.95
Overall	128		64.5	

H = 8.68 DF = 1 P = 0.003
H = 8.79 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
31	35	4.000	18.9	-5.07
71	16	19.000	41.6	5.07
Overall	51		26.0	

H = 25.76 DF = 1 P = 0.000
H = 25.89 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
31	35	23.00	25.8	-0.13
71	16	23.50	26.4	0.13
Overall	51		26.0	

H = 0.02 DF = 1 P = 0.895
H = 0.02 DF = 1 P = 0.895 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
31         35   72.00      31.9   4.21
71         16   53.00      13.0  -4.21
Overall    51              26.0

H = 17.74  DF = 1  P = 0.000
H = 17.76  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   2.230      26.2  -1.54
71         12   2.260      34.3   1.54
Overall    55              28.0

H = 2.37  DF = 1  P = 0.124
H = 2.38  DF = 1  P = 0.123  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   1.890      23.3  -4.08
71         12   1.991      44.7   4.08
Overall    55              28.0

H = 16.61  DF = 1  P = 0.000
H = 16.63  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 25.17    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          63  62   18.00   3.00                            *----)
71          41   3   13.00   3.75  *----)
                                   -----+---------+---------+---------+-
                                     14.0      16.0      18.0      20.0

Overall median = 18.00

A 95.0% CI for median(31) - median(71): (4.00,6.00)


Mood median test for WL (%)

Chi-Square = 5.02    DF = 1    P = 0.025

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          53  59   34.00   6.00                         (------*-----)
71          13   4   31.00   3.50     (------*-----)
                                      +---------+---------+---------+------
                                   30.0      31.5      33.0      34.5

Overall median = 33.00

A 95.0% CI for median(31) - median(71): (1.00,4.00)
```

```
Mood median test for Wp (%)

Chi-Square = 0.01    DF = 1    P = 0.932

Domain                                 Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1     +---------+---------+---------+------
31         51   60   16.00   3.00               (---------*
71          8    9   16.00   3.00     (-------------------*---------)
                                      +---------+---------+---------+------
                                   14.0      15.0      16.0      17.0

Overall median = 16.00

A 95.0% CI for median(31) - median(71): (-1.00,2.00)


Mood median test for Ip (%)

Chi-Square = 9.07    DF = 1    P = 0.003

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          62  49   18.00   4.00                           (-*-------)
71          16   1   16.00   2.50  (-------*--------)
                                   -----+---------+---------+---------+-
                                     15.6      16.8      18.0      19.2

Overall median = 18.00

A 95.0% CI for median(31) - median(71): (1.00,3.00)


Mood median test for % GRAVEL

Chi-Square = 26.23    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
31          27   8     4.0    6.0  (---*)
71           0  16    19.0    7.5                               (---*------)
                                   -------+---------+---------+---------
                                        6.0      12.0      18.0

Overall median = 8.0

A 95.0% CI for median(31) - median(71): (-20.0,-12.8)


Mood median test for % SAND

Chi-Square = 0.08    DF = 1    P = 0.776

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          19  16    23.0   10.0        (--------*------)
71           8   8    23.5   14.0  (----------------*----------------)
                                   --------+---------+---------+--------
                                        20.0      24.0      28.0

Overall median = 23.0

A 95.0% CI for median(31) - median(71): (-9.0,7.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 17.07    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
31          11  24    72.0   16.0                               (---*----)
71          15   1    53.0   15.5    (------*-------)
                                     -+---------+---------+---------+-----
                                   48.0      56.0      64.0      72.0

Overall median = 65.0

A 95.0% CI for median(31) - median(71): (10.0,27.2)


Mood median test for Bulk Density

Chi-Square = 1.35    DF = 1    P = 0.246

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median   Q3-Q1  --+---------+---------+---------+----
31          26  17  2.2300  0.0900  (------*--------------)
71           5   7  2.2600  0.0575          (-------------*--------------)
                                    --+---------+---------+---------+----
                                    2.220     2.240     2.260     2.280

Overall median = 2.2500

A 95.0% CI for median(31) - median(71): (-0.0600,0.0200)


Mood median test for Dry Density

Chi-Square = 11.13    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
31          27  16   1.890  0.119  (---*------)
71           1  11   1.991  0.067                    (----*--------)
                                   ------+---------+---------+---------+
                                       1.900     1.950     2.000     2.050

Overall median = 1.920

A 95.0% CI for median(31) - median(71): (-0.146,-0.045)
```

Results for: Domain 31 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
31	125	18.47	2.50	0.22
72	26	15.13	4.24	0.83

Difference = mu (31) - mu (72)
Estimate for difference: 3.345
95% CI for difference: (1.580, 5.111)
T-Test of difference = 0 (vs not =): T-Value = 3.88 P-Value = 0.001 DF = 28

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
31	112	33.41	4.86	0.46
72	10	30.50	4.84	1.5

Difference = mu (31) - mu (72)
Estimate for difference: 2.91
95% CI for difference: (-0.65, 6.47)
T-Test of difference = 0 (vs not =): T-Value = 1.82 P-Value = 0.098 DF = 10

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	15.62	1.95	0.19
72	10	15.20	1.99	0.63

Difference = mu (31) - mu (72)
Estimate for difference: 0.422
95% CI for difference: (-1.039, 1.883)
T-Test of difference = 0 (vs not =): T-Value = 0.64 P-Value = 0.535 DF = 10

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
31	111	17.89	3.19	0.30
72	10	15.30	3.71	1.2

Difference = mu (31) - mu (72)
Estimate for difference: 2.59
95% CI for difference: (-0.11, 5.29)
T-Test of difference = 0 (vs not =): T-Value = 2.14 P-Value = 0.058 DF = 10

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
31	35	5.63	5.82	0.98
72	9	20.56	7.14	2.4

Difference = mu (31) - mu (72)
Estimate for difference: -14.93
95% CI for difference: (-20.67, -9.19)
T-Test of difference = 0 (vs not =): T-Value = -5.79 P-Value = 0.000 DF = 10

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
31         35  24.29   8.74      1.5
72          9  27.56   7.20      2.4

Difference = mu (31) - mu (72)
Estimate for difference:  -3.27
95% CI for difference:  (-9.31, 2.77)
T-Test of difference = 0 (vs not =): T-Value = -1.16  P-Value = 0.265  DF = 14


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
31         35   70.1   11.4      1.9
72          9  51.89   7.66      2.6

Difference = mu (31) - mu (72)
Estimate for difference:  18.20
95% CI for difference:  (11.48, 24.92)
T-Test of difference = 0 (vs not =): T-Value = 5.69  P-Value = 0.000  DF = 18


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
31         43  2.2281  0.0640   0.0098
72          7   2.221   0.100    0.038

Difference = mu (31) - mu (72)
Estimate for difference:  0.0067
95% CI for difference:  (-0.0892, 0.1026)
T-Test of difference = 0 (vs not =): T-Value = 0.17  P-Value = 0.870  DF = 6


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
31         43  1.8845  0.0804    0.012
72          7   1.944   0.155    0.059

Difference = mu (31) - mu (72)
Estimate for difference:  -0.0598
95% CI for difference:  (-0.2065, 0.0868)
T-Test of difference = 0 (vs not =): T-Value = -1.00  P-Value = 0.357  DF = 6
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
31         125   18.00      82.6   4.06
72          26   13.00      44.3  -4.06
Overall    151              76.0

H = 16.47  DF = 1  P = 0.000
H = 16.68  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
31	112	34.00	63.7	2.26
72	10	30.00	37.3	-2.26
Overall	122		61.5	

H = 5.12 DF = 1 P = 0.024
H = 5.15 DF = 1 P = 0.023 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	16.00	61.9	0.97
72	10	15.00	50.7	-0.97
Overall	121		61.0	

H = 0.94 DF = 1 P = 0.332
H = 0.97 DF = 1 P = 0.324 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
31	111	18.00	63.3	2.39
72	10	15.50	35.6	-2.39
Overall	121		61.0	

H = 5.69 DF = 1 P = 0.017
H = 5.77 DF = 1 P = 0.016 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
31	35	4.000	18.6	-4.02
72	9	17.000	37.8	4.02
Overall	44		22.5	

H = 16.12 DF = 1 P = 0.000
H = 16.22 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
31	35	23.00	21.1	-1.45
72	9	26.00	28.1	1.45
Overall	44		22.5	

H = 2.12 DF = 1 P = 0.146
H = 2.13 DF = 1 P = 0.145 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
31         35   72.00      26.0   3.61
72          9   53.00       8.7  -3.61
Overall    44              22.5

H = 13.02  DF = 1  P = 0.000
H = 13.04  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   2.230      25.2  -0.41
72          7   2.240      27.6   0.41
Overall    50              25.5

H = 0.16  DF = 1  P = 0.685
H = 0.17  DF = 1  P = 0.684  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
31         43   1.890      23.3  -2.59
72          7   2.000      38.7   2.59
Overall    50              25.5

H = 6.69  DF = 1  P = 0.010
H = 6.70  DF = 1  P = 0.010  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 6.12    DF = 1    P = 0.013

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
31          63  62   18.00   3.00                             *----)
72          20   6   13.00   5.75  (-*-------------------)
                                   -------+---------+---------+---------
                                       14.0      16.0      18.0

Overall median = 18.00

A 95.0% CI for median(31) - median(72): (1.00,6.01)


Mood median test for WL (%)

Chi-Square = 6.69    DF = 1    P = 0.010

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
31          53  59   34.00   6.00                           (---*---)
72           9   1   30.00   5.25   (-----------*--------)
                                    --+---------+---------+---------+----
                                   27.5      30.0      32.5      35.0

Overall median = 33.00

A 95.0% CI for median(31) - median(72): (1.30,7.00)
```

```
Mood median test for Wp (%)

Chi-Square = 2.13    DF = 1    P = 0.145

Domain                                  Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  ---+---------+---------+---------+---
31         51   60   16.00   3.00              (---------*
72          7    3   15.00   2.75  (------------*----------------)
                                   ---+---------+---------+---------+---
                                   14.0      15.0      16.0      17.0

Overall median = 16.00

A 95.0% CI for median(31) - median(72): (-0.48,2.24)


Mood median test for Ip (%)

Chi-Square = 4.41    DF = 1    P = 0.036

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
31          62  49   18.00   4.00                                (*----)
72           9   1   15.50   5.25     (----------------*---------)
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 18.00

A 95.0% CI for median(31) - median(72): (0.76,6.00)


Mood median test for % GRAVEL

Chi-Square = 13.58    DF = 1    P = 0.000

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
31          24  11     4.0    6.0   (-*)
72           0   9    17.0   13.5                 (--*-------------)
                                   --------+---------+---------+--------
                                         8.0      16.0      24.0

Overall median = 5.0

A 95.0% CI for median(31) - median(72): (-25.0,-10.0)


Mood median test for % SAND

Chi-Square = 1.26    DF = 1    P = 0.262

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          19  16    23.0   10.0  (----------*------)
72           3   6    26.0    7.5           (---------*------------)
                                   -----+---------+---------+---------+-
                                     21.0      24.5      28.0      31.5

Overall median = 23.5

A 95.0% CI for median(31) - median(72): (-9.0,2.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 9.43    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
31          15  20    72.0   16.0                            (--*---)
72           9   0    53.0   15.5  (---------*------)
                                   -------+---------+---------+---------
                                         50        60        70

Overall median = 69.0

A 95.0% CI for median(31) - median(72): (8.0,33.0)


Mood median test for Bulk Density

Chi-Square = 0.03    DF = 1    P = 0.857

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
31          23  20   2.230  0.090                (---*---------)
72           4   3   2.240  0.040  (---------------------*--------------)
                                   -----+---------+---------+---------+-
                                      2.190     2.220     2.250     2.280

Overall median = 2.240

A 95.0% CI for median(31) - median(72): (-0.053,0.046)


Mood median test for Dry Density

Chi-Square = 4.15    DF = 1    P = 0.042

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
31          24  19   1.890  0.119     (---*------)
72           1   6   2.000  0.070  (----------------------------*----)
                                   ---------+---------+---------+-------
                                          1.900     1.950     2.000

Overall median = 1.915

A 95.0% CI for median(31) - median(72): (-0.133,0.018)
```

Results for: Domain 41 v 43

Two-Sample T-Test and CI: (Parameter) versus Domain reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
41	57	19.60	8.68	1.1
43	50	20.44	7.73	1.1

Difference = mu(41) - mu(43)
Estimate for difference: -0.84
95% CI for difference: (-3.98, 2.31)
T-Test of difference = 0 (vs not =): T-Value = -0.53 P-Value = 0.599 DF = 104

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
41	13	44.5	10.6	2.9
43	17	37.35	7.61	1.8

Difference = mu (41) - mu (43)
Estimate for difference: 7.11
95% CI for difference: (-0.14, 14.35)
T-Test of difference = 0 (vs not =): T-Value = 2.05 P-Value = 0.054 DF = 20

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
41	13	21.85	4.38	1.2
43	17	20.29	3.53	0.86

Difference = mu(41) - mu(43)
Estimate for difference: 1.55
95% CI for difference: (-1.53, 4.63)
T-Test of difference = 0 (vs not =): T-Value = 1.04 P-Value = 0.307 DF = 22

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
41	13	22.62	6.78	1.9
43	17	17.06	5.15	1.2

Difference = mu (41) - mu (43)
Estimate for difference: 5.56
95% CI for difference: (0.86, 10.25)
T-Test of difference = 0 (vs not =): T-Value = 2.46 P-Value = 0.023 DF = 21

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
41	6	22.3	13.5	5.5
43	15	38.1	12.9	3.3

Difference = mu(41) - mu(43)
Estimate for difference: -15.80
95% CI for difference: (-30.66, -0.94)
T-Test of difference = 0 (vs not =): T-Value = -2.45 P-Value = 0.040 DF = 8

```
Two-sample T for % SAND

Domain
reference   N   Mean  StDev  SE Mean
41          6  27.00   7.01      2.9
43         15  33.93   7.56      2.0

Difference = mu(41) - mu(43)
Estimate for difference:  -6.93
95% CI for difference:  (-14.77, 0.91)
T-Test of difference = 0 (vs not =): T-Value = -2.00  P-Value = 0.077  DF = 9


Two-sample T for % Fines (SILT/CLAY)

Domain
reference   N  Mean  StDev  SE Mean
41          6  50.7   16.1      6.6
43         15  27.9   11.0      2.8

Difference = mu(41) - mu(43)
Estimate for difference:  22.73
95% CI for difference:  (5.24, 40.23)
T-Test of difference = 0 (vs not =): T-Value = 3.18  P-Value = 0.019  DF = 6


Two-sample T for Bulk Density

Domain
reference   N    Mean   StDev  SE Mean
41          8  2.2000  0.0807    0.029
43         12   2.112   0.162    0.047

Difference = mu(41) - mu(43)
Estimate for difference:  0.0883
95% CI for difference:  (-0.0273, 0.2040)
T-Test of difference = 0 (vs not =): T-Value = 1.61  P-Value = 0.125  DF = 17


Two-sample T for Dry Density

Domain
reference   N    Mean   StDev  SE Mean
41          8  1.8950  0.0735    0.026
43         12   1.810   0.176    0.051

Difference = mu(41) - mu(43)
Estimate for difference:  0.0850
95% CI for difference:  (-0.0368, 0.2068)
T-Test of difference = 0 (vs not =): T-Value = 1.49  P-Value = 0.158  DF = 15
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
reference    N  Median  Ave Rank      Z
41          57   17.00      53.2  -0.29
43          50   17.00      54.9   0.29
Overall    107              54.0

H = 0.08  DF = 1  P = 0.772
H = 0.08  DF = 1  P = 0.771  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
41	13	42.00	18.8	1.82
43	17	39.00	12.9	-1.82
Overall	30		15.5	

H = 3.31 DF = 1 P = 0.069
H = 3.33 DF = 1 P = 0.068 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
41	13	21.00	17.0	0.82
43	17	20.00	14.4	-0.82
Overall	30		15.5	

H = 0.67 DF = 1 P = 0.414
H = 0.67 DF = 1 P = 0.412 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
41	13	22.00	19.5	2.16
43	17	16.00	12.5	-2.16
Overall	30		15.5	

H = 4.65 DF = 1 P = 0.031
H = 4.67 DF = 1 P = 0.031 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
41	6	23.50	6.6	-2.06
43	15	41.00	12.8	2.06
Overall	21		11.0	

H = 4.26 DF = 1 P = 0.039
H = 4.27 DF = 1 P = 0.039 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
41	6	27.50	7.3	-1.71
43	15	33.00	12.5	1.71
Overall	21		11.0	

H = 2.93 DF = 1 P = 0.087
H = 2.94 DF = 1 P = 0.086 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
41	6	46.00	16.8	2.69
43	15	23.00	8.7	-2.69
Overall	21		11.0	

H = 7.21 DF = 1 P = 0.007
H = 7.25 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
41	8	2.225	13.3	1.70
43	12	2.155	8.7	-1.70
Overall	20		10.5	

H = 2.88 DF = 1 P = 0.090
H = 2.89 DF = 1 P = 0.089 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
41	8	1.915	13.0	1.54
43	12	1.835	8.8	-1.54
Overall	20		10.5	

H = 2.38 DF = 1 P = 0.123
H = 2.39 DF = 1 P = 0.122 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.06   DF = 1   P = 0.805

```
Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
41          31  26   17.00   4.50      (------*---------)
43          26  24   17.00  11.25   (---------*----------------------)
                                    +---------+---------+---------+------
                                 16.0      17.0      18.0      19.0
```

Overall median = 17.00

A 95.0% CI for median(41) - median(43): (-2.50,2.00)

Mood median test for WL (%)

Chi-Square = 3.39   DF = 1   P = 0.065

```
Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
41           4   9    42.0   16.5             (---------*--------------)
43          11   6    39.0   13.0   (--------------*------)
                                    +---------+---------+---------+------
                                 30.0      36.0      42.0      48.0
```

Overall median = 40.5

A 95.0% CI for median(41) - median(43): (-4.0,19.0)

```
Mood median test for Wp (%)

Chi-Square = 0.14    DF = 1    P = 0.713

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           6   7   21.00   5.00            (---------*------------)
43           9   8   20.00   7.00  (--------------*--------------)
                                   -----+---------+---------+---------+-
                                     18.0      20.0      22.0      24.0

Overall median = 20.50

A 95.0% CI for median(41) - median(43): (-4.00,5.00)


Mood median test for Ip (%)

Chi-Square = 6.27    DF = 1    P = 0.012

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           4   9    22.0   12.0        (-------------*------------)
43          13   4    16.0    5.5  (----*------)
                                   -----+---------+---------+---------+-
                                     16.0      20.0      24.0      28.0

Overall median = 19.0

A 95.0% CI for median(41) - median(43): (-2.0,12.0)


Mood median test for % GRAVEL

Chi-Square = 0.69    DF = 1    P = 0.407

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           4   2    23.5   26.8  (-------------*---------)
43           7   8    41.0   20.0                      (-------*-----)
                                   ----+---------+---------+---------+--
                                      12        24        36        48

Overall median = 33.0

A 95.0% CI for median(41) - median(43): (-37.0,6.0)


Mood median test for % SAND

Chi-Square = 1.64    DF = 1    P = 0.201

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
41           5   1    27.5   11.8  (--------------*-----------)
43           8   7    33.0   10.0                   (------*-------)
                                   ---------+---------+---------+-------
                                         24.0      30.0      36.0

Overall median = 33.0

A 95.0% CI for median(41) - median(43): (-19.0,4.1)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 5.62    DF = 1    P = 0.018

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41           1   5    46.0   29.0            (------*---------------)
43          11   4    23.0   17.0  (-*--------)
                                   -------+---------+---------+---------
                                         30        45        60

Overall median = 33.0

A 95.0% CI for median(41) - median(43): (5.9,52.0)


Mood median test for Bulk Density

Chi-Square = 4.85    DF = 1    P = 0.028

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
41           2   6   2.225  0.048                              (-----*-)
43           9   3   2.155  0.265  (------------------------*-------)
                                   ------+---------+---------+---------+
                                       2.000     2.080     2.160     2.240

Overall median = 2.190

A 95.0% CI for median(41) - median(43): (0.000,0.210)


Mood median test for Dry Density

Chi-Square = 0.83    DF = 1    P = 0.361

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           3   5   1.915  0.062                        (---*---)
43           7   5   1.835  0.252  (-----------------*------)
                                   -----+---------+---------+---------+-
                                      1.70      1.80      1.90      2.00

Overall median = 1.885

A 95.0% CI for median(41) - median(43): (-0.010,0.260)
```

Results for: Domain 41 v 51

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
41         57  19.60   8.68      1.1
51         10  14.36   8.77      2.8

Difference = mu (41) - mu (51)
Estimate for difference:  5.24
95% CI for difference:  (-1.29, 11.78)
T-Test of difference = 0 (vs not =): T-Value = 1.75  P-Value = 0.106  DF = 12


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
41         13   44.5   10.6      2.9
51         13  27.08   2.90     0.80

Difference = mu (41) - mu (51)
Estimate for difference:  17.38
95% CI for difference:  (10.79, 23.98)
T-Test of difference = 0 (vs not =): T-Value = 5.70  P-Value = 0.000  DF = 13


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
41         13  21.85   4.38      1.2
51         13  17.08   1.71     0.47

Difference = mu (41) - mu (51)
Estimate for difference:  4.77
95% CI for difference:  (1.99, 7.55)
T-Test of difference = 0 (vs not =): T-Value = 3.66  P-Value = 0.002  DF = 15


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
41         13  22.62   6.78      1.9
51         13  10.00   1.83     0.51

Difference = mu (41) - mu (51)
Estimate for difference:  12.62
95% CI for difference:  (8.41, 16.82)
T-Test of difference = 0 (vs not =): T-Value = 6.48  P-Value = 0.000  DF = 13


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
41          6   22.3   13.5      5.5
51         10  38.20   9.73      3.1

Difference = mu (41) - mu (51)
Estimate for difference:  -15.87
95% CI for difference:  (-30.43, -1.30)
T-Test of difference = 0 (vs not =): T-Value = -2.51  P-Value = 0.036  DF = 8
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
41	6	27.00	7.01	2.9
51	10	16.00	4.71	1.5

Difference = mu (41) - mu (51)
Estimate for difference: 11.00
95% CI for difference: (3.37, 18.63)
T-Test of difference = 0 (vs not =): T-Value = 3.41 P-Value = 0.011 DF = 7

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
41	6	50.7	16.1	6.6
51	10	38.5	12.7	4.0

Difference = mu (41) - mu (51)
Estimate for difference: 12.17
95% CI for difference: (-5.56, 29.90)
T-Test of difference = 0 (vs not =): T-Value = 1.58 P-Value = 0.152 DF = 8

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	2.2000	0.0807	0.029
51	3	2.3267	0.0379	0.022

Difference = mu (41) - mu (51)
Estimate for difference: -0.1267
95% CI for difference: (-0.2117, -0.0417)
T-Test of difference = 0 (vs not =): T-Value = -3.52 P-Value = 0.010 DF = 7

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	1.8950	0.0735	0.026
51	3	2.1600	0.0361	0.021

Difference = mu (41) - mu (51)
Estimate for difference: -0.2650
95% CI for difference: (-0.3437, -0.1863)
T-Test of difference = 0 (vs not =): T-Value = -7.96 P-Value = 0.000 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
41	57	17.00	36.5	2.48
51	10	12.00	19.9	-2.48
Overall	67		34.0	

H = 6.16 DF = 1 P = 0.013
H = 6.18 DF = 1 P = 0.013 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	42.00	19.8	4.23
51	13	27.00	7.2	-4.23
Overall	26		13.5	

H = 17.90 DF = 1 P = 0.000
H = 17.97 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	21.00	18.5	3.33
51	13	17.00	8.5	-3.33
Overall	26		13.5	

H = 11.11 DF = 1 P = 0.001
H = 11.29 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	22.00	19.8	4.23
51	13	10.00	7.2	-4.23
Overall	26		13.5	

H = 17.90 DF = 1 P = 0.000
H = 18.02 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
41	6	23.50	5.0	-2.28
51	10	39.50	10.6	2.28
Overall	16		8.5	

H = 5.19 DF = 1 P = 0.023
H = 5.23 DF = 1 P = 0.022 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
41	6	27.50	12.6	2.66
51	10	16.00	6.0	-2.66
Overall	16		8.5	

H = 7.06 DF = 1 P = 0.008
H = 7.10 DF = 1 P = 0.008 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
41          6   46.00      11.3   1.84
51         10   37.50       6.8  -1.84
Overall    16               8.5

H = 3.40  DF = 1  P = 0.065
H = 3.41  DF = 1  P = 0.065  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
41          8   2.225       4.5  -2.45
51          3   2.310      10.0   2.45
Overall    11               6.0

H = 6.00  DF = 1  P = 0.014
H = 6.03  DF = 1  P = 0.014  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
41          8   1.915       4.5  -2.45
51          3   2.150      10.0   2.45
Overall    11               6.0

H = 6.00  DF = 1  P = 0.014
H = 6.06  DF = 1  P = 0.014  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.84    DF = 1    P = 0.358

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
41          31  26    17.0    4.5                        (-*-)
51           7   3    12.0   12.2  (-----------*--------------------)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 17.0

A 95.0% CI for median(41) - median(51): (-1.7,10.5)
```

```
Mood median test for WL (%)

Chi-Square = 18.62    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
41           1  12    42.0   16.5                (-------*----------)
51          12   1    27.0    4.5  (--*--)
                                   ---------+---------+---------+-------
                                         32.0      40.0      48.0

Overall median = 31.5

A 95.0% CI for median(41) - median(51): (11.1,25.0)


Mood median test for Wp (%)

Chi-Square = 5.85    DF = 1    P = 0.016

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
41           5   8   21.00   5.00              (-------*----------)
51          11   2   17.00   2.50  (---*----)
                                   ------+---------+---------+---------+
                                      17.5      20.0      22.5      25.0

Overall median = 19.00

A 95.0% CI for median(41) - median(51): (1.62,7.00)


Mood median test for Ip (%)

Chi-Square = 18.62    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           1  12    22.0   12.0              (---------*--------)
51          12   1    10.0    2.5  (-*-)
                                   -----+---------+---------+---------+-
                                     12.0      18.0      24.0      30.0

Overall median = 12.5

A 95.0% CI for median(41) - median(51): (9.1,18.0)


Mood median test for % GRAVEL

Chi-Square = 4.27    DF = 1    P = 0.039

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           5   1    23.5   26.8  (-------------*---------)
51           3   7    39.5   14.8                     (------*-----)
                                   ----+---------+---------+---------+--
                                      12        24        36        48

Overall median = 36.0

A 95.0% CI for median(41) - median(51): (-36.1,-1.6)
```

```
Mood median test for % SAND

Chi-Square = 4.27    DF = 1    P = 0.039

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
41           1   5    27.5   11.8            (--------------*----------)
51           7   3    16.0    5.3  (-----*--)
                                   ---------+---------+---------+-------
                                         18.0      24.0      30.0

Overall median = 17.5

A 95.0% CI for median(41) - median(51): (3.8,19.1)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 4.27    DF = 1    P = 0.039

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           1   5    46.0   29.0      (-------*--------------------)
51           7   3    37.5   11.8  (----*----)
                                   ----+---------+---------+---------+--
                                      36        48        60        72

Overall median = 38.5

A 95.0% CI for median(41) - median(51): (0.5,34.9)


Mood median test for Bulk Density

Chi-Square = 7.22    DF = 1    P = 0.007

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41           7   1   2.225  0.048  (-------*--)
51           0   3   2.310  0.070                      (-*---------)
                                   -------+---------+---------+---------
                                        2.220     2.280     2.340

Overall median = 2.240
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(51): (-0.184,-0.059)


Mood median test for Dry Density

Chi-Square = 4.95    DF = 1    P = 0.026

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
41           6   2   1.915  0.062  (---*---)
51           0   3   2.150  0.070                            (-*----)
                                   ---+---------+---------+---------+---
                                    1.90      2.00      2.10      2.20

Overall median = 1.920
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(41) - median(51): (-0.323,-0.180)
```

Results for: Domain 41 v 52

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
41	57	19.60	8.68	1.1
52	24	8.48	2.78	0.57

Difference = mu (41) - mu (52)
Estimate for difference: 11.12
95% CI for difference: (8.57, 13.68)
T-Test of difference = 0 (vs not =): T-Value = 8.68 P-Value = 0.000 DF = 75

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	44.5	10.6	2.9
52	24	25.33	2.73	0.56

Difference = mu (41) - mu (52)
Estimate for difference: 19.13
95% CI for difference: (12.60, 25.65)
T-Test of difference = 0 (vs not =): T-Value = 6.39 P-Value = 0.000 DF = 12

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	21.85	4.38	1.2
52	24	16.21	1.61	0.33

Difference = mu (41) - mu (52)
Estimate for difference: 5.64
95% CI for difference: (2.92, 8.35)
T-Test of difference = 0 (vs not =): T-Value = 4.48 P-Value = 0.001 DF = 13

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	22.62	6.78	1.9
52	24	9.13	2.11	0.43

Difference = mu (41) - mu (52)
Estimate for difference: 13.49
95% CI for difference: (9.32, 17.66)
T-Test of difference = 0 (vs not =): T-Value = 7.00 P-Value = 0.000 DF = 13

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
41	6	22.3	13.5	5.5
52	15	37.5	13.5	3.5

Difference = mu (41) - mu (52)
Estimate for difference: -15.13
95% CI for difference: (-29.88, -0.38)
T-Test of difference = 0 (vs not =): T-Value = -2.32 P-Value = 0.045 DF = 9

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
41	6	27.00	7.01	2.9
52	15	18.47	6.10	1.6

Difference = mu (41) - mu (52)
Estimate for difference: 8.53
95% CI for difference: (1.00, 16.07)
T-Test of difference = 0 (vs not =): T-Value = 2.61 P-Value = 0.031 DF = 8

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
41	6	50.7	16.1	6.6
52	15	36.7	15.7	4.1

Difference = mu (41) - mu (52)
Estimate for difference: 14.00
95% CI for difference: (-3.45, 31.45)
T-Test of difference = 0 (vs not =): T-Value = 1.81 P-Value = 0.103 DF = 9

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	2.2000	0.0807	0.029
52	7	2.364	0.125	0.047

Difference = mu (41) - mu (52)
Estimate for difference: -0.1643
95% CI for difference: (-0.2870, -0.0416)
T-Test of difference = 0 (vs not =): T-Value = -2.98 P-Value = 0.014 DF = 10

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	1.8950	0.0735	0.026
52	7	2.196	0.154	0.058

Difference = mu (41) - mu (52)
Estimate for difference: -0.3007
95% CI for difference: (-0.4479, -0.1535)
T-Test of difference = 0 (vs not =): T-Value = -4.71 P-Value = 0.002 DF = 8

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
41	57	17.000	52.9	7.01
52	24	8.450	12.8	-7.01
Overall	81		41.0	

H = 49.17 DF = 1 P = 0.000
H = 49.27 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	42.00	31.0	4.95
52	24	25.50	12.5	-4.95
Overall	37		19.0	

H = 24.47 DF = 1 P = 0.000
H = 24.63 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	21.00	29.6	4.39
52	24	16.00	13.3	-4.39
Overall	37		19.0	

H = 19.28 DF = 1 P = 0.000
H = 19.70 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	22.000	30.8	4.87
52	24	9.000	12.6	-4.87
Overall	37		19.0	

H = 23.69 DF = 1 P = 0.000
H = 23.91 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
41	6	23.50	7.1	-1.83
52	15	36.00	12.6	1.83
Overall	21		11.0	

H = 3.35 DF = 1 P = 0.067
H = 3.38 DF = 1 P = 0.066 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
41	6	27.50	15.8	2.22
52	15	19.00	9.1	-2.22
Overall	21		11.0	

H = 4.92 DF = 1 P = 0.027
H = 4.93 DF = 1 P = 0.026 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
41	6	46.00	14.5	1.63
52	15	38.00	9.6	-1.63
Overall	21		11.0	

H = 2.67 DF = 1 P = 0.102
H = 2.69 DF = 1 P = 0.101 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
41	8	2.225	5.4	-2.43
52	7	2.410	11.0	2.43
Overall	15		8.0	

H = 5.91 DF = 1 P = 0.015
H = 5.96 DF = 1 P = 0.015 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
41	8	1.915	4.8	-3.01
52	7	2.200	11.7	3.01
Overall	15		8.0	

H = 9.05 DF = 1 P = 0.003
H = 9.09 DF = 1 P = 0.003 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 30.14   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41          19  38    17.0    4.5                                 (--*--)
52          24   0     8.4    4.5  (----*----)
                                   -------+---------+---------+---------
                                        9.0      12.0      15.0
```

Overall median = 16.0

A 95.0% CI for median(41) - median(52): (6.8,11.0)

Mood median test for WL (%)

Chi-Square = 26.30   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
41           0  13    42.0   16.5                    (------*-----------)
52          21   3    25.5    3.8     (-*-)
                                      +---------+---------+---------+------
                                   24.0      32.0      40.0      48.0
```

Overall median = 27.0

A 95.0% CI for median(41) - median(52): (10.7,25.3)

```
Mood median test for Wp (%)

Chi-Square = 12.07    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
41           2  11   21.00   5.00                   (-------*----------)
52          18   6   16.00   2.75    (---*)
                                     +---------+---------+---------+------
                                  15.0      17.5      20.0      22.5

Overall median = 17.00

A 95.0% CI for median(41) - median(52): (3.00,7.00)


Mood median test for Ip (%)

Chi-Square = 26.30    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41           0  13    22.0   12.0              (---------*--------)
52          21   3     9.0    3.0  (-*-)
                                   -------+---------+---------+---------
                                       12.0      18.0      24.0

Overall median = 11.0

A 95.0% CI for median(41) - median(52): (8.0,19.0)


Mood median test for % GRAVEL

Chi-Square = 0.69    DF = 1    P = 0.407

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           4   2    23.5   26.8  (-------------*---------)
52           7   8    36.0   22.0                   (----*----------)
                                   ----+---------+---------+---------+--
                                      12        24        36        48

Overall median = 32.0

A 95.0% CI for median(41) - median(52): (-33.1,8.0)


Mood median test for % SAND

Chi-Square = 4.30    DF = 1    P = 0.038

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41           1   5    27.5   11.8          (--------------*-----------)
52          10   5    19.0    9.0  (--------*---)
                                   -------+---------+---------+---------
                                       18.0      24.0      30.0

Overall median = 20.0

A 95.0% CI for median(41) - median(52): (-3.0,19.1)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.50    DF = 1    P = 0.477

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
41           3   3    46.0   29.0         (------*---------------)
52          10   5    38.0   21.0  (-------*---)
                                   ---+---------+---------+---------+---
                                     30        45        60        75

Overall median = 40.0

A 95.0% CI for median(41) - median(52): (-7.0,45.0)


Mood median test for Bulk Density

Chi-Square = 8.04    DF = 1    P = 0.005

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
41           7   1   2.225  0.048  (-----*-)
52           1   6   2.410  0.120           (------------------*----)
                                   --------+---------+---------+--------
                                         2.240     2.320     2.400

Overall median = 2.240

A 95.0% CI for median(41) - median(52): (-0.212,-0.050)


Mood median test for Dry Density

Chi-Square = 8.04    DF = 1    P = 0.005

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           7   1   1.915  0.062  (--*-)
52           1   6   2.200  0.250            (----------*--------)
                                   -----+---------+---------+---------+-
                                      1.95      2.10      2.25      2.40

Overall median = 1.950

A 95.0% CI for median(41) - median(52): (-0.450,-0.153)
```

Results for: Domain 41 v 61

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
41	57	19.60	8.68	1.1
61	9	17.50	6.94	2.3

Difference = mu (41) - mu (61)
Estimate for difference: 2.10
95% CI for difference: (-3.53, 7.73)
T-Test of difference = 0 (vs not =): T-Value = 0.81 P-Value = 0.431 DF = 12

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	2.2000	0.0807	0.029
61	9	2.120	0.154	0.051

Difference = mu (41) - mu (61)
Estimate for difference: 0.0800
95% CI for difference: (-0.0479, 0.2079)
T-Test of difference = 0 (vs not =): T-Value = 1.36 P-Value = 0.198 DF = 12

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	1.8950	0.0735	0.026
61	9	1.817	0.222	0.074

Difference = mu (41) - mu (61)
Estimate for difference: 0.0784
95% CI for difference: (-0.0994, 0.2561)
T-Test of difference = 0 (vs not =): T-Value = 1.00 P-Value = 0.345 DF = 9

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
41	57	17.00	34.5	1.05
61	9	16.30	27.3	-1.05
Overall	66		33.5	

H = 1.09 DF = 1 P = 0.295
H = 1.10 DF = 1 P = 0.295 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
41	8	2.225	10.1	0.87
61	9	2.130	8.0	-0.87
Overall	17		9.0	

H = 0.75 DF = 1 P = 0.386
H = 0.75 DF = 1 P = 0.385 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
41	8	1.915	9.3	0.24
61	9	1.790	8.7	-0.24
Overall	17		9.0	

H = 0.06 DF = 1 P = 0.810
H = 0.06 DF = 1 P = 0.809 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.48   DF = 1   P = 0.490

```
Domain                                   Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
41          31  26    17.0    4.5                (*--)
61           6   3    16.3   12.1    (-----------*--------------------)
                                     -+---------+---------+---------+-----
                                   12.0      16.0      20.0      24.0
```

Overall median = 17.0

A 95.0% CI for median(41) - median(61): (-9.1,6.5)

Mood median test for Bulk Density

Chi-Square = 1.45   DF = 1   P = 0.229

```
Domain                                   Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    ---+---------+---------+---------+---
41           3   5   2.225  0.048                            (------*-)
61           6   3   2.130  0.215    (----------------*-----------------)
                                     ---+---------+---------+---------+---
                                      2.030     2.100     2.170     2.240
```

Overall median = 2.210

A 95.0% CI for median(41) - median(61): (-0.050,0.160)

Mood median test for Dry Density

Chi-Square = 0.05   DF = 1   P = 0.819

```
Domain                                   Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -----+---------+---------+---------+-
41           4   4   1.915  0.062                        (--*-)
61           5   4   1.790  0.380    (-------------*----------------)
                                     -----+---------+---------+---------+-
                                        1.65      1.80      1.95      2.10
```

Overall median = 1.910

A 95.0% CI for median(41) - median(61): (-0.130,0.190)

Results for: Domain 41 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
41	57	19.60	8.68	1.1
62	131	16.88	5.15	0.45

Difference = mu (41) - mu (62)
Estimate for difference: 2.72
95% CI for difference: (0.26, 5.19)
T-Test of difference = 0 (vs not =): T-Value = 2.21 P-Value = 0.031 DF = 73

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	44.5	10.6	2.9
62	113	34.27	6.08	0.57

Difference = mu (41) - mu (62)
Estimate for difference: 10.20
95% CI for difference: (3.66, 16.73)
T-Test of difference = 0 (vs not =): T-Value = 3.40 P-Value = 0.005 DF = 12

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	21.85	4.38	1.2
62	113	17.70	2.77	0.26

Difference = mu (41) - mu (62)
Estimate for difference: 4.15
95% CI for difference: (1.47, 6.83)
T-Test of difference = 0 (vs not =): T-Value = 3.34 P-Value = 0.005 DF = 13

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	22.62	6.78	1.9
62	113	16.57	4.48	0.42

Difference = mu (41) - mu (62)
Estimate for difference: 6.05
95% CI for difference: (1.89, 10.21)
T-Test of difference = 0 (vs not =): T-Value = 3.14 P-Value = 0.008 DF = 13

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
41	6	22.3	13.5	5.5
62	47	24.9	13.6	2.0

Difference = mu (41) - mu (62)
Estimate for difference: -2.56
95% CI for difference: (-16.91, 11.79)
T-Test of difference = 0 (vs not =): T-Value = -0.44 P-Value = 0.678 DF = 6

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
41          6  27.00   7.01      2.9
62         47  28.74   7.27      1.1

Difference = mu (41) - mu (62)
Estimate for difference:  -1.74
95% CI for difference:  (-9.22, 5.73)
T-Test of difference = 0 (vs not =): T-Value = -0.57  P-Value = 0.589  DF = 6


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N  Mean  StDev  SE Mean
41          6  50.7   16.1      6.6
62         47  45.0   16.8      2.5

Difference = mu (41) - mu (62)
Estimate for difference:  5.69
95% CI for difference:  (-11.45, 22.83)
T-Test of difference = 0 (vs not =): T-Value = 0.81  P-Value = 0.448  DF = 6


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
41          8  2.2000  0.0807    0.029
62         29   2.113   0.106    0.020

Difference = mu (41) - mu (62)
Estimate for difference:  0.0873
95% CI for difference:  (0.0129, 0.1618)
T-Test of difference = 0 (vs not =): T-Value = 2.52  P-Value = 0.025  DF = 14


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
41          8  1.8950  0.0735    0.026
62         29   1.800   0.176    0.033

Difference = mu (41) - mu (62)
Estimate for difference:  0.0950
95% CI for difference:  (0.0094, 0.1806)
T-Test of difference = 0 (vs not =): T-Value = 2.27  P-Value = 0.031  DF = 28
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
41          57   17.00     111.7   2.85
62         131   15.87      87.0  -2.85
Overall    188              94.5

H = 8.14  DF = 1  P = 0.004
H = 8.15  DF = 1  P = 0.004  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	42.00	98.5	3.65
62	113	34.00	59.5	-3.65
Overall	126		63.5	

H = 13.35 DF = 1 P = 0.000
H = 13.47 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	21.00	99.3	3.73
62	113	17.00	59.4	-3.73
Overall	126		63.5	

H = 13.91 DF = 1 P = 0.000
H = 14.12 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	22.00	92.6	3.03
62	113	16.00	60.2	-3.03
Overall	126		63.5	

H = 9.19 DF = 1 P = 0.002
H = 9.27 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
41	6	23.50	25.2	-0.31
62	47	24.00	27.2	0.31
Overall	53		27.0	

H = 0.10 DF = 1 P = 0.757
H = 0.10 DF = 1 P = 0.757 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
41	6	27.50	23.9	-0.52
62	47	28.00	27.4	0.52
Overall	53		27.0	

H = 0.27 DF = 1 P = 0.604
H = 0.27 DF = 1 P = 0.603 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
41          6   46.00      30.7   0.62
62         47   47.00      26.5  -0.62
Overall    53              27.0

H = 0.38  DF = 1  P = 0.537
H = 0.38  DF = 1  P = 0.537  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
41          8   2.225      27.0   2.36
62         29   2.150      16.8  -2.36
Overall    37              19.0

H = 5.58  DF = 1  P = 0.018
H = 5.60  DF = 1  P = 0.018  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
41          8   1.915      22.2   0.94
62         29   1.850      18.1  -0.94
Overall    37              19.0

H = 0.89  DF = 1  P = 0.347
H = 0.89  DF = 1  P = 0.346  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 5.66    DF = 1    P = 0.017

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
41          21  36   17.00   4.50                  (--------*------------)
62          73  58   15.87   5.61     (-------*----------)
                                      +---------+---------+---------+------
                                   15.20     16.00     16.80     17.60

Overall median = 16.27

A 95.0% CI for median(41) - median(62): (0.31,2.49)


Mood median test for WL (%)

Chi-Square = 7.60    DF = 1    P = 0.006

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           3  10    42.0   16.5        (-----------*-----------------)
62          71  42    34.0    4.0  (-*
                                   ----+---------+---------+---------+--
                                    35.0      40.0      45.0      50.0

Overall median = 34.0

A 95.0% CI for median(41) - median(62): (2.5,17.7)
```

Mood median test for Wp (%)

Chi-Square = 6.95   DF = 1   P = 0.008

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           2  11   21.00   5.00            (---------*------------)
62          61  52   17.00   3.00  *----)
                                   -----+---------+---------+---------+-
                                     18.0      20.0      22.0      24.0
```

Overall median = 17.50

A 95.0% CI for median(41) - median(62): (2.00,6.35)

Mood median test for Ip (%)

Chi-Square = 5.96   DF = 1   P = 0.015

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           4   9    22.0   12.0    (---------------*---------------)
62          74  39    16.0    4.0  (*--)
                                   -----+---------+---------+---------+-
                                     17.5      21.0      24.5      28.0
```

Overall median = 17.0

A 95.0% CI for median(41) - median(62): (-0.3,11.3)

Mood median test for % GRAVEL

Chi-Square = 0.00   DF = 1   P = 0.961

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
41           3   3    23.5   26.8   (-------------------*----------------)
62          24  23    24.0   19.0                   (----*-----)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0
```

Overall median = 24.0

A 95.0% CI for median(41) - median(62): (-20.0,14.2)

Mood median test for % SAND

Chi-Square = 0.06   DF = 1   P = 0.805

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
41           3   3    27.5   11.8   (----------------*--------------)
62          26  21    28.0    9.0                (----*---)
                                    --+---------+---------+---------+----
                                   20.0      25.0      30.0      35.0
```

Overall median = 28.0

A 95.0% CI for median(41) - median(62): (-11.2,10.0)

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 0.961

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           3   3    46.0   29.0  (---------*-----------------------)
62          24  23    47.0   20.0        (----*---)
                                   ----+---------+---------+---------+--
                                      40        50        60        70

Overall median = 47.0

A 95.0% CI for median(41) - median(62): (-16.0,28.2)


Mood median test for Bulk Density

Chi-Square = 3.47    DF = 1    P = 0.063

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
41           2   6   2.225  0.048                         (-------*--)
62          18  11   2.150  0.196   (------------------*--------)
                                    -+---------+---------+---------+-----
                                   2.040     2.100     2.160     2.220

Overall median = 2.190

A 95.0% CI for median(41) - median(62): (0.024,0.139)


Mood median test for Dry Density

Chi-Square = 1.13    DF = 1    P = 0.289

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
41           3   5   1.915  0.062                     (------*----)
62          17  12   1.850  0.315  (----------------*-----------)
                                   ---+---------+---------+---------+---
                                    1.750     1.820     1.890     1.960

Overall median = 1.880

A 95.0% CI for median(41) - median(62): (-0.004,0.176)
```

Results for: Domain 41 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
41	57	19.60	8.68	1.1
63	55	17.40	5.42	0.73

Difference = mu (41) - mu (63)
Estimate for difference: 2.21
95% CI for difference: (-0.50, 4.91)
T-Test of difference = 0 (vs not =): T-Value = 1.62 P-Value = 0.109 DF = 94

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	44.5	10.6	2.9
63	58	34.88	4.40	0.58

Difference = mu (41) - mu (63)
Estimate for difference: 9.58
95% CI for difference: (3.05, 16.12)
T-Test of difference = 0 (vs not =): T-Value = 3.19 P-Value = 0.008 DF = 12

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	21.85	4.38	1.2
63	58	17.98	2.92	0.38

Difference = mu (41) - mu (63)
Estimate for difference: 3.86
95% CI for difference: (1.13, 6.59)
T-Test of difference = 0 (vs not =): T-Value = 3.04 P-Value = 0.009 DF = 14

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	22.62	6.78	1.9
63	58	16.90	3.05	0.40

Difference = mu (41) - mu (63)
Estimate for difference: 5.72
95% CI for difference: (1.57, 9.87)
T-Test of difference = 0 (vs not =): T-Value = 2.98 P-Value = 0.011 DF = 13

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
41	6	22.3	13.5	5.5
63	30	26.9	11.7	2.1

Difference = mu (41) - mu (63)
Estimate for difference: -4.60
95% CI for difference: (-19.08, 9.88)
T-Test of difference = 0 (vs not =): T-Value = -0.78 P-Value = 0.467 DF = 6

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
41	6	27.00	7.01	2.9
63	30	29.70	8.47	1.5

Difference = mu (41) - mu (63)
Estimate for difference: -2.70
95% CI for difference: (-10.20, 4.80)
T-Test of difference = 0 (vs not =): T-Value = -0.83 P-Value = 0.431 DF = 8

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
41	6	50.7	16.1	6.6
63	30	43.4	11.2	2.1

Difference = mu (41) - mu (63)
Estimate for difference: 7.30
95% CI for difference: (-9.52, 24.12)
T-Test of difference = 0 (vs not =): T-Value = 1.06 P-Value = 0.329 DF = 6

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	2.2000	0.0807	0.029
63	11	2.081	0.118	0.036

Difference = mu (41) - mu (63)
Estimate for difference: 0.1190
95% CI for difference: (0.0224, 0.2157)
T-Test of difference = 0 (vs not =): T-Value = 2.61 P-Value = 0.019 DF = 16

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	1.8950	0.0735	0.026
63	11	1.806	0.147	0.044

Difference = mu (41) - mu (63)
Estimate for difference: 0.0886
95% CI for difference: (-0.0207, 0.1980)
T-Test of difference = 0 (vs not =): T-Value = 1.73 P-Value = 0.105 DF = 15

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
41	57	17.00	63.3	2.26
63	55	15.38	49.5	-2.26
Overall	112		56.5	

H = 5.09 DF = 1 P = 0.024
H = 5.09 DF = 1 P = 0.024 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	42.00	52.9	3.27
63	58	34.00	32.2	-3.27
Overall	71		36.0	

H = 10.70 DF = 1 P = 0.001
H = 10.78 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	21.00	52.2	3.12
63	58	18.00	32.4	-3.12
Overall	71		36.0	

H = 9.75 DF = 1 P = 0.002
H = 9.86 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	22.00	50.5	2.80
63	58	16.00	32.8	-2.80
Overall	71		36.0	

H = 7.85 DF = 1 P = 0.005
H = 7.95 DF = 1 P = 0.005 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
41	6	23.50	16.0	-0.64
63	30	25.50	19.0	0.64
Overall	36		18.5	

H = 0.41 DF = 1 P = 0.524
H = 0.41 DF = 1 P = 0.524 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
41	6	27.50	16.1	-0.62
63	30	29.00	19.0	0.62
Overall	36		18.5	

H = 0.38 DF = 1 P = 0.538
H = 0.38 DF = 1 P = 0.537 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
41	6	46.00	22.0	0.89
63	30	42.50	17.8	-0.89
Overall	36		18.5	

H = 0.79 DF = 1 P = 0.373
H = 0.80 DF = 1 P = 0.372 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
41	8	2.225	13.6	2.39
63	11	2.090	7.4	-2.39
Overall	19		10.0	

H = 5.73 DF = 1 P = 0.017
H = 5.76 DF = 1 P = 0.016 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
41	8	1.915	12.2	1.45
63	11	1.840	8.4	-1.45
Overall	19		10.0	

H = 2.09 DF = 1 P = 0.148
H = 2.10 DF = 1 P = 0.147 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 2.89   DF = 1   P = 0.089

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
41          24  33   17.00   4.50                  (------*---------)
63          32  23   15.38   5.92  (------*-----------------)
                                   ---+---------+---------+---------+---
                                   15.0      16.0      17.0      18.0
```

Overall median = 16.55

A 95.0% CI for median(41) - median(63): (-0.16,3.02)

Mood median test for WL (%)

Chi-Square = 5.93   DF = 1   P = 0.015

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           3  10    42.0   16.5        (-----------*-----------------)
63          35  23    34.0    5.0  (-*-)
                                   ----+---------+---------+---------+--
                                    35.0      40.0      45.0      50.0
```

Overall median = 34.0

A 95.0% CI for median(41) - median(63): (2.8,16.3)

Mood median test for Wp (%)

Chi-Square = 9.30   DF = 1   P = 0.002

```
Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           2  11   21.00   5.00            (---------*------------)
63          36  22   18.00   4.25  (----*----)
                                   -----+---------+---------+---------+-
                                     18.0      20.0      22.0      24.0
```

Overall median = 18.00

A 95.0% CI for median(41) - median(63): (1.00,5.16)

Mood median test for Ip (%)

Chi-Square = 4.23   DF = 1   P = 0.040

```
Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           4   9    22.0   12.0   (---------------*---------------)
63          36  22    16.0    4.0  *----)
                                   ----+---------+---------+---------+--
                                    17.5      21.0      24.5      28.0
```

Overall median = 17.0

A 95.0% CI for median(41) - median(63): (-0.2,11.2)

Mood median test for % GRAVEL

Chi-Square = 0.00   DF = 1   P = 1.000

```
Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
41           3   3    23.5   26.8   (------------------*----------------)
63          15  15    25.5   15.3                     (----*-------)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0
```

Overall median = 25.5

A 95.0% CI for median(41) - median(63): (-22.0,15.0)

Mood median test for % SAND

Chi-Square = 0.36   DF = 1   P = 0.549

```
Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
41           4   2    27.5   11.8   (----------------*--------------)
63          16  14    29.0    9.0                 (-----*-----)
                                    --+---------+---------+---------+----
                                   20.0      25.0      30.0      35.0
```

Overall median = 29.0

A 95.0% CI for median(41) - median(63): (-14.0,11.0)

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           3   3    46.0   29.0  (---------*------------------------)
63          15  15    42.5   15.5     (---*------)
                                   ----+---------+---------+---------+--
                                      40        50        60        70

Overall median = 42.5

A 95.0% CI for median(41) - median(63): (-14.0,34.0)


Mood median test for Bulk Density

Chi-Square = 4.23    DF = 1    P = 0.040

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
41           2   6   2.225  0.048                              (-----*-)
63           8   3   2.090  0.260  (----------------*--------------)
                                   ------+---------+---------+---------+
                                       2.000     2.080     2.160     2.240

Overall median = 2.190

A 95.0% CI for median(41) - median(63): (0.055,0.190)


Mood median test for Dry Density

Chi-Square = 2.36    DF = 1    P = 0.125

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
41           3   5   1.915  0.062                           (----*----)
63           8   3   1.840  0.250   (--------------------*-----------)
                                    -+---------+---------+---------+-----
                                   1.680     1.760     1.840     1.920

Overall median = 1.880

A 95.0% CI for median(41) - median(63): (-0.003,0.148)
```

Results for: Domain 41 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
41	57	19.60	8.68	1.1
64	24	15.34	2.86	0.58

Difference = mu (41) - mu (64)
Estimate for difference: 4.26
95% CI for difference: (1.69, 6.83)
T-Test of difference = 0 (vs not =): T-Value = 3.31 P-Value = 0.001 DF = 76

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	44.5	10.6	2.9
64	27	34.44	2.34	0.45

Difference = mu (41) - mu (64)
Estimate for difference: 10.02
95% CI for difference: (3.53, 16.50)
T-Test of difference = 0 (vs not =): T-Value = 3.36 P-Value = 0.006 DF = 12

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	21.85	4.38	1.2
64	27	17.81	2.24	0.43

Difference = mu (41) - mu (64)
Estimate for difference: 4.03
95% CI for difference: (1.29, 6.78)
T-Test of difference = 0 (vs not =): T-Value = 3.13 P-Value = 0.007 DF = 15

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	22.62	6.78	1.9
64	27	16.63	2.39	0.46

Difference = mu (41) - mu (64)
Estimate for difference: 5.99
95% CI for difference: (1.81, 10.17)
T-Test of difference = 0 (vs not =): T-Value = 3.09 P-Value = 0.009 DF = 13

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
41	6	22.3	13.5	5.5
64	2	19.0	11.3	8.0

Difference = mu (41) - mu (64)
Estimate for difference: 3.33
95% CI for difference: (-38.48, 45.15)
T-Test of difference = 0 (vs not =): T-Value = 0.34 P-Value = 0.764 DF = 2

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
41	6	27.00	7.01	2.9
64	2	27.50	2.12	1.5

Difference = mu (41) - mu (64)
Estimate for difference: -0.50
95% CI for difference: (-8.81, 7.81)
T-Test of difference = 0 (vs not =): T-Value = -0.15 P-Value = 0.883 DF = 5

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
41	6	50.7	16.1	6.6
64	2	53.50	9.19	6.5

Difference = mu (41) - mu (64)
Estimate for difference: -2.83
95% CI for difference: (-32.22, 26.56)
T-Test of difference = 0 (vs not =): T-Value = -0.31 P-Value = 0.779 DF = 3

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	2.2000	0.0807	0.029
64	13	2.1462	0.0859	0.024

Difference = mu (41) - mu (64)
Estimate for difference: 0.0538
95% CI for difference: (-0.0254, 0.1331)
T-Test of difference = 0 (vs not =): T-Value = 1.45 P-Value = 0.168 DF = 15

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	1.8950	0.0735	0.026
64	13	1.8731	0.0910	0.025

Difference = mu (41) - mu (64)
Estimate for difference: 0.0219
95% CI for difference: (-0.0545, 0.0983)
T-Test of difference = 0 (vs not =): T-Value = 0.61 P-Value = 0.553 DF = 17

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
41	57	17.00	46.5	3.23
64	24	15.44	28.0	-3.23
Overall	81		41.0	

H = 10.45 DF = 1 P = 0.001
H = 10.49 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	42.00	28.8	3.10
64	27	34.00	16.5	-3.10
Overall	40		20.5	

H = 9.64 DF = 1 P = 0.002
H = 9.73 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	21.00	29.0	3.18
64	27	18.00	16.4	-3.18
Overall	40		20.5	

H = 10.09 DF = 1 P = 0.001
H = 10.28 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	22.00	27.6	2.67
64	27	17.00	17.1	-2.67
Overall	40		20.5	

H = 7.13 DF = 1 P = 0.008
H = 7.24 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
41	6	23.50	4.7	0.33
64	2	19.00	4.0	-0.33
Overall	8		4.5	

H = 0.11 DF = 1 P = 0.739

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
41	6	27.50	4.5	0.00
64	2	27.50	4.5	0.00
Overall	8		4.5	

H = 0.00 DF = 1 P = 1.000
H = 0.00 DF = 1 P = 1.000 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain                 Ave
Reference  N  Median  Rank      Z
41         6   46.00   4.3  -0.33
64         2   53.50   5.0   0.33
Overall    8           4.5

H = 0.11  DF = 1  P = 0.739
H = 0.11  DF = 1  P = 0.737  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
41          8   2.225      13.9   1.70
64         13   2.180       9.2  -1.70
Overall    21              11.0

H = 2.90  DF = 1  P = 0.089
H = 2.91  DF = 1  P = 0.088  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
41          8   1.915      11.8   0.47
64         13   1.900      10.5  -0.47
Overall    21              11.0

H = 0.22  DF = 1  P = 0.638
H = 0.22  DF = 1  P = 0.635  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 3.51    DF = 1    P = 0.061

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
41          25  32   17.00   4.50                     (----*------)
64          16   8   15.44   4.00  (---------------*---------)
                                   ---+---------+---------+---------+---
                                   13.5      15.0      16.5      18.0

Overall median = 16.80

A 95.0% CI for median(41) - median(64): (-0.21,4.87)

Mood median test for WL (%)

Chi-Square = 7.93    DF = 1    P = 0.005

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           3  10    42.0   16.5        (-----------*-----------------)
64          19   8    34.0    4.0  (-*-)
                                   ----+---------+---------+---------+--
                                    35.0      40.0      45.0      50.0

Overall median = 35.0

A 95.0% CI for median(41) - median(64): (2.0,16.0)
```

```
Mood median test for Wp (%)

Chi-Square = 10.64    DF = 1    P = 0.001

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           2  11   21.00   5.00            (---------*-----------)
64          19   8   18.00   2.00  (----*
                                   -----+---------+---------+---------+-
                                     18.0      20.0      22.0      24.0

Overall median = 18.00

A 95.0% CI for median(41) - median(64): (1.00,6.00)


Mood median test for Ip (%)

Chi-Square = 5.63    DF = 1    P = 0.018

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           4   9    22.0   12.0   (---------------*---------------)
64          19   8    17.0    3.0  (--*
                                   ----+---------+---------+---------+--
                                    17.5      21.0      24.5      28.0

Overall median = 17.0

A 95.0% CI for median(41) - median(64): (0.0,11.0)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
41           3   3    23.5   26.8   (------------------*----------------)
64           1   1    19.0   16.0        (---------*---------)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0

Overall median = 22.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 89.8% CI for median(41) - median(64): (-21.0,27.0)


Mood median test for % SAND

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
41           3   3    27.5   11.8   (----------------*--------------)
64           1   1    27.5    3.0                 (--*--)
                                    --+---------+---------+---------+----
                                   20.0      25.0      30.0      35.0

Overall median = 27.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 89.8% CI for median(41) - median(64): (-12.0,11.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           3   3    46.0   29.0  (---------*-----------------------)
64           1   1    53.5   13.0             (------*-----)
                                   ----+---------+---------+---------+--
                                      40        50        60        70

Overall median = 49.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 89.8% CI for median(41) - median(64): (-27.0,27.0)


Mood median test for Bulk Density

Chi-Square = 3.26    DF = 1    P = 0.071

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
41           3   5   2.225  0.048                       (--------*--)
64          10   3   2.180  0.140  (--------------------*----)
                                   -----+---------+---------+---------+-
                                      2.100     2.150     2.200     2.250

Overall median = 2.200

A 95.0% CI for median(41) - median(64): (-0.010,0.132)


Mood median test for Dry Density

Chi-Square = 0.27    DF = 1    P = 0.604

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
41           4   4   1.915  0.062                 (----------*--------)
64           8   5   1.900  0.145  (----------------------*------------)
                                   --------+---------+---------+--------
                                         1.840     1.880     1.920

Overall median = 1.910

A 95.0% CI for median(41) - median(64): (-0.070,0.122)
```

Results for: Domain 41 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
41         57  19.60   8.68      1.1
65          7  17.71   4.27      1.6

Difference = mu (41) - mu (65)
Estimate for difference:  1.89
95% CI for difference:  (-2.39, 6.17)
T-Test of difference = 0 (vs not =): T-Value = 0.95  P-Value = 0.358  DF = 13


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
41         13   44.5   10.6      2.9
65          8  35.25   5.60      2.0

Difference = mu (41) - mu (65)
Estimate for difference:  9.21
95% CI for difference:  (1.76, 16.66)
T-Test of difference = 0 (vs not =): T-Value = 2.60  P-Value = 0.018  DF = 18


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
41         13  21.85   4.38      1.2
65          8  18.88   1.46     0.52

Difference = mu (41) - mu (65)
Estimate for difference:  2.97
95% CI for difference:  (0.16, 5.78)
T-Test of difference = 0 (vs not =): T-Value = 2.25  P-Value = 0.040  DF = 15


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
41         13  22.62   6.78      1.9
65          8  16.38   4.41      1.6

Difference = mu (41) - mu (65)
Estimate for difference:  6.24
95% CI for difference:  (1.11, 11.37)
T-Test of difference = 0 (vs not =): T-Value = 2.56  P-Value = 0.020  DF = 18


Two-sample T for % GRAVEL

Domain
Reference  N  Mean  StDev  SE Mean
41         6  22.3   13.5      5.5
65         2  20.0   11.3      8.0

Difference = mu (41) - mu (65)
Estimate for difference:  2.33
95% CI for difference:  (-39.48, 44.15)
T-Test of difference = 0 (vs not =): T-Value = 0.24  P-Value = 0.833  DF = 2
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
41	6	27.00	7.01	2.9
65	2	34.00	1.41	1.0

Difference = mu (41) - mu (65)
Estimate for difference: -7.00
95% CI for difference: (-14.80, 0.80)
T-Test of difference = 0 (vs not =): T-Value = -2.31 P-Value = 0.069 DF = 5

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
41	6	50.7	16.1	6.6
65	2	46.0	12.7	9.0

Difference = mu (41) - mu (65)
Estimate for difference: 4.7
95% CI for difference: (-43.3, 52.6)
T-Test of difference = 0 (vs not =): T-Value = 0.42 P-Value = 0.716 DF = 2

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	2.2000	0.0807	0.029
65	7	2.0929	0.0496	0.019

Difference = mu (41) - mu (65)
Estimate for difference: 0.1071
95% CI for difference: (0.0320, 0.1823)
T-Test of difference = 0 (vs not =): T-Value = 3.14 P-Value = 0.009 DF = 11

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	1.8950	0.0735	0.026
65	7	1.7800	0.0995	0.038

Difference = mu (41) - mu (65)
Estimate for difference: 0.1150
95% CI for difference: (0.0132, 0.2168)
T-Test of difference = 0 (vs not =): T-Value = 2.52 P-Value = 0.031 DF = 10

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
41	57	17.00	32.9	0.52
65	7	17.00	29.1	-0.52
Overall	64		32.5	

H = 0.27 DF = 1 P = 0.606
H = 0.27 DF = 1 P = 0.605 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	42.00	13.3	2.17
65	8	37.50	7.3	-2.17
Overall	21		11.0	

H = 4.72 DF = 1 P = 0.030
H = 4.74 DF = 1 P = 0.030 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	21.00	12.8	1.74
65	8	19.00	8.0	-1.74
Overall	21		11.0	

H = 3.02 DF = 1 P = 0.082
H = 3.14 DF = 1 P = 0.076 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	22.00	13.2	2.10
65	8	18.50	7.4	-2.10
Overall	21		11.0	

H = 4.41 DF = 1 P = 0.036
H = 4.45 DF = 1 P = 0.035 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
41	6	23.50	4.7	0.33
65	2	20.00	4.0	-0.33
Overall	8		4.5	

H = 0.11 DF = 1 P = 0.739

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
41	6	27.50	3.8	-1.33
65	2	34.00	6.5	1.33
Overall	8		4.5	

H = 1.78 DF = 1 P = 0.182

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
41	6	46.00	4.7	0.33
65	2	46.00	4.0	-0.33
Overall	8		4.5	

H = 0.11 DF = 1 P = 0.739
H = 0.11 DF = 1 P = 0.737 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
41	8	2.225	10.7	2.49
65	7	2.100	4.9	-2.49
Overall	15		8.0	

H = 6.19 DF = 1 P = 0.013
H = 6.22 DF = 1 P = 0.013 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
41	8	1.915	10.6	2.37
65	7	1.810	5.1	-2.37
Overall	15		8.0	

H = 5.63 DF = 1 P = 0.018
H = 5.66 DF = 1 P = 0.017 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.02   DF = 1   P = 0.890

```
Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
41          31  26   17.00   4.50           (---*----)
65           4   3   17.00   4.00  (------------*-----------------)
                                   --------+---------+---------+--------
                                        16.0      18.0      20.0
```

Overall median = 17.00

A 95.0% CI for median(41) - median(65): (-3.20,2.77)

```
Mood median test for WL (%)

Chi-Square = 9.69    DF = 1    P = 0.002

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
41           4   9    42.0   16.5           (---------*--------------)
65           8   0    37.5    8.3  (-----------*---)
                                   ---------+---------+---------+-------
                                         36.0      42.0      48.0

Overall median = 40.0

A 95.0% CI for median(41) - median(65): (0.5,19.0)


Mood median test for Wp (%)

Chi-Square = 2.65    DF = 1    P = 0.104

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
41           5   8   21.00   5.00         (-----------*----------------)
65           6   2   19.00   1.50  (------*-----)
                                   --------+---------+---------+--------
                                        19.2      20.8      22.4

Overall median = 19.00

A 95.0% CI for median(41) - median(65): (-1.00,5.00)


Mood median test for Ip (%)
Chi-Square = 6.39    DF = 1    P = 0.011

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41           4   9    22.0   12.0            (----------*----------)
65           7   1    18.5    6.3  (-------------*)
                                   -------+---------+---------+---------
                                       15.0      20.0      25.0

Overall median = 19.0

A 95.0% CI for median(41) - median(65): (2.4,15.0)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
41           3   3    23.5   26.8   (------------------*----------------)
65           1   1    20.0   16.0         (---------*---------)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0

Overall median = 22.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 89.8% CI for median(41) - median(65): (-22.0,26.0)
```

```
Mood median test for % SAND

Chi-Square = 2.67    DF = 1    P = 0.102

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
41           4   2    27.5   11.8   (----------------*--------------)
65           0   2    34.0    2.0                               (-*-)
                                    --+---------+---------+---------+----
                                   20.0      25.0      30.0      35.0

Overall median = 30.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 89.8% CI for median(41) - median(65): (-18.0,4.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           3   3    46.0   29.0  (---------*------------------------)
65           1   1    46.0   18.0   (--------*--------)
                                   ----+---------+---------+---------+--
                                      40        50        60        70

Overall median = 46.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 89.8% CI for median(41) - median(65): (-22.0,37.0)


Mood median test for Bulk Density

Chi-Square = 11.48    DF = 1    P = 0.001

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
41           1   7   2.225  0.048                          (-------*--)
65           7   0   2.100  0.070    (---------*----)
                                     +---------+---------+---------+------
                                   2.040     2.100     2.160     2.220

Overall median = 2.160

A 95.0% CI for median(41) - median(65): (0.078,0.190)


Mood median test for Dry Density

Chi-Square = 3.62    DF = 1    P = 0.057

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
41           3   5   1.915  0.062                        (----*----)
65           6   1   1.810  0.120  (--------------*-----)
                                   ---------+---------+---------+-------
                                          1.760     1.840     1.920

Overall median = 1.880

A 95.0% CI for median(41) - median(65): (0.040,0.207)
```

Results for: Domain 41 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
41	57	19.60	8.68	1.1
71	44	14.56	5.80	0.87

Difference = mu (41) - mu (71)
Estimate for difference: 5.04
95% CI for difference: (2.18, 7.91)
T-Test of difference = 0 (vs not =): T-Value = 3.49 P-Value = 0.001 DF = 97

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	44.5	10.6	2.9
71	17	31.24	2.61	0.63

Difference = mu (41) - mu (71)
Estimate for difference: 13.23
95% CI for difference: (6.72, 19.73)
T-Test of difference = 0 (vs not =): T-Value = 4.39 P-Value = 0.001 DF = 13

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	21.85	4.38	1.2
71	17	15.35	1.73	0.42

Difference = mu (41) - mu (71)
Estimate for difference: 6.49
95% CI for difference: (3.74, 9.25)
T-Test of difference = 0 (vs not =): T-Value = 5.06 P-Value = 0.000 DF = 14

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	22.62	6.78	1.9
71	17	15.88	1.96	0.48

Difference = mu (41) - mu (71)
Estimate for difference: 6.73
95% CI for difference: (2.54, 10.92)
T-Test of difference = 0 (vs not =): T-Value = 3.47 P-Value = 0.004 DF = 13

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
41	6	22.3	13.5	5.5
71	16	20.69	6.81	1.7

Difference = mu (41) - mu (71)
Estimate for difference: 1.65
95% CI for difference: (-13.20, 16.49)
T-Test of difference = 0 (vs not =): T-Value = 0.29 P-Value = 0.787 DF = 5

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
41	6	27.00	7.01	2.9
71	16	24.37	7.67	1.9

Difference = mu (41) - mu (71)
Estimate for difference: 2.63
95% CI for difference: (-5.17, 10.42)
T-Test of difference = 0 (vs not =): T-Value = 0.76 P-Value = 0.466 DF = 9

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
41	6	50.7	16.1	6.6
71	16	52.1	11.3	2.8

Difference = mu (41) - mu (71)
Estimate for difference: -1.46
95% CI for difference: (-18.94, 16.02)
T-Test of difference = 0 (vs not =): T-Value = -0.20 P-Value = 0.845 DF = 6

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	2.2000	0.0807	0.029
71	12	2.2583	0.0486	0.014

Difference = mu (41) - mu (71)
Estimate for difference: -0.0583
95% CI for difference: (-0.1292, 0.0125)
T-Test of difference = 0 (vs not =): T-Value = -1.83 P-Value = 0.096 DF = 10

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
41	8	1.8950	0.0735	0.026
71	12	1.9937	0.0718	0.021

Difference = mu (41) - mu (71)
Estimate for difference: -0.0987
95% CI for difference: (-0.1700, -0.0274)
T-Test of difference = 0 (vs not =): T-Value = -2.97 P-Value = 0.010 DF = 14

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
41	57	17.00	64.9	5.43
71	44	13.00	33.0	-5.43
Overall	101		51.0	

H = 29.46 DF = 1 P = 0.000
H = 29.63 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
41	57	17.00	64.9	5.43
71	44	13.00	33.0	-5.43
Overall	101		51.0	

H = 29.46 DF = 1 P = 0.000
H = 29.63 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	42.00	22.6	3.87
71	17	31.00	10.1	-3.87
Overall	30		15.5	

H = 14.99 DF = 1 P = 0.000
H = 15.13 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	21.00	23.5	4.37
71	17	16.00	9.4	-4.37
Overall	30		15.5	

H = 19.13 DF = 1 P = 0.000
H = 19.57 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	22.00	20.4	2.66
71	17	16.00	11.8	-2.66
Overall	30		15.5	

H = 7.06 DF = 1 P = 0.008
H = 7.14 DF = 1 P = 0.008 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
41	6	23.50	11.8	0.11
71	16	19.00	11.4	-0.11
Overall	22		11.5	

H = 0.01 DF = 1 P = 0.912
H = 0.01 DF = 1 P = 0.912 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
41	6	27.50	13.0	0.66
71	16	23.50	10.9	-0.66
Overall	22		11.5	

H = 0.44 DF = 1 P = 0.507
H = 0.45 DF = 1 P = 0.504 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
41	6	46.00	10.6	-0.41
71	16	53.00	11.8	0.41
Overall	22		11.5	

H = 0.16 DF = 1 P = 0.685
H = 0.16 DF = 1 P = 0.685 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
41	8	2.225	6.9	-2.20
71	12	2.260	12.9	2.20
Overall	20		10.5	

H = 4.83 DF = 1 P = 0.028
H = 4.88 DF = 1 P = 0.027 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
41	8	1.915	5.6	-3.01
71	12	1.991	13.8	3.01
Overall	20		10.5	

H = 9.05 DF = 1 P = 0.003
H = 9.07 DF = 1 P = 0.003 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 19.22   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
41          19  38   17.00   4.50                      (----*------)
71          34  10   13.00   3.75  *-----)
                                   ---+---------+---------+---------+---
                                   13.5      15.0      16.5      18.0
```

Overall median = 16.00

A 95.0% CI for median(41) - median(71): (2.50,5.00)

Mood median test for WL (%)

Chi-Square = 11.00   DF = 1   P = 0.001

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
41           2  11    42.0   16.5               (---------*--------------)
71          13   4    31.0    3.5     (-*)
                                      +---------+---------+---------+------
                                   30.0      36.0      42.0      48.0
```

Overall median = 33.0

A 95.0% CI for median(41) - median(71): (5.0,20.0)

```
Mood median test for Wp (%)

Chi-Square = 22.71    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
41           2  11   21.00   5.00                  (------*--------)
71          17   0   16.00   3.00  (-----*---)
                                   ---+---------+---------+---------+---
                                   15.0      18.0      21.0      24.0

Overall median = 17.00

A 95.0% CI for median(41) - median(71): (2.00,8.00)
```

```
Mood median test for Ip (%)

Chi-Square = 8.17    DF = 1    P = 0.004

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
41           4   9    22.0   12.0      (---------------*---------------)
71          14   3    16.0    2.5  (--*--)
                                   -------+---------+---------+---------
                                       17.5      21.0      24.5

Overall median = 17.0

A 95.0% CI for median(41) - median(71): (0.0,12.0)
```

```
Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
41           3   3    23.5   26.8   (------------------*----------------)
71           8   8    19.0    7.5               (--*----)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0

Overall median = 19.0

A 95.0% CI for median(41) - median(71): (-15.0,20.0)
```

```
Mood median test for % SAND

Chi-Square = 0.07    DF = 1    P = 0.793

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
41           3   3    27.5   11.8      (----------------*--------------)
71           9   7    23.5   14.0  (------------*--------------)
                                   ------+---------+---------+---------+
                                      20.0      25.0      30.0      35.0

Overall median = 26.0

A 95.0% CI for median(41) - median(71): (-13.0,17.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.49    DF = 1    P = 0.484

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           4   2    46.0   29.0  (---------*-----------------------)
71           8   8    53.0   15.5            (-----*-----)
                                   ----+---------+---------+---------+--
                                      40        50        60        70

Overall median = 52.0

A 95.0% CI for median(41) - median(71): (-23.0,24.0)


Mood median test for Bulk Density

Chi-Square = 5.69    DF = 1    P = 0.017

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
41           7   1   2.225  0.048  (-------------*----)
71           4   8   2.260  0.058                 (-------*-------)
                                   --------+---------+---------+--------
                                         2.205     2.240     2.275

Overall median = 2.240

A 95.0% CI for median(41) - median(71): (-0.100,0.000)


Mood median test for Dry Density

Chi-Square = 7.50    DF = 1    P = 0.006

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
41           7   1   1.915  0.062  (--------*------)
71           3   9   1.991  0.067                    (----*--------)
                                   ------+---------+---------+---------+
                                       1.900     1.950     2.000     2.050

Overall median = 1.967

A 95.0% CI for median(41) - median(71): (-0.147,-0.023)
```

Results for: Domain 41 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
41	57	19.60	8.68	1.1
72	26	15.13	4.24	0.83

Difference = mu (41) - mu (72)
Estimate for difference: 4.48
95% CI for difference: (1.65, 7.30)
T-Test of difference = 0 (vs not =): T-Value = 3.15 P-Value = 0.002 DF = 80

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	44.5	10.6	2.9
72	10	30.50	4.84	1.5

Difference = mu (41) - mu (72)
Estimate for difference: 13.96
95% CI for difference: (6.96, 20.96)
T-Test of difference = 0 (vs not =): T-Value = 4.21 P-Value = 0.001 DF = 17

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	21.85	4.38	1.2
72	10	15.20	1.99	0.63

Difference = mu (41) - mu (72)
Estimate for difference: 6.65
95% CI for difference: (3.76, 9.53)
T-Test of difference = 0 (vs not =): T-Value = 4.86 P-Value = 0.000 DF = 17

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
41	13	22.62	6.78	1.9
72	10	15.30	3.71	1.2

Difference = mu (41) - mu (72)
Estimate for difference: 7.32
95% CI for difference: (2.68, 11.95)
T-Test of difference = 0 (vs not =): T-Value = 3.30 P-Value = 0.004 DF = 19

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
41	6	22.3	13.5	5.5
72	9	20.56	7.14	2.4

Difference = mu (41) - mu (72)
Estimate for difference: 1.78
95% CI for difference: (-12.93, 16.48)
T-Test of difference = 0 (vs not =): T-Value = 0.30 P-Value = 0.777 DF = 6

```
Two-sample T for % SAND

Domain
Reference  N   Mean  StDev  SE Mean
41         6  27.00   7.01      2.9
72         9  27.56   7.20      2.4

Difference = mu (41) - mu (72)
Estimate for difference:  -0.56
95% CI for difference:  (-8.78, 7.67)
T-Test of difference = 0 (vs not =): T-Value = -0.15  P-Value = 0.884  DF = 11


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference  N   Mean  StDev  SE Mean
41         6   50.7   16.1      6.6
72         9  51.89   7.66      2.6


Difference = mu (41) - mu (72)
Estimate for difference:  -1.22
95% CI for difference:  (-18.45, 16.00)
T-Test of difference = 0 (vs not =): T-Value = -0.17  P-Value = 0.868  DF = 6


Two-sample T for Bulk Density

Domain
Reference  N    Mean   StDev  SE Mean
41         8  2.2000  0.0807    0.029
72         7   2.221   0.100    0.038

Difference = mu (41) - mu (72)
Estimate for difference:  -0.0214
95% CI for difference:  (-0.1259, 0.0831)
T-Test of difference = 0 (vs not =): T-Value = -0.45  P-Value = 0.661  DF = 11


Two-sample T for Dry Density

Domain
Reference  N    Mean   StDev  SE Mean
41         8  1.8950  0.0735    0.026
72         7   1.944   0.155    0.059

Difference = mu (41) - mu (72)
Estimate for difference:  -0.0493
95% CI for difference:  (-0.1973, 0.0986)
T-Test of difference = 0 (vs not =): T-Value = -0.77  P-Value = 0.464  DF = 8
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
41         57   17.00      47.9   3.31
72         26   13.00      29.0  -3.31
Overall    83              42.0

H = 10.98  DF = 1  P = 0.001
H = 11.03  DF = 1  P = 0.001  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	42.00	16.2	3.38
72	10	30.00	6.5	-3.38
Overall	23		12.0	

H = 11.42 DF = 1 P = 0.001
H = 11.46 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	21.00	16.6	3.69
72	10	15.00	6.0	-3.69
Overall	23		12.0	

H = 13.62 DF = 1 P = 0.000
H = 13.74 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
41	13	22.00	15.0	2.45
72	10	15.50	8.1	-2.45
Overall	23		12.0	

H = 6.00 DF = 1 P = 0.014
H = 6.07 DF = 1 P = 0.014 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
41	6	23.50	8.6	0.41
72	9	17.00	7.6	-0.41
Overall	15		8.0	

H = 0.17 DF = 1 P = 0.680
H = 0.17 DF = 1 P = 0.679 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
41	6	27.50	8.1	0.06
72	9	26.00	7.9	-0.06
Overall	15		8.0	

H = 0.00 DF = 1 P = 0.953
H = 0.00 DF = 1 P = 0.953 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain                 Ave
Reference   N  Median  Rank      Z
41          6   46.00   7.2  -0.59
72          9   53.00   8.6   0.59
Overall    15           8.0

H = 0.35  DF = 1  P = 0.556
H = 0.35  DF = 1  P = 0.555  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain                 Ave
Reference   N  Median  Rank      Z
41          8   2.225   6.4  -1.50
72          7   2.240   9.9   1.50
Overall    15           8.0

H = 2.26  DF = 1  P = 0.132
H = 2.35  DF = 1  P = 0.126  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
41          8   1.915       5.8  -2.08
72          7   2.000      10.6   2.08
Overall    15               8.0

H = 4.34  DF = 1  P = 0.037
H = 4.35  DF = 1  P = 0.037  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 3.31    DF = 1    P = 0.069

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
41          25  32   17.00   4.50                        (----*------)
72          17   9   13.00   5.75  (--*-------------------------)
                                   ------+---------+---------+---------+
                                      13.5      15.0      16.5      18.0

Overall median = 16.80

A 95.0% CI for median(41) - median(72): (-0.24,5.00)


Mood median test for WL (%)

Chi-Square = 10.14    DF = 1    P = 0.001

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
41           3  10    42.0   16.5                 (--------*------------)
72           9   1    30.0    5.3    (---*--)
                                     -+---------+---------+---------+-----
                                   28.0      35.0      42.0      49.0

Overall median = 34.0

A 95.0% CI for median(41) - median(72): (8.1,23.0)
```

```
Mood median test for Wp (%)

Chi-Square = 9.44    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           5   8   21.00   5.00                   (------*--------)
72          10   0   15.00   2.75  (---*-----)
                                   ----+---------+---------+---------+--
                                    15.0      18.0      21.0      24.0

Overall median = 19.00

A 95.0% CI for median(41) - median(72): (3.00,9.00)


Mood median test for Ip (%)

Chi-Square = 5.49    DF = 1    P = 0.019

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
41           4   9    22.0   12.0           (----------*----------)
72           8   2    15.5    5.3  (------*---)
                                   ------+---------+---------+---------+
                                      15.0      20.0      25.0      30.0

Overall median = 17.0

A 95.0% CI for median(41) - median(72): (3.8,15.0)


Mood median test for % GRAVEL

Chi-Square = 0.04    DF = 1    P = 0.833

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
41           3   3    23.5   26.8   (------------------*----------------)
72           5   4    17.0   13.5            (--*-------------)
                                    -+---------+---------+---------+-----
                                   8.0      16.0      24.0      32.0

Overall median = 17.0

A 95.0% CI for median(41) - median(72): (-19.5,19.6)


Mood median test for % SAND

Chi-Square = 0.04    DF = 1    P = 0.833

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
41           3   3    27.5   11.8   (----------------*--------------)
72           5   4    26.0    7.5         (-------*--------)
                                    --+---------+---------+---------+----
                                   20.0      25.0      30.0      35.0

Overall median = 26.0


A 95.0% CI for median(41) - median(72): (-7.8,8.9)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.71    DF = 1    P = 0.398

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
41           4   2    46.0   29.0  (---------*-----------------------)
72           4   5    53.0   15.5         (---------*------)
                                   ----+---------+---------+---------+--
                                      40        50        60        70

Overall median = 52.0

A 95.0% CI for median(41) - median(72): (-19.1,20.4)


Mood median test for Bulk Density

Chi-Square = 3.62    DF = 1    P = 0.057

Domain                               Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  -----+---------+---------+---------+-
41          5    3   2.225  0.048   (---------------*----)
72          1    6   2.240  0.040  (---------------------*--------------)
                                   -----+---------+---------+---------+-
                                      2.190     2.220     2.250     2.280

Overall median = 2.240

A 95.0% CI for median(41) - median(72): (-0.082,0.000)


Mood median test for Dry Density

Chi-Square = 3.23    DF = 1    P = 0.072

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
41           6   2   1.915  0.062     (--------*------)
72           2   5   2.000  0.070  (----------------------------*----)
                                   ---------+---------+---------+-------
                                          1.900     1.950     2.000

Overall median = 1.948

A 95.0% CI for median(41) - median(72): (-0.138,-0.020)
```

Results for: Domain 43 v 51

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
43	50	20.44	7.73	1.1
51	10	14.36	8.77	2.8

Difference = mu (43) - mu (51)
Estimate for difference: 6.08
95% CI for difference: (-0.48, 12.64)
T-Test of difference = 0 (vs not =): T-Value = 2.04 P-Value = 0.066 DF = 11

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	37.35	7.61	1.8
51	13	27.08	2.90	0.80

Difference = mu (43) - mu (51)
Estimate for difference: 10.28
95% CI for difference: (6.09, 14.46)
T-Test of difference = 0 (vs not =): T-Value = 5.11 P-Value = 0.000 DF = 21

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	20.29	3.53	0.86
51	13	17.08	1.71	0.47

Difference = mu (43) - mu (51)
Estimate for difference: 3.217
95% CI for difference: (1.198, 5.237)
T-Test of difference = 0 (vs not =): T-Value = 3.29 P-Value = 0.003 DF = 24

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	17.06	5.15	1.2
51	13	10.00	1.83	0.51

Difference = mu (43) - mu (51)
Estimate for difference: 7.06
95% CI for difference: (4.25, 9.87)
T-Test of difference = 0 (vs not =): T-Value = 5.23 P-Value = 0.000 DF = 20

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
43	15	38.1	12.9	3.3
51	10	38.20	9.73	3.1

Difference = mu (43) - mu (51)
Estimate for difference: -0.07
95% CI for difference: (-9.46, 9.33)
T-Test of difference = 0 (vs not =): T-Value = -0.01 P-Value = 0.988 DF = 22

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
43	15	33.93	7.56	2.0
51	10	16.00	4.71	1.5

Difference = mu (43) - mu (51)
Estimate for difference: 17.93
95% CI for difference: (12.84, 23.03)
T-Test of difference = 0 (vs not =): T-Value = 7.30 P-Value = 0.000 DF = 22

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
43	15	27.9	11.0	2.8
51	10	38.5	12.7	4.0

Difference = mu (43) - mu (51)
Estimate for difference: -10.57
95% CI for difference: (-20.94, -0.20)
T-Test of difference = 0 (vs not =): T-Value = -2.15 P-Value = 0.046 DF = 17

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	2.112	0.162	0.047
51	3	2.3267	0.0379	0.022

Difference = mu (43) - mu (51)
Estimate for difference: -0.2150
95% CI for difference: (-0.3275, -0.1025)
T-Test of difference = 0 (vs not =): T-Value = -4.16 P-Value = 0.001 DF = 12

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	1.810	0.176	0.051
51	3	2.1600	0.0361	0.021

Difference = mu (43) - mu (51)
Estimate for difference: -0.3500
95% CI for difference: (-0.4698, -0.2302)
T-Test of difference = 0 (vs not =): T-Value = -6.37 P-Value = 0.000 DF = 12

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
43	50	17.00	33.0	2.44
51	10	12.00	18.2	-2.44
Overall	60		30.5	

H = 5.95 DF = 1 P = 0.015
H = 5.98 DF = 1 P = 0.015 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	39.00	20.7	3.68
51	13	27.00	8.7	-3.68
Overall	30		15.5	

H = 13.56 DF = 1 P = 0.000
H = 13.64 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	20.00	18.8	2.36
51	13	17.00	11.2	-2.36
Overall	30		15.5	

H = 5.59 DF = 1 P = 0.018
H = 5.70 DF = 1 P = 0.017 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	16.00	21.0	3.93
51	13	10.00	8.3	-3.93
Overall	30		15.5	

H = 15.48 DF = 1 P = 0.000
H = 15.57 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
43	15	41.00	13.0	0.00
51	10	39.50	13.0	0.00
Overall	25		13.0	

H = 0.00 DF = 1 P = 1.000
H = 0.00 DF = 1 P = 1.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
43	15	33.00	17.8	3.99
51	10	16.00	5.8	-3.99
Overall	25		13.0	

H = 15.95 DF = 1 P = 0.000
H = 15.99 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
43	15	23.00	10.5	-2.05
51	10	37.50	16.7	2.05
Overall	25		13.0	

H = 4.21 DF = 1 P = 0.040
H = 4.22 DF = 1 P = 0.040 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
43	12	2.155	6.7	-2.31
51	3	2.310	13.3	2.31
Overall	15		8.0	

H = 5.33 DF = 1 P = 0.021
* NOTE * One or more small samples

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
43	12	1.835	6.5	-2.60
51	3	2.150	14.0	2.60
Overall	15		8.0	

H = 6.75 DF = 1 P = 0.009
H = 6.76 DF = 1 P = 0.009 (adjusted for ties)

* NOTE * One or more small samples

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 1.09   DF = 1   P = 0.296

```
Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
43          26  24    17.0   11.3                      (--*----)
51           7   3    12.0   12.2  (-----------*--------------------)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0
```

Overall median = 17.0

A 95.0% CI for median(43) - median(51): (-1.6,10.5)

```
Mood median test for WL (%)

Chi-Square = 11.00    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
43           4  13    39.0   12.5                (---------------*-------)
51          11   2    27.0    4.5    (---*----)
                                     +---------+---------+---------+------
                                   25.0      30.0      35.0      40.0

Overall median = 30.5

A 95.0% CI for median(43) - median(51): (2.0,16.0)


Mood median test for Wp (%)

Chi-Square = 5.13    DF = 1    P = 0.024

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
43           6  11   20.00   7.00           (--------------*--------------)
51          10   3   17.00   2.50    (----*------)
                                     +---------+---------+---------+------
                                   16.0      18.0      20.0      22.0

Overall median = 18.00

A 95.0% CI for median(43) - median(51): (0.00,7.00)


Mood median test for Ip (%)

Chi-Square = 20.07    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
43           3  14    16.0    5.5                    (-----*---------)
51          13   0    10.0    2.5   (--*----)
                                    +---------+---------+---------+------
                                   9.0      12.0      15.0      18.0

Overall median = 13.0

A 95.0% CI for median(43) - median(51): (4.0,10.0)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
43           9   6    41.0   20.0  (-------------------*-------------)
51           6   4    39.5   14.8    (---------------*------------)
                                   ---------+---------+---------+-------
                                         35.0      40.0      45.0

Overall median = 41.0

A 95.0% CI for median(43) - median(51): (-14.0,11.3)
```

```
Mood median test for % SAND

Chi-Square = 15.38    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
43           3  12    33.0   10.0                        (-----*------)
51          10   0    16.0    5.3  (----*--)
                                   --+---------+---------+---------+----
                                   14.0      21.0      28.0      35.0

Overall median = 27.0

A 95.0% CI for median(43) - median(51): (14.1,23.3)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.23    DF = 1    P = 0.072

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
43          10   5    23.0   17.0   (---*-----------------)
51           3   7    37.5   11.8                  (---------*--------)
                                    -+---------+---------+---------+-----
                                   21.0      28.0      35.0      42.0

Overall median = 31.0

A 95.0% CI for median(43) - median(51): (-17.6,-2.1)


Mood median test for Bulk Density

Chi-Square = 4.29    DF = 1    P = 0.038

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
43           8   4   2.155  0.265  (-----------------*---)
51           0   3   2.310  0.070                              (*----)
                                   --------+---------+---------+--------
                                         2.04      2.16      2.28

Overall median = 2.180
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(43) - median(51): (-0.450,-0.080)


Mood median test for Dry Density

Chi-Square = 5.63    DF = 1    P = 0.018

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
43           9   3   1.835  0.252   (-----------*---)
51           0   3   2.150  0.070                                  (*---)
                                    +---------+---------+---------+------
                                   1.65      1.80      1.95      2.10

Overall median = 1.890
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(43) - median(51): (-0.570,-0.230)
```

Results for: Domain 43 v 52

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
43         50  20.44   7.73      1.1
52         24   8.48   2.78     0.57

Difference = mu (43) - mu (52)
Estimate for difference:  11.96
95% CI for difference:  (9.50, 14.42)
T-Test of difference = 0 (vs not =): T-Value = 9.72  P-Value = 0.000  DF = 68


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
43         17  37.35   7.61      1.8
52         24  25.33   2.73     0.56

Difference = mu (43) - mu (52)
Estimate for difference:  12.02
95% CI for difference:  (7.97, 16.07)
T-Test of difference = 0 (vs not =): T-Value = 6.24  P-Value = 0.000  DF = 18


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
43         17  20.29   3.53     0.86
52         24  16.21   1.61     0.33

Difference = mu (43) - mu (52)
Estimate for difference:  4.086
95% CI for difference:  (2.171, 6.000)
T-Test of difference = 0 (vs not =): T-Value = 4.45  P-Value = 0.000  DF = 20


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
43         17  17.06   5.15      1.2
52         24   9.13   2.11     0.43

Difference = mu (43) - mu (52)
Estimate for difference:  7.93
95% CI for difference:  (5.17, 10.70)
T-Test of difference = 0 (vs not =): T-Value = 6.00  P-Value = 0.000  DF = 19


Two-sample T for % GRAVEL

Domain
Reference   N  Mean  StDev  SE Mean
43         15  38.1   12.9      3.3
52         15  37.5   13.5      3.5

Difference = mu (43) - mu (52)
Estimate for difference:  0.67
95% CI for difference:  (-9.20, 10.53)
T-Test of difference = 0 (vs not =): T-Value = 0.14  P-Value = 0.891  DF = 27
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
43	15	33.93	7.56	2.0
52	15	18.47	6.10	1.6

Difference = mu (43) - mu (52)
Estimate for difference: 15.47
95% CI for difference: (10.31, 20.63)
T-Test of difference = 0 (vs not =): T-Value = 6.16 P-Value = 0.000 DF = 26

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
43	15	27.9	11.0	2.8
52	15	36.7	15.7	4.1

Difference = mu (43) - mu (52)
Estimate for difference: -8.73
95% CI for difference: (-18.94, 1.47)
T-Test of difference = 0 (vs not =): T-Value = -1.76 P-Value = 0.090 DF = 25

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	2.112	0.162	0.047
52	7	2.364	0.125	0.047

Difference = mu (43) - mu (52)
Estimate for difference: -0.2526
95% CI for difference: (-0.3941, -0.1111)
T-Test of difference = 0 (vs not =): T-Value = -3.81 P-Value = 0.002 DF = 15

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	1.810	0.176	0.051
52	7	2.196	0.154	0.058

Difference = mu (43) - mu (52)
Estimate for difference: -0.3857
95% CI for difference: (-0.5517, -0.2197)
T-Test of difference = 0 (vs not =): T-Value = -4.98 P-Value = 0.000 DF = 14

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
43	50	17.000	49.1	6.73
52	24	8.450	13.2	-6.73
Overall	74		37.5	

H = 45.24 DF = 1 P = 0.000
H = 45.34 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	39.00	31.8	4.86
52	24	25.50	13.4	-4.86
Overall	41		21.0	

H = 23.58 DF = 1 P = 0.000
H = 23.76 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	20.00	29.0	3.61
52	24	16.00	15.3	-3.61
Overall	41		21.0	

H = 13.05 DF = 1 P = 0.000
H = 13.49 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	16.000	31.4	4.66
52	24	9.000	13.7	-4.66
Overall	41		21.0	

H = 21.69 DF = 1 P = 0.000
H = 21.88 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
43	15	41.00	15.9	0.27
52	15	36.00	15.1	-0.27
Overall	30		15.5	

H = 0.07 DF = 1 P = 0.787
H = 0.07 DF = 1 P = 0.787 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
43	15	33.00	22.3	4.25
52	15	19.00	8.7	-4.25
Overall	30		15.5	

H = 18.08 DF = 1 P = 0.000
H = 18.11 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
43         15   23.00      12.6  -1.78
52         15   38.00      18.4   1.78
Overall    30              15.5

H = 3.18  DF = 1  P = 0.074
H = 3.19  DF = 1  P = 0.074  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
43         12   2.155       7.2  -2.83
52          7   2.410      14.8   2.83
Overall    19              10.0

H = 8.02  DF = 1  P = 0.005
H = 8.07  DF = 1  P = 0.005  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
43         12   1.835       6.8  -3.30
52          7   2.200      15.6   3.30
Overall    19              10.0

H = 10.86  DF = 1  P = 0.001
H = 10.87  DF = 1  P = 0.001  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 35.52    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
43          13  37    17.0   11.3                              (--*-----)
52          24   0     8.4    4.5    (---*----)
                                     +---------+---------+---------+------
                                   7.0      10.5      14.0      17.5

Overall median = 15.5

A 95.0% CI for median(43) - median(52): (7.0,10.8)


Mood median test for WL (%)

Chi-Square = 23.18    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
43           2  15    39.0   12.5                 (------------*------)
52          21   3    25.5    3.8     (--*-)
                                      +---------+---------+---------+------
                                   24.0      30.0      36.0      42.0

Overall median = 27.0

A 95.0% CI for median(43) - median(52): (4.0,17.1)
```

```
Mood median test for Wp (%)

Chi-Square = 8.91    DF = 1    P = 0.003

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
43           4  13   20.00   7.00             (-----------*-----------)
52          17   7   16.00   2.75     (---*)
                                      +---------+---------+---------+------
                                   15.0      17.5      20.0      22.5

Overall median = 16.00

A 95.0% CI for median(43) - median(52): (1.95,7.00)


Mood median test for Ip (%)

Chi-Square = 23.18    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
43           2  15    16.0    5.5                    (-----*---------)
52          21   3     9.0    3.0  (--*---)
                                   ---+---------+---------+---------+---
                                    9.0      12.0      15.0      18.0

Overall median = 11.0

A 95.0% CI for median(43) - median(52): (6.0,11.0)


Mood median test for % GRAVEL

Chi-Square = 0.13    DF = 1    P = 0.715

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
43           7   8    41.0   20.0      (----------------*-----------)
52           8   7    36.0   22.0     (---------*--------------------)
                                      +---------+---------+---------+------
                                   30.0      36.0      42.0      48.0

Overall median = 37.0

A 95.0% CI for median(43) - median(52): (-12.0,14.0)


Mood median test for % SAND

Chi-Square = 16.13    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
43           2  13    33.0   10.0                           (-----*------)
52          13   2    19.0    9.0     (------*---)
                                      +---------+---------+---------+------
                                   14.0      21.0      28.0      35.0

Overall median = 25.5

A 95.0% CI for median(43) - median(52): (9.0,22.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.33    DF = 1    P = 0.068

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
43          10   5    23.0   17.0    (---*-----------------)
52           5  10    38.0   21.0            (----------------*--------)
                                     -+---------+---------+---------+-----
                                   21.0      28.0      35.0      42.0

Overall median = 28.5

A 95.0% CI for median(43) - median(52): (-21.0,5.0)


Mood median test for Bulk Density

Chi-Square = 6.54    DF = 1    P = 0.011

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
43           9   3   2.155  0.265    (-------------*--)
52           1   6   2.410  0.120                        (----------*-)
                                     +---------+---------+---------+------
                                   1.95      2.10      2.25      2.40

Overall median = 2.190

A 95.0% CI for median(43) - median(52): (-0.381,-0.099)


Mood median test for Dry Density

Chi-Square = 12.31    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
43          10   2   1.835  0.252  (---------*--)
52           0   7   2.200  0.250                    (-------*------)
                                   --------+---------+---------+--------
                                         1.80      2.00      2.20

Overall median = 1.900

A 95.0% CI for median(43) - median(52): (-0.641,-0.189)
```

Results for: Domain 43 v 61

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
43	50	20.44	7.73	1.1
61	9	17.50	6.94	2.3

Difference = mu (43) - mu (61)
Estimate for difference: 2.94
95% CI for difference: (-2.69, 8.57)
T-Test of difference = 0 (vs not =): T-Value = 1.15 P-Value = 0.275 DF = 11

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	2.112	0.162	0.047
61	9	2.120	0.154	0.051

Difference = mu (43) - mu (61)
Estimate for difference: -0.0083
95% CI for difference: (-0.1548, 0.1382)
T-Test of difference = 0 (vs not =): T-Value = -0.12 P-Value = 0.906 DF = 17

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	1.810	0.176	0.051
61	9	1.817	0.222	0.074

Difference = mu (43) - mu (61)
Estimate for difference: -0.0066
95% CI for difference: (-0.1995, 0.1863)
T-Test of difference = 0 (vs not =): T-Value = -0.07 P-Value = 0.942 DF = 14

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
43	50	17.00	31.2	1.31
61	9	16.30	23.1	-1.31
Overall	59		30.0	

H = 1.71 DF = 1 P = 0.191
H = 1.72 DF = 1 P = 0.190 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
43	12	2.155	11.0	-0.04
61	9	2.130	11.1	0.04
Overall	21		11.0	

H = 0.00 DF = 1 P = 0.972
H = 0.00 DF = 1 P = 0.972 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
43         12   1.835      10.9  -0.07
61          9   1.790      11.1   0.07
Overall    21              11.0

H = 0.01  DF = 1  P = 0.943
H = 0.01  DF = 1  P = 0.943  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.66    DF = 1    P = 0.416

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
43          26  24    17.0   11.3               (-*-----)
61           6   3    16.3   12.1    (-----------*--------------------)
                                     -+---------+---------+---------+-----
                                    12.0      16.0      20.0      24.0

Overall median = 17.0

A 95.0% CI for median(43) - median(61): (-9.1,6.5)


Mood median test for Bulk Density

Chi-Square = 0.06    DF = 1    P = 0.801

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           6   6   2.155  0.265  (--------------------*----)
61           5   4   2.130  0.215        (-----------*------------)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.140

A 95.0% CI for median(43) - median(61): (-0.212,0.120)


Mood median test for Dry Density

Chi-Square = 0.06    DF = 1    P = 0.801

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           6   6   1.835  0.252       (-----------*---)
61           5   4   1.790  0.380  (-------------*----------------)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10

Overall median = 1.830

A 95.0% CI for median(43) - median(61): (-0.323,0.154)
```

Results for: domain 43 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
43	50	20.44	7.73	1.1
62	131	16.88	5.15	0.45

Difference = mu (43) - mu (62)
Estimate for difference: 3.56
95% CI for difference: (1.20, 5.92)
T-Test of difference = 0 (vs not =): T-Value = 3.01 P-Value = 0.004 DF = 66

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	37.35	7.61	1.8
62	113	34.27	6.08	0.57

Difference = mu (43) - mu (62)
Estimate for difference: 3.09
95% CI for difference: (-0.96, 7.13)
T-Test of difference = 0 (vs not =): T-Value = 1.60 P-Value = 0.126 DF = 19

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	20.29	3.53	0.86
62	113	17.70	2.77	0.26

Difference = mu (43) - mu (62)
Estimate for difference: 2.595
95% CI for difference: (0.721, 4.469)
T-Test of difference = 0 (vs not =): T-Value = 2.90 P-Value = 0.009 DF = 19

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	17.06	5.15	1.2
62	113	16.57	4.48	0.42

Difference = mu (43) - mu (62)
Estimate for difference: 0.49
95% CI for difference: (-2.27, 3.25)
T-Test of difference = 0 (vs not =): T-Value = 0.37 P-Value = 0.713 DF = 19

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
43	15	38.1	12.9	3.3
62	47	24.9	13.6	2.0

Difference = mu (43) - mu (62)
Estimate for difference: 13.24
95% CI for difference: (5.24, 21.24)
T-Test of difference = 0 (vs not =): T-Value = 3.42 P-Value = 0.002 DF = 24

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
43	15	33.93	7.56	2.0
62	47	28.74	7.27	1.1

Difference = mu (43) - mu (62)
Estimate for difference: 5.19
95% CI for difference: (0.58, 9.80)
T-Test of difference = 0 (vs not =): T-Value = 2.33 P-Value = 0.029 DF = 22

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
43	15	27.9	11.0	2.8
62	47	45.0	16.8	2.5

Difference = mu (43) - mu (62)
Estimate for difference: -17.05
95% CI for difference: (-24.66, -9.43)
T-Test of difference = 0 (vs not =): T-Value = -4.54 P-Value = 0.000 DF = 36

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	2.112	0.162	0.047
62	29	2.113	0.106	0.020

Difference = mu (43) - mu (62)
Estimate for difference: -0.0010
95% CI for difference: (-0.1093, 0.1072)
T-Test of difference = 0 (vs not =): T-Value = -0.02 P-Value = 0.984 DF = 15

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	1.810	0.176	0.051
62	29	1.800	0.176	0.033

Difference = mu (43) - mu (62)
Estimate for difference: 0.0100
95% CI for difference: (-0.1162, 0.1362)
T-Test of difference = 0 (vs not =): T-Value = 0.17 P-Value = 0.870 DF = 20

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
43	50	17.00	108.9	2.84
62	131	15.87	84.2	-2.84
Overall	181		91.0	

H = 8.05 DF = 1 P = 0.005
H = 8.05 DF = 1 P = 0.005 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	39.00	79.3	1.62
62	113	34.00	63.4	-1.62
Overall	130		65.5	

H = 2.63 DF = 1 P = 0.105
H = 2.66 DF = 1 P = 0.103 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	20.00	88.6	2.71
62	113	17.00	62.0	-2.71
Overall	130		65.5	

H = 7.33 DF = 1 P = 0.007
H = 7.44 DF = 1 P = 0.006 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	16.00	69.5	0.47
62	113	16.00	64.9	-0.47
Overall	130		65.5	

H = 0.22 DF = 1 P = 0.639
H = 0.22 DF = 1 P = 0.637 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
43	15	41.00	44.2	3.12
62	47	24.00	27.5	-3.12
Overall	62		31.5	

H = 9.75 DF = 1 P = 0.002
H = 9.76 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
43	15	33.00	40.5	2.23
62	47	28.00	28.6	-2.23
Overall	62		31.5	

H = 4.96 DF = 1 P = 0.026
H = 4.97 DF = 1 P = 0.026 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
43         15   23.00      17.4  -3.47
62         47   47.00      36.0   3.47
Overall    62              31.5

H = 12.03  DF = 1  P = 0.001
H = 12.04  DF = 1  P = 0.001  (adjusted for ties)
```

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
43         15   23.00      17.4  -3.47
62         47   47.00      36.0   3.47
Overall    62              31.5

H = 12.03  DF = 1  P = 0.001
H = 12.04  DF = 1  P = 0.001  (adjusted for ties)
```

```
Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
43         12   2.155      20.7  -0.11
62         29   2.150      21.1   0.11
Overall    41              21.0

H = 0.01  DF = 1  P = 0.909
H = 0.01  DF = 1  P = 0.909  (adjusted for ties)
```

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
43         12   1.835      20.9  -0.04
62         29   1.850      21.1   0.04
Overall    41              21.0

H = 0.00  DF = 1  P = 0.966
H = 0.00  DF = 1  P = 0.966  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 2.92    DF = 1    P = 0.088

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
43          20  30   17.00  11.25        (--------*------------------)
62          71  60   15.87   5.61  (----*------)
                                   ---+---------+---------+---------+---
                                   15.6      16.8      18.0      19.2

Overall median = 16.05

A 95.0% CI for median(43) - median(62): (-0.14,3.49)
```

```
Mood median test for WL (%)

Chi-Square = 2.89    DF = 1    P = 0.089

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
43           7  10    39.0   12.5    (---------------------*-----------)
62          71  42    34.0    4.0         (--*
                                     -+---------+---------+---------+-----
                                    31.5      35.0      38.5      42.0

Overall median = 34.0

A 95.0% CI for median(43) - median(62): (-3.0,10.0)


Mood median test for Wp (%)

Chi-Square = 3.57    DF = 1    P = 0.059

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -----+---------+---------+---------+-
43           5  12   20.00   7.00   (--------------*--------------)
62          61  52   17.00   3.00   *----)
                                    -----+---------+---------+---------+-
                                      18.0      20.0      22.0      24.0

Overall median = 17.00

A 95.0% CI for median(43) - median(62): (0.00,6.00)


Mood median test for Ip (%)

Chi-Square = 0.00    DF = 1    P = 0.955

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -------+---------+---------+---------
43           9   8   16.00   5.50   (-------------*-------------------)
62          59  54   16.00   4.00              (--*-----)
                                    -------+---------+---------+---------
                                        15.0      16.5      18.0

Overall median = 16.00

A 95.0% CI for median(43) - median(62): (-3.00,3.00)


Mood median test for % GRAVEL

Chi-Square = 7.12    DF = 1    P = 0.008

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -----+---------+---------+---------+-
43           3  12    41.0   20.0                (------------*--------)
62          28  19    24.0   19.0   (----*-----)
                                    -----+---------+---------+---------+-
                                      24.0      32.0      40.0      48.0

Overall median = 26.5

A 95.0% CI for median(43) - median(62): (5.7,22.3)
```

```
Mood median test for % SAND

Chi-Square = 4.93    DF = 1    P = 0.026

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
43           4  11    33.0   10.0           (-----------*------------)
62          28  19    28.0    9.0  (------*-----)
                                   -------+---------+---------+---------
                                       28.0      31.5      35.0

Overall median = 29.0

A 95.0% CI for median(43) - median(62): (0.7,10.2)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 13.79    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
43          14   1    23.0   17.0   (--*------------)
62          18  29    47.0   20.0                         (----*---)
                                    +---------+---------+---------+------
                                   20        30        40        50

Overall median = 44.0

A 95.0% CI for median(43) - median(62): (-29.0,-11.3)
```

```
Mood median test for Bulk Density

Chi-Square = 0.26    DF = 1    P = 0.613

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
43           6   6   2.155  0.265  (-----------------------*-------)
62          17  12   2.150  0.196            (--------------*-----)
                                   ------+---------+---------+---------+
                                       2.000     2.080     2.160     2.240

Overall median = 2.150

A 95.0% CI for median(43) - median(62): (-0.182,0.136)
```

```
Mood median test for Dry Density

Chi-Square = 0.15    DF = 1    P = 0.699

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
43           7   5   1.835  0.252  (----------------------*-------)
62          15  14   1.850  0.315            (--------------*---------)
                                   ----+---------+---------+---------+--
                                     1.680     1.760     1.840     1.920

Overall median = 1.850

A 95.0% CI for median(43) - median(62): (-0.212,0.142)
```

Results for: Domain 43 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
43	50	20.44	7.73	1.1
63	55	17.40	5.42	0.73

Difference = mu (43) - mu (63)
Estimate for difference: 3.04
95% CI for difference: (0.43, 5.66)
T-Test of difference = 0 (vs not =): T-Value = 2.31 P-Value = 0.023 DF = 86

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	37.35	7.61	1.8
63	58	34.88	4.40	0.58

Difference = mu (43) - mu (63)
Estimate for difference: 2.47
95% CI for difference: (-1.57, 6.52)
T-Test of difference = 0 (vs not =): T-Value = 1.28 P-Value = 0.216 DF = 19

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	20.29	3.53	0.86
63	58	17.98	2.92	0.38

Difference = mu (43) - mu (63)
Estimate for difference: 2.311
95% CI for difference: (0.366, 4.257)
T-Test of difference = 0 (vs not =): T-Value = 2.46 P-Value = 0.022 DF = 22

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	17.06	5.15	1.2
63	58	16.90	3.05	0.40

Difference = mu (43) - mu (63)
Estimate for difference: 0.16
95% CI for difference: (-2.58, 2.91)
T-Test of difference = 0 (vs not =): T-Value = 0.12 P-Value = 0.903 DF = 19

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
43	15	38.1	12.9	3.3
63	30	26.9	11.7	2.1

Difference = mu (43) - mu (63)
Estimate for difference: 11.20
95% CI for difference: (3.05, 19.35)
T-Test of difference = 0 (vs not =): T-Value = 2.83 P-Value = 0.009 DF = 25

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
43	15	33.93	7.56	2.0
63	30	29.70	8.47	1.5

Difference = mu (43) - mu (63)
Estimate for difference: 4.23
95% CI for difference: (-0.85, 9.31)
T-Test of difference = 0 (vs not =): T-Value = 1.70 P-Value = 0.099 DF = 31

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
43	15	27.9	11.0	2.8
63	30	43.4	11.2	2.1

Difference = mu (43) - mu (63)
Estimate for difference: -15.43
95% CI for difference: (-22.61, -8.25)
T-Test of difference = 0 (vs not =): T-Value = -4.40 P-Value = 0.000 DF = 28

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	2.112	0.162	0.047
63	11	2.081	0.118	0.036

Difference = mu (43) - mu (63)
Estimate for difference: 0.0307
95% CI for difference: (-0.0919, 0.1533)
T-Test of difference = 0 (vs not =): T-Value = 0.52 P-Value = 0.607 DF = 20

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	1.810	0.176	0.051
63	11	1.806	0.147	0.044

Difference = mu (43) - mu (63)
Estimate for difference: 0.0036
95% CI for difference: (-0.1370, 0.1443)
T-Test of difference = 0 (vs not =): T-Value = 0.05 P-Value = 0.958 DF = 20

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
43	50	17.00	60.2	2.30
63	55	15.38	46.5	-2.30
Overall	105		53.0	

H = 5.28 DF = 1 P = 0.022
H = 5.28 DF = 1 P = 0.022 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	39.00	43.1	1.09
63	58	34.00	36.5	-1.09
Overall	75		38.0	

H = 1.18 DF = 1 P = 0.276
H = 1.19 DF = 1 P = 0.275 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	20.00	49.0	2.36
63	58	18.00	34.8	-2.36
Overall	75		38.0	

H = 5.57 DF = 1 P = 0.018
H = 5.64 DF = 1 P = 0.018 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	16.00	38.2	0.04
63	58	16.00	37.9	-0.04
Overall	75		38.0	

H = 0.00 DF = 1 P = 0.965
H = 0.00 DF = 1 P = 0.964 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
43	15	41.00	30.2	2.60
63	30	25.50	19.4	-2.60
Overall	45		23.0	

H = 6.76 DF = 1 P = 0.009
H = 6.78 DF = 1 P = 0.009 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
43	15	33.00	28.3	1.90
63	30	29.00	20.4	-1.90
Overall	45		23.0	

H = 3.62 DF = 1 P = 0.057
H = 3.63 DF = 1 P = 0.057 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
43	15	23.00	12.9	-3.65
63	30	42.50	28.1	3.65
Overall	45		23.0	

H = 13.31 DF = 1 P = 0.000
H = 13.33 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
43	12	2.155	12.9	0.65
63	11	2.090	11.0	-0.65
Overall	23		12.0	

H = 0.42 DF = 1 P = 0.518
H = 0.42 DF = 1 P = 0.518 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
43	12	1.835	12.1	0.06
63	11	1.840	11.9	-0.06
Overall	23		12.0	

H = 0.00 DF = 1 P = 0.951
H = 0.00 DF = 1 P = 0.951 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 4.19   DF = 1   P = 0.041

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
43          20  30   17.00  11.25            (-----*---------------)
63          33  22   15.38   5.92   (----*----------)
                                    --+---------+---------+---------+----
                                   15.0      16.5      18.0      19.5
```

Overall median = 16.60

A 95.0% CI for median(43) - median(63): (-0.61,4.00)

Mood median test for WL (%)

Chi-Square = 1.96   DF = 1   P = 0.161

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     -+---------+---------+---------+-----
43           7  10    39.0   12.5     (---------------------*-----------)
63          35  23    34.0    5.0          (--*--)
                                      -+---------+---------+---------+-----
                                   31.5      35.0      38.5      42.0
```

Overall median = 34.0

A 95.0% CI for median(43) - median(63): (-3.0,9.0)

```
Mood median test for Wp (%)

Chi-Square = 3.82    DF = 1    P = 0.050

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           6  11   20.00   7.00  (--------------*--------------)
63          36  22   18.00   4.25  (----*----)
                                   -----+---------+---------+---------+-
                                     18.0      20.0      22.0      24.0

Overall median = 18.00

A 95.0% CI for median(43) - median(63): (-1.00,5.00)


Mood median test for Ip (%)

Chi-Square = 0.01    DF = 1    P = 0.930

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
43           9   8   16.00   5.50  (-------------*-------------------)
63          30  28   16.00   4.00               *------------)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0

Overall median = 16.00

A 95.0% CI for median(43) - median(63): (-3.00,3.00)


Mood median test for % GRAVEL

Chi-Square = 5.38    DF = 1    P = 0.020

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
43           4  11    41.0   20.0              (--------------*--------)
63          19  11    25.5   15.3  (----*--------)
                                   ---------+---------+---------+-------
                                         28.0      35.0      42.0

Overall median = 30.0

A 95.0% CI for median(43) - median(63): (3.9,21.3)


Mood median test for % SAND

Chi-Square = 4.50    DF = 1    P = 0.034

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
43           5  10    33.0   10.0          (-----------*------------)
63          20  10    29.0    9.0  (--------*-------)
                                   ------+---------+---------+---------+
                                      28.0      31.5      35.0      38.5

Overall median = 31.0

A 95.0% CI for median(43) - median(63): (-1.1,11.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 7.51    DF = 1    P = 0.006

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43          12   3    23.0   17.0  (---*--------------)
63          11  19    42.5   15.5                        (---*--------)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 39.0

A 95.0% CI for median(43) - median(63): (-27.0,-6.8)


Mood median test for Bulk Density

Chi-Square = 2.25    DF = 1    P = 0.133

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
43           5   7   2.155  0.265  (------------------------*-------)
63           8   3   2.090  0.260  (----------------*--------------)
                                   ------+---------+---------+---------+
                                       2.000     2.080     2.160     2.240

Overall median = 2.130

A 95.0% CI for median(43) - median(63): (-0.118,0.157)


Mood median test for Dry Density

Chi-Square = 0.03    DF = 1    P = 0.855

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
43           7   5   1.835  0.252  (----------------------*-------)
63           6   5   1.840  0.250     (--------------------*-----------)
                                   ----+---------+---------+---------+--
                                     1.680     1.760     1.840     1.920

Overall median = 1.840

A 95.0% CI for median(43) - median(63): (-0.201,0.109)
```

Results for: Domain 43 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
43	50	20.44	7.73	1.1
64	24	15.34	2.86	0.58

Difference = mu (43) - mu (64)
Estimate for difference: 5.10
95% CI for difference: (2.63, 7.57)
T-Test of difference = 0 (vs not =): T-Value = 4.12 P-Value = 0.000 DF = 68

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	37.35	7.61	1.8
64	27	34.44	2.34	0.45

Difference = mu (43) - mu (64)
Estimate for difference: 2.91
95% CI for difference: (-1.10, 6.92)
T-Test of difference = 0 (vs not =): T-Value = 1.53 P-Value = 0.144 DF = 17

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	20.29	3.53	0.86
64	27	17.81	2.24	0.43

Difference = mu (43) - mu (64)
Estimate for difference: 2.479
95% CI for difference: (0.501, 4.458)
T-Test of difference = 0 (vs not =): T-Value = 2.59 P-Value = 0.016 DF = 24

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	17.06	5.15	1.2
64	27	16.63	2.39	0.46

Difference = mu (43) - mu (64)
Estimate for difference: 0.43
95% CI for difference: (-2.35, 3.21)
T-Test of difference = 0 (vs not =): T-Value = 0.32 P-Value = 0.751 DF = 20

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
43	15	38.1	12.9	3.3
64	2	19.0	11.3	8.0

Difference = mu (43) - mu (64)
Estimate for difference: 19.13
95% CI for difference: (-90.95, 129.21)
T-Test of difference = 0 (vs not =): T-Value = 2.21 P-Value = 0.271 DF = 1

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
43         15  33.93   7.56      2.0
64          2  27.50   2.12      1.5

Difference = mu (43) - mu (64)
Estimate for difference:  6.43
95% CI for difference:  (0.41, 12.46)
T-Test of difference = 0 (vs not =): T-Value = 2.61  P-Value = 0.040  DF = 6


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
43         15   27.9   11.0      2.8
64          2  53.50   9.19      6.5


Difference = mu (43) - mu (64)
Estimate for difference:  -25.57
95% CI for difference:  (-115.71, 64.58)
T-Test of difference = 0 (vs not =): T-Value = -3.60  P-Value = 0.172  DF = 1


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
43         12   2.112   0.162    0.047
64         13  2.1462  0.0859    0.024

Difference = mu (43) - mu (64)
Estimate for difference:  -0.0345
95% CI for difference:  (-0.1458, 0.0768)
T-Test of difference = 0 (vs not =): T-Value = -0.66  P-Value = 0.521  DF = 16


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
43         12   1.810   0.176    0.051
64         13  1.8731  0.0910    0.025

Difference = mu (43) - mu (64)
Estimate for difference:  -0.0631
95% CI for difference:  (-0.1835, 0.0573)
T-Test of difference = 0 (vs not =): T-Value = -1.11  P-Value = 0.283  DF = 16
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
43         50   17.00      42.6   2.97
64         24   15.44      26.8  -2.97
Overall    74              37.5

H = 8.84  DF = 1  P = 0.003
H = 8.89  DF = 1  P = 0.003  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	39.00	25.8	1.34
64	27	34.00	20.4	-1.34
Overall	44		22.5	

H = 1.79 DF = 1 P = 0.181
H = 1.80 DF = 1 P = 0.179 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	20.00	27.7	2.15
64	27	18.00	19.2	-2.15
Overall	44		22.5	

H = 4.60 DF = 1 P = 0.032
H = 4.67 DF = 1 P = 0.031 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	16.00	22.4	-0.02
64	27	17.00	22.5	0.02
Overall	44		22.5	

H = 0.00 DF = 1 P = 0.981
H = 0.00 DF = 1 P = 0.981 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
43	15	41.00	9.8	1.79
64	2	19.00	3.0	-1.79
Overall	17		9.0	

H = 3.20 DF = 1 P = 0.074
H = 3.22 DF = 1 P = 0.073 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
43	15	33.00	9.6	1.27
64	2	27.50	4.8	-1.27
Overall	17		9.0	

H = 1.61 DF = 1 P = 0.205
H = 1.62 DF = 1 P = 0.204 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
43	15	23.00	8.1	-2.09
64	2	53.50	16.0	2.09
Overall	17		9.0	

H = 4.36 DF = 1 P = 0.037
H = 4.37 DF = 1 P = 0.037 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
43	12	2.155	12.3	-0.44
64	13	2.180	13.6	0.44
Overall	25		13.0	

H = 0.19 DF = 1 P = 0.663
H = 0.19 DF = 1 P = 0.663 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
43	12	1.835	11.4	-1.06
64	13	1.900	14.5	1.06
Overall	25		13.0	

H = 1.13 DF = 1 P = 0.289
H = 1.13 DF = 1 P = 0.288 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 5.02   DF = 1   P = 0.025

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
43          26  24   17.00  11.25              (----*-----------)
64          19   5   15.44   4.00  (----------*-------)
                                   ----+---------+---------+---------+--
                                    14.0      16.0      18.0      20.0
```

Overall median = 17.00

A 95.0% CI for median(43) - median(64): (0.15,4.39)

```
Mood median test for WL (%)

Chi-Square = 0.86    DF = 1    P = 0.353

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
43           7  10    39.0   12.5   (---------------------*-----------)
64          15  12    34.0    4.0        (--*--)
                                    -+---------+---------+---------+-----
                                   31.5      35.0      38.5      42.0

Overall median = 34.5

A 95.0% CI for median(43) - median(64): (-4.0,7.2)


Mood median test for Wp (%)

Chi-Square = 5.23    DF = 1    P = 0.022

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           6  11   20.00   7.00  (--------------*--------------)
64          19   8   18.00   2.00  (----*
                                   -----+---------+---------+---------+-
                                     18.0      20.0      22.0      24.0

Overall median = 18.00

A 95.0% CI for median(43) - median(64): (-0.09,6.00)


Mood median test for Ip (%)

Chi-Square = 0.62    DF = 1    P = 0.431

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
43          10   7   16.00   5.50  (-------------*-------------------)
64          19   8   17.00   3.00               (------*)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0

Overall median = 17.00

A 95.0% CI for median(43) - median(64): (-2.09,3.00)


Mood median test for % GRAVEL

Chi-Square = 2.01    DF = 1    P = 0.156

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
43           7   8    41.0   20.0                      (---------*------)
64           2   0    19.0   16.0  (-------*-------)
                                   ---------+---------+---------+-------
                                           20        30        40

Overall median = 33.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.3% CI for median(43) - median(64): (-13.0,47.0)
```

```
Mood median test for % SAND

Chi-Square = 1.59    DF = 1    P = 0.208

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
43           8   7    33.0   10.0          (-----------*------------)
64           2   0    27.5    3.0  (----*---)
                                   ------+---------+---------+---------+
                                      28.0      31.5      35.0      38.5

Overall median = 33.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.3% CI for median(43) - median(64): (-8.0,24.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.55    DF = 1    P = 0.110

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
43           9   6    23.0   17.0  (-*----------)
64           0   2    53.5   13.0                       (-----*----)
                                   ---+---------+---------+---------+---
                                     24        36        48        60

Overall median = 25.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.3% CI for median(43) - median(64): (-43.0,6.0)


Mood median test for Bulk Density

Chi-Square = 0.37    DF = 1    P = 0.543

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
43           7   5   2.155  0.265  (-----------------------*-------)
64           6   7   2.180  0.140                 (------------*--)
                                   ------+---------+---------+---------+
                                       2.000     2.080     2.160     2.240

Overall median = 2.170

A 95.0% CI for median(43) - median(64): (-0.170,0.087)


Mood median test for Dry Density

Chi-Square = 0.37    DF = 1    P = 0.543

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           7   5   1.835  0.252  (-----------------*------)
64           6   7   1.900  0.145                 (--------*----)
                                   -----+---------+---------+---------+-
                                      1.70      1.80      1.90      2.00

Overall median = 1.870

A 95.0% CI for median(43) - median(64): (-0.260,0.067)
```

Results for: Domain 43 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
43         50  20.44   7.73      1.1
65          7  17.71   4.27      1.6

Difference = mu (43) - mu (65)
Estimate for difference:  2.73
95% CI for difference:  (-1.52, 6.97)
T-Test of difference = 0 (vs not =): T-Value = 1.40  P-Value = 0.187  DF = 12


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
43         17  37.35   7.61      1.8
65          8  35.25   5.60      2.0

Difference = mu (43) - mu (65)
Estimate for difference:  2.10
95% CI for difference:  (-3.58, 7.79)
T-Test of difference = 0 (vs not =): T-Value = 0.78  P-Value = 0.447  DF = 18


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
43         17  20.29   3.53     0.86
65          8  18.88   1.46     0.52

Difference = mu (43) - mu (65)
Estimate for difference:  1.42
95% CI for difference:  (-0.65, 3.49)
T-Test of difference = 0 (vs not =): T-Value = 1.42  P-Value = 0.170  DF = 22


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
43         17  17.06   5.15      1.2
65          8  16.38   4.41      1.6

Difference = mu (43) - mu (65)
Estimate for difference:  0.68
95% CI for difference:  (-3.55, 4.92)
T-Test of difference = 0 (vs not =): T-Value = 0.34  P-Value = 0.737  DF = 16


Two-sample T for % GRAVEL

Domain
Reference   N  Mean  StDev  SE Mean
43         15  38.1   12.9      3.3
65          2  20.0   11.3      8.0

Difference = mu (43) - mu (65)
Estimate for difference:  18.13
95% CI for difference:  (-91.95, 128.21)
T-Test of difference = 0 (vs not =): T-Value = 2.09  P-Value = 0.284  DF = 1
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
43	15	33.93	7.56	2.0
65	2	34.00	1.41	1.0

Difference = mu (43) - mu (65)
Estimate for difference: -0.07
95% CI for difference: (-4.90, 4.76)
T-Test of difference = 0 (vs not =): T-Value = -0.03 P-Value = 0.976 DF = 11

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
43	15	27.9	11.0	2.8
65	2	46.0	12.7	9.0

Difference = mu (43) - mu (65)
Estimate for difference: -18.07
95% CI for difference: (-137.99, 101.86)
T-Test of difference = 0 (vs not =): T-Value = -1.91 P-Value = 0.306 DF = 1

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	2.112	0.162	0.047
65	7	2.0929	0.0496	0.019

Difference = mu (43) - mu (65)
Estimate for difference: 0.0188
95% CI for difference: (-0.0893, 0.1269)
T-Test of difference = 0 (vs not =): T-Value = 0.37 P-Value = 0.715 DF = 14

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	1.810	0.176	0.051
65	7	1.7800	0.0995	0.038

Difference = mu (43) - mu (65)
Estimate for difference: 0.0300
95% CI for difference: (-0.1041, 0.1641)
T-Test of difference = 0 (vs not =): T-Value = 0.47 P-Value = 0.642 DF = 16

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
43	50	17.00	29.5	0.61
65	7	17.00	25.4	-0.61
Overall	57		29.0	

H = 0.37 DF = 1 P = 0.543
H = 0.37 DF = 1 P = 0.542 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	39.00	13.7	0.73
65	8	37.50	11.4	-0.73
Overall	25		13.0	

H = 0.53 DF = 1 P = 0.466
H = 0.53 DF = 1 P = 0.465 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	20.00	13.9	0.84
65	8	19.00	11.2	-0.84
Overall	25		13.0	

H = 0.71 DF = 1 P = 0.398
H = 0.73 DF = 1 P = 0.393 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	16.00	13.0	0.00
65	8	18.50	13.0	0.00
Overall	25		13.0	

H = 0.00 DF = 1 P = 1.000
H = 0.00 DF = 1 P = 1.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
43	15	41.00	9.8	1.79
65	2	20.00	3.0	-1.79
Overall	17		9.0	

H = 3.20 DF = 1 P = 0.074
H = 3.22 DF = 1 P = 0.073 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
43	15	33.00	9.0	0.00
65	2	34.00	9.0	0.00
Overall	17		9.0	

H = 0.00 DF = 1 P = 1.000
H = 0.00 DF = 1 P = 1.000 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
43	15	23.00	8.2	-1.71
65	2	46.00	14.8	1.71
Overall	17		9.0	

H = 2.94 DF = 1 P = 0.086
H = 2.95 DF = 1 P = 0.086 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
43	12	2.155	11.1	1.10
65	7	2.100	8.1	-1.10
Overall	19		10.0	

H = 1.21 DF = 1 P = 0.272
H = 1.21 DF = 1 P = 0.272 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
43	12	1.835	10.6	0.63
65	7	1.810	8.9	-0.63
Overall	19		10.0	

H = 0.40 DF = 1 P = 0.526
H = 0.40 DF = 1 P = 0.525 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.07   DF = 1   P = 0.799

```
Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
43          26  24   17.00  11.25          (----*-----------)
65           4   3   17.00   4.00  (------------*-----------------)
                                   --------+---------+---------+--------
                                        16.0      18.0      20.0
```

Overall median = 17.00

A 95.0% CI for median(43) - median(65): (-3.13,3.32)

```
Mood median test for WL (%)

Chi-Square = 0.52    DF = 1    P = 0.471

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
43           8   9    39.0   12.5    (---------------------*-----------)
65           5   3    37.5    8.3  (-------------------*------)
                                   ---+---------+---------+---------+---
                                   31.5      35.0      38.5      42.0

Overall median = 38.0

A 95.0% CI for median(43) - median(65): (-6.7,9.2)


Mood median test for Wp (%)

Chi-Square = 1.72    DF = 1    P = 0.189

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           8   9   20.00   7.00  (--------------*--------------)
65           6   2   19.00   1.50      (-----*----)
                                   -----+---------+---------+---------+-
                                     18.0      20.0      22.0      24.0

Overall median = 19.00

A 95.0% CI for median(43) - median(65): (-1.22,5.00)


Mood median test for Ip (%)

Chi-Square = 0.99    DF = 1    P = 0.319

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
43          10   7   16.00   5.50               (---------*--------------)
65           3   5   18.50   6.25    (---------------------------------*--)
                                     -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 17.00

A 95.0% CI for median(43) - median(65): (-3.22,7.00)


Mood median test for % GRAVEL

Chi-Square = 2.01    DF = 1    P = 0.156

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
43           7   8    41.0   20.0                    (---------*------)
65           2   0    20.0   16.0  (-------*-------)
                                   --------+---------+---------+--------
                                          20        30        40

Overall median = 33.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.3% CI for median(43) - median(65): (-14.0,46.0)
```

```
Mood median test for % SAND

Chi-Square = 0.01    DF = 1    P = 0.929

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           8   7   33.00  10.00  (----------------*------------------)
65           1   1   34.00   2.00                   (---*---)
                                   -----+---------+---------+---------+-
                                     30.0      32.5      35.0      37.5

Overall median = 33.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.3% CI for median(43) - median(65): (-14.00,17.00)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.55    DF = 1    P = 0.110

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
43           9   6    23.0   17.0   (--*------------)
65           0   2    46.0   18.0                    (--------*--------)
                                    +---------+---------+---------+------
                                   20        30        40        50

Overall median = 25.0
* NOTE * Levels with < 6 observations have confidence < 95.0%


A 94.3% CI for median(43) - median(65): (-38.0,16.0)


Mood median test for Bulk Density

Chi-Square = 4.87    DF = 1    P = 0.027

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
43           4   8   2.155  0.265  (------------------------*-------)
65           6   1   2.100  0.070            (-------*--)
                                   ------+---------+---------+---------+
                                       2.000     2.080     2.160     2.240

Overall median = 2.120

A 95.0% CI for median(43) - median(65): (-0.090,0.140)


Mood median test for Dry Density

Chi-Square = 1.57    DF = 1    P = 0.210

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           5   7   1.835  0.252  (-------------------------*--------)
65           5   2   1.810  0.120        (-----------------*------)
                                   -----+---------+---------+---------+-
                                      1.680     1.750     1.820     1.890

Overall median = 1.820

A 95.0% CI for median(43) - median(65): (-0.151,0.171)
```

Results for: Domain 43 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
43	50	20.44	7.73	1.1
71	44	14.56	5.80	0.87

Difference = mu (43) - mu (71)
Estimate for difference: 5.88
95% CI for difference: (3.10, 8.66)
T-Test of difference = 0 (vs not =): T-Value = 4.20 P-Value = 0.000 DF = 89

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	37.35	7.61	1.8
71	17	31.24	2.61	0.63

Difference = mu (43) - mu (71)
Estimate for difference: 6.12
95% CI for difference: (2.03, 10.20)
T-Test of difference = 0 (vs not =): T-Value = 3.14 P-Value = 0.005 DF = 19

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	20.29	3.53	0.86
71	17	15.35	1.73	0.42

Difference = mu (43) - mu (71)
Estimate for difference: 4.941
95% CI for difference: (2.968, 6.914)
T-Test of difference = 0 (vs not =): T-Value = 5.18 P-Value = 0.000 DF = 23

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	17.06	5.15	1.2
71	17	15.88	1.96	0.48

Difference = mu (43) - mu (71)
Estimate for difference: 1.18
95% CI for difference: (-1.61, 3.97)
T-Test of difference = 0 (vs not =): T-Value = 0.88 P-Value = 0.390 DF = 20

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
43	15	38.1	12.9	3.3
71	16	20.69	6.81	1.7

Difference = mu (43) - mu (71)
Estimate for difference: 17.45
95% CI for difference: (9.65, 25.24)
T-Test of difference = 0 (vs not =): T-Value = 4.67 P-Value = 0.000 DF = 20

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
43	15	33.93	7.56	2.0
71	16	24.37	7.67	1.9

Difference = mu (43) - mu (71)
Estimate for difference: 9.56
95% CI for difference: (3.95, 15.16)
T-Test of difference = 0 (vs not =): T-Value = 3.49 P-Value = 0.002 DF = 28

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
43	15	27.9	11.0	2.8
71	16	52.1	11.3	2.8

Difference = mu (43) - mu (71)
Estimate for difference: -24.19
95% CI for difference: (-32.40, -15.98)
T-Test of difference = 0 (vs not =): T-Value = -6.03 P-Value = 0.000 DF = 28

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	2.112	0.162	0.047
71	12	2.2583	0.0486	0.014

Difference = mu (43) - mu (71)
Estimate for difference: -0.1467
95% CI for difference: (-0.2531, -0.0402)
T-Test of difference = 0 (vs not =): T-Value = -3.00 P-Value = 0.011 DF = 12

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
43	12	1.810	0.176	0.051
71	12	1.9937	0.0718	0.021

Difference = mu (43) - mu (71)
Estimate for difference: -0.1837
95% CI for difference: (-0.3016, -0.0659)
T-Test of difference = 0 (vs not =): T-Value = -3.34 P-Value = 0.005 DF = 14

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
43	50	17.00	60.3	4.83
71	44	13.00	33.0	-4.83
Overall	94		47.5	

H = 23.37 DF = 1 P = 0.000
H = 23.53 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	39.00	21.5	2.34
71	17	31.00	13.5	-2.34
Overall	34		17.5	

H = 5.49 DF = 1 P = 0.019
H = 5.53 DF = 1 P = 0.019 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	20.00	23.9	3.74
71	17	16.00	11.1	-3.74
Overall	34		17.5	

H = 13.97 DF = 1 P = 0.000
H = 14.21 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	16.00	18.7	0.72
71	17	16.00	16.3	-0.72
Overall	34		17.5	

H = 0.52 DF = 1 P = 0.469
H = 0.53 DF = 1 P = 0.465 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
43	15	41.00	22.0	3.56
71	16	19.00	10.4	-3.56
Overall	31		16.0	

H = 12.66 DF = 1 P = 0.000
H = 12.69 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
43	15	33.00	21.0	2.98
71	16	23.50	11.3	-2.98
Overall	31		16.0	

H = 8.91 DF = 1 P = 0.003
H = 8.94 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
43	15	23.00	9.1	-4.09
71	16	53.00	22.5	4.09
Overall	31		16.0	

H = 16.74 DF = 1 P = 0.000
H = 16.76 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
43	12	2.155	8.6	-2.68
71	12	2.260	16.4	2.68
Overall	24		12.5	

H = 7.21 DF = 1 P = 0.007
H = 7.23 DF = 1 P = 0.007 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
43	12	1.835	8.8	-2.60
71	12	1.991	16.3	2.60
Overall	24		12.5	

H = 6.75 DF = 1 P = 0.009
H = 6.75 DF = 1 P = 0.009 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 13.30   DF = 1   P = 0.000

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43          20  30   17.00  11.25                (----*-----------)
71          34  10   13.00   3.75  *----)
                                   -----+---------+---------+---------+-
                                     14.0      16.0      18.0      20.0
```

Overall median = 16.00

A 95.0% CI for median(43) - median(71): (2.80,5.20)

Mood median test for WL (%)

Chi-Square = 5.85   DF = 1   P = 0.016

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           6  11    39.0   12.5    (-------------------*---------)
71          13   4    31.0    3.5  (-*--)
                                   -----+---------+---------+---------+-
                                     32.0      36.0      40.0      44.0
```

Overall median = 32.0

A 95.0% CI for median(43) - median(71): (-1.0,11.0)

```
Mood median test for Wp (%)

Chi-Square = 18.55    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
43           5  12   20.00   7.00              (-----------*-----------)
71          17   0   16.00   3.00  (-------*---)
                                   ----+---------+---------+---------+--
                                    15.0      17.5      20.0      22.5

Overall median = 17.00

A 95.0% CI for median(43) - median(71): (1.00,8.00)


Mood median test for Ip (%)

Chi-Square = 0.49    DF = 1    P = 0.486

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
43           9   8   16.00   5.50  (-------------*-------------------)
71          11   6   16.00   2.50         (------*-----)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0

Overall median = 16.00

A 95.0% CI for median(43) - median(71): (-2.00,4.00)


Mood median test for % GRAVEL

Chi-Square = 11.63    DF = 1    P = 0.001

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
43           3  12    41.0   20.0                (---------*------)
71          13   3    19.0    7.5  (-*---)
                                   ---+---------+---------+---------+---
                                     20        30        40        50

Overall median = 24.0

A 95.0% CI for median(43) - median(71): (10.7,26.2)


Mood median test for % SAND

Chi-Square = 3.89    DF = 1    P = 0.049

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
43           5  10    33.0   10.0                       (------*-------)
71          11   5    23.5   14.0   (----------*------------)
                                    --+---------+---------+---------+----
                                   18.0      24.0      30.0      36.0

Overall median = 30.0

A 95.0% CI for median(43) - median(71): (-0.2,17.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 14.30    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
43          13   2    23.0   17.0  (-*----------)
71           3  13    53.0   15.5                      (----*-----)
                                   ---+---------+---------+---------+---
                                     24        36        48        60

Overall median = 41.0

A 95.0% CI for median(43) - median(71): (-36.5,-16.7)


Mood median test for Bulk Density

Chi-Square = 8.22    DF = 1    P = 0.004

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43          10   2   2.155  0.265  (--------------------*----)
71           3   9   2.260  0.058                            (--*--)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.230

A 95.0% CI for median(43) - median(71): (-0.260,-0.050)


Mood median test for Dry Density

Chi-Square = 10.67    DF = 1    P = 0.001

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
43          10   2   1.835  0.252  (---------------*----)
71           2  10   1.991  0.067                           (-*--)
                                   ---+---------+---------+---------+---
                                    1.68      1.80      1.92      2.04

Overall median = 1.961

A 95.0% CI for median(43) - median(71): (-0.337,-0.083)
```

Results for: Domain 43 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
43	50	20.44	7.73	1.1
72	26	15.13	4.24	0.83

Difference = mu (43) - mu (72)
Estimate for difference: 5.31
95% CI for difference: (2.58, 8.05)
T-Test of difference = 0 (vs not =): T-Value = 3.87 P-Value = 0.000 DF = 73

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	37.35	7.61	1.8
72	10	30.50	4.84	1.5

Difference = mu (43) - mu (72)
Estimate for difference: 6.85
95% CI for difference: (1.91, 11.80)
T-Test of difference = 0 (vs not =): T-Value = 2.86 P-Value = 0.009 DF = 24

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	20.29	3.53	0.86
72	10	15.20	1.99	0.63

Difference = mu (43) - mu (72)
Estimate for difference: 5.09
95% CI for difference: (2.90, 7.29)
T-Test of difference = 0 (vs not =): T-Value = 4.79 P-Value = 0.000 DF = 24

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
43	17	17.06	5.15	1.2
72	10	15.30	3.71	1.2

Difference = mu (43) - mu (72)
Estimate for difference: 1.76
95% CI for difference: (-1.79, 5.31)
T-Test of difference = 0 (vs not =): T-Value = 1.03 P-Value = 0.316 DF = 23

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
43	15	38.1	12.9	3.3
72	9	20.56	7.14	2.4

Difference = mu (43) - mu (72)
Estimate for difference: 17.58
95% CI for difference: (9.07, 26.08)
T-Test of difference = 0 (vs not =): T-Value = 4.30 P-Value = 0.000 DF = 21

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
43         15  33.93   7.56      2.0
72          9  27.56   7.20      2.4


Difference = mu (43) - mu (72)
Estimate for difference:  6.38
95% CI for difference:  (-0.15, 12.90)
T-Test of difference = 0 (vs not =): T-Value = 2.06  P-Value = 0.055  DF = 17


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
43         15   27.9   11.0      2.8
72          9  51.89   7.66      2.6

Difference = mu (43) - mu (72)
Estimate for difference:  -23.96
95% CI for difference:  (-31.90, -16.01)
T-Test of difference = 0 (vs not =): T-Value = -6.27  P-Value = 0.000  DF = 21


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
43         12  2.112  0.162    0.047
72          7  2.221  0.100    0.038

Difference = mu (43) - mu (72)
Estimate for difference:  -0.1098
95% CI for difference:  (-0.2375, 0.0179)
T-Test of difference = 0 (vs not =): T-Value = -1.82  P-Value = 0.087  DF = 16


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
43         12  1.810  0.176    0.051
72          7  1.944  0.155    0.059

Difference = mu (43) - mu (72)
Estimate for difference:  -0.1343
95% CI for difference:  (-0.3009, 0.0323)
T-Test of difference = 0 (vs not =): T-Value = -1.73  P-Value = 0.106  DF = 14
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
43         50   17.00      44.6   3.33
72         26   13.00      26.8  -3.33
Overall    76              38.5

H = 11.08  DF = 1  P = 0.001
H = 11.14  DF = 1  P = 0.001  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	39.00	16.6	2.26
72	10	30.00	9.5	-2.26
Overall	27		14.0	

H = 5.11 DF = 1 P = 0.024
H = 5.14 DF = 1 P = 0.023 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	20.00	18.0	3.44
72	10	15.00	7.2	-3.44
Overall	27		14.0	

H = 11.83 DF = 1 P = 0.001
H = 11.95 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
43	17	16.00	15.2	1.03
72	10	15.50	11.9	-1.03
Overall	27		14.0	

H = 1.06 DF = 1 P = 0.303
H = 1.07 DF = 1 P = 0.301 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
43	15	41.00	16.0	3.10
72	9	17.00	6.7	-3.10
Overall	24		12.5	

H = 9.61 DF = 1 P = 0.002
H = 9.65 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
43	15	33.00	14.8	2.09
72	9	26.00	8.6	-2.09
Overall	24		12.5	

H = 4.36 DF = 1 P = 0.037
H = 4.37 DF = 1 P = 0.037 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
43         15   23.00       8.4  -3.64
72          9   53.00      19.3   3.64
Overall    24              12.5

H = 13.23  DF = 1  P = 0.000
H = 13.26  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
43         12   2.155       8.2  -1.86
72          7   2.240      13.1   1.86
Overall    19              10.0

H = 3.46  DF = 1  P = 0.063
H = 3.47  DF = 1  P = 0.063  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
43         12   1.835       8.3  -1.73
72          7   2.000      12.9   1.73
Overall    19              10.0

H = 3.00  DF = 1  P = 0.083
H = 3.01  DF = 1  P = 0.083  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 4.45    DF = 1    P = 0.035

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
43          26  24   17.00  11.25                   (----*-----------)
72          20   6   13.00   5.75  (-*-------------------)
                                   -------+---------+---------+---------
                                       14.0      16.0      18.0

Overall median = 17.00

A 95.0% CI for median(43) - median(72): (0.00,5.00)


Mood median test for WL (%)

Chi-Square = 5.04    DF = 1    P = 0.025

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
43           6  11    39.0   12.5          (---------------*-------)
72           8   2    30.0    5.3  (-----*----)
                                   ------+---------+---------+---------+
                                      30.0      35.0      40.0      45.0

Overall median = 32.0

A 95.0% CI for median(43) - median(72): (0.9,13.4)
```

```
Mood median test for Wp (%)

Chi-Square = 7.63    DF = 1    P = 0.006

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
43           6  11   20.00   7.00             (---------*---------)
72           9   1   15.00   2.75  (---*-----)
                                   ----+---------+---------+---------+--
                                    15.0      18.0      21.0      24.0

Overall median = 18.00

A 95.0% CI for median(43) - median(72): (2.62,9.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 8.71    DF = 1    P = 0.003

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
43           4  11    41.0   20.0                   (---------*------)
72           8   1    17.0   13.5  (--*----------)
                                   ------+---------+---------+---------+
                                        20        30        40        50

Overall median = 31.0

A 95.0% CI for median(43) - median(72): (4.0,28.4)
```

```
Mood median test for Ip (%)

Chi-Square = 0.13    DF = 1    P = 0.722

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
43           9   8   16.00   5.50               (---------*--------------)
72           6   4   15.50   5.25     (----------------*---------)
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 16.00

A 95.0% CI for median(43) - median(72): (-1.38,7.00)
```

```
Mood median test for % SAND

Chi-Square = 4.44    DF = 1    P = 0.035

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
43           5  10    33.0   10.0               (--------*--------)
72           7   2    26.0    7.5  (-------*--------)
                                   ------+---------+---------+---------+
                                      25.0      30.0      35.0      40.0

Overall median = 30.5

A 95.0% CI for median(43) - median(72): (2.9,13.4)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 14.40    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
43          12   3    23.0   17.0  (-*----------)
72           0   9    53.0   15.5                    (-------*-----)
                                   ---+---------+---------+---------+---
                                     24        36        48        60

Overall median = 38.5

A 95.0% CI for median(43) - median(72): (-37.0,-16.9)


Mood median test for Bulk Density

Chi-Square = 6.54    DF = 1    P = 0.011

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
43           9   3   2.155  0.265  (--------------------*----)
72           1   6   2.240  0.040                        (-----*----)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.190

A 95.0% CI for median(43) - median(72): (-0.250,-0.048)


Mood median test for Dry Density

Chi-Square = 6.54    DF = 1    P = 0.011

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
43           9   3   1.835  0.252  (---------------*----)
72           1   6   2.000  0.070                   (-----------*-)
                                   ---+---------+---------+---------+---
                                    1.68      1.80      1.92      2.04

Overall median = 1.890

A 95.0% CI for median(43) - median(72): (-0.328,-0.055)
```

Results for: Domain 51 v 52

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
51	10	14.36	8.77	2.8
52	24	8.48	2.78	0.57

Difference = mu (51) - mu (52)
Estimate for difference: 5.88
95% CI for difference: (-0.52, 12.28)
T-Test of difference = 0 (vs not =): T-Value = 2.08 P-Value = 0.067 DF = 9

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
51	13	27.08	2.90	0.80
52	24	25.33	2.73	0.56

Difference = mu (51) - mu (52)
Estimate for difference: 1.744
95% CI for difference: (-0.280, 3.768)
T-Test of difference = 0 (vs not =): T-Value = 1.78 P-Value = 0.088 DF = 23

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
51	13	17.08	1.71	0.47
52	24	16.21	1.61	0.33

Difference = mu (51) - mu (52)
Estimate for difference: 0.869
95% CI for difference: (-0.324, 2.061)
T-Test of difference = 0 (vs not =): T-Value = 1.51 P-Value = 0.146 DF = 23

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
51	13	10.00	1.83	0.51
52	24	9.13	2.11	0.43

Difference = mu (51) - mu (52)
Estimate for difference: 0.875
95% CI for difference: (-0.487, 2.237)
T-Test of difference = 0 (vs not =): T-Value = 1.32 P-Value = 0.199 DF = 28

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
51	10	38.20	9.73	3.1
52	15	37.5	13.5	3.5

Difference = mu (51) - mu (52)
Estimate for difference: 0.73
95% CI for difference: (-8.89, 10.36)
T-Test of difference = 0 (vs not =): T-Value = 0.16 P-Value = 0.876 DF = 22

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
51	10	16.00	4.71	1.5
52	15	18.47	6.10	1.6

Difference = mu (51) - mu (52)
Estimate for difference: -2.47
95% CI for difference: (-6.97, 2.03)
T-Test of difference = 0 (vs not =): T-Value = -1.14 P-Value = 0.268 DF = 22

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
51	10	38.5	12.7	4.0
52	15	36.7	15.7	4.1

Difference = mu (51) - mu (52)
Estimate for difference: 1.83
95% CI for difference: (-10.00, 13.66)
T-Test of difference = 0 (vs not =): T-Value = 0.32 P-Value = 0.751 DF = 22

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
51	3	2.3267	0.0379	0.022
52	7	2.364	0.125	0.047

Difference = mu (51) - mu (52)
Estimate for difference: -0.0376
95% CI for difference: (-0.1604, 0.0852)
T-Test of difference = 0 (vs not =): T-Value = -0.72 P-Value = 0.492 DF = 7

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
51	3	2.1600	0.0361	0.021
52	7	2.196	0.154	0.058

Difference = mu (51) - mu (52)
Estimate for difference: -0.0357
95% CI for difference: (-0.1821, 0.1107)
T-Test of difference = 0 (vs not =): T-Value = -0.58 P-Value = 0.582 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
51	10	12.000	22.9	2.06
52	24	8.450	15.2	-2.06
Overall	34		17.5	

H = 4.24 DF = 1 P = 0.039
H = 4.25 DF = 1 P = 0.039 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
51	13	27.00	23.0	1.67
52	24	25.50	16.8	-1.67
Overall	37		19.0	

H = 2.79 DF = 1 P = 0.095
H = 2.85 DF = 1 P = 0.091 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
51	13	17.00	22.5	1.46
52	24	16.00	17.1	-1.46
Overall	37		19.0	

H = 2.14 DF = 1 P = 0.143
H = 2.27 DF = 1 P = 0.132 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
51	13	10.000	22.4	1.42
52	24	9.000	17.1	-1.42
Overall	37		19.0	

H = 2.00 DF = 1 P = 0.157
H = 2.05 DF = 1 P = 0.152 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
51	10	39.50	13.8	0.42
52	15	36.00	12.5	-0.42
Overall	25		13.0	

H = 0.17 DF = 1 P = 0.677
H = 0.17 DF = 1 P = 0.676 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
51	10	16.00	10.5	-1.39
52	15	19.00	14.7	1.39
Overall	25		13.0	

H = 1.92 DF = 1 P = 0.166
H = 1.93 DF = 1 P = 0.164 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
reference   N  Median  Ave Rank      Z
51         10   37.50      13.4   0.19
52         15   38.00      12.8  -0.19
Overall    25              13.0

H = 0.04  DF = 1  P = 0.846
H = 0.04  DF = 1  P = 0.846  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain                  Ave
reference   N  Median  Rank      Z
51          3   2.310   4.3  -0.80
52          7   2.410   6.0   0.80
Overall    10           5.5

H = 0.64  DF = 1  P = 0.425
H = 0.65  DF = 1  P = 0.419  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain                  Ave
reference   N  Median  Rank      Z
51          3   2.150   4.5  -0.68
52          7   2.200   5.9   0.68
Overall    10           5.5

H = 0.47  DF = 1  P = 0.494
H = 0.47  DF = 1  P = 0.493  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.57    DF = 1    P = 0.452

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
51           4   6    12.0   12.2   (-----------*--------------------)
52          13  11     8.4    4.5  (---*---)
                                   ---+---------+---------+---------+---
                                    8.0      12.0      16.0      20.0

Overall median = 8.8

A 95.0% CI for median(51) - median(52): (-1.9,10.0)
```

```
Mood median test for WL (%)

Chi-Square = 1.96    DF = 1    P = 0.161

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
51           5   8   27.00   4.50            (------------*-------------)
52          15   9   25.50   3.75     (---------*---------)
                                      +---------+---------+---------+------
                                   24.0      25.5      27.0      28.5

Overall median = 26.00

A 95.0% CI for median(51) - median(52): (-1.28,4.28)


Mood median test for Wp (%)

Chi-Square = 2.18    DF = 1    P = 0.139

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
51           6   7   17.00   2.50               (---------*------------)
52          17   7   16.00   2.75     (---------*-)
                                      +---------+---------+---------+------
                                   15.0      16.0      17.0      18.0

Overall median = 16.00

A 95.0% CI for median(51) - median(52): (0.00,2.00)


Mood median test for Ip (%)

Chi-Square = 2.73    DF = 1    P = 0.098

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
51           5   8   10.00   2.50              (---------*------------)
52          16   8    9.00   3.00    (---------*-----------)
                                     +---------+---------+---------+------
                                   8.0       9.0      10.0      11.0

Overall median = 9.00

A 95.0% CI for median(51) - median(52): (0.00,3.00)


Mood median test for % GRAVEL

Chi-Square = 0.24    DF = 1    P = 0.622

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
51           5   5    39.5   14.8       (-------------*----------)
52           9   6    36.0   22.0     (---------*--------------------)
                                      +---------+---------+---------+------
                                   30.0      36.0      42.0      48.0

Overall median = 38.0

A 95.0% CI for median(51) - median(52): (-8.5,16.0)
```

```
Mood median test for % SAND

Chi-Square = 6.25    DF = 1    P = 0.012

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           9   1   16.00   5.25  (------------*-------)
52           6   9   19.00   9.00      (--------------------*----------)
                                   ---------+---------+---------+-------
                                         15.0      17.5      20.0

Overall median = 18.00

A 95.0% CI for median(51) - median(52): (-7.31,0.93)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.69    DF = 1    P = 0.405

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
51           7   3    37.5   11.8           (-------------*-----------)
52           8   7    38.0   21.0  (-----------------------*-----------)
                                   --------+---------+---------+--------
                                        30.0      35.0      40.0

Overall median = 38.0

A 95.0% CI for median(51) - median(52): (-9.3,10.3)


Mood median test for Bulk Density

Chi-Square = 0.48    DF = 1    P = 0.490

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
51           2   1   2.310  0.070          (-*---------)
52           3   4   2.410  0.120  (-------------------------*----)
                                   -----+---------+---------+---------+-
                                      2.280     2.340     2.400     2.460

Overall median = 2.360
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(52): (-0.129,0.102)


Mood median test for Dry Density

Chi-Square = 0.48    DF = 1    P = 0.490

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
51           2   1   2.150  0.070           (-*----)
52           3   4   2.200  0.250  (---------------*--------------)
                                   ------+---------+---------+---------+
                                       2.10      2.20      2.30      2.40

Overall median = 2.195
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(52): (-0.209,0.142)
```

Results for: Domain 51 v 61

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
51	10	14.36	8.77	2.8
61	9	17.50	6.94	2.3

Difference = mu (51) - mu (61)
Estimate for difference: -3.14
95% CI for difference: (-10.79, 4.51)
T-Test of difference = 0 (vs not =): T-Value = -0.87 P-Value = 0.397 DF = 16

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
51	3	2.3267	0.0379	0.022
61	9	2.120	0.154	0.051

Difference = mu (51) - mu (61)
Estimate for difference: 0.2067
95% CI for difference: (0.0805, 0.3328)
T-Test of difference = 0 (vs not =): T-Value = 3.71 P-Value = 0.005 DF = 9

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
51	3	2.1600	0.0361	0.021
61	9	1.817	0.222	0.074

Difference = mu (51) - mu (61)
Estimate for difference: 0.3434
95% CI for difference: (0.1691, 0.5176)
T-Test of difference = 0 (vs not =): T-Value = 4.46 P-Value = 0.002 DF = 9

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
51	10	12.00	8.6	-1.14
61	9	16.30	11.6	1.14
Overall	19		10.0	

H = 1.31 DF = 1 P = 0.253

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
51	3	2.310	11.0	2.50
61	9	2.130	5.0	-2.50
Overall	12		6.5	

H = 6.23 DF = 1 P = 0.013

* NOTE * One or more small samples

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
51          3   2.150      11.0   2.50
61          9   1.790       5.0  -2.50
Overall    12               6.5

H = 6.23  DF = 1  P = 0.013
H = 6.25  DF = 1  P = 0.012  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.46    DF = 1    P = 0.498

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
51           6   4    12.0   12.2  (--------*----------------)
61           4   5    16.3   12.1          (---------*----------------)
                                   -----+---------+---------+---------+-
                                     10.0      15.0      20.0      25.0

Overall median = 13.9

A 95.0% CI for median(51) - median(61): (-13.9,5.5)


Mood median test for Bulk Density

Chi-Square = 4.00    DF = 1    P = 0.046

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           0   3   2.310  0.070                               (*-----)
61           6   3   2.130  0.215  (-----------*------------)
                                   ---------+---------+---------+-------
                                          2.10      2.20      2.30

Overall median = 2.225
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(61): (0.040,0.380)


Mood median test for Dry Density

Chi-Square = 4.00    DF = 1    P = 0.046

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
51           0   3   2.150  0.070                              (*--)
61           6   3   1.790  0.380   (---------*------------)
                                    -+---------+---------+---------+-----
                                   1.60      1.80      2.00      2.20

Overall median = 1.980
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(61): (0.090,0.670)
```

Results for: Domain 51 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
51	10	14.36	8.77	2.8
62	131	16.88	5.15	0.45

Difference = mu (51) - mu (62)
Estimate for difference: -2.52
95% CI for difference: (-8.87, 3.83)
T-Test of difference = 0 (vs not =): T-Value = -0.90 P-Value = 0.393 DF = 9

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	27.08	2.90	0.80
62	113	34.27	6.08	0.57

Difference = mu (51) - mu (62)
Estimate for difference: -7.189
95% CI for difference: (-9.217, -5.160)
T-Test of difference = 0 (vs not =): T-Value = -7.28 P-Value = 0.000 DF = 26

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	17.08	1.71	0.47
62	113	17.70	2.77	0.26

Difference = mu (51) - mu (62)
Estimate for difference: -0.622
95% CI for difference: (-1.749, 0.504)
T-Test of difference = 0 (vs not =): T-Value = -1.15 P-Value = 0.263 DF = 20

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	10.00	1.83	0.51
62	113	16.57	4.48	0.42

Difference = mu (51) - mu (62)
Estimate for difference: -6.566
95% CI for difference: (-7.909, -5.224)
T-Test of difference = 0 (vs not =): T-Value = -9.96 P-Value = 0.000 DF = 32

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
51	10	38.20	9.73	3.1
62	47	24.9	13.6	2.0

Difference = mu (51) - mu (62)
Estimate for difference: 13.31
95% CI for difference: (5.58, 21.03)
T-Test of difference = 0 (vs not =): T-Value = 3.63 P-Value = 0.002 DF = 17

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
51	10	16.00	4.71	1.5
62	47	28.74	7.27	1.1

Difference = mu (51) - mu (62)
Estimate for difference: -12.74
95% CI for difference: (-16.57, -8.92)
T-Test of difference = 0 (vs not =): T-Value = -6.97 P-Value = 0.000 DF = 19

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
51	10	38.5	12.7	4.0
62	47	45.0	16.8	2.5

Difference = mu (51) - mu (62)
Estimate for difference: -6.48
95% CI for difference: (-16.45, 3.49)
T-Test of difference = 0 (vs not =): T-Value = -1.38 P-Value = 0.187 DF = 16

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
51	3	2.3267	0.0379	0.022
62	29	2.113	0.106	0.020

Difference = mu (51) - mu (62)
Estimate for difference: 0.2140
95% CI for difference: (0.1419, 0.2861)
T-Test of difference = 0 (vs not =): T-Value = 7.26 P-Value = 0.000 DF = 6

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
51	3	2.1600	0.0361	0.021
62	29	1.800	0.176	0.033

Difference = mu (51) - mu (62)
Estimate for difference: 0.3600
95% CI for difference: (0.2777, 0.4423)
T-Test of difference = 0 (vs not =): T-Value = 9.28 P-Value = 0.000 DF = 16

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
51	10	12.00	47.5	-1.88
62	131	15.87	72.8	1.88
Overall	141		71.0	

H = 3.55 DF = 1 P = 0.060
H = 3.55 DF = 1 P = 0.060 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	27.00	16.8	-4.87
62	113	34.00	68.9	4.87
Overall	126		63.5	

H = 23.70 DF = 1 P = 0.000
H = 23.92 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	17.00	56.4	-0.74
62	113	17.00	64.3	0.74
Overall	126		63.5	

H = 0.54 DF = 1 P = 0.461
H = 0.56 DF = 1 P = 0.456 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	10.00	14.3	-5.13
62	113	16.00	69.2	5.13
Overall	126		63.5	

H = 26.35 DF = 1 P = 0.000
H = 26.56 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
51	10	39.50	42.9	2.91
62	47	24.00	26.1	-2.91
Overall	57		29.0	

H = 8.44 DF = 1 P = 0.004
H = 8.46 DF = 1 P = 0.004 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
51	10	16.00	8.7	-4.27
62	47	28.00	33.3	4.27
Overall	57		29.0	

H = 18.23 DF = 1 P = 0.000
H = 18.27 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
51         10   37.50      23.1  -1.24
62         47   47.00      30.3   1.24
Overall    57              29.0

H = 1.53  DF = 1  P = 0.216
H = 1.53  DF = 1  P = 0.216  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
51          3   2.310      31.0   2.81
62         29   2.150      15.0  -2.81
Overall    32              16.5

H = 7.91  DF = 1  P = 0.005
H = 7.93  DF = 1  P = 0.005  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
51          3   2.150      31.0   2.81
62         29   1.850      15.0  -2.81
Overall    32              16.5

H = 7.91  DF = 1  P = 0.005
H = 7.92  DF = 1  P = 0.005  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 1.66    DF = 1    P = 0.197

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
51           7   3    12.0   12.2  (-----------*--------------------)
62          64  67    15.9    5.6                      (-*-)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 15.8

A 95.0% CI for median(51) - median(62): (-8.6,3.8)
```

```
Mood median test for WL (%)

Chi-Square = 12.36    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
51          13   0   27.00   4.50    (-------*--------)
62          55  58   34.00   4.00                                   (---*
                                     +---------+---------+---------+------
                                   25.0      27.5      30.0      32.5

Overall median = 33.00

A 95.0% CI for median(51) - median(62): (-9.00,-3.83)


Mood median test for Wp (%)

Chi-Square = 1.10    DF = 1    P = 0.295

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     -+---------+---------+---------+-----
51           9   4   17.00   2.50     (-------------*------------------)
62          61  52   17.00   3.00                   *-------------)
                                      -+---------+---------+---------+-----
                                    16.10     16.80     17.50     18.20

Overall median = 17.00

A 95.0% CI for median(51) - median(62): (-1.00,1.17)


Mood median test for Ip (%)

Chi-Square = 10.87    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   ----+---------+---------+---------+--
51          13   0   10.00   2.50   (---*----)
62          59  54   16.00   4.00                              (*---)
                                    ----+---------+---------+---------+--
                                     10.0      12.5      15.0      17.5

Overall median = 16.00

A 95.0% CI for median(51) - median(62): (-8.00,-4.83)


Mood median test for % GRAVEL

Chi-Square = 8.11    DF = 1    P = 0.004

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -----+---------+---------+---------+-
51           1   9    39.5   14.8                 (---------*--------)
62          28  19    24.0   19.0   (----*-----)
                                    -----+---------+---------+---------+-
                                       24.0      32.0      40.0      48.0

Overall median = 26.0

A 95.0% CI for median(51) - median(62): (5.7,23.1)
```

```
Mood median test for % SAND

Chi-Square = 9.47    DF = 1    P = 0.002

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
51          10   0    16.0    5.3  (------*---)
62          22  25    28.0    9.0                            (----*---)
                                   -----+---------+---------+---------+-
                                     15.0      20.0      25.0      30.0

Overall median = 27.0

A 95.0% CI for median(51) - median(62): (-16.1,-9.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 4.12    DF = 1    P = 0.042

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           8   2    37.5   11.8  (-----------*---------)
62          21  26    47.0   20.0                     (-------*-----)
                                   ---------+---------+---------+-------
                                         36.0      42.0      48.0

Overall median = 45.0

A 95.0% CI for median(51) - median(62): (-18.1,-4.1)
```

```
Mood median test for Bulk Density

Chi-Square = 3.75    DF = 1    P = 0.053

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
51           0   3   2.310  0.070                            (*-----)
62          17  12   2.150  0.196  (----------*----)
                                   ------+---------+---------+---------+
                                       2.10      2.20      2.30      2.40

Overall median = 2.150
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(62): (0.091,0.363)
```

```
Mood median test for Dry Density

Chi-Square = 3.31    DF = 1    P = 0.069

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
51           0   3   2.150  0.070                             (*---)
62          16  13   1.850  0.315  (-------*-----)
                                   -----+---------+---------+---------+-
                                      1.80      1.95      2.10      2.25

Overall median = 1.870
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(62): (0.170,0.600)
```

Results for: Domain 51 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
51	10	14.36	8.77	2.8
63	55	17.40	5.42	0.73

Difference = mu (51) - mu (63)
Estimate for difference: -3.04
95% CI for difference: (-9.42, 3.35)
T-Test of difference = 0 (vs not =): T-Value = -1.06 P-Value = 0.314 DF = 10

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	27.08	2.90	0.80
63	58	34.88	4.40	0.58

Difference = mu (51) - mu (63)
Estimate for difference: -7.802
95% CI for difference: (-9.838, -5.767)
T-Test of difference = 0 (vs not =): T-Value = -7.88 P-Value = 0.000 DF = 26

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	17.08	1.71	0.47
63	58	17.98	2.92	0.38

Difference = mu (51) - mu (63)
Estimate for difference: -0.906
95% CI for difference: (-2.149, 0.337)
T-Test of difference = 0 (vs not =): T-Value = -1.49 P-Value = 0.147 DF = 30

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	10.00	1.83	0.51
63	58	16.90	3.05	0.40

Difference = mu (51) - mu (63)
Estimate for difference: -6.897
95% CI for difference: (-8.217, -5.577)
T-Test of difference = 0 (vs not =): T-Value = -10.69 P-Value = 0.000 DF = 29

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
51	10	38.20	9.73	3.1
63	30	26.9	11.7	2.1

Difference = mu (51) - mu (63)
Estimate for difference: 11.27
95% CI for difference: (3.39, 19.14)
T-Test of difference = 0 (vs not =): T-Value = 3.00 P-Value = 0.008 DF = 18

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
51         10  16.00   4.71      1.5
63         30  29.70   8.47      1.5

Difference = mu (51) - mu (63)
Estimate for difference:  -13.70
95% CI for difference:  (-18.10, -9.30)
T-Test of difference = 0 (vs not =): T-Value = -6.38  P-Value = 0.000  DF = 28


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N  Mean  StDev  SE Mean
51         10  38.5   12.7      4.0
63         30  43.4   11.2      2.1

Difference = mu (51) - mu (63)
Estimate for difference:  -4.87
95% CI for difference:  (-14.53, 4.79)
T-Test of difference = 0 (vs not =): T-Value = -1.08  P-Value = 0.298  DF = 14


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
51          3  2.3267  0.0379    0.022
63         11   2.081   0.118    0.036

Difference = mu (51) - mu (63)
Estimate for difference:  0.2457
95% CI for difference:  (0.1539, 0.3375)
T-Test of difference = 0 (vs not =): T-Value = 5.89  P-Value = 0.000  DF = 11


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
51          3  2.1600  0.0361    0.021
63         11   1.806   0.147    0.044

Difference = mu (51) - mu (63)
Estimate for difference:  0.3536
95% CI for difference:  (0.2460, 0.4612)
T-Test of difference = 0 (vs not =): T-Value = 7.23  P-Value = 0.000  DF = 11
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
51         10   12.00      22.8  -1.85
63         55   15.38      34.9   1.85
Overall    65              33.0

H = 3.44  DF = 1  P = 0.064
H = 3.44  DF = 1  P = 0.064  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	27.00	9.4	-5.14
63	58	34.00	42.0	5.14
Overall	71		36.0	

H = 26.39 DF = 1 P = 0.000
H = 26.58 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	17.00	30.7	-1.03
63	58	18.00	37.2	1.03
Overall	71		36.0	

H = 1.07 DF = 1 P = 0.301
H = 1.08 DF = 1 P = 0.298 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	10.00	8.0	-5.42
63	58	16.00	42.3	5.42
Overall	71		36.0	

H = 29.37 DF = 1 P = 0.000
H = 29.69 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
51	10	39.50	28.9	2.61
63	30	25.50	17.7	-2.61
Overall	40		20.5	

H = 6.80 DF = 1 P = 0.009
H = 6.82 DF = 1 P = 0.009 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
51	10	16.00	7.7	-4.00
63	30	29.00	24.8	4.00
Overall	40		20.5	

H = 15.98 DF = 1 P = 0.000
H = 16.04 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
51         10   37.50      15.5  -1.56
63         30   42.50      22.2   1.56
Overall    40              20.5

H = 2.44  DF = 1  P = 0.118
H = 2.44  DF = 1  P = 0.118  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
51          3   2.310      13.0   2.57
63         11   2.090       6.0  -2.57
Overall    14               7.5

H = 6.60  DF = 1  P = 0.010
H = 6.63  DF = 1  P = 0.010  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
51          3   2.150      13.0   2.57
63         11   1.840       6.0  -2.57
Overall    14               7.5

H = 6.60  DF = 1  P = 0.010

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 1.75    DF = 1    P = 0.186

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
51           7   3    12.0   12.2  (-----------*--------------------)
63          26  29    15.4    5.9                    (*----)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 15.2

A 95.0% CI for median(51) - median(63): (-8.5,3.7)
```

```
Mood median test for WL (%)

Chi-Square = 13.82    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
51          13   0    27.0    4.5  (------*-------)
63          25  33    34.0    5.0                             (--*---)
                                   -------+---------+---------+---------
                                       27.0      30.0      33.0

Overall median = 33.0

A 95.0% CI for median(51) - median(63): (-9.0,-4.9)


Mood median test for Wp (%)

Chi-Square = 1.03    DF = 1    P = 0.311

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
51          10   3   17.00   2.50     (-----------*----------------)
63          36  22   18.00   4.25                 (-----------*-----------)
                                      +---------+---------+---------+------
                                   16.00     16.80     17.60     18.40

Overall median = 18.00

A 95.0% CI for median(51) - median(63): (-2.00,0.08)


Mood median test for Ip (%)

Chi-Square = 10.36    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
51          13   0   10.00   2.50  (---*----)
63          30  28   16.00   4.00                                *-------)
                                   ----+---------+---------+---------+--
                                    10.0      12.5      15.0      17.5

Overall median = 16.00

A 95.0% CI for median(51) - median(63): (-8.00,-4.92)


Mood median test for % GRAVEL

Chi-Square = 8.53    DF = 1    P = 0.003

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           1   9    39.5   14.8                (----------*---------)
63          19  11    25.5   15.3  (----*--------)
                                   ---------+---------+---------+-------
                                         28.0      35.0      42.0

Overall median = 29.0

A 95.0% CI for median(51) - median(63): (3.9,23.1)
```

```
Mood median test for % SAND

Chi-Square = 6.60    DF = 1    P = 0.010

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           9   1    16.0    5.3  (-----*--)
63          13  17    29.0    9.0                        (----*----)
                                   ---------+---------+---------+-------
                                         18.0      24.0      30.0

Overall median = 26.0

A 95.0% CI for median(51) - median(63): (-18.1,-8.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 4.04    DF = 1    P = 0.044

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           8   2    37.5   11.8  (-----------*---------)
63          13  17    42.5   15.5                (-----*-----------)
                                   ---------+---------+---------+-------
                                         36.0      42.0      48.0

Overall median = 40.0

A 95.0% CI for median(51) - median(63): (-16.1,-0.1)


Mood median test for Bulk Density

Chi-Square = 3.82    DF = 1    P = 0.051

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
51           0   3   2.310  0.070                              (*----)
63           7   4   2.090  0.260  (-----------*---------)
                                   --------+---------+---------+--------
                                         2.04      2.16      2.28

Overall median = 2.120
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(63): (0.089,0.421)


Mood median test for Dry Density

Chi-Square = 3.82    DF = 1    P = 0.051

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
51           0   3   2.150  0.070                              (*---)
63           7   4   1.840  0.250  (----------*-----)
                                   --------+---------+---------+--------
                                         1.80      1.95      2.10

Overall median = 1.865
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(63): (0.196,0.527)
```

Results for: Domain 51 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
51	10	14.36	8.77	2.8
64	24	15.34	2.86	0.58

Difference = mu (51) - mu (64)
Estimate for difference: -0.98
95% CI for difference: (-7.39, 5.43)
T-Test of difference = 0 (vs not =): T-Value = -0.35 P-Value = 0.737 DF = 9

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	27.08	2.90	0.80
64	27	34.44	2.34	0.45

Difference = mu (51) - mu (64)
Estimate for difference: -7.368
95% CI for difference: (-9.297, -5.438)
T-Test of difference = 0 (vs not =): T-Value = -7.99 P-Value = 0.000 DF = 19

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	17.08	1.71	0.47
64	27	17.81	2.24	0.43

Difference = mu (51) - mu (64)
Estimate for difference: -0.738
95% CI for difference: (-2.044, 0.568)
T-Test of difference = 0 (vs not =): T-Value = -1.15 P-Value = 0.258 DF = 30

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	10.00	1.83	0.51
64	27	16.63	2.39	0.46

Difference = mu (51) - mu (64)
Estimate for difference: -6.630
95% CI for difference: (-8.026, -5.233)
T-Test of difference = 0 (vs not =): T-Value = -9.69 P-Value = 0.000 DF = 30

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
51	10	38.20	9.73	3.1
64	2	19.0	11.3	8.0

Difference = mu (51) - mu (64)
Estimate for difference: 19.20
95% CI for difference: (-89.71, 128.11)
T-Test of difference = 0 (vs not =): T-Value = 2.24 P-Value = 0.267 DF = 1

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
51         10  16.00   4.71      1.5
64          2  27.50   2.12      1.5

Difference = mu (51) - mu (64)
Estimate for difference:  -11.50
95% CI for difference:  (-18.23, -4.77)
T-Test of difference = 0 (vs not =): T-Value = -5.44  P-Value = 0.012  DF = 3


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
51         10   38.5   12.7      4.0
64          2  53.50   9.19      6.5

Difference = mu (51) - mu (64)
Estimate for difference:  -15.00
95% CI for difference:  (-112.04, 82.04)
T-Test of difference = 0 (vs not =): T-Value = -1.96  P-Value = 0.300  DF = 1


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
51          3  2.3267  0.0379    0.022
64         13  2.1462  0.0859    0.024

Difference = mu (51) - mu (64)
Estimate for difference:  0.1805
95% CI for difference:  (0.1041, 0.2570)
T-Test of difference = 0 (vs not =): T-Value = 5.58  P-Value = 0.001  DF = 7


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
51          3  2.1600  0.0361    0.021
64         13  1.8731  0.0910    0.025

Difference = mu (51) - mu (64)
Estimate for difference:  0.2869
95% CI for difference:  (0.2115, 0.3623)
T-Test of difference = 0 (vs not =): T-Value = 8.77  P-Value = 0.000  DF = 8
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
51         10   12.00      14.1  -1.29
64         24   15.44      18.9   1.29
Overall    34              17.5

H = 1.65  DF = 1  P = 0.199
H = 1.65  DF = 1  P = 0.198  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	27.00	7.5	-4.87
64	27	34.00	26.7	4.87
Overall	40		20.5	

H = 23.68 DF = 1 P = 0.000
H = 23.87 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	17.00	17.3	-1.18
64	27	18.00	22.0	1.18
Overall	40		20.5	

H = 1.40 DF = 1 P = 0.236
H = 1.44 DF = 1 P = 0.230 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	10.00	7.5	-4.87
64	27	17.00	26.7	4.87
Overall	40		20.5	

H = 23.68 DF = 1 P = 0.000
H = 23.96 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
51	10	39.50	7.4	1.93
64	2	19.00	2.0	-1.93
Overall	12		6.5	

H = 3.74 DF = 1 P = 0.053
H = 3.75 DF = 1 P = 0.053 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
51	10	16.00	5.6	-1.93
64	2	27.50	11.0	1.93
Overall	12		6.5	

H = 3.74 DF = 1 P = 0.053
H = 3.78 DF = 1 P = 0.052 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
51         10   37.50       5.8  -1.50
64          2   53.50      10.0   1.50
Overall    12               6.5

H = 2.26  DF = 1  P = 0.133
H = 2.27  DF = 1  P = 0.132  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
51          3   2.310      15.0   2.62
64         13   2.180       7.0  -2.62
Overall    16               8.5

H = 6.88  DF = 1  P = 0.009
H = 6.89  DF = 1  P = 0.009  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
51          3   2.150      15.0   2.62
64         13   1.900       7.0  -2.62
Overall    16               8.5

H = 6.88  DF = 1  P = 0.009
H = 6.99  DF = 1  P = 0.008  (adjusted for ties)

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 2.27    DF = 1    P = 0.132

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
51           7   3    12.0   12.2  (-----------*--------------------)
64          10  14    15.4    4.0                 (-----*---)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 14.6

A 95.0% CI for median(51) - median(64): (-8.6,3.4)
```

```
Mood median test for WL (%)

Chi-Square = 15.76    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
51          13   0    27.0    4.5  (------*-------)
64           9  18    34.0    4.0                             (--*---)
                                   -------+---------+---------+---------
                                       27.0      30.0      33.0

Overall median = 33.0

A 95.0% CI for median(51) - median(64): (-10.0,-5.0)


Mood median test for Wp (%)

Chi-Square = 1.58    DF = 1    P = 0.209

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
51           9   4   17.00   2.50    (-------------*------------------)
64          13  14   18.00   2.00                  (-------------*)
                                     -+---------+---------+---------+-----
                                   16.10     16.80     17.50     18.20

Overall median = 17.00

A 95.0% CI for median(51) - median(64): (-2.00,1.00)


Mood median test for Ip (%)

Chi-Square = 17.43    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
51          13   0   10.00   2.50  (---*----)
64           8  19   17.00   3.00                              (---*
                                   ----+---------+---------+---------+--
                                    10.0      12.5      15.0      17.5

Overall median = 15.00

A 95.0% CI for median(51) - median(64): (-8.00,-5.00)


Mood median test for % GRAVEL

Chi-Square = 1.71    DF = 1    P = 0.190

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           5   5    39.5   14.8                      (--------*-----)
64           2   0    19.0   16.0  (-------*-------)
                                   ---------+---------+---------+-------
                                           20        30        40

Overall median = 38.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.9% CI for median(51) - median(64): (-10.0,38.0)
```

```
Mood median test for % SAND

Chi-Square = 2.40    DF = 1    P = 0.121

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
51           6   4    16.0    5.3  (------*---)
64           0   2    27.5    3.0                              (--*--)
                                   -----+---------+---------+---------+-
                                     15.0      20.0      25.0      30.0

Overall median = 16.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.9% CI for median(51) - median(64): (-19.0,1.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.36    DF = 1    P = 0.067

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
51           7   3    37.5   11.8   (--------*-------)
64           0   2    53.5   13.0                        (-------*-------)
                                    --+---------+---------+---------+----
                                   32.0      40.0      48.0      56.0

Overall median = 38.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.9% CI for median(51) - median(64): (-39.0,19.0)


Mood median test for Bulk Density

Chi-Square = 3.69    DF = 1    P = 0.055

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
51           0   3   2.310  0.070                              (-*------)
64           8   5   2.180  0.140    (------------*--)
                                     +---------+---------+---------+------
                                   2.080     2.160     2.240     2.320

Overall median = 2.195
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(64): (0.080,0.320)


Mood median test for Dry Density

Chi-Square = 3.69    DF = 1    P = 0.055

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           0   3   2.150  0.070                            (*---)
64           8   5   1.900  0.145  (------*----)
                                   ---------+---------+---------+-------
                                          1.92      2.04      2.16

Overall median = 1.930
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(64): (0.180,0.400)
```

Results for: Domain 51 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
51	17	16.49	9.90	2.4
65	7	17.71	4.27	1.6

Difference = mu (51) - mu (65)
Estimate for difference: -1.22
95% CI for difference: (-7.24, 4.80)
T-Test of difference = 0 (vs not =): T-Value = -0.42 P-Value = 0.677 DF = 21

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
51	20	27.75	6.45	1.4
65	8	35.25	5.60	2.0

Difference = mu (51) - mu (65)
Estimate for difference: -7.50
95% CI for difference: (-12.75, -2.25)
T-Test of difference = 0 (vs not =): T-Value = -3.06 P-Value = 0.008 DF = 14

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
51	20	19.30	6.78	1.5
65	8	18.88	1.46	0.52

Difference = mu (51) - mu (65)
Estimate for difference: 0.42
95% CI for difference: (-2.89, 3.74)
T-Test of difference = 0 (vs not =): T-Value = 0.27 P-Value = 0.793 DF = 22

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
51	20	8.45	3.03	0.68
65	8	16.38	4.41	1.6

Difference = mu (51) - mu (65)
Estimate for difference: -7.92
95% CI for difference: (-11.77, -4.08)
T-Test of difference = 0 (vs not =): T-Value = -4.66 P-Value = 0.001 DF = 9

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
51	19	37.3	13.6	3.1
65	2	20.0	11.3	8.0

Difference = mu (51) - mu (65)
Estimate for difference: 17.26
95% CI for difference: (-91.85, 126.38)
T-Test of difference = 0 (vs not =): T-Value = 2.01 P-Value = 0.294 DF = 1

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
51	19	16.89	7.26	1.7
65	2	34.00	1.41	1.0

Difference = mu (51) - mu (65)
Estimate for difference: -17.11
95% CI for difference: (-21.50, -12.71)
T-Test of difference = 0 (vs not =): T-Value = -8.80 P-Value = 0.000 DF = 9

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
51	19	39.8	18.1	4.2
65	2	46.0	12.7	9.0

Difference = mu (51) - mu (65)
Estimate for difference: -6.16
95% CI for difference: (-132.14, 119.83)
T-Test of difference = 0 (vs not =): T-Value = -0.62 P-Value = 0.646 DF = 1

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
51	3	2.3267	0.0379	0.022
65	7	2.0929	0.0496	0.019

Difference = mu (51) - mu (65)
Estimate for difference: 0.2338
95% CI for difference: (0.1598, 0.3078)
T-Test of difference = 0 (vs not =): T-Value = 8.12 P-Value = 0.000 DF = 5

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
51	3	2.1600	0.0361	0.021
65	7	1.7800	0.0995	0.038

Difference = mu (51) - mu (65)
Estimate for difference: 0.3800
95% CI for difference: (0.2784, 0.4816)
T-Test of difference = 0 (vs not =): T-Value = 8.84 P-Value = 0.000 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
51	17	12.80	11.4	-1.17
65	7	17.00	15.1	1.17
Overall	24		12.5	

H = 1.38 DF = 1 P = 0.240
H = 1.38 DF = 1 P = 0.240 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
51	20	27.00	12.1	-2.47
65	8	37.50	20.6	2.47
Overall	28		14.5	

H = 6.08 DF = 1 P = 0.014
H = 6.12 DF = 1 P = 0.013 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
51	20	16.50	13.0	-1.55
65	8	19.00	18.3	1.55
Overall	28		14.5	

H = 2.41 DF = 1 P = 0.121
H = 2.51 DF = 1 P = 0.113 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
51	20	9.000	11.3	-3.31
65	8	18.500	22.6	3.31
Overall	28		14.5	

H = 10.93 DF = 1 P = 0.001
H = 11.06 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
51	19	38.00	11.8	1.80
65	2	20.00	3.5	-1.80
Overall	21		11.0	

H = 3.23 DF = 1 P = 0.072
H = 3.24 DF = 1 P = 0.072 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
51	19	16.00	10.1	-2.10
65	2	34.00	19.8	2.10
Overall	21		11.0	

H = 4.40 DF = 1 P = 0.036
H = 4.42 DF = 1 P = 0.036 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
51         19   37.00      10.7  -0.78
65          2   46.00      14.3   0.78
Overall    21              11.0

H = 0.61  DF = 1  P = 0.436
H = 0.61  DF = 1  P = 0.436  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain                   Ave
Reference   N  Median  Rank      Z
51          3   2.310   9.0   2.39
65          7   2.100   4.0  -2.39
Overall    10           5.5

H = 5.73  DF = 1  P = 0.017
H = 5.76  DF = 1  P = 0.016  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain                   Ave
Reference   N  Median  Rank      Z
51          3   2.150   9.0   2.39
65          7   1.810   4.0  -2.39
Overall    10           5.5

H = 5.73  DF = 1  P = 0.017

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 5.04    DF = 1    P = 0.025

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
51          11   6    12.8   18.3  (--------*-------------------------)
65           1   6    17.0    4.0              (----*-------)
                                   ---+---------+---------+---------+---
                                   10.0      15.0      20.0      25.0

Overall median = 14.6

A 95.0% CI for median(51) - median(65): (-8.5,-0.4)
```

```
Mood median test for WL (%)

Chi-Square = 6.30    DF = 1    P = 0.012

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
51          13   7    27.0    8.3   (-----*-----)
65           1   7    37.5    8.3               (-------------*----)
                                    --+---------+---------+---------+----
                                   25.0      30.0      35.0      40.0

Overall median = 28.5

A 95.0% CI for median(51) - median(65): (-15.0,-3.0)


Mood median test for Wp (%)

Chi-Square = 6.30    DF = 1    P = 0.012

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
51          13   7   16.50   3.75  (---*------------------)
65           1   7   19.00   1.50                 (--------*--------)
                                   -------+---------+---------+---------
                                       16.8      18.0      19.2

Overall median = 17.50

A 95.0% CI for median(51) - median(65): (-4.00,-1.00)


Mood median test for Ip (%)

Chi-Square = 9.11    DF = 1    P = 0.003

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
51          15   5     9.0    5.3    (-----*--)
65           1   7    18.5    6.3                 (------------------*-)
                                     +---------+---------+---------+------
                                   7.0      10.5      14.0      17.5

Overall median = 10.0

A 95.0% CI for median(51) - median(65): (-10.0,-2.0)


Mood median test for % GRAVEL

Chi-Square = 1.66    DF = 1    P = 0.198

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
51          10   9    38.0   16.0                     (------*-------)
65           2   0    20.0   16.0  (-------*-------)
                                   --------+---------+---------+--------
                                          20        30        40

Overall median = 38.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.8% CI for median(51) - median(65): (-25.0,52.0)
```

```
Mood median test for % SAND

Chi-Square = 2.43    DF = 1    P = 0.119

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
51          11   8    16.0    6.0  (----*--)
65           0   2    34.0    2.0                                  (-*)
                                   --------+---------+---------+--------
                                        18.0      24.0      30.0

Overall median = 16.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.8% CI for median(51) - median(65): (-31.0,2.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.01    DF = 1    P = 0.943

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
51          10   9    37.0   16.0  (--------*------)
65           1   1    46.0   18.0           (------------*-----------)
                                   ------+---------+---------+---------+
                                      35.0      42.0      49.0      56.0

Overall median = 37.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.8% CI for median(51) - median(65): (-39.0,56.0)


Mood median test for Bulk Density

Chi-Square = 6.43    DF = 1    P = 0.011

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
51           0   3   2.310  0.070                          (*-----)
65           6   1   2.100  0.070  (-----*--)
                                   ------+---------+---------+---------+
                                       2.10      2.20      2.30      2.40

Overall median = 2.120
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(65): (0.174,0.326)


Mood median test for Dry Density

Chi-Square = 4.29    DF = 1    P = 0.038

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
51           0   3   2.150  0.070                             (*---)
65           5   2   1.810  0.120  (-------*--)
                                   -------+---------+---------+---------
                                        1.80      1.95      2.10

Overall median = 1.830
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(65): (0.280,0.498)
```

Results for: Domain 51 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
51	10	14.36	8.77	2.8
71	44	14.56	5.80	0.87

Difference = mu (51) - mu (71)
Estimate for difference: -0.20
95% CI for difference: (-6.68, 6.27)
T-Test of difference = 0 (vs not =): T-Value = -0.07 P-Value = 0.946 DF = 10

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	27.08	2.90	0.80
71	17	31.24	2.61	0.63

Difference = mu (51) - mu (71)
Estimate for difference: -4.16
95% CI for difference: (-6.27, -2.05)
T-Test of difference = 0 (vs not =): T-Value = -4.06 P-Value = 0.000 DF = 24

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	17.08	1.71	0.47
71	17	15.35	1.73	0.42

Difference = mu (51) - mu (71)
Estimate for difference: 1.724
95% CI for difference: (0.424, 3.024)
T-Test of difference = 0 (vs not =): T-Value = 2.73 P-Value = 0.011 DF = 26

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	10.00	1.83	0.51
71	17	15.88	1.96	0.48

Difference = mu (51) - mu (71)
Estimate for difference: -5.882
95% CI for difference: (-7.312, -4.453)
T-Test of difference = 0 (vs not =): T-Value = -8.46 P-Value = 0.000 DF = 26

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
51	10	38.20	9.73	3.1
71	16	20.69	6.81	1.7

Difference = mu (51) - mu (71)
Estimate for difference: 17.51
95% CI for difference: (9.97, 25.05)
T-Test of difference = 0 (vs not =): T-Value = 4.98 P-Value = 0.000 DF = 14

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
51         10  16.00   4.71      1.5
71         16  24.37   7.67      1.9

Difference = mu (51) - mu (71)
Estimate for difference:  -8.37
95% CI for difference:  (-13.40, -3.35)
T-Test of difference = 0 (vs not =): T-Value = -3.45  P-Value = 0.002  DF = 23


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N  Mean  StDev  SE Mean
51         10  38.5   12.7      4.0
71         16  52.1   11.3      2.8

Difference = mu (51) - mu (71)
Estimate for difference:  -13.63
95% CI for difference:  (-23.97, -3.28)
T-Test of difference = 0 (vs not =): T-Value = -2.78  P-Value = 0.013  DF = 17


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
51          3  2.3267  0.0379    0.022
71         12  2.2583  0.0486    0.014

Difference = mu (51) - mu (71)
Estimate for difference:  0.0683
95% CI for difference:  (-0.0143, 0.1510)
T-Test of difference = 0 (vs not =): T-Value = 2.63  P-Value = 0.078  DF = 3


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
51          3  2.1600  0.0361    0.021
71         12  1.9937  0.0718    0.021

Difference = mu (51) - mu (71)
Estimate for difference:  0.1663
95% CI for difference:  (0.0944, 0.2382)
T-Test of difference = 0 (vs not =): T-Value = 5.66  P-Value = 0.001  DF = 6
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
51         10   12.00      23.8  -0.82
71         44   13.00      28.3   0.82
Overall    54              27.5

H = 0.68  DF = 1  P = 0.410
H = 0.69  DF = 1  P = 0.407  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	27.00	9.5	-3.26
71	17	31.00	20.1	3.26
Overall	30		15.5	

H = 10.66 DF = 1 P = 0.001
H = 10.82 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	17.00	19.4	2.11
71	17	16.00	12.5	-2.11
Overall	30		15.5	

H = 4.47 DF = 1 P = 0.035
H = 4.68 DF = 1 P = 0.031 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	10.00	7.2	-4.52
71	17	16.00	21.9	4.52
Overall	30		15.5	

H = 20.43 DF = 1 P = 0.000
H = 20.62 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
51	10	39.50	19.9	3.35
71	16	19.00	9.5	-3.35
Overall	26		13.5	

H = 11.20 DF = 1 P = 0.001
H = 11.24 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
51	10	16.00	8.3	-2.77
71	16	23.50	16.8	2.77
Overall	26		13.5	

H = 7.66 DF = 1 P = 0.006
H = 7.71 DF = 1 P = 0.005 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
51         10   37.50       8.5  -2.64
71         16   53.00      16.6   2.64
Overall    26              13.5

H = 6.94  DF = 1  P = 0.008
H = 6.95  DF = 1  P = 0.008  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
51          3   2.310      12.8   2.09
71         12   2.260       6.8  -2.09
Overall    15               8.0

H = 4.38  DF = 1  P = 0.036
H = 4.41  DF = 1  P = 0.036  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
51          3   2.150      14.0   2.60
71         12   1.991       6.5  -2.60
Overall    15               8.0

H = 6.75  DF = 1  P = 0.009

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.02    DF = 1    P = 0.897

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
51           5   5    12.0   12.2  (-----------*--------------------)
71          23  21    13.0    3.8                *-)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 13.0

A 95.0% CI for median(51) - median(71): (-6.5,5.4)
```

```
Mood median test for WL (%)

Chi-Square = 5.79    DF = 1    P = 0.016

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
51          11   2   27.00   4.50  (---------*-----------)
71           7  10   31.00   3.50                         (----*----)
                                   -----+---------+---------+---------+-
                                     26.0      28.0      30.0      32.0

Overall median = 30.00

A 95.0% CI for median(51) - median(71): (-7.00,-1.00)


Mood median test for Wp (%)

Chi-Square = 1.03    DF = 1    P = 0.310

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
51           6   7   17.00   2.50                 (--------*----------)
71          11   6   16.00   3.00  (---------------*--------)
                                   ---+---------+---------+---------+---
                                   14.4      15.6      16.8      18.0

Overall median = 16.00

A 95.0% CI for median(51) - median(71): (-1.00,3.00)


Mood median test for Ip (%)

Chi-Square = 22.94    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
51          13   0   10.00   2.50  (---*----)
71           2  15   16.00   2.50                        (---*---)
                                   ----+---------+---------+---------+--
                                    10.0      12.5      15.0      17.5

Overall median = 13.50

A 95.0% CI for median(51) - median(71): (-8.00,-4.00)


Mood median test for % GRAVEL

Chi-Square = 10.40    DF = 1    P = 0.001

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           1   9    39.5   14.8                    (---------*--------)
71          12   4    19.0    7.5  (--*----)
                                   ---------+---------+---------+-------
                                         24.0      32.0      40.0

Overall median = 23.5

A 95.0% CI for median(51) - median(71): (11.0,28.0)
```

```
Mood median test for % SAND

Chi-Square = 8.55    DF = 1    P = 0.003

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
51           9   1    16.0    5.3  (------*---)
71           5  11    23.5   14.0           (------------*-------------)
                                   -----+---------+---------+---------+-
                                     15.0      20.0      25.0      30.0

Overall median = 18.0

A 95.0% CI for median(51) - median(71): (-17.0,-2.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 5.85    DF = 1    P = 0.016

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
51           8   2    37.5   11.8   (--------*-------)
71           5  11    53.0   15.5                       (------*-------)
                                    --+---------+---------+---------+----
                                   32.0      40.0      48.0      56.0

Overall median = 49.0

A 95.0% CI for median(51) - median(71): (-25.0,-11.0)


Mood median test for Bulk Density

Chi-Square = 4.29    DF = 1    P = 0.038

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
51           0   3   2.310  0.070                 (-*--------------)
71           8   4   2.260  0.058  (------*------)
                                   --+---------+---------+---------+----
                                   2.240     2.280     2.320     2.360

Overall median = 2.270
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(71): (0.010,0.140)


Mood median test for Dry Density

Chi-Square = 4.29    DF = 1    P = 0.038

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           0   3   2.150  0.070                        (--*------)
71           8   4   1.991  0.067  (--*------)
                                   ---------+---------+---------+-------
                                          2.030     2.100     2.170

Overall median = 2.000
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(71): (0.094,0.235)
```

Results for: Domain 51 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
51	10	14.36	8.77	2.8
72	26	15.13	4.24	0.83

Difference = mu (51) - mu (72)
Estimate for difference: -0.77
95% CI for difference: (-7.22, 5.68)
T-Test of difference = 0 (vs not =): T-Value = -0.26 P-Value = 0.796 DF = 10

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	27.08	2.90	0.80
72	10	30.50	4.84	1.5

Difference = mu (51) - mu (72)
Estimate for difference: -3.42
95% CI for difference: (-7.16, 0.31)
T-Test of difference = 0 (vs not =): T-Value = -1.98 P-Value = 0.069 DF = 13

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	17.08	1.71	0.47
72	10	15.20	1.99	0.63

Difference = mu (51) - mu (72)
Estimate for difference: 1.877
95% CI for difference: (0.216, 3.537)
T-Test of difference = 0 (vs not =): T-Value = 2.38 P-Value = 0.029 DF = 17

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
51	13	10.00	1.83	0.51
72	10	15.30	3.71	1.2

Difference = mu (51) - mu (72)
Estimate for difference: -5.30
95% CI for difference: (-8.09, -2.51)
T-Test of difference = 0 (vs not =): T-Value = -4.14 P-Value = 0.001 DF = 12

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
51	10	38.20	9.73	3.1
72	9	20.56	7.14	2.4

Difference = mu (51) - mu (72)
Estimate for difference: 17.64
95% CI for difference: (9.40, 25.89)
T-Test of difference = 0 (vs not =): T-Value = 4.54 P-Value = 0.000 DF = 16

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
51	10	16.00	4.71	1.5
72	9	27.56	7.20	2.4

Difference = mu (51) - mu (72)
Estimate for difference: -11.56
95% CI for difference: (-17.66, -5.45)
T-Test of difference = 0 (vs not =): T-Value = -4.09 P-Value = 0.001 DF = 13

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
51	10	38.5	12.7	4.0
72	9	51.89	7.66	2.6

Difference = mu (51) - mu (72)
Estimate for difference: -13.39
95% CI for difference: (-23.52, -3.26)
T-Test of difference = 0 (vs not =): T-Value = -2.82 P-Value = 0.013 DF = 15

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
51	3	2.3267	0.0379	0.022
72	7	2.221	0.100	0.038

Difference = mu (51) - mu (72)
Estimate for difference: 0.1052
95% CI for difference: (0.0017, 0.2088)
T-Test of difference = 0 (vs not =): T-Value = 2.40 P-Value = 0.047 DF = 7

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
51	3	2.1600	0.0361	0.021
72	7	1.944	0.155	0.059

Difference = mu (51) - mu (72)
Estimate for difference: 0.2157
95% CI for difference: (0.0684, 0.3629)
T-Test of difference = 0 (vs not =): T-Value = 3.46 P-Value = 0.010 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
51	10	12.00	15.8	-0.95
72	26	13.00	19.5	0.95
Overall	36		18.5	

H = 0.91 DF = 1 P = 0.340
H = 0.92 DF = 1 P = 0.339 (adjusted for ties)

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
51	10	12.00	15.8	-0.95
72	26	13.00	19.5	0.95
Overall	36		18.5	

H = 0.91 DF = 1 P = 0.340
H = 0.92 DF = 1 P = 0.339 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	27.00	9.7	-1.86
72	10	30.00	15.0	1.86
Overall	23		12.0	

H = 3.46 DF = 1 P = 0.063
H = 3.52 DF = 1 P = 0.061 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	17.00	14.9	2.36
72	10	15.00	8.2	-2.36
Overall	23		12.0	

H = 5.55 DF = 1 P = 0.018
H = 5.69 DF = 1 P = 0.017 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
51	13	10.00	7.8	-3.41
72	10	15.50	17.5	3.41
Overall	23		12.0	

H = 11.63 DF = 1 P = 0.001
H = 11.83 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
51	10	39.50	13.9	3.18
72	9	17.00	5.7	-3.18
Overall	19		10.0	

H = 10.14 DF = 1 P = 0.001
H = 10.18 DF = 1 P = 0.001 (adjusted for ties)

```
Kruskal-Wallis Test on % SAND

Domain
Reference   N  Median  Ave Rank      Z
51         10   16.00       6.0  -3.27
72          9   26.00      14.4   3.27
Overall    19              10.0

H = 10.67  DF = 1  P = 0.001
H = 10.70  DF = 1  P = 0.001  (adjusted for ties)


Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
51         10   37.50       6.8  -2.57
72          9   53.00      13.5   2.57
Overall    19              10.0

H = 6.62  DF = 1  P = 0.010
H = 6.63  DF = 1  P = 0.010  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain                  Ave
Reference   N  Median  Rank      Z
51          3   2.310   8.8   2.28
72          7   2.240   4.1  -2.28
Overall    10           5.5

H = 5.19  DF = 1  P = 0.023
H = 5.36  DF = 1  P = 0.021  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Dry Density

Domain                  Ave
Reference   N  Median  Rank      Z
51          3   2.150   9.0   2.39
72          7   2.000   4.0  -2.39
Overall    10           5.5

H = 5.73  DF = 1  P = 0.017

* NOTE * One or more small samples
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.04    DF = 1    P = 0.836

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
51           5   5    12.0   12.2  (-----------*--------------------)
72          14  12    13.0    5.8                (*---------)
                                   --+---------+---------+---------+----
                                   8.0      12.0      16.0      20.0

Overall median = 13.0

A 95.0% CI for median(51) - median(72): (-7.6,4.5)
```

```
Mood median test for WL (%)

Chi-Square = 3.49    DF = 1    P = 0.062

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
51           9   4   27.00   4.50  (---------*-----------)
72           3   7   30.00   5.25            (--------------*-----------)
                                   -----+---------+---------+---------+-
                                     26.0      28.0      30.0      32.0

Overall median = 28.00

A 95.0% CI for median(51) - median(72): (-7.00,1.23)
```

```
Mood median test for Wp (%)

Chi-Square = 2.72    DF = 1    P = 0.099

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           6   7   17.00   2.50                  (-----*--------)
72           8   2   15.00   2.75  (--------*----------)
                                   ---------+---------+---------+-------
                                         15.0      16.5      18.0

Overall median = 16.00

A 95.0% CI for median(51) - median(72): (0.00,3.23)
```

```
Mood median test for Ip (%)

Chi-Square = 7.30    DF = 1    P = 0.007

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
51          12   1   10.00   2.50  (---*----)
72           4   6   15.50   5.25              (-------------*------)
                                   ----+---------+---------+---------+--
                                    10.0      12.5      15.0      17.5

Overall median = 12.00

A 95.0% CI for median(51) - median(72): (-8.00,-1.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 9.02    DF = 1    P = 0.003

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
51           2   8    39.5   14.8                   (--------*-----)
72           8   1    17.0   13.5  (--*----------)
                                   ------+---------+---------+---------+
                                        20        30        40        50

Overall median = 30.0

A 95.0% CI for median(51) - median(72): (4.0,31.1)
```

```
Mood median test for % SAND

Chi-Square = 11.82    DF = 1    P = 0.001

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
51           9   1    16.0    5.3  (------*---)
72           1   8    26.0    7.5                     (-------*--------)
                                   -----+---------+---------+---------+-
                                     15.0      20.0      25.0      30.0

Overall median = 19.0

A 95.0% CI for median(51) - median(72): (-16.1,-4.9)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 6.34    DF = 1    P = 0.012

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
51           8   2    37.5   11.8  (------*-----)
72           2   7    53.0   15.5              (---------*------)
                                   ---------+---------+---------+-------
                                           40        50        60

Overall median = 42.0

A 95.0% CI for median(51) - median(72): (-27.2,-6.8)


Mood median test for Bulk Density

Chi-Square = 4.29    DF = 1    P = 0.038

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
51           0   3   2.310  0.070                     (-*---------)
72           5   2   2.240  0.040  (---------*-------)
                                   -------+---------+---------+---------
                                        2.220     2.280     2.340

Overall median = 2.265
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(72): (0.017,0.165)


Mood median test for Dry Density

Chi-Square = 4.29    DF = 1    P = 0.038

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
51           0   3   2.150  0.070                            (-*----)
72           5   2   2.000  0.070  (-------------*--)
                                   ----+---------+---------+---------+--
                                     1.90      2.00      2.10      2.20

Overall median = 2.013
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(51) - median(72): (0.107,0.303)
```

Results for: Domain 52 v 61

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
52	24	8.48	2.78	0.57
61	9	17.50	6.94	2.3

Difference = mu (52) - mu (61)
Estimate for difference: -9.02
95% CI for difference: (-14.51, -3.53)
T-Test of difference = 0 (vs not =): T-Value = -3.79 P-Value = 0.005 DF = 8

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
52	7	2.364	0.125	0.047
61	9	2.120	0.154	0.051

Difference = mu (52) - mu (61)
Estimate for difference: 0.2443
95% CI for difference: (0.0938, 0.3948)
T-Test of difference = 0 (vs not =): T-Value = 3.51 P-Value = 0.004 DF = 13

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
52	7	2.196	0.154	0.058
61	9	1.817	0.222	0.074

Difference = mu (52) - mu (61)
Estimate for difference: 0.3791
95% CI for difference: (0.1753, 0.5829)
T-Test of difference = 0 (vs not =): T-Value = 4.02 P-Value = 0.001 DF = 13

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	8.450	13.1	-3.74
61	9	16.300	27.3	3.74
Overall	33		17.0	

H = 13.98 DF = 1 P = 0.000
H = 13.99 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
52	7	2.410	12.4	2.91
61	9	2.130	5.4	-2.91
Overall	16		8.5	

H = 8.47 DF = 1 P = 0.004
H = 8.52 DF = 1 P = 0.004 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
52          7   2.200      12.4   2.91
61          9   1.790       5.4  -2.91
Overall    16               8.5

H = 8.47  DF = 1  P = 0.004
H = 8.49  DF = 1  P = 0.004  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 14.85    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
52          18   6     8.4    4.5  (--*--)
61           0   9    16.3   12.1           (---------*----------------)
                                   ------+---------+---------+---------+
                                      10.0      15.0      20.0      25.0

Overall median = 10.0

A 95.0% CI for median(52) - median(61): (-18.7,-2.2)


Mood median test for Bulk Density

Chi-Square = 6.35    DF = 1    P = 0.012

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
52           1   6   2.410  0.120                     (-------------*--)
61           7   2   2.130  0.215  (--------*----------)
                                   --+---------+---------+---------+----
                                   2.04      2.16      2.28      2.40

Overall median = 2.250

A 95.0% CI for median(52) - median(61): (0.050,0.330)


Mood median test for Dry Density

Chi-Square = 6.35    DF = 1    P = 0.012

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
52           1   6   2.200  0.250                     (-----*-----)
61           7   2   1.790  0.380  (--------*--------)
                                   -------+---------+---------+---------
                                        1.75      2.00      2.25

Overall median = 2.025

A 95.0% CI for median(52) - median(61): (0.070,0.570)
```

Results for: Domain 52 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
52	24	8.48	2.78	0.57
62	131	16.88	5.15	0.45

Difference = mu (52) - mu (62)
Estimate for difference: -8.400
95% CI for difference: (-9.850, -6.950)
T-Test of difference = 0 (vs not =): T-Value = -11.60 P-Value = 0.000 DF = 57

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
52	24	25.33	2.73	0.56
62	113	34.27	6.08	0.57

Difference = mu (52) - mu (62)
Estimate for difference: -8.932
95% CI for difference: (-10.521, -7.343)
T-Test of difference = 0 (vs not =): T-Value = -11.19 P-Value = 0.000 DF = 78

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
52	24	16.21	1.61	0.33
62	113	17.70	2.77	0.26

Difference = mu (52) - mu (62)
Estimate for difference: -1.491
95% CI for difference: (-2.332, -0.649)
T-Test of difference = 0 (vs not =): T-Value = -3.55 P-Value = 0.001 DF = 56

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
52	24	9.13	2.11	0.43
62	113	16.57	4.48	0.42

Difference = mu (52) - mu (62)
Estimate for difference: -7.441
95% CI for difference: (-8.643, -6.239)
T-Test of difference = 0 (vs not =): T-Value = -12.34 P-Value = 0.000 DF = 74

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
52	15	37.5	13.5	3.5
62	47	24.9	13.6	2.0

Difference = mu (52) - mu (62)
Estimate for difference: 12.57
95% CI for difference: (4.29, 20.85)
T-Test of difference = 0 (vs not =): T-Value = 3.14 P-Value = 0.005 DF = 23

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
52         15  18.47   6.10      1.6
62         47  28.74   7.27      1.1

Difference = mu (52) - mu (62)
Estimate for difference:  -10.28
95% CI for difference:  (-14.18, -6.38)
T-Test of difference = 0 (vs not =): T-Value = -5.41  P-Value = 0.000  DF = 27


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N  Mean  StDev  SE Mean
52         15  36.7   15.7      4.1
62         47  45.0   16.8      2.5

Difference = mu (52) - mu (62)
Estimate for difference:  -8.31
95% CI for difference:  (-18.08, 1.46)
T-Test of difference = 0 (vs not =): T-Value = -1.75  P-Value = 0.092  DF = 25


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
52          7  2.364  0.125    0.047
62         29  2.113  0.106    0.020

Difference = mu (52) - mu (62)
Estimate for difference:  0.2516
95% CI for difference:  (0.1338, 0.3694)
T-Test of difference = 0 (vs not =): T-Value = 4.93  P-Value = 0.001  DF = 8


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
52          7  2.196  0.154    0.058
62         29  1.800  0.176    0.033

Difference = mu (52) - mu (62)
Estimate for difference:  0.3957
95% CI for difference:  (0.2467, 0.5447)
T-Test of difference = 0 (vs not =): T-Value = 5.92  P-Value = 0.000  DF = 10
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
52          24   8.450      18.2  -7.10
62         131  15.870      89.0   7.10
Overall    155              78.0

H = 50.45  DF = 1  P = 0.000
H = 50.46  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	25.50	17.7	-6.98
62	113	34.00	79.9	6.98
Overall	137		69.0	

H = 48.67 DF = 1 P = 0.000
H = 49.02 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	16.00	49.1	-2.70
62	113	17.00	73.2	2.70
Overall	137		69.0	

H = 7.31 DF = 1 P = 0.007
H = 7.46 DF = 1 P = 0.006 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	9.000	18.0	-6.93
62	113	16.000	79.8	6.93
Overall	137		69.0	

H = 48.08 DF = 1 P = 0.000
H = 48.40 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
52	15	36.00	43.9	3.07
62	47	24.00	27.5	-3.07
Overall	62		31.5	

H = 9.40 DF = 1 P = 0.002
H = 9.41 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
52	15	19.00	13.5	-4.45
62	47	28.00	37.3	4.45
Overall	62		31.5	

H = 19.77 DF = 1 P = 0.000
H = 19.81 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
52	15	38.00	23.5	-1.98
62	47	47.00	34.1	1.98
Overall	62		31.5	

H = 3.92 DF = 1 P = 0.048
H = 3.93 DF = 1 P = 0.047 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
52	7	2.410	30.7	3.42
62	29	2.150	15.6	-3.42
Overall	36		18.5	

H = 11.68 DF = 1 P = 0.001
H = 11.71 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
52	7	2.200	31.6	3.68
62	29	1.850	15.3	-3.68
Overall	36		18.5	

H = 13.52 DF = 1 P = 0.000
H = 13.55 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 27.32   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
52          24   0    8.45   4.52  (----*----)
62          55  76   15.87   5.61                              (-*--)
                                   -------+---------+---------+---------
                                        9.0      12.0      15.0
```

Overall median = 15.20

A 95.0% CI for median(52) - median(62): (-9.02,-5.64)

Mood median test for WL (%)

Chi-Square = 21.36   DF = 1   P = 0.000

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
52          24   0    25.5    3.8     (----*----)
62          55  58    34.0    4.0                                  (--*
                                      +---------+---------+---------+------
                                   24.0      27.0      30.0      33.0
```

Overall median = 33.0

A 95.0% CI for median(52) - median(62): (-10.0,-6.0)

```
Mood median test for Wp (%)

Chi-Square = 3.58    DF = 1    P = 0.058

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
52          18   6   16.00   2.75    (---------*-)
62          61  52   17.00   3.00                        *---------)
                                     +---------+---------+---------+------
                                   15.0      16.0      17.0      18.0

Overall median = 17.00

A 95.0% CI for median(52) - median(62): (-2.34,-1.00)


Mood median test for Ip (%)

Chi-Square = 27.85    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
52          24   0    9.00   3.00  (---*----)
62          46  67   16.00   4.00                                (*---)
                                   --------+---------+---------+--------
                                        10.0      12.5      15.0

Overall median = 15.00

A 95.0% CI for median(52) - median(62): (-9.00,-6.00)


Mood median test for % GRAVEL

Chi-Square = 7.92    DF = 1    P = 0.005

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
52           3  12    36.0   22.0              (-------*---------------)
62          29  18    24.0   19.0  (----*-----)
                                   -----+---------+---------+---------+-
                                     24.0      32.0      40.0      48.0

Overall median = 27.0

A 95.0% CI for median(52) - median(62): (4.0,22.7)


Mood median test for % SAND

Chi-Square = 10.64    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          13   2    19.0    9.0  (----------*----)
62          18  29    28.0    9.0                        (----*---)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 26.5

A 95.0% CI for median(52) - median(62): (-14.3,-5.8)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.74    DF = 1    P = 0.053

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          11   4    38.0   21.0  (----------------*--------)
62          21  26    47.0   20.0                        (------*----)
                                   ---+---------+---------+---------+---
                                   28.0      35.0      42.0      49.0

Overall median = 45.0

A 95.0% CI for median(52) - median(62): (-21.5,-3.1)


Mood median test for Bulk Density

Chi-Square = 4.43    DF = 1    P = 0.035

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
52           1   6   2.410  0.120                    (-------------*--)
62          17  12   2.150  0.196    (--------*---)
                                     +---------+---------+---------+------
                                   2.04      2.16      2.28      2.40

Overall median = 2.170

A 95.0% CI for median(52) - median(62): (0.112,0.315)


Mood median test for Dry Density

Chi-Square = 8.69    DF = 1    P = 0.003

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
52           0   7   2.200  0.250                 (-------*------)
62          18  11   1.850  0.315  (------*---)
                                   ----+---------+---------+---------+--
                                     1.80      2.00      2.20      2.40

Overall median = 1.910

A 95.0% CI for median(52) - median(62): (0.181,0.558)
```

Results for: Domain 52 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
52	24	8.48	2.78	0.57
63	55	17.40	5.42	0.73

Difference = mu (52) - mu (63)
Estimate for difference: -8.918
95% CI for difference: (-10.761, -7.074)
T-Test of difference = 0 (vs not =): T-Value = -9.64 P-Value = 0.000 DF = 74

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
52	24	25.33	2.73	0.56
63	58	34.88	4.40	0.58

Difference = mu (52) - mu (63)
Estimate for difference: -9.546
95% CI for difference: (-11.148, -7.944)
T-Test of difference = 0 (vs not =): T-Value = -11.89 P-Value = 0.000 DF = 67

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
52	24	16.21	1.61	0.33
63	58	17.98	2.92	0.38

Difference = mu (52) - mu (63)
Estimate for difference: -1.774
95% CI for difference: (-2.781, -0.767)
T-Test of difference = 0 (vs not =): T-Value = -3.51 P-Value = 0.001 DF = 73

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
52	24	9.13	2.11	0.43
63	58	16.90	3.05	0.40

Difference = mu (52) - mu (63)
Estimate for difference: -7.772
95% CI for difference: (-8.948, -6.595)
T-Test of difference = 0 (vs not =): T-Value = -13.21 P-Value = 0.000 DF = 61

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
52	15	37.5	13.5	3.5
63	30	26.9	11.7	2.1

Difference = mu (52) - mu (63)
Estimate for difference: 10.53
95% CI for difference: (2.11, 18.96)
T-Test of difference = 0 (vs not =): T-Value = 2.58 P-Value = 0.016 DF = 24

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
52         15  18.47   6.10      1.6
63         30  29.70   8.47      1.5

Difference = mu (52) - mu (63)
Estimate for difference:  -11.23
95% CI for difference:  (-15.71, -6.76)
T-Test of difference = 0 (vs not =): T-Value = -5.09  P-Value = 0.000  DF = 37


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N  Mean  StDev  SE Mean
52         15  36.7   15.7      4.1
63         30  43.4   11.2      2.1

Difference = mu (52) - mu (63)
Estimate for difference:  -6.70
95% CI for difference:  (-16.16, 2.76)
T-Test of difference = 0 (vs not =): T-Value = -1.47  P-Value = 0.156  DF = 21


Two-sample T for Bulk Density

Domain
Reference   N   Mean  StDev  SE Mean
52          7  2.364  0.125    0.047
63         11  2.081  0.118    0.036

Difference = mu (52) - mu (63)
Estimate for difference:  0.2833
95% CI for difference:  (0.1548, 0.4119)
T-Test of difference = 0 (vs not =): T-Value = 4.80  P-Value = 0.000  DF = 12


Two-sample T for Dry Density

Domain
Reference   N   Mean  StDev  SE Mean
52          7  2.196  0.154    0.058
63         11  1.806  0.147    0.044

Difference = mu (52) - mu (63)
Estimate for difference:  0.3894
95% CI for difference:  (0.2299, 0.5488)
T-Test of difference = 0 (vs not =): T-Value = 5.32  P-Value = 0.000  DF = 12
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
52         24   8.450      14.1  -6.62
63         55  15.380      51.3   6.62
Overall    79              40.0

H = 43.82  DF = 1  P = 0.000
H = 43.83  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	25.50	13.2	-6.92
63	58	34.00	53.2	6.92
Overall	82		41.5	

H = 47.89 DF = 1 P = 0.000
H = 48.12 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	16.00	30.8	-2.62
63	58	18.00	45.9	2.62
Overall	82		41.5	

H = 6.86 DF = 1 P = 0.009
H = 7.01 DF = 1 P = 0.008 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	9.000	13.3	-6.89
63	58	16.000	53.2	6.89
Overall	82		41.5	

H = 47.53 DF = 1 P = 0.000
H = 47.92 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
52	15	36.00	30.2	2.59
63	30	25.50	19.4	-2.59
Overall	45		23.0	

H = 6.70 DF = 1 P = 0.010
H = 6.71 DF = 1 P = 0.010 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
52	15	19.00	11.3	-4.23
63	30	29.00	28.9	4.23
Overall	45		23.0	

H = 17.86 DF = 1 P = 0.000
H = 17.91 DF = 1 P = 0.000 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
52         15   38.00      18.1  -1.78
63         30   42.50      25.5   1.78
Overall    45              23.0

H = 3.17  DF = 1  P = 0.075
H = 3.18  DF = 1  P = 0.075  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
52          7   2.410      14.6   3.22
63         11   2.090       6.3  -3.22
Overall    18               9.5

H = 10.34  DF = 1  P = 0.001
H = 10.40  DF = 1  P = 0.001  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
52          7   2.200      14.6   3.26
63         11   1.840       6.2  -3.26
Overall    18               9.5

H = 10.63  DF = 1  P = 0.001
H = 10.64  DF = 1  P = 0.001  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 33.61    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
52          24   0     8.4    4.5  (----*----)
63          16  39    15.4    5.9                          (-*-----)
                                   -------+---------+---------+---------
                                        9.0      12.0      15.0

Overall median = 13.8

A 95.0% CI for median(52) - median(63): (-9.0,-5.0)


Mood median test for WL (%)

Chi-Square = 30.77    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
52          24   0    25.5    3.8     (----*----)
63          19  39    34.0    5.0                                 (--*---)
                                      +---------+---------+---------+------
                                   24.0      27.0      30.0      33.0

Overall median = 32.0

A 95.0% CI for median(52) - median(63): (-10.0,-6.0)
```

```
Mood median test for Wp (%)

Chi-Square = 7.68    DF = 1    P = 0.006

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
52          18   6   16.00   2.75  (-------*-)
63          24  34   18.00   4.25                   (-------*-------)
                                   -----+---------+---------+---------+-
                                     15.6      16.8      18.0      19.2

Overall median = 17.00

A 95.0% CI for median(52) - median(63): (-3.00,-2.00)


Mood median test for Ip (%)

Chi-Square = 33.93    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          24   0    9.00   3.00  (--*---)
63          17  41   16.00   4.00                            *------)
                                   ---+---------+---------+---------+---
                                    9.0      12.0      15.0      18.0

Overall median = 15.50

A 95.0% CI for median(52) - median(63): (-9.00,-6.00)


Mood median test for % GRAVEL

Chi-Square = 2.21    DF = 1    P = 0.138

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52           6   9    36.0   22.0            (------*---------------)
63          19  11    25.5   15.3   (---*-------)
                                   ---+---------+---------+---------+---
                                   24.0      32.0      40.0      48.0

Overall median = 30.0

A 95.0% CI for median(52) - median(63): (2.0,21.3)


Mood median test for % SAND

Chi-Square = 7.70    DF = 1    P = 0.006

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          13   2    19.0    9.0  (----------*----)
63          13  17    29.0    9.0                          (-----*-----)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 26.0

A 95.0% CI for median(52) - median(63): (-16.1,-5.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.18    DF = 1    P = 0.140

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          10   5    38.0   21.0  (----------------*--------)
63          13  17    42.5   15.5                    (----*---------)
                                   ---+---------+---------+---------+---
                                   28.0      35.0      42.0      49.0

Overall median = 40.0

A 95.0% CI for median(52) - median(63): (-19.1,1.2)
```

```
Mood median test for Bulk Density

Chi-Square = 5.84    DF = 1    P = 0.016

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
52           1   6   2.410  0.120                        (----------*-)
63           8   3   2.090  0.260    (--------*-------)
                                     +---------+---------+---------+------
                                   1.95      2.10      2.25      2.40

Overall median = 2.175

A 95.0% CI for median(52) - median(63): (0.159,0.355)
```

```
Mood median test for Dry Density

Chi-Square = 7.90    DF = 1    P = 0.005

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
52           1   6   2.200  0.250                   (-------*------)
63           9   2   1.840  0.250  (-------*----)
                                   ------+---------+---------+---------+
                                       1.80      2.00      2.20      2.40

Overall median = 1.930

A 95.0% CI for median(52) - median(63): (0.199,0.522)
```

Results for: Domain 52 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24   8.48   2.78     0.57
64         24  15.34   2.86     0.58

Difference = mu (52) - mu (64)
Estimate for difference:  -6.861
95% CI for difference:  (-8.500, -5.222)
T-Test of difference = 0 (vs not =): T-Value = -8.43  P-Value = 0.000  DF = 45


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24  25.33   2.73     0.56
64         27  34.44   2.34     0.45

Difference = mu (52) - mu (64)
Estimate for difference:  -9.111
95% CI for difference:  (-10.555, -7.668)
T-Test of difference = 0 (vs not =): T-Value = -12.71  P-Value = 0.000  DF = 45


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24  16.21   1.61     0.33
64         27  17.81   2.24     0.43

Difference = mu (52) - mu (64)
Estimate for difference:  -1.606
95% CI for difference:  (-2.697, -0.516)
T-Test of difference = 0 (vs not =): T-Value = -2.96  P-Value = 0.005  DF = 47


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24   9.13   2.11     0.43
64         27  16.63   2.39     0.46

Difference = mu (52) - mu (64)
Estimate for difference:  -7.505
95% CI for difference:  (-8.772, -6.238)
T-Test of difference = 0 (vs not =): T-Value = -11.91  P-Value = 0.000  DF = 48


Two-sample T for % GRAVEL

Domain
Reference   N  Mean  StDev  SE Mean
52         15  37.5   13.5      3.5
64          2  19.0   11.3      8.0

Difference = mu (52) - mu (64)
Estimate for difference:  18.47
95% CI for difference:  (-92.35, 129.28)
T-Test of difference = 0 (vs not =): T-Value = 2.12  P-Value = 0.281  DF = 1
```

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
52         15  18.47   6.10      1.6
64          2  27.50   2.12      1.5

Difference = mu (52) - mu (64)
Estimate for difference:  -9.03
95% CI for difference:  (-15.07, -2.99)
T-Test of difference = 0 (vs not =): T-Value = -4.15  P-Value = 0.014  DF = 4


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
52         15   36.7   15.7      4.1
64          2  53.50   9.19      6.5

Difference = mu (52) - mu (64)
Estimate for difference:  -16.83
95% CI for difference:  (-114.20, 80.54)
T-Test of difference = 0 (vs not =): T-Value = -2.20  P-Value = 0.272  DF = 1


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
52          7   2.364   0.125    0.047
64         13  2.1462  0.0859    0.024

Difference = mu (52) - mu (64)
Estimate for difference:  0.2181
95% CI for difference:  (0.0987, 0.3375)
T-Test of difference = 0 (vs not =): T-Value = 4.13  P-Value = 0.003  DF = 9


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
52          7   2.196   0.154    0.058
64         13  1.8731  0.0910    0.025

Difference = mu (52) - mu (64)
Estimate for difference:  0.3226
95% CI for difference:  (0.1761, 0.4691)
T-Test of difference = 0 (vs not =): T-Value = 5.08  P-Value = 0.001  DF = 8
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
52         24   8.450      13.4  -5.50
64         24  15.440      35.6   5.50
Overall    48              24.5

H = 30.20  DF = 1  P = 0.000
H = 30.22  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	25.50	12.6	-6.07
64	27	34.00	37.9	6.07
Overall	51		26.0	

H = 36.81 DF = 1 P = 0.000
H = 37.01 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	16.00	19.9	-2.76
64	27	18.00	31.4	2.76
Overall	51		26.0	

H = 7.64 DF = 1 P = 0.006
H = 7.86 DF = 1 P = 0.005 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	9.000	12.9	-5.93
64	27	17.000	37.6	5.93
Overall	51		26.0	

H = 35.11 DF = 1 P = 0.000
H = 35.40 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
52	15	36.00	9.8	1.79
64	2	19.00	3.0	-1.79
Overall	17		9.0	

H = 3.20 DF = 1 P = 0.074
H = 3.23 DF = 1 P = 0.072 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
52	15	19.00	8.2	-1.79
64	2	27.50	15.0	1.79
Overall	17		9.0	

H = 3.20 DF = 1 P = 0.074
H = 3.21 DF = 1 P = 0.073 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
52         15   38.00       8.3  -1.64
64          2   53.50      14.5   1.64
Overall    17               9.0

H = 2.69  DF = 1  P = 0.101
H = 2.69  DF = 1  P = 0.101  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
52          7   2.410      16.0   3.05
64         13   2.180       7.5  -3.05
Overall    20              10.5

H = 9.31  DF = 1  P = 0.002
H = 9.34  DF = 1  P = 0.002  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
52          7   2.200      16.3   3.21
64         13   1.900       7.4  -3.21
Overall    20              10.5

H = 10.30  DF = 1  P = 0.001
H = 10.38  DF = 1  P = 0.001  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 21.48    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
52          21   3     8.4    4.5  (----*----)
64           5  19    15.4    4.0                     (------*-----)
                                   -------+---------+---------+---------
                                        9.0      12.0      15.0

Overall median = 12.0

A 95.0% CI for median(52) - median(64): (-9.5,-3.8)
```

```
Mood median test for WL (%)

Chi-Square = 40.30    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
52          24   0    25.5    3.8    (----*----)
64           3  24    34.0    4.0                                  (--*---)
                                     +---------+---------+---------+------
                                  24.0      27.0      30.0      33.0

Overall median = 31.0

A 95.0% CI for median(52) - median(64): (-11.0,-7.0)


Mood median test for Wp (%)

Chi-Square = 3.84    DF = 1    P = 0.050

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
52          18   6   16.00   2.75    (---------*-)
64          13  14   18.00   2.00                        (---------*
                                     +---------+---------+---------+------
                                  15.0      16.0      17.0      18.0

Overall median = 17.00

A 95.0% CI for median(52) - median(64): (-2.00,-1.00)


Mood median test for Ip (%)

Chi-Square = 37.24    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
52          24   0    9.00   3.00  (---*----)
64           4  23   17.00   3.00                                 (---*
                                   --------+---------+---------+--------
                                       10.0      12.5      15.0

Overall median = 14.00

A 95.0% CI for median(52) - median(64): (-9.00,-7.00)


Mood median test for % GRAVEL

Chi-Square = 2.01    DF = 1    P = 0.156

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -+---------+---------+---------+-----
52           7   8    36.0   22.0                 (----*----------)
64           2   0    19.0   16.0  (------*------)
                                   -+---------+---------+---------+-----
                                   12        24        36        48

Overall median = 32.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.3% CI for median(52) - median(64): (-18.0,48.0)
```

```
Mood median test for % SAND

Chi-Square = 3.24    DF = 1    P = 0.072

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          10   5    19.0    9.0  (----------*----)
64           0   2    27.5    3.0                          (--*--)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 20.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.3% CI for median(52) - median(64): (-22.0,4.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.24    DF = 1    P = 0.072

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
52          10   5    38.0   21.0  (-----------*-----)
64           0   2    53.5   13.0                      (------*-----)
                                   ----+---------+---------+---------+--
                                      30        40        50        60

Overall median = 40.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.3% CI for median(52) - median(64): (-49.0,29.0)


Mood median test for Bulk Density

Chi-Square = 7.21    DF = 1    P = 0.007

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
52           1   6   2.410  0.120                 (---------------*--)
64          10   3   2.180  0.140  (---------*--)
                                   --+---------+---------+---------+----
                                   2.10      2.20      2.30      2.40

Overall median = 2.200

A 95.0% CI for median(52) - median(64): (0.087,0.303)


Mood median test for Dry Density

Chi-Square = 12.17    DF = 1    P = 0.000

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
52           1   6   2.200  0.250                   (----------*--------)
64          12   1   1.900  0.145    (------*--)
                                     +---------+---------+---------+------
                                   1.80      1.95      2.10      2.25

Overall median = 1.950

A 95.0% CI for median(52) - median(64): (0.127,0.502)
```

Results for: Domain 52 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
52	32	12.65	9.29	1.6
65	7	17.71	4.27	1.6

Difference = mu (52) - mu (65)
Estimate for difference: -5.07
95% CI for difference: (-9.87, -0.26)
T-Test of difference = 0 (vs not =): T-Value = -2.20 P-Value = 0.040 DF = 20

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
52	31	27.9	10.4	1.9
65	8	35.25	5.60	2.0

Difference = mu (52) - mu (65)
Estimate for difference: -7.35
95% CI for difference: (-13.01, -1.69)
T-Test of difference = 0 (vs not =): T-Value = -2.70 P-Value = 0.013 DF = 21

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
52	29	19.76	9.88	1.8
65	8	18.88	1.46	0.52

Difference = mu (52) - mu (65)
Estimate for difference: 0.88
95% CI for difference: (-3.00, 4.77)
T-Test of difference = 0 (vs not =): T-Value = 0.46 P-Value = 0.646 DF = 31

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
52	29	8.79	2.68	0.50
65	8	16.38	4.41	1.6

Difference = mu (52) - mu (65)
Estimate for difference: -7.58
95% CI for difference: (-11.35, -3.81)
T-Test of difference = 0 (vs not =): T-Value = -4.64 P-Value = 0.002 DF = 8

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
52	25	36.7	14.0	2.8
65	2	20.0	11.3	8.0

Difference = mu (52) - mu (65)
Estimate for difference: 16.72
95% CI for difference: (-90.97, 124.41)
T-Test of difference = 0 (vs not =): T-Value = 1.97 P-Value = 0.299 DF = 1

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
52         25  20.28   6.21      1.2
65          2  34.00   1.41      1.0

Difference = mu (52) - mu (65)
Estimate for difference:  -13.72
95% CI for difference:  (-17.82, -9.62)
T-Test of difference = 0 (vs not =): T-Value = -8.61  P-Value = 0.000  DF = 5


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N  Mean  StDev  SE Mean
52         25  37.8   14.8      3.0
65          2  46.0   12.7      9.0

Difference = mu (52) - mu (65)
Estimate for difference:  -8.20
95% CI for difference:  (-128.60, 112.20)
T-Test of difference = 0 (vs not =): T-Value = -0.87  P-Value = 0.546  DF = 1


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
52         11   2.212   0.266    0.080
65          7  2.0929  0.0496    0.019

Difference = mu (52) - mu (65)
Estimate for difference:  0.1190
95% CI for difference:  (-0.0626, 0.3005)
T-Test of difference = 0 (vs not =): T-Value = 1.44  P-Value = 0.177  DF = 11


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
52         11   1.985   0.350     0.11
65          7  1.7800  0.0995    0.038

Difference = mu (52) - mu (65)
Estimate for difference:  0.205
95% CI for difference:  (-0.039, 0.450)
T-Test of difference = 0 (vs not =): T-Value = 1.83  P-Value = 0.092  DF = 12
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
52         32   10.00      17.9  -2.42
65          7   17.00      29.4   2.42
Overall    39              20.0

H = 5.83  DF = 1  P = 0.016
H = 5.84  DF = 1  P = 0.016  (adjusted for ties)
```

```
Kruskal-Wallis Test on WL (%)

Domain
Reference   N  Median  Ave Rank      Z
52         31   26.00      17.4  -2.80
65          8   37.50      30.1   2.80
Overall    39              20.0

H = 7.84  DF = 1  P = 0.005
H = 7.91  DF = 1  P = 0.005  (adjusted for ties)


Kruskal-Wallis Test on Wp (%)

Domain
Reference   N  Median  Ave Rank      Z
52         29   16.00      17.1  -1.99
65          8   19.00      25.8   1.99
Overall    37              19.0

H = 3.97  DF = 1  P = 0.046
H = 4.09  DF = 1  P = 0.043  (adjusted for ties)


Kruskal-Wallis Test on Ip (%)

Domain
Reference   N  Median  Ave Rank      Z
52         29   9.000      15.8  -3.47
65          8  18.500      30.8   3.47
Overall    37              19.0

H = 12.03  DF = 1  P = 0.001
H = 12.19  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on % GRAVEL

Domain
Reference   N  Median  Ave Rank      Z
52         25   36.00      14.8   1.76
65          2   20.00       4.5  -1.76
Overall    27              14.0

H = 3.09  DF = 1  P = 0.079
H = 3.10  DF = 1  P = 0.078  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on % SAND

Domain
Reference   N  Median  Ave Rank      Z
52         25   20.00      13.0  -2.31
65          2   34.00      26.5   2.31
Overall    27              14.0

H = 5.36  DF = 1  P = 0.021
H = 5.38  DF = 1  P = 0.020  (adjusted for ties)

* NOTE * One or more small samples
```

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
52         25   38.00      13.6  -0.93
65          2   46.00      19.0   0.93
Overall    27              14.0

H = 0.86  DF = 1  P = 0.355
H = 0.86  DF = 1  P = 0.354  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
52         11   2.290      10.9   1.36
65          7   2.100       7.4  -1.36
Overall    18               9.5

H = 1.85  DF = 1  P = 0.174
H = 1.86  DF = 1  P = 0.172  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
52         11   2.080      11.3   1.77
65          7   1.810       6.7  -1.77
Overall    18               9.5

H = 3.12  DF = 1  P = 0.077
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 8.98    DF = 1    P = 0.003

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
52          20  12    10.0    6.1  (-----*----)
65           0   7    17.0    4.0                   (-------*----------)
                                   -------+---------+---------+---------
                                       10.5      14.0      17.5

Overall median = 11.0

A 95.0% CI for median(52) - median(65): (-10.7,-4.8)


Mood median test for WL (%)

Chi-Square = 13.29    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
52          25   6    26.0    3.0   (---*-)
65           1   7    37.5    8.3               (-------------*----)
                                    --+---------+---------+---------+----
                                   25.0      30.0      35.0      40.0

Overall median = 27.0

A 95.0% CI for median(52) - median(65): (-15.0,-4.6)
```

```
Mood median test for Wp (%)

Chi-Square = 6.17    DF = 1    P = 0.013

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
52          18  11   16.00   3.50  *----------------)
65           1   7   19.00   1.50                  (--------*--------)
                                   -------+---------+---------+---------
                                       16.8      18.0      19.2

Overall median = 17.00

A 95.0% CI for median(52) - median(65): (-4.00,-1.59)


Mood median test for Ip (%)

Chi-Square = 7.10    DF = 1    P = 0.008

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
52          19  10     9.0    3.5  (--*--)
65           1   7    18.5    6.3             (-----------------*-)
                                   -------+---------+---------+---------
                                       10.5      14.0      17.5

Overall median = 9.0

A 95.0% CI for median(52) - median(65): (-11.0,-3.0)


Mood median test for % GRAVEL

Chi-Square = 1.49    DF = 1    P = 0.223

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
52          14  11    36.0   16.5                        (-----*----)
65           2   0    20.0   16.0  (---------*---------)
                                   -----+---------+---------+---------+-
                                     16.0      24.0      32.0      40.0

Overall median = 36.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(52) - median(65): (-28.0,49.0)


Mood median test for % SAND
Chi-Square = 2.33    DF = 1    P = 0.127

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
52          14  11    20.0   10.0  (---*-----)
65           0   2    34.0    2.0                               (-*-)
                                   ----+---------+---------+---------+--
                                    20.0      25.0      30.0      35.0

Overall median = 21.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(52) - median(65): (-28.0,-2.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 0.957

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          13  12    38.0   16.0  (-----*------)
65           1   1    46.0   18.0       (--------------*--------------)
                                   ---+---------+---------+---------+---
                                   36.0      42.0      48.0      54.0

Overall median = 38.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(52) - median(65): (-44.0,39.0)
```

```
Mood median test for Bulk Density

Chi-Square = 4.22    DF = 1    P = 0.040

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
52           4   7   2.290  0.360     (-------------------*---------)
65           6   1   2.100  0.070    (----*--)
                                     +---------+---------+---------+------
                                   2.04      2.16      2.28      2.40

Overall median = 2.120

A 95.0% CI for median(52) - median(65): (-0.030,0.360)
```

```
Mood median test for Dry Density

Chi-Square = 5.84    DF = 1    P = 0.016

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
52           3   8   2.080  0.510     (---------------------*----------)
65           6   1   1.810  0.120   (------*--)
                                   -----+---------+---------+---------+-
                                      1.76      1.92      2.08      2.24

Overall median = 1.850

A 95.0% CI for median(52) - median(65): (0.019,0.481)
```

Results for: Domain 52 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24   8.48   2.78     0.57
71         44  14.56   5.80     0.87

Difference = mu (52) - mu (71)
Estimate for difference:  -6.08
95% CI for difference:  (-8.16, -4.00)
T-Test of difference = 0 (vs not =): T-Value = -5.84  P-Value = 0.000  DF = 65


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24  25.33   2.73     0.56
71         17  31.24   2.61     0.63

Difference = mu (52) - mu (71)
Estimate for difference:  -5.902
95% CI for difference:  (-7.614, -4.190)
T-Test of difference = 0 (vs not =): T-Value = -7.00  P-Value = 0.000  DF = 35


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24  16.21   1.61     0.33
71         17  15.35   1.73     0.42

Difference = mu (52) - mu (71)
Estimate for difference:  0.855
95% CI for difference:  (-0.230, 1.941)
T-Test of difference = 0 (vs not =): T-Value = 1.60  P-Value = 0.118  DF = 33


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24   9.13   2.11     0.43
71         17  15.88   1.96     0.48

Difference = mu (52) - mu (71)
Estimate for difference:  -6.757
95% CI for difference:  (-8.061, -5.454)
T-Test of difference = 0 (vs not =): T-Value = -10.51  P-Value = 0.000  DF = 36


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
52         15   37.5   13.5      3.5
71         16  20.69   6.81      1.7

Difference = mu (52) - mu (71)
Estimate for difference:  16.78
95% CI for difference:  (8.71, 24.85)
T-Test of difference = 0 (vs not =): T-Value = 4.34  P-Value = 0.000  DF = 20
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
52	15	18.47	6.10	1.6
71	16	24.37	7.67	1.9

Difference = mu (52) - mu (71)
Estimate for difference: -5.91
95% CI for difference: (-10.99, -0.82)
T-Test of difference = 0 (vs not =): T-Value = -2.38 P-Value = 0.024 DF = 28

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
52	15	36.7	15.7	4.1
71	16	52.1	11.3	2.8

Difference = mu (52) - mu (71)
Estimate for difference: -15.46
95% CI for difference: (-25.64, -5.27)
T-Test of difference = 0 (vs not =): T-Value = -3.13 P-Value = 0.004 DF = 25

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
52	7	2.364	0.125	0.047
71	12	2.2583	0.0486	0.014

Difference = mu (52) - mu (71)
Estimate for difference: 0.1060
95% CI for difference: (-0.0103, 0.2222)
T-Test of difference = 0 (vs not =): T-Value = 2.16 P-Value = 0.068 DF = 7

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
52	7	2.196	0.154	0.058
71	12	1.9937	0.0718	0.021

Difference = mu (52) - mu (71)
Estimate for difference: 0.2020
95% CI for difference: (0.0557, 0.3483)
T-Test of difference = 0 (vs not =): T-Value = 3.26 P-Value = 0.014 DF = 7

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	8.450	16.2	-5.63
71	44	13.000	44.5	5.63
Overall	68		34.5	

H = 31.74 DF = 1 P = 0.000
H = 31.96 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	25.50	13.4	-4.80
71	17	31.00	31.7	4.80
Overall	41		21.0	

H = 23.07 DF = 1 P = 0.000
H = 23.33 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	16.00	22.7	1.10
71	17	16.00	18.6	-1.10
Overall	41		21.0	

H = 1.21 DF = 1 P = 0.272
H = 1.26 DF = 1 P = 0.262 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	9.000	12.7	-5.27
71	17	16.000	32.7	5.27
Overall	41		21.0	

H = 27.73 DF = 1 P = 0.000
H = 27.98 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
52	15	36.00	22.3	3.76
71	16	19.00	10.1	-3.76
Overall	31		16.0	

H = 14.10 DF = 1 P = 0.000
H = 14.14 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
52	15	19.00	12.7	-1.96
71	16	23.50	19.1	1.96
Overall	31		16.0	

H = 3.83 DF = 1 P = 0.050
H = 3.84 DF = 1 P = 0.050 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
52	15	38.00	10.7	-3.14
71	16	53.00	21.0	3.14
Overall	31		16.0	

H = 9.88 DF = 1 P = 0.002
H = 9.89 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
52	7	2.410	13.9	2.32
71	12	2.260	7.7	-2.32
Overall	19		10.0	

H = 5.40 DF = 1 P = 0.020
H = 5.45 DF = 1 P = 0.020 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
52	7	2.200	14.1	2.45
71	12	1.991	7.6	-2.45
Overall	19		10.0	

H = 6.01 DF = 1 P = 0.014

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 25.76   DF = 1   P = 0.000

```
Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
52          22   2    8.45   4.52  (------*-------)
71          12  32   13.00   3.75                                *----)
                                   -----+---------+---------+---------+-
                                      8.0      10.0      12.0      14.0
```

Overall median = 12.25

A 95.0% CI for median(52) - median(71): (-6.78,-3.00)

Mood median test for WL (%)

Chi-Square = 23.18   DF = 1   P = 0.000

```
Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
52          21   3   25.50   3.75  (-----*-----)
71           2  15   31.00   3.50                        (---*---)
                                   ----+---------+---------+---------+--
                                    25.0      27.5      30.0      32.5
```

Overall median = 27.00

A 95.0% CI for median(52) - median(71): (-8.00,-3.00)

```
Mood median test for Wp (%)

Chi-Square = 0.17    DF = 1    P = 0.678

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
52          17   7   16.00   2.75              (---------*-)
71          11   6   16.00   3.00    (-------------------*---------)
                                     +---------+---------+---------+------
                                  14.0      15.0      16.0      17.0

Overall median = 16.00

A 95.0% CI for median(52) - median(71): (-1.00,1.05)


Mood median test for Ip (%)

Chi-Square = 30.49    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
52          21   3    9.00   3.00  (---*----)
71           0  17   16.00   2.50                               (---*---)
                                   --------+---------+---------+--------
                                        10.0      12.5      15.0

Overall median = 11.00

A 95.0% CI for median(52) - median(71): (-9.00,-6.00)


Mood median test for % GRAVEL

Chi-Square = 23.51    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52           1  14    36.0   22.0              (-----*------------)
71          15   1    19.0    7.5  (-*---)
                                   ---+---------+---------+---------+---
                                     20        30        40        50

Overall median = 25.0

A 95.0% CI for median(52) - median(71): (8.7,26.2)


Mood median test for % SAND

Chi-Square = 2.64    DF = 1    P = 0.104

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          10   5    19.0    9.0  (----------*----)
71           6  10    23.5   14.0         (------------*-------------)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 20.0

A 95.0% CI for median(52) - median(71): (-15.2,1.5)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 9.38    DF = 1    P = 0.002

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
52          12   3    38.0   21.0  (-----------*-----)
71           4  12    53.0   15.5                      (-----*-----)
                                   ----+---------+---------+---------+--
                                      30        40        50        60

Overall median = 46.0

A 95.0% CI for median(52) - median(71): (-28.5,-8.7)


Mood median test for Bulk Density

Chi-Square = 5.70    DF = 1    P = 0.017

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
52           2   5   2.410  0.120     (-------------------------*----)
71          10   2   2.260  0.058  (----*----)
                                   --------+---------+---------+--------
                                         2.280     2.340     2.400

Overall median = 2.290

A 95.0% CI for median(52) - median(71): (-0.001,0.171)


Mood median test for Dry Density

Chi-Square = 6.54    DF = 1    P = 0.011

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
52           1   6   2.200  0.250        (------------*------------)
71           9   3   1.991  0.067  (-*--)
                                   ------+---------+---------+---------+
                                        2.04      2.16      2.28      2.40

Overall median = 2.027

A 95.0% CI for median(52) - median(71): (0.052,0.357)
```

Results for: Domain 52 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24   8.48   2.78     0.57
72         26  15.13   4.24     0.83

Difference = mu (52) - mu (72)
Estimate for difference:  -6.65
95% CI for difference:  (-8.68, -4.62)
T-Test of difference = 0 (vs not =): T-Value = -6.60  P-Value = 0.000  DF = 43


Two-sample T for WL (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24  25.33   2.73     0.56
72         10  30.50   4.84      1.5

Difference = mu (52) - mu (72)
Estimate for difference:  -5.17
95% CI for difference:  (-8.75, -1.58)
T-Test of difference = 0 (vs not =): T-Value = -3.17  P-Value = 0.009  DF = 11


Two-sample T for Wp (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24  16.21   1.61     0.33
72         10  15.20   1.99     0.63

Difference = mu (52) - mu (72)
Estimate for difference:  1.008
95% CI for difference:  (-0.515, 2.531)
T-Test of difference = 0 (vs not =): T-Value = 1.42  P-Value = 0.177  DF = 14


Two-sample T for Ip (%)

Domain
Reference   N   Mean  StDev  SE Mean
52         24   9.13   2.11     0.43
72         10  15.30   3.71      1.2

Difference = mu (52) - mu (72)
Estimate for difference:  -6.17
95% CI for difference:  (-8.93, -3.42)
T-Test of difference = 0 (vs not =): T-Value = -4.94  P-Value = 0.000  DF = 11


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
52         15   37.5   13.5      3.5
72          9  20.56   7.14      2.4

Difference = mu (52) - mu (72)
Estimate for difference:  16.91
95% CI for difference:  (8.15, 25.67)
T-Test of difference = 0 (vs not =): T-Value = 4.02  P-Value = 0.001  DF = 21
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
52	15	18.47	6.10	1.6
72	9	27.56	7.20	2.4

Difference = mu (52) - mu (72)
Estimate for difference: -9.09
95% CI for difference: (-15.24, -2.93)
T-Test of difference = 0 (vs not =): T-Value = -3.17 P-Value = 0.007 DF = 14

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
52	15	36.7	15.7	4.1
72	9	51.89	7.66	2.6

Difference = mu (52) - mu (72)
Estimate for difference: -15.22
95% CI for difference: (-25.19, -5.25)
T-Test of difference = 0 (vs not =): T-Value = -3.18 P-Value = 0.005 DF = 21

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
52	7	2.364	0.125	0.047
72	7	2.221	0.100	0.038

Difference = mu (52) - mu (72)
Estimate for difference: 0.1429
95% CI for difference: (0.0097, 0.2760)
T-Test of difference = 0 (vs not =): T-Value = 2.36 P-Value = 0.038 DF = 11

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
52	7	2.196	0.154	0.058
72	7	1.944	0.155	0.059

Difference = mu (52) - mu (72)
Estimate for difference: 0.2514
95% CI for difference: (0.0693, 0.4334)
T-Test of difference = 0 (vs not =): T-Value = 3.04 P-Value = 0.011 DF = 11

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	8.450	14.5	-5.15
72	26	13.000	35.7	5.15
Overall	50		25.5	

H = 26.48 DF = 1 P = 0.000
H = 26.57 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	25.50	13.9	-3.23
72	10	30.00	26.1	3.23
Overall	34		17.5	

H = 10.44 DF = 1 P = 0.001
H = 10.62 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	16.00	19.4	1.74
72	10	15.00	12.9	-1.74
Overall	34		17.5	

H = 3.02 DF = 1 P = 0.082
H = 3.18 DF = 1 P = 0.075 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
52	24	9.000	13.0	-4.06
72	10	15.500	28.3	4.06
Overall	34		17.5	

H = 16.51 DF = 1 P = 0.000
H = 16.74 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
52	15	36.00	15.8	2.92
72	9	17.00	7.1	-2.92
Overall	24		12.5	

H = 8.54 DF = 1 P = 0.003
H = 8.56 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
52	15	19.00	9.3	-2.83
72	9	26.00	17.8	2.83
Overall	24		12.5	

H = 8.02 DF = 1 P = 0.005
H = 8.05 DF = 1 P = 0.005 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
52	15	38.00	9.2	-2.92
72	9	53.00	17.9	2.92
Overall	24		12.5	

H = 8.54 DF = 1 P = 0.003
H = 8.56 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
52	7	2.410	10.0	2.24
72	7	2.240	5.0	-2.24
Overall	14		7.5	

H = 5.00 DF = 1 P = 0.025
H = 5.09 DF = 1 P = 0.024 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
52	7	2.200	10.1	2.36
72	7	2.000	4.9	-2.36
Overall	14		7.5	

H = 5.59 DF = 1 P = 0.018

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 25.96   DF = 1   P = 0.000

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
52          21   3     8.4    4.5  (----*----)
72           4  22    13.0    5.8                    (*-------------)
                                   -------+---------+---------+---------
                                        9.0      12.0      15.0
```

Overall median = 11.9

A 95.0% CI for median(52) - median(72): (-8.7,-3.0)

Mood median test for WL (%)

Chi-Square = 7.81   DF = 1   P = 0.005

```
Domain                               Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  ----+---------+---------+---------+--
52         15    9   25.50   3.75  (-----*-----)
72          1    9   30.00   5.25              (-----------*--------)
                                   ----+---------+---------+---------+--
                                    25.0      27.5      30.0      32.5
```

Overall median = 27.00

A 95.0% CI for median(52) - median(72): (-7.11,-0.92)

```
Mood median test for Wp (%)

Chi-Square = 3.85    DF = 1    P = 0.050

Domain                               Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1  ---+---------+---------+---------+---
52          8   16   16.00   2.75              (---------*-)
72          7    3   15.00   2.75  (------------*----------------)
                                   ---+---------+---------+---------+---
                                   14.0      15.0      16.0      17.0

Overall median = 16.00

A 95.0% CI for median(52) - median(72): (-0.06,2.03)


Mood median test for Ip (%)
Chi-Square = 14.17    DF = 1    P = 0.000

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          17   7    9.00   3.00  (--*---)
72           0  10   15.50   5.25              (-----------*-----)
                                   ---+---------+---------+---------+---
                                    9.0      12.0      15.0      18.0

Overall median = 10.50

A 95.0% CI for median(52) - median(72): (-9.03,-3.00)


Mood median test for % GRAVEL

Chi-Square = 5.53    DF = 1    P = 0.019

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
52           6   9    36.0   22.0                 (-----*-----------)
72           8   1    17.0   13.5  (--*----------)
                                   ------+---------+---------+---------+
                                        20        30        40        50

Overall median = 30.0

A 95.0% CI for median(52) - median(72): (2.0,25.4)


Mood median test for % SAND

Chi-Square = 8.71    DF = 1    P = 0.003

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
52          11   4    19.0    9.0  (----------*----)
72           1   8    26.0    7.5                   (-------*--------)
                                   ---+---------+---------+---------+---
                                   15.0      20.0      25.0      30.0

Overall median = 21.5

A 95.0% CI for median(52) - median(72): (-12.1,-2.6)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 8.71    DF = 1    P = 0.003

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
52          11   4    38.0   21.0  (-----------*-----)
72           1   8    53.0   15.5                   (---------*------)
                                   ----+---------+---------+---------+--
                                      30        40        50        60

Overall median = 41.5

A 95.0% CI for median(52) - median(72): (-29.7,-5.1)
```

```
Mood median test for Bulk Density

Chi-Square = 7.14    DF = 1    P = 0.008

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
52           1   6   2.410  0.120           (-------------------*----)
72           6   1   2.240  0.040  (-------*-----)
                                   --------+---------+---------+--------
                                         2.240     2.320     2.400

Overall median = 2.285

A 95.0% CI for median(52) - median(72): (0.010,0.170)
```

```
Mood median test for Dry Density

Chi-Square = 7.14    DF = 1    P = 0.008

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
52           1   6   2.200  0.250              (----------*--------)
72           6   1   2.000  0.070  (--------*-)
                                   ------+---------+---------+---------+
                                       1.95      2.10      2.25      2.40

Overall median = 2.036

A 95.0% CI for median(52) - median(72): (0.062,0.382)
```

Results for: Domain 61 v 62

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
61	9	17.50	6.94	2.3
62	131	16.88	5.15	0.45

Difference = mu (61) - mu (62)
Estimate for difference: 0.62
95% CI for difference: (-4.81, 6.06)
T-Test of difference = 0 (vs not =): T-Value = 0.26 P-Value = 0.799 DF = 8

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
61	9	2.120	0.154	0.051
62	29	2.113	0.106	0.020

Difference = mu (61) - mu (62)
Estimate for difference: 0.0073
95% CI for difference: (-0.1152, 0.1298)
T-Test of difference = 0 (vs not =): T-Value = 0.13 P-Value = 0.897 DF = 10

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
61	9	1.817	0.222	0.074
62	29	1.800	0.176	0.033

Difference = mu (61) - mu (62)
Estimate for difference: 0.0166
95% CI for difference: (-0.1618, 0.1951)
T-Test of difference = 0 (vs not =): T-Value = 0.21 P-Value = 0.841 DF = 11

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
61	9	16.30	69.6	-0.07
62	131	15.87	70.6	0.07
Overall	140		70.5	

H = 0.00 DF = 1 P = 0.946
H = 0.00 DF = 1 P = 0.946 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
61	9	2.130	21.7	0.67
62	29	2.150	18.8	-0.67
Overall	38		19.5	

H = 0.45 DF = 1 P = 0.503
H = 0.45 DF = 1 P = 0.503 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
61          9   1.790      21.3   0.57
62         29   1.850      18.9  -0.57
Overall    38              19.5

H = 0.32  DF = 1  P = 0.571
H = 0.32  DF = 1  P = 0.571  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.12    DF = 1    P = 0.730

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
61           4   5    16.3   12.1    (-----------*--------------------)
62          66  65    15.9    5.6             (-*-)
                                     -+---------+---------+---------+-----
                                   12.0      16.0      20.0      24.0

Overall median = 15.9

A 95.0% CI for median(61) - median(62): (-4.5,10.3)


Mood median test for Bulk Density

Chi-Square = 0.15    DF = 1    P = 0.703

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
61           5   4   2.130  0.215  (----------------*-----------------)
62          14  15   2.150  0.196      (---------------*------)
                                   ---+---------+---------+---------+---
                                    2.030     2.100     2.170     2.240

Overall median = 2.146

A 95.0% CI for median(61) - median(62): (-0.200,0.200)


Mood median test for Dry Density

Chi-Square = 0.04    DF = 1    P = 0.841

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           5   4   1.790  0.380  (-------------*----------------)
62          15  14   1.850  0.315            (-------*-----)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10

Overall median = 1.850

A 95.0% CI for median(61) - median(62): (-0.360,0.290)
```

Results for: Domain 61 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
61          9  17.50   6.94      2.3
63         55  17.40   5.42     0.73

Difference = mu (61) - mu (63)
Estimate for difference:  0.10
95% CI for difference:  (-5.39, 5.59)
T-Test of difference = 0 (vs not =): T-Value = 0.04  P-Value = 0.967  DF = 9


Two-sample T for Bulk Density

Domain
reference   N   Mean  StDev  SE Mean
61          9  2.120  0.154    0.051
63         11  2.081  0.118    0.036

Difference = mu (61) - mu (63)
Estimate for difference:  0.0390
95% CI for difference:  (-0.0949, 0.1729)
T-Test of difference = 0 (vs not =): T-Value = 0.63  P-Value = 0.542  DF = 14


Two-sample T for Dry Density

Domain
reference   N   Mean  StDev  SE Mean
61          9  1.817  0.222    0.074
63         11  1.806  0.147    0.044

Difference = mu (61) - mu (63)
Estimate for difference:  0.0103
95% CI for difference:  (-0.1763, 0.1968)
T-Test of difference = 0 (vs not =): T-Value = 0.12  P-Value = 0.907  DF = 13
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
61          9   16.30      31.1  -0.24
63         55   15.38      32.7   0.24
Overall    64              32.5

H = 0.06  DF = 1  P = 0.809
H = 0.06  DF = 1  P = 0.809  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
61          9   2.130      11.8   0.87
63         11   2.090       9.5  -0.87
Overall    20              10.5

H = 0.76  DF = 1  P = 0.382
H = 0.77  DF = 1  P = 0.381  (adjusted for ties)
```

```
Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
61          9   1.790      10.8   0.19
63         11   1.840      10.3  -0.19
Overall    20              10.5

H = 0.04  DF = 1  P = 0.849
H = 0.04  DF = 1  P = 0.849  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.13    DF = 1    P = 0.719

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
61           4   5    16.3   12.1    (-----------*--------------------)
63          28  27    15.4    5.9            (*----)
                                     -+---------+---------+---------+-----
                                   12.0      16.0      20.0      24.0

Overall median = 15.6

A 95.0% CI for median(61) - median(63): (-4.5,11.1)


Mood median test for Bulk Density

Chi-Square = 0.20    DF = 1    P = 0.653

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           4   5   2.130  0.215       (-----------*------------)
63           6   5   2.090  0.260  (-------------*-----------)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.100

A 95.0% CI for median(61) - median(63): (-0.066,0.196)


Mood median test for Dry Density

Chi-Square = 0.20    DF = 1    P = 0.653

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           5   4   1.790  0.380  (-------------*----------------)
63           5   6   1.840  0.250         (----------*-----)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10

Overall median = 1.830

A 95.0% CI for median(61) - median(63): (-0.144,0.216)
```

Results for: Domain 61 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
61          9  17.50   6.94      2.3
64         24  15.34   2.86     0.58

Difference = mu (61) - mu (64)
Estimate for difference:  2.16
95% CI for difference:  (-3.24, 7.56)
T-Test of difference = 0 (vs not =): T-Value = 0.91  P-Value = 0.389  DF = 9


Two-sample T for Bulk Density

Domain
reference   N    Mean   StDev  SE Mean
61          9   2.120   0.154    0.051
64         13  2.1462  0.0859    0.024

Difference = mu (61) - mu (64)
Estimate for difference:  -0.0262
95% CI for difference:  (-0.1507, 0.0984)
T-Test of difference = 0 (vs not =): T-Value = -0.46  P-Value = 0.653  DF = 11


Two-sample T for Dry Density

Domain
reference   N    Mean   StDev  SE Mean
61          9   1.817   0.222    0.074
64         13  1.8731  0.0910    0.025

Difference = mu (61) - mu (64)
Estimate for difference:  -0.0565
95% CI for difference:  (-0.2337, 0.1208)
T-Test of difference = 0 (vs not =): T-Value = -0.72  P-Value = 0.489  DF = 9
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
61          9   16.30      17.6   0.20
64         24   15.44      16.8  -0.20
Overall    33              17.0

H = 0.04  DF = 1  P = 0.840
H = 0.04  DF = 1  P = 0.840  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
61          9   2.130      11.6   0.03
64         13   2.180      11.5  -0.03
Overall    22              11.5

H = 0.00  DF = 1  P = 0.973
H = 0.00  DF = 1  P = 0.973  (adjusted for ties)
```

```
Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
61          9   1.790      11.1  -0.23
64         13   1.900      11.8   0.23
Overall    22              11.5

H = 0.05  DF = 1  P = 0.815
H = 0.06  DF = 1  P = 0.814  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.25    DF = 1    P = 0.619

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
61           4   5    16.3   12.1    (-----------*--------------------)
64          13  11    15.4    4.0        (-----*--)
                                      -+---------+---------+---------+-----
                                    12.0      16.0      20.0      24.0

Overall median = 15.9

A 95.0% CI for median(61) - median(64): (-4.5,12.1)


Mood median test for Bulk Density

Chi-Square = 0.19    DF = 1    P = 0.665

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   ---+---------+---------+---------+---
61           5   4   2.130  0.215   (----------------*-----------------)
64           6   7   2.180  0.140             (-------------*---)
                                    ---+---------+---------+---------+---
                                     2.030     2.100     2.170     2.240

Overall median = 2.155

A 95.0% CI for median(61) - median(64): (-0.132,0.136)


Mood median test for Dry Density
C
hi-Square = 0.19    DF = 1    P = 0.665

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   -----+---------+---------+---------+-
61           5   4   1.790  0.380   (-------------*----------------)
64           6   7   1.900  0.145                  (------*--)
                                    -----+---------+---------+---------+-
                                       1.65      1.80      1.95      2.10

Overall median = 1.885

A 95.0% CI for median(61) - median(64): (-0.220,0.187)
```

Results for: Domain 61 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
61	9	17.50	6.94	2.3
65	7	17.71	4.27	1.6

Difference = mu (61) - mu (65)
Estimate for difference: -0.21
95% CI for difference: (-6.31, 5.88)
T-Test of difference = 0 (vs not =): T-Value = -0.08 P-Value = 0.941 DF = 13

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
61	9	2.120	0.154	0.051
65	7	2.0929	0.0496	0.019

Difference = mu (61) - mu (65)
Estimate for difference: 0.0271
95% CI for difference: (-0.0946, 0.1489)
T-Test of difference = 0 (vs not =): T-Value = 0.50 P-Value = 0.630 DF = 10

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
61	9	1.817	0.222	0.074
65	7	1.7800	0.0995	0.038

Difference = mu (61) - mu (65)
Estimate for difference: 0.0366
95% CI for difference: (-0.1464, 0.2196)
T-Test of difference = 0 (vs not =): T-Value = 0.44 P-Value = 0.668 DF = 11

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
61	9	16.30	8.0	-0.48
65	7	17.00	9.1	0.48
Overall	16		8.5	

H = 0.23 DF = 1 P = 0.634
H = 0.23 DF = 1 P = 0.633 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
61	9	2.130	9.3	0.74
65	7	2.100	7.5	-0.74
Overall	16		8.5	

H = 0.55 DF = 1 P = 0.459
H = 0.55 DF = 1 P = 0.458 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain                 Ave
reference   N  Median  Rank      Z
61          9   1.790   9.1   0.53
65          7   1.810   7.8  -0.53
Overall    16           8.5

H = 0.28  DF = 1  P = 0.597
H = 0.28  DF = 1  P = 0.596  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.25    DF = 1    P = 0.614

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
61           5   4    16.3   12.1    (-----------*--------------------)
65           3   4    17.0    4.0           (-----*---------)
                                     -+---------+---------+---------+-----
                                   12.0      16.0      20.0      24.0

Overall median = 16.6

A 95.0% CI for median(61) - median(65): (-7.4,6.1)


Mood median test for Bulk Density

Chi-Square = 0.25    DF = 1    P = 0.614

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
61           4   5   2.130  0.215  (----------------*-----------------)
65           4   3   2.100  0.070      (--------*---)
                                   ---+---------+---------+---------+---
                                    2.030     2.100     2.170     2.240

Overall median = 2.110

A 95.0% CI for median(61) - median(65): (-0.040,0.190)


Mood median test for Dry Density

Chi-Square = 0.25    DF = 1    P = 0.614

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           5   4   1.790  0.380  (-------------*----------------)
65           3   4   1.810  0.120          (-------*--)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10

Overall median = 1.800

A 95.0% CI for median(61) - median(65): (-0.080,0.290)
```

Results for: Domain 61 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
61	9	17.50	6.94	2.3
71	44	14.56	5.80	0.87

Difference = mu (61) - mu (71)
Estimate for difference: 2.94
95% CI for difference: (-2.57, 8.45)
T-Test of difference = 0 (vs not =): T-Value = 1.19 P-Value = 0.262 DF = 10

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
61	9	2.120	0.154	0.051
71	12	2.2583	0.0486	0.014

Difference = mu (61) - mu (71)
Estimate for difference: -0.1383
95% CI for difference: (-0.2587, -0.0180)
T-Test of difference = 0 (vs not =): T-Value = -2.60 P-Value = 0.029 DF = 9

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
61	9	1.817	0.222	0.074
71	12	1.9937	0.0718	0.021

Difference = mu (61) - mu (71)
Estimate for difference: -0.1771
95% CI for difference: (-0.3513, -0.0029)
T-Test of difference = 0 (vs not =): T-Value = -2.30 P-Value = 0.047 DF = 9

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
61	9	16.30	32.0	1.07
71	44	13.00	26.0	-1.07
Overall	53		27.0	

H = 1.14 DF = 1 P = 0.286
H = 1.15 DF = 1 P = 0.283 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
61	9	2.130	7.1	-2.52
71	12	2.260	14.0	2.52
Overall	21		11.0	

H = 6.36 DF = 1 P = 0.012
H = 6.39 DF = 1 P = 0.011 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
61          9   1.790       8.2  -1.78
71         12   1.991      13.1   1.78
Overall    21              11.0

H = 3.16  DF = 1  P = 0.076
H = 3.16  DF = 1  P = 0.076  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.18    DF = 1    P = 0.669

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
61           4   5    16.3   12.1    (-----------*--------------------)
71          23  21    13.0    3.8       *--)
                                     -+---------+---------+---------+-----
                                   12.0      16.0      20.0      24.0

Overall median = 13.6

A 95.0% CI for median(61) - median(71): (-2.5,13.1)


Mood median test for Bulk Density

Chi-Square = 4.07    DF = 1    P = 0.044

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
61           7   2   2.130  0.215  (--------------*---------------)
71           4   8   2.260  0.058                             (--*---)
                                   ---------+---------+---------+-------
                                          2.080     2.160     2.240

Overall median = 2.240

A 95.0% CI for median(61) - median(71): (-0.220,0.002)


Mood median test for Dry Density

Chi-Square = 1.29    DF = 1    P = 0.256

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           6   3   1.790  0.380  (-------------*----------------)
71           5   7   1.991  0.067                           (-*--)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10

Overall median = 1.991

A 95.0% CI for median(61) - median(71): (-0.291,0.040)
```

Results for: Domain 61 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
61	9	17.50	6.94	2.3
72	26	15.13	4.24	0.83

Difference = mu (61) - mu (72)
Estimate for difference: 2.37
95% CI for difference: (-3.11, 7.85)
T-Test of difference = 0 (vs not =): T-Value = 0.97 P-Value = 0.357 DF = 10

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
61	9	2.120	0.154	0.051
72	7	2.221	0.100	0.038

Difference = mu (61) - mu (72)
Estimate for difference: -0.1014
95% CI for difference: (-0.2393, 0.0365)
T-Test of difference = 0 (vs not =): T-Value = -1.59 P-Value = 0.136 DF = 13

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
61	9	1.817	0.222	0.074
72	7	1.944	0.155	0.059

Difference = mu (61) - mu (72)
Estimate for difference: -0.1277
95% CI for difference: (-0.3320, 0.0766)
T-Test of difference = 0 (vs not =): T-Value = -1.35 P-Value = 0.200 DF = 13

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
61	9	16.30	19.7	0.57
72	26	13.00	17.4	-0.57
Overall	35		18.0	

H = 0.32 DF = 1 P = 0.571
H = 0.32 DF = 1 P = 0.570 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
61	9	2.130	6.9	-1.53
72	7	2.240	10.6	1.53
Overall	16		8.5	

H = 2.36 DF = 1 P = 0.125
H = 2.39 DF = 1 P = 0.122 (adjusted for ties)

```
Kruskal-Wallis Test on Dry Density

Domain                  Ave
Reference   N  Median  Rank      Z
61          9   1.790   7.4  -1.01
72          7   2.000   9.9   1.01
Overall    16           8.5

H = 1.01  DF = 1  P = 0.315
H = 1.01  DF = 1  P = 0.314  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.24    DF = 1    P = 0.627

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
61           4   5    16.3   12.1   (-----------*--------------------)
72          14  12    13.0    5.8      *---------)
                                    -+---------+---------+---------+-----
                                   12.0      16.0      20.0      24.0

Overall median = 13.6

A 95.0% CI for median(61) - median(72): (-3.5,13.1)


Mood median test for Bulk Density

Chi-Square = 0.78    DF = 1    P = 0.377

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
61           7   2   2.130  0.215  (--------------*---------------)
72           4   3   2.240  0.040                       (-------*-----)
                                   ---------+---------+---------+-------
                                          2.080     2.160     2.240

Overall median = 2.240

A 95.0% CI for median(61) - median(72): (-0.200,0.000)


Mood median test for Dry Density

Chi-Square = 2.29    DF = 1    P = 0.131

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
61           6   3   1.790  0.380  (-------------*----------------)
72           2   5   2.000  0.070                     (--------*-)
                                   -----+---------+---------+---------+-
                                      1.65      1.80      1.95      2.10

Overall median = 1.966

A 95.0% CI for median(61) - median(72): (-0.258,0.062)
```

Results for: Domain 62 v 63

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
reference    N   Mean  StDev  SE Mean
62         131  16.88   5.15     0.45
63          55  17.40   5.42     0.73

Difference = mu (62) - mu (63)
Estimate for difference:  -0.518
95% CI for difference:  (-2.223, 1.187)
T-Test of difference = 0 (vs not =): T-Value = -0.60  P-Value = 0.548  DF = 96


Two-sample T for WL (%)

Domain
reference    N   Mean  StDev  SE Mean
62         113  34.27   6.08     0.57
63          58  34.88   4.40     0.58

Difference = mu (62) - mu (63)
Estimate for difference:  -0.614
95% CI for difference:  (-2.220, 0.992)
T-Test of difference = 0 (vs not =): T-Value = -0.76  P-Value = 0.451  DF = 150


Two-sample T for Wp (%)

Domain
reference    N   Mean  StDev  SE Mean
62         113  17.70   2.77     0.26
63          58  17.98   2.92     0.38

Difference = mu (62) - mu (63)
Estimate for difference:  -0.284
95% CI for difference:  (-1.202, 0.634)
T-Test of difference = 0 (vs not =): T-Value = -0.61  P-Value = 0.542  DF = 109


Two-sample T for Ip (%)

Domain
reference    N   Mean  StDev  SE Mean
62         113  16.57   4.48     0.42
63          58  16.90   3.05     0.40

Difference = mu (62) - mu (63)
Estimate for difference:  -0.330
95% CI for difference:  (-1.479, 0.818)
T-Test of difference = 0 (vs not =): T-Value = -0.57  P-Value = 0.571  DF = 156


Two-sample T for % GRAVEL

Domain
reference   N  Mean  StDev  SE Mean
62         47  24.9   13.6      2.0
63         30  26.9   11.7      2.1

Difference = mu (62) - mu (63)
Estimate for difference:  -2.04
95% CI for difference:  (-7.87, 3.79)
T-Test of difference = 0 (vs not =): T-Value = -0.70  P-Value = 0.488  DF = 68
```

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
62	47	28.74	7.27	1.1
63	30	29.70	8.47	1.5

Difference = mu (62) - mu (63)
Estimate for difference: -0.96
95% CI for difference: (-4.71, 2.80)
T-Test of difference = 0 (vs not =): T-Value = -0.51 P-Value = 0.612 DF = 55

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
62	47	45.0	16.8	2.5
63	30	43.4	11.2	2.1

Difference = mu (62) - mu (63)
Estimate for difference: 1.61
95% CI for difference: (-4.76, 7.99)
T-Test of difference = 0 (vs not =): T-Value = 0.50 P-Value = 0.616 DF = 74

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
62	29	2.113	0.106	0.020
63	11	2.081	0.118	0.036

Difference = mu (62) - mu (63)
Estimate for difference: 0.0317
95% CI for difference: (-0.0545, 0.1179)
T-Test of difference = 0 (vs not =): T-Value = 0.78 P-Value = 0.447 DF = 16

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
62	29	1.800	0.176	0.033
63	11	1.806	0.147	0.044

Difference = mu (62) - mu (63)
Estimate for difference: -0.0064
95% CI for difference: (-0.1208, 0.1081)
T-Test of difference = 0 (vs not =): T-Value = -0.12 P-Value = 0.909 DF = 21

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
62	131	15.87	92.9	-0.25
63	55	15.38	95.0	0.25
Overall	186		93.5	

H = 0.06 DF = 1 P = 0.803
H = 0.06 DF = 1 P = 0.803 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
62	113	34.00	83.0	-1.10
63	58	34.00	91.8	1.10
Overall	171		86.0	

H = 1.21 DF = 1 P = 0.271
H = 1.22 DF = 1 P = 0.268 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
62	113	17.00	83.8	-0.81
63	58	18.00	90.3	0.81
Overall	171		86.0	

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
62	113	16.00	83.5	-0.91
63	58	16.00	90.8	0.91
Overall	171		86.0	

H = 0.83 DF = 1 P = 0.364
H = 0.84 DF = 1 P = 0.361 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
62	47	24.00	37.6	-0.69
63	30	25.50	41.2	0.69
Overall	77		39.0	

H = 0.48 DF = 1 P = 0.487
H = 0.48 DF = 1 P = 0.487 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
62	47	28.00	38.2	-0.40
63	30	29.00	40.3	0.40
Overall	77		39.0	

H = 0.16 DF = 1 P = 0.691
H = 0.16 DF = 1 P = 0.691 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
62	47	47.00	39.9	0.42
63	30	42.50	37.6	-0.42
Overall	77		39.0	

H = 0.18 DF = 1 P = 0.672
H = 0.18 DF = 1 P = 0.672 (adjusted for ties)

```
Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
62         29   2.150      21.3   0.73
63         11   2.090      18.3  -0.73
Overall    40              20.5

H = 0.53  DF = 1  P = 0.467
H = 0.53  DF = 1  P = 0.467  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
62         29   1.850      20.8   0.24
63         11   1.840      19.8  -0.24
Overall    40              20.5

H = 0.06  DF = 1  P = 0.809
H = 0.06  DF = 1  P = 0.808  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.23    DF = 1    P = 0.630

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          64  67   15.87   5.61            (---------*----------)
63          29  26   15.38   5.92     (---------*----------------------)
                                      +---------+---------+---------+------
                                   14.70     15.40     16.10     16.80

Overall median = 15.82

A 95.0% CI for median(62) - median(63): (-1.50,1.30)


Mood median test for WL (%)
Chi-Square = 0.10    DF = 1    P = 0.751

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          71  42   34.00   4.00     (----------------*
63          35  23   34.00   5.00     (----------------*---------------)
                                      +---------+---------+---------+------
                                   33.00     33.60     34.20     34.80

Overall median = 34.00

A 95.0% CI for median(62) - median(63): (-2.00,1.00)
```

```
Mood median test for Wp (%)

Chi-Square = 0.83    DF = 1    P = 0.361

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
62          78  35   17.00   3.00  *----------------)
63          36  22   18.00   4.25  (----------------*---------------)
                                   -------+---------+---------+---------
                                       17.40     18.00     18.60

Overall median = 18.00

A 95.0% CI for median(62) - median(63): (-1.00,1.00)
```

```
Mood median test for Ip (%)

Chi-Square = 0.00    DF = 1    P = 0.952

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
62          59  54   16.00   4.00  (-----*-------------)
63          30  28   16.00   4.00        *-------------------------)
                                   -------+---------+---------+---------
                                       16.10     16.80     17.50

Overall median = 16.00

A 95.0% CI for median(62) - median(63): (-1.00,1.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 0.01    DF = 1    P = 0.927

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62          24  23    24.0   19.0  (-----------*-------------)
63          15  15    25.5   15.3        (---------*-----------------)
                                   ---+---------+---------+---------+---
                                   21.0      24.5      28.0      31.5

Overall median = 24.0

A 95.0% CI for median(62) - median(63): (-9.2,4.2)
```

```
Mood median test for % SAND

Chi-Square = 0.55    DF = 1    P = 0.459

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62          26  21   28.00   9.00  (------------*---------)
63          14  16   29.00   9.00     (-------------*-------------)
                                   ---+---------+---------+---------+---
                                   26.0      28.0      30.0      32.0

Overall median = 28.00

A 95.0% CI for median(62) - median(63): (-4.00,3.16)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.44    DF = 1    P = 0.508

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
62          23  24    47.0   20.0           (-------------*----------)
63          17  13    42.5   15.5  (---------*--------------------)
                                   ---------+---------+---------+-------
                                         42.0      45.5      49.0

Overall median = 46.0

A 95.0% CI for median(62) - median(63): (-3.0,10.2)


Mood median test for Bulk Density

Chi-Square = 2.49    DF = 1    P = 0.115

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          13  16   2.150  0.196            (--------------*-----)
63           8   3   2.090  0.260  (----------------*--------------)
                                   ------+---------+---------+---------+
                                       2.000     2.080     2.160     2.240

Overall median = 2.130

A 95.0% CI for median(62) - median(63): (-0.150,0.240)


Mood median test for Dry Density

Chi-Square = 0.46    DF = 1    P = 0.499

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
62          15  14   1.850  0.315           (----------------*-----------)
63           7   4   1.840  0.250   (----------------------*------------)
                                    -+---------+---------+---------+-----
                                   1.680     1.750     1.820     1.890

Overall median = 1.850

A 95.0% CI for median(62) - median(63): (-0.180,0.210)
```

Results for: Domain 62 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
reference    N   Mean  StDev  SE Mean
62         131  16.88   5.15     0.45
64          24  15.34   2.86     0.58

Difference = mu (62) - mu (64)
Estimate for difference:  1.539
95% CI for difference:  (0.061, 3.016)
T-Test of difference = 0 (vs not =): T-Value = 2.09  P-Value = 0.042  DF = 55


Two-sample T for WL (%)

Domain
reference    N   Mean  StDev  SE Mean
62         113  34.27   6.08     0.57
64          27  34.44   2.34     0.45

Difference = mu (62) - mu (64)
Estimate for difference:  -0.179
95% CI for difference:  (-1.622, 1.264)
T-Test of difference = 0 (vs not =): T-Value = -0.25  P-Value = 0.806  DF = 110


Two-sample T for Wp (%)

Domain
reference    N   Mean  StDev  SE Mean
62         113  17.70   2.77     0.26
64          27  17.81   2.24     0.43

Difference = mu (62) - mu (64)
Estimate for difference:  -0.116
95% CI for difference:  (-1.128, 0.896)
T-Test of difference = 0 (vs not =): T-Value = -0.23  P-Value = 0.819  DF = 47


Two-sample T for Ip (%)

Domain
reference    N   Mean  StDev  SE Mean
62         113  16.57   4.48     0.42
64          27  16.63   2.39     0.46

Difference = mu (62) - mu (64)
Estimate for difference:  -0.063
95% CI for difference:  (-1.306, 1.179)
T-Test of difference = 0 (vs not =): T-Value = -0.10  P-Value = 0.920  DF = 75


Two-sample T for % GRAVEL

Domain
reference   N  Mean  StDev  SE Mean
62         47  24.9   13.6      2.0
64          2  19.0   11.3      8.0

Difference = mu (62) - mu (64)
Estimate for difference:  5.89
95% CI for difference:  (-98.85, 110.63)
T-Test of difference = 0 (vs not =): T-Value = 0.71  P-Value = 0.605  DF = 1
```

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
62	47	28.74	7.27	1.1
64	2	27.50	2.12	1.5

Difference = mu (62) - mu (64)
Estimate for difference: 1.24
95% CI for difference: (-6.66, 9.15)
T-Test of difference = 0 (vs not =): T-Value = 0.68 P-Value = 0.568 DF = 2

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
62	47	45.0	16.8	2.5
64	2	53.50	9.19	6.5

Difference = mu (62) - mu (64)
Estimate for difference: -8.52
95% CI for difference: (-96.81, 79.77)
T-Test of difference = 0 (vs not =): T-Value = -1.23 P-Value = 0.436 DF = 1

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
62	29	2.113	0.106	0.020
64	13	2.1462	0.0859	0.024

Difference = mu (62) - mu (64)
Estimate for difference: -0.0335
95% CI for difference: (-0.0969, 0.0299)
T-Test of difference = 0 (vs not =): T-Value = -1.08 P-Value = 0.289 DF = 28

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
62	29	1.800	0.176	0.033
64	13	1.8731	0.0910	0.025

Difference = mu (62) - mu (64)
Estimate for difference: -0.0731
95% CI for difference: (-0.1567, 0.0105)
T-Test of difference = 0 (vs not =): T-Value = -1.77 P-Value = 0.085 DF = 39

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
62	131	15.87	79.6	1.07
64	24	15.44	69.0	-1.07
Overall	155		78.0	

H = 1.14 DF = 1 P = 0.285
H = 1.14 DF = 1 P = 0.285 (adjusted for ties)

```
Kruskal-Wallis Test on WL (%)

Domain
reference    N  Median  Ave Rank      Z
62         113   34.00      68.3  -1.29
64          27   34.00      79.6   1.29
Overall    140              70.5

H = 1.67  DF = 1  P = 0.197
H = 1.69  DF = 1  P = 0.194  (adjusted for ties)


Kruskal-Wallis Test on Wp (%)

Domain
reference    N  Median  Ave Rank      Z
62         113   17.00      69.5  -0.60
64          27   18.00      74.7   0.60
Overall    140              70.5

H = 0.37  DF = 1  P = 0.545
H = 0.37  DF = 1  P = 0.541  (adjusted for ties)


Kruskal-Wallis Test on Ip (%)

Domain
reference    N  Median  Ave Rank      Z
62         113   16.00      69.4  -0.63
64          27   17.00      74.9   0.63
Overall    140              70.5

H = 0.40  DF = 1  P = 0.530
H = 0.40  DF = 1  P = 0.527  (adjusted for ties)


Kruskal-Wallis Test on % GRAVEL

Domain
reference   N  Median  Ave Rank      Z
62         47   24.00      25.2   0.56
64          2   19.00      19.5  -0.56
Overall    49              25.0

H = 0.31  DF = 1  P = 0.578
H = 0.31  DF = 1  P = 0.578  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on % SAND

Domain
reference   N  Median  Ave Rank      Z
62         47   28.00      25.1   0.13
64          2   27.50      23.8  -0.13
Overall    49              25.0

H = 0.02  DF = 1  P = 0.899
H = 0.02  DF = 1  P = 0.899  (adjusted for ties)

* NOTE * One or more small samples
```

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
reference   N  Median  Ave Rank      Z
62         47   47.00      24.6  -0.88
64          2   53.50      33.8   0.88
Overall    49              25.0

H = 0.78  DF = 1  P = 0.377
H = 0.78  DF = 1  P = 0.376  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
62         29   2.150      20.6  -0.73
64         13   2.180      23.6   0.73
Overall    42              21.5

H = 0.54  DF = 1  P = 0.463
H = 0.54  DF = 1  P = 0.462  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
62         29   1.850      20.3  -0.93
64         13   1.900      24.1   0.93
Overall    42              21.5

H = 0.86  DF = 1  P = 0.355
H = 0.86  DF = 1  P = 0.354  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.00    DF = 1    P = 0.973

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
62          66  65   15.87   5.61                     (----*------)
64          12  12   15.44   4.00    (-------------------*------------)
                                     -+---------+---------+---------+-----
                                   13.2      14.4      15.6      16.8

Overall median = 15.87

A 95.0% CI for median(62) - median(64): (-1.36,2.89)
```

```
Mood median test for WL (%)

Chi-Square = 0.49    DF = 1    P = 0.485

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
62          71  42   34.00   4.00    (----------------*
64          15  12   34.00   4.00    (----------------*----------------)
                                     +---------+---------+---------+------
                                   33.00     33.60     34.20     34.80

Overall median = 34.00

A 95.0% CI for median(62) - median(64): (-2.00,1.00)


Mood median test for Wp (%)

Chi-Square = 0.30    DF = 1    P = 0.585

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62          61  52   17.00   3.00  *--------------------------------)
64          13  14   18.00   2.00  (--------------------------------*)
                                   ---+---------+---------+---------+---
                                   17.10     17.40     17.70     18.00

Overall median = 17.00

A 95.0% CI for median(62) - median(64): (-1.00,1.00)


Mood median test for Ip (%)

Chi-Square = 1.15    DF = 1    P = 0.284

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
62          59  54   16.00   4.00  (--------*------------------------)
64          11  16   17.00   3.00          (-------------------------*)
                                   ---------+---------+---------+-------
                                         16.00     16.40     16.80

Overall median = 16.50

A 95.0% CI for median(62) - median(64): (-1.00,1.00)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 0.976

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
62          24  23    24.0   19.0                    (-------*---------)
64           1   1    19.0   16.0  (---------------*---------------)
                                   --------+---------+---------+--------
                                        15.0      20.0      25.0

Overall median = 24.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(64): (-26.0,43.0)
```

```
Mood median test for % SAND

Chi-Square = 0.02    DF = 1    P = 0.882

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
62          26  21   28.00   9.00    (-----------------*------------)
64           1   1   27.50   3.00        (---------*---------)
                                     -+---------+---------+---------+-----
                                   25.5      27.0      28.5      30.0

Overall median = 28.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(64): (-12.00,16.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 0.976

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          24  23    47.0   20.0  (---------*------)
64           1   1    53.5   13.0            (------------*------------)
                                   ------+---------+---------+---------+
                                      45.0      50.0      55.0      60.0

Overall median = 47.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(64): (-42.0,33.0)
```

```
Mood median test for Bulk Density

Chi-Square = 0.56    DF = 1    P = 0.453

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62          17  12   2.150  0.196  (----------------------*---------)
64           6   7   2.180  0.140          (--------------------*----)
                                   ---+---------+---------+---------+---
                                    2.050     2.100     2.150     2.200

Overall median = 2.150

A 95.0% CI for median(62) - median(64): (-0.140,0.100)
```

```
Mood median test for Dry Density

Chi-Square = 1.00    DF = 1    P = 0.317

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62          16  13   1.850  0.315  (----------------*-----------)
64           5   8   1.900  0.145            (------------*-------)
                                   ---+---------+---------+---------+---
                                    1.750     1.820     1.890     1.960

Overall median = 1.865

A 95.0% CI for median(62) - median(64): (-0.200,0.080)
```

Results for: Domain 62 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
62	131	16.88	5.15	0.45
65	7	17.71	4.27	1.6

Difference = mu (62) - mu (65)
Estimate for difference: -0.84
95% CI for difference: (-4.94, 3.27)
T-Test of difference = 0 (vs not =): T-Value = -0.50 P-Value = 0.636 DF = 6

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
62	113	34.27	6.08	0.57
65	8	35.25	5.60	2.0

Difference = mu (62) - mu (65)
Estimate for difference: -0.98
95% CI for difference: (-5.74, 3.77)
T-Test of difference = 0 (vs not =): T-Value = -0.48 P-Value = 0.646 DF = 8

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
62	113	17.70	2.77	0.26
65	8	18.88	1.46	0.52

Difference = mu (62) - mu (65)
Estimate for difference: -1.176
95% CI for difference: (-2.462, 0.111)
T-Test of difference = 0 (vs not =): T-Value = -2.04 P-Value = 0.069 DF = 10

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
62	113	16.57	4.48	0.42
65	8	16.38	4.41	1.6

Difference = mu (62) - mu (65)
Estimate for difference: 0.19
95% CI for difference: (-3.53, 3.91)
T-Test of difference = 0 (vs not =): T-Value = 0.12 P-Value = 0.909 DF = 8

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
62	47	24.9	13.6	2.0
65	2	20.0	11.3	8.0

Difference = mu (62) - mu (65)
Estimate for difference: 4.89
95% CI for difference: (-99.85, 109.63)
T-Test of difference = 0 (vs not =): T-Value = 0.59 P-Value = 0.659 DF = 1

```
Two-sample T for % SAND

Domain
reference   N   Mean  StDev  SE Mean
62         47  28.74   7.27      1.1
65          2  34.00   1.41      1.0

Difference = mu (62) - mu (65)
Estimate for difference:  -5.26
95% CI for difference:  (-9.30, -1.21)
T-Test of difference = 0 (vs not =): T-Value = -3.61  P-Value = 0.023  DF = 4


Two-sample T for % Fines (SILT/CLAY)

Domain
reference   N  Mean  StDev  SE Mean
62         47  45.0   16.8      2.5
65          2  46.0   12.7      9.0

Difference = mu (62) - mu (65)
Estimate for difference:  -1.02
95% CI for difference:  (-119.56, 117.52)
T-Test of difference = 0 (vs not =): T-Value = -0.11  P-Value = 0.931  DF = 1


Two-sample T for Bulk Density

Domain
reference   N    Mean   StDev  SE Mean
62         29   2.113   0.106    0.020
65          7  2.0929  0.0496    0.019

Difference = mu (62) - mu (65)
Estimate for difference:  0.0198
95% CI for difference:  (-0.0368, 0.0764)
T-Test of difference = 0 (vs not =): T-Value = 0.73  P-Value = 0.475  DF = 21


Two-sample T for Dry Density

Domain
reference   N    Mean   StDev  SE Mean
62         29   1.800   0.176    0.033
65          7  1.7800  0.0995    0.038

Difference = mu (62) - mu (65)
Estimate for difference:  0.0200
95% CI for difference:  (-0.0857, 0.1257)
T-Test of difference = 0 (vs not =): T-Value = 0.40  P-Value = 0.694  DF = 16
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
reference    N  Median  Ave Rank      Z
62         131   15.87      68.9  -0.71
65           7   17.00      80.0   0.71
Overall    138              69.5

H = 0.51  DF = 1  P = 0.476
H = 0.51  DF = 1  P = 0.476  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
62	113	34.00	59.9	-1.24
65	8	37.50	75.9	1.24
Overall	121		61.0	

H = 1.54 DF = 1 P = 0.214
H = 1.56 DF = 1 P = 0.212 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
62	113	17.00	59.5	-1.81
65	8	19.00	82.7	1.81
Overall	121		61.0	

H = 3.28 DF = 1 P = 0.070
H = 3.33 DF = 1 P = 0.068 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
62	113	16.00	60.5	-0.60
65	8	18.50	68.2	0.60
Overall	121		61.0	

H = 0.36 DF = 1 P = 0.549
H = 0.36 DF = 1 P = 0.547 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
62	47	24.00	25.2	0.45
65	2	20.00	20.5	-0.45
Overall	49		25.0	

H = 0.21 DF = 1 P = 0.649
H = 0.21 DF = 1 P = 0.649 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
62	47	28.00	24.5	-1.24
65	2	34.00	37.3	1.24
Overall	49		25.0	

H = 1.53 DF = 1 P = 0.216
H = 1.54 DF = 1 P = 0.215 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
62	47	47.00	24.9	-0.30
65	2	46.00	28.0	0.30
Overall	49		25.0	

H = 0.09 DF = 1 P = 0.762
H = 0.09 DF = 1 P = 0.762 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
62	29	2.150	19.1	0.70
65	7	2.100	16.0	-0.70
Overall	36		18.5	

H = 0.49 DF = 1 P = 0.484
H = 0.49 DF = 1 P = 0.484 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
62	29	1.850	19.1	0.70
65	7	1.810	16.0	-0.70
Overall	36		18.5	

H = 0.49 DF = 1 P = 0.484
H = 0.49 DF = 1 P = 0.484 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.15   DF = 1   P = 0.698

```
Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
62          66  65   15.87   5.61      (--*---)
65           3   4   17.00   4.00  (------------*-----------------)
                                   --------+---------+---------+--------
                                        16.0      18.0      20.0
```

Overall median = 15.90

A 95.0% CI for median(62) - median(65): (-10.20,3.00)

```
Mood median test for WL (%)

Chi-Square = 2.02    DF = 1    P = 0.155

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
62          71  42   34.00   4.00          (--*
65           3   5   37.50   8.25  (----------------------*-------)
                                   --------+---------+---------+--------
                                        33.0      36.0      39.0

Overall median = 34.00

A 95.0% CI for median(62) - median(65): (-7.00,3.23)


Mood median test for Wp (%)

Chi-Square = 5.15    DF = 1    P = 0.023

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          61  52   17.00   3.00     *---------)
65           1   7   19.00   1.50              (----------*----------)
                                      +---------+---------+---------+------
                                   17.0      18.0      19.0      20.0

Overall median = 17.00

A 95.0% CI for median(62) - median(65): (-3.03,-0.93)


Mood median test for Ip (%)

Chi-Square = 0.65    DF = 1    P = 0.421

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
62          59  54   16.00   4.00                        (-*----)
65           3   5   18.50   6.25    (--------------------------------*--)
                                     -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 16.00

A 95.0% CI for median(62) - median(65): (-3.07,5.13)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 0.976

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          24  23    24.0   19.0                  (-------*---------)
65           1   1    20.0   16.0  (---------------*---------------)
                                   ------+---------+---------+---------+
                                      15.0      20.0      25.0      30.0

Overall median = 24.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(65): (-27.0,42.0)
```

```
Mood median test for % SAND

Chi-Square = 2.36    DF = 1    P = 0.125

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
62          26  21   28.00   9.00  (-------*------)
65           0   2   34.00   2.00                           (--*---)
                                   -----+---------+---------+---------+-
                                     27.0      30.0      33.0      36.0

Overall median = 28.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(65): (-18.00,9.00)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 0.976

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          24  23    47.0   20.0            (---------*------)
65           1   1    46.0   18.0  (-----------------*-----------------)
                                   ------+---------+---------+---------+
                                      40.0      45.0      50.0      55.0

Overall median = 47.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(62) - median(65): (-37.0,43.0)


Mood median test for Bulk Density

Chi-Square = 4.43    DF = 1    P = 0.035

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62          12  17   2.150  0.196  (----------------------*---------)
65           6   1   2.100  0.070   (-----------*-----)
                                   ---+---------+---------+---------+---
                                    2.050     2.100     2.150     2.200

Overall median = 2.125

A 95.0% CI for median(62) - median(65): (-0.015,0.116)


Mood median test for Dry Density

Chi-Square = 1.60    DF = 1    P = 0.206

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
62          13  16   1.850  0.315        (----------------*-----------)
65           5   2   1.810  0.120  (-----------------*------)
                                   ---------+---------+---------+-------
                                          1.750     1.820     1.890

Overall median = 1.830

A 95.0% CI for median(62) - median(65): (-0.069,0.176)
```

Results for: Domain 62 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
62	131	16.88	5.15	0.45
71	44	14.56	5.80	0.87

Difference = mu (62) - mu (71)
Estimate for difference: 2.318
95% CI for difference: (0.356, 4.280)
T-Test of difference = 0 (vs not =): T-Value = 2.36 P-Value = 0.021 DF = 67

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
62	113	34.27	6.08	0.57
71	17	31.24	2.61	0.63

Difference = mu (62) - mu (71)
Estimate for difference: 3.030
95% CI for difference: (1.315, 4.745)
T-Test of difference = 0 (vs not =): T-Value = 3.55 P-Value = 0.001 DF = 48

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
62	113	17.70	2.77	0.26
71	17	15.35	1.73	0.42

Difference = mu (62) - mu (71)
Estimate for difference: 2.346
95% CI for difference: (1.338, 3.355)
T-Test of difference = 0 (vs not =): T-Value = 4.75 P-Value = 0.000 DF = 30

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
62	113	16.57	4.48	0.42
71	17	15.88	1.96	0.48

Difference = mu (62) - mu (71)
Estimate for difference: 0.684
95% CI for difference: (-0.597, 1.965)
T-Test of difference = 0 (vs not =): T-Value = 1.07 P-Value = 0.288 DF = 46

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
62	47	24.9	13.6	2.0
71	16	20.69	6.81	1.7

Difference = mu (62) - mu (71)
Estimate for difference: 4.21
95% CI for difference: (-1.05, 9.46)
T-Test of difference = 0 (vs not =): T-Value = 1.61 P-Value = 0.114 DF = 52

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
62         47  28.74   7.27      1.1
71         16  24.37   7.67      1.9

Difference = mu (62) - mu (71)
Estimate for difference:  4.37
95% CI for difference:  (-0.15, 8.89)
T-Test of difference = 0 (vs not =): T-Value = 1.99  P-Value = 0.058  DF = 24


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N  Mean  StDev  SE Mean
62         47  45.0   16.8      2.5
71         16  52.1   11.3      2.8

Difference = mu (62) - mu (71)
Estimate for difference:  -7.15
95% CI for difference:  (-14.73, 0.43)
T-Test of difference = 0 (vs not =): T-Value = -1.91  P-Value = 0.064  DF = 38


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
62         29   2.113   0.106    0.020
71         12  2.2583  0.0486    0.014

Difference = mu (62) - mu (71)
Estimate for difference:  -0.1457
95% CI for difference:  (-0.1947, -0.0966)
T-Test of difference = 0 (vs not =): T-Value = -6.01  P-Value = 0.000  DF = 38


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
62         29   1.800   0.176    0.033
71         12  1.9937  0.0718    0.021

Difference = mu (62) - mu (71)
Estimate for difference:  -0.1937
95% CI for difference:  (-0.2722, -0.1152)
T-Test of difference = 0 (vs not =): T-Value = -5.00  P-Value = 0.000  DF = 38
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference    N  Median  Ave Rank      Z
62         131   15.87      95.8   3.52
71          44   13.00      64.8  -3.52
Overall    175              88.0

H = 12.37  DF = 1  P = 0.000
H = 12.38  DF = 1  P = 0.000  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
62	113	34.00	69.1	2.81
71	17	31.00	41.6	-2.81
Overall	130		65.5	

H = 7.90 DF = 1 P = 0.005
H = 7.98 DF = 1 P = 0.005 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
62	113	17.00	69.9	3.44
71	17	16.00	36.2	-3.44
Overall	130		65.5	

H = 11.80 DF = 1 P = 0.001
H = 12.03 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
62	113	16.00	66.2	0.58
71	17	16.00	60.5	-0.58
Overall	130		65.5	

H = 0.34 DF = 1 P = 0.560
H = 0.34 DF = 1 P = 0.557 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
62	47	24.00	33.7	1.26
71	16	19.00	27.0	-1.26
Overall	63		32.0	

H = 1.60 DF = 1 P = 0.207
H = 1.60 DF = 1 P = 0.206 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
62	47	28.00	34.5	1.82
71	16	23.50	24.8	-1.82
Overall	63		32.0	

H = 3.33 DF = 1 P = 0.068
H = 3.33 DF = 1 P = 0.068 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
Reference   N  Median  Ave Rank      Z
62         47   47.00      29.4  -1.93
71         16   53.00      39.6   1.93
Overall    63              32.0

H = 3.71  DF = 1  P = 0.054
H = 3.72  DF = 1  P = 0.054  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
62         29   2.150      15.8  -4.30
71         12   2.260      33.5   4.30
Overall    41              21.0

H = 18.47  DF = 1  P = 0.000
H = 18.52  DF = 1  P = 0.000  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
62         29   1.850      16.5  -3.75
71         12   1.991      31.9   3.75
Overall    41              21.0

H = 14.09  DF = 1  P = 0.000
H = 14.10  DF = 1  P = 0.000  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 14.36    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
62          55  76   15.87   5.61                        (-------*-------)
71          33  11   13.00   3.75   *---------)
                                    +---------+---------+---------+------
                                 13.0      14.0      15.0      16.0

Overall median = 15.20

A 95.0% CI for median(62) - median(71): (1.51,3.14)


Mood median test for WL (%)

Chi-Square = 4.58    DF = 1    P = 0.032

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   +---------+---------+---------+------
62          55  58   34.00   4.00                           (-------*
71          13   4   31.00   3.50   (-------*--------)
                                    +---------+---------+---------+------
                                 30.0      31.2      32.4      33.6

Overall median = 33.00

A 95.0% CI for median(62) - median(71): (1.00,4.00)
```

```
Mood median test for Wp (%)

Chi-Square = 13.04    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
62          61  52   17.00   3.00                         *-------)
71          17   0   16.00   3.00  (---------------*--------)
                                   ---+---------+---------+---------+---
                                   14.4      15.6      16.8      18.0

Overall median = 17.00

A 95.0% CI for median(62) - median(71): (0.00,3.00)


Mood median test for Ip (%)

Chi-Square = 0.93    DF = 1    P = 0.335

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          59  54   16.00   4.00               (------*---------------)
71          11   6   16.00   2.50     (----------------*---------------)
                                      +---------+---------+---------+------
                                   15.00     15.60     16.20     16.80

Overall median = 16.00

A 95.0% CI for median(62) - median(71): (-1.00,2.00)


Mood median test for % GRAVEL

Chi-Square = 4.40    DF = 1    P = 0.036

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
62          21  26    24.0   19.0            (-----------*-------------)
71          12   4    19.0    7.5   (-----*-----------)
                                    --+---------+---------+---------+----
                                   17.5      21.0      24.5      28.0

Overall median = 23.0

A 95.0% CI for median(62) - median(71): (-0.4,9.0)


Mood median test for % SAND

Chi-Square = 0.00    DF = 1    P = 0.948

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
62          26  21    28.0    9.0                      (------*----)
71           9   7    23.5   14.0  (----------------*----------------)
                                   --------+---------+---------+--------
                                        20.0      24.0      28.0

Overall median = 28.0

A 95.0% CI for median(62) - median(71): (-4.0,12.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 3.84    DF = 1    P = 0.050

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          28  19    47.0   20.0  (---------*------)
71           5  11    53.0   15.5            (-----------*-----------)
                                   ------+---------+---------+---------+
                                      45.0      50.0      55.0      60.0

Overall median = 49.0

A 95.0% CI for median(62) - median(71): (-14.0,1.0)
```

```
Mood median test for Bulk Density

Chi-Square = 15.72    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
62          22   7   2.150  0.196  (---------------*------)
71           1  11   2.260  0.058                              (---*---)
                                   ---------+---------+---------+-------
                                          2.100     2.170     2.240

Overall median = 2.200

A 95.0% CI for median(62) - median(71): (-0.230,-0.048)
```

```
Mood median test for Dry Density

Chi-Square = 14.02    DF = 1    P = 0.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
62          21   8   1.850  0.315  (-----------*-------)
71           1  11   1.991  0.067                         (-*---)
                                   -------+---------+---------+---------
                                        1.80      1.90      2.00

Overall median = 1.930

A 95.0% CI for median(62) - median(71): (-0.278,-0.082)
```

Results for: Domain 62 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
Reference    N   Mean  StDev  SE Mean
62         131  16.88   5.15     0.45
72          26  15.13   4.24     0.83

Difference = mu (62) - mu (72)
Estimate for difference:  1.752
95% CI for difference:  (-0.159, 3.664)
T-Test of difference = 0 (vs not =): T-Value = 1.85  P-Value = 0.071  DF = 41


Two-sample T for WL (%)

Domain
Reference    N   Mean  StDev  SE Mean
62         113  34.27   6.08     0.57
72          10  30.50   4.84      1.5

Difference = mu (62) - mu (72)
Estimate for difference:  3.77
95% CI for difference:  (0.17, 7.36)
T-Test of difference = 0 (vs not =): T-Value = 2.31  P-Value = 0.042  DF = 11


Two-sample T for Wp (%)

Domain
Reference    N   Mean  StDev  SE Mean
62         113  17.70   2.77     0.26
72          10  15.20   1.99     0.63

Difference = mu (62) - mu (72)
Estimate for difference:  2.499
95% CI for difference:  (1.016, 3.982)
T-Test of difference = 0 (vs not =): T-Value = 3.67  P-Value = 0.003  DF = 12


Two-sample T for Ip (%)

Domain
Reference    N   Mean  StDev  SE Mean
62         113  16.57   4.48     0.42
72          10  15.30   3.71      1.2

Difference = mu (62) - mu (72)
Estimate for difference:  1.27
95% CI for difference:  (-1.48, 4.01)
T-Test of difference = 0 (vs not =): T-Value = 1.01  P-Value = 0.332  DF = 11


Two-sample T for % GRAVEL

Domain
Reference   N   Mean  StDev  SE Mean
62         47   24.9   13.6      2.0
72          9  20.56   7.14      2.4

Difference = mu (62) - mu (72)
Estimate for difference:  4.34
95% CI for difference:  (-2.11, 10.79)
T-Test of difference = 0 (vs not =): T-Value = 1.40  P-Value = 0.177  DF = 21
```

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
62	47	28.74	7.27	1.1
72	9	27.56	7.20	2.4

Difference = mu (62) - mu (72)
Estimate for difference: 1.19
95% CI for difference: (-4.58, 6.96)
T-Test of difference = 0 (vs not =): T-Value = 0.45 P-Value = 0.659 DF = 11

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
62	47	45.0	16.8	2.5
72	9	51.89	7.66	2.6

Difference = mu (62) - mu (72)
Estimate for difference: -6.91
95% CI for difference: (-14.21, 0.38)
T-Test of difference = 0 (vs not =): T-Value = -1.95 P-Value = 0.062 DF = 25

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
62	29	2.113	0.106	0.020
72	7	2.221	0.100	0.038

Difference = mu (62) - mu (72)
Estimate for difference: -0.1088
95% CI for difference: (-0.2055, -0.0120)
T-Test of difference = 0 (vs not =): T-Value = -2.54 P-Value = 0.032 DF = 9

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
62	29	1.800	0.176	0.033
72	7	1.944	0.155	0.059

Difference = mu (62) - mu (72)
Estimate for difference: -0.1443
95% CI for difference: (-0.2941, 0.0054)
T-Test of difference = 0 (vs not =): T-Value = -2.15 P-Value = 0.057 DF = 10

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
62	131	15.87	81.8	1.72
72	26	13.00	65.0	-1.72
Overall	157		79.0	

H = 2.95 DF = 1 P = 0.086
H = 2.95 DF = 1 P = 0.086 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
62	113	34.00	64.6	2.73
72	10	30.00	32.5	-2.73
Overall	123		62.0	

H = 7.43 DF = 1 P = 0.006
H = 7.50 DF = 1 P = 0.006 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
62	113	17.00	64.8	2.95
72	10	15.00	30.1	-2.95
Overall	123		62.0	

H = 8.69 DF = 1 P = 0.003
H = 8.83 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
62	113	16.00	63.0	1.01
72	10	15.50	51.1	-1.01
Overall	123		62.0	

H = 1.02 DF = 1 P = 0.313
H = 1.03 DF = 1 P = 0.311 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
62	47	24.00	29.3	0.81
72	9	17.00	24.4	-0.81
Overall	56		28.5	

H = 0.66 DF = 1 P = 0.415
H = 0.66 DF = 1 P = 0.415 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
62	47	28.00	29.2	0.71
72	9	26.00	24.9	-0.71
Overall	56		28.5	

H = 0.51 DF = 1 P = 0.475
H = 0.51 DF = 1 P = 0.475 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
62	47	47.00	27.0	-1.55
72	9	53.00	36.2	1.55
Overall	56		28.5	

H = 2.40 DF = 1 P = 0.121
H = 2.41 DF = 1 P = 0.121 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
62	29	2.150	16.0	-2.92
72	7	2.240	28.9	2.92
Overall	36		18.5	

H = 8.51 DF = 1 P = 0.004
H = 8.55 DF = 1 P = 0.003 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
62	29	1.850	16.3	-2.50
72	7	2.000	27.4	2.50
Overall	36		18.5	

H = 6.24 DF = 1 P = 0.012
H = 6.25 DF = 1 P = 0.012 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 1.40   DF = 1   P = 0.237

```
Domain                                   Individual 95.0% CIs
Reference   N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
62           64  67   15.87   5.61                        (----*------)
72           16  10   13.00   5.75  (--*---------------------------------)
                                    -----+---------+---------+---------+-
                                      13.2      14.4      15.6      16.8
```

Overall median = 15.80

A 95.0% CI for median(62) - median(72): (-1.38,3.07)

Mood median test for WL (%)

Chi-Square = 6.29   DF = 1   P = 0.012

```
Domain                                   Individual 95.0% CIs
Reference   N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
62           55  58   34.00   4.00                                (----*
72            9   1   30.00   5.25  (--------------*-----------)
                                    -----+---------+---------+---------+-
                                      28.0      30.0      32.0      34.0
```

Overall median = 33.00

A 95.0% CI for median(62) - median(72): (0.76,7.00)

```
Mood median test for Wp (%)

Chi-Square = 2.53    DF = 1    P = 0.112

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          61  52   17.00   3.00                              *-------)
72           8   2   15.00   2.75  (----------*-------------)
                                   ------+---------+---------+---------+
                                      14.4      15.6      16.8      18.0

Overall median = 17.00

A 95.0% CI for median(62) - median(72): (0.52,3.24)


Mood median test for Ip (%)

Chi-Square = 0.22    DF = 1    P = 0.636

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
62          59  54   16.00   4.00                              (--*-----)
72           6   4   15.50   5.25     (---------------------*------------)
                                      +---------+---------+---------+------
                                   12.0      13.5      15.0      16.5

Overall median = 16.00

A 95.0% CI for median(62) - median(72): (-1.24,5.00)


Mood median test for % GRAVEL

Chi-Square = 0.74    DF = 1    P = 0.390

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
62          24  23    24.0   19.0                (---------*-----------)
72           6   3    17.0   13.5  (------*-------------------------)
                                   ----+---------+---------+---------+--
                                    16.0      20.0      24.0      28.0

Overall median = 24.0

A 95.0% CI for median(62) - median(72): (-5.0,12.0)


Mood median test for % SAND

Chi-Square = 0.40    DF = 1    P = 0.529

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
62          26  21   28.00   9.00                 (---------*-------)
72           6   3   26.00   7.50    (--------------*----------------)
                                     -+---------+---------+---------+-----
                                   22.5      25.0      27.5      30.0

Overall median = 28.00

A 95.0% CI for median(62) - median(72): (-4.00,7.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 1.19    DF = 1    P = 0.275

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
62          25  22    47.0   20.0  (---------*------)
72           3   6    53.0   15.5    (-------------------*--------------)
                                   ------+---------+---------+---------+
                                      45.0      50.0      55.0      60.0

Overall median = 48.5

A 95.0% CI for median(62) - median(72): (-16.0,7.0)


Mood median test for Bulk Density

Chi-Square = 4.43    DF = 1    P = 0.035

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
62          17  12   2.150  0.196  (---------------*------)
72           1   6   2.240  0.040                      (--------*-----)
                                   ---------+---------+---------+-------
                                          2.100     2.170     2.240

Overall median = 2.170

A 95.0% CI for median(62) - median(72): (-0.172,-0.052)


Mood median test for Dry Density

Chi-Square = 4.43    DF = 1    P = 0.035

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
62          17  12   1.850  0.315  (-----------*-------)
72           1   6   2.000  0.070              (-------------*--)
                                   -------+---------+---------+---------
                                        1.80      1.90      2.00

Overall median = 1.885

A 95.0% CI for median(62) - median(72): (-0.243,-0.027)
```

Results for: Domain 63 v 64

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
63	55	17.40	5.42	0.73
64	24	15.34	2.86	0.58

Difference = mu (63) - mu (64)
Estimate for difference: 2.056
95% CI for difference: (0.191, 3.921)
T-Test of difference = 0 (vs not =): T-Value = 2.20 P-Value = 0.031 DF = 74

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
63	58	34.88	4.40	0.58
64	27	34.44	2.34	0.45

Difference = mu (63) - mu (64)
Estimate for difference: 0.435
95% CI for difference: (-1.023, 1.893)
T-Test of difference = 0 (vs not =): T-Value = 0.59 P-Value = 0.555 DF = 81

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
63	58	17.98	2.92	0.38
64	27	17.81	2.24	0.43

Difference = mu (63) - mu (64)
Estimate for difference: 0.168
95% CI for difference: (-0.983, 1.319)
T-Test of difference = 0 (vs not =): T-Value = 0.29 P-Value = 0.772 DF = 64

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
63	58	16.90	3.05	0.40
64	27	16.63	2.39	0.46

Difference = mu (63) - mu (64)
Estimate for difference: 0.267
95% CI for difference: (-0.951, 1.485)
T-Test of difference = 0 (vs not =): T-Value = 0.44 P-Value = 0.663 DF = 63

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
63	30	26.9	11.7	2.1
64	2	19.0	11.3	8.0

Difference = mu (63) - mu (64)
Estimate for difference: 7.93
95% CI for difference: (-97.30, 113.17)
T-Test of difference = 0 (vs not =): T-Value = 0.96 P-Value = 0.514 DF = 1

Two-sample T for % SAND

Domain reference	N	Mean	StDev	SE Mean
63	30	29.70	8.47	1.5
64	2	27.50	2.12	1.5

Difference = mu (63) - mu (64)
Estimate for difference: 2.20
95% CI for difference: (-3.78, 8.18)
T-Test of difference = 0 (vs not =): T-Value = 1.02 P-Value = 0.365 DF = 4

Two-sample T for % Fines (SILT/CLAY)

Domain reference	N	Mean	StDev	SE Mean
63	30	43.4	11.2	2.1
64	2	53.50	9.19	6.5

Difference = mu (63) - mu (64)
Estimate for difference: -10.13
95% CI for difference: (-96.74, 76.47)
T-Test of difference = 0 (vs not =): T-Value = -1.49 P-Value = 0.377 DF = 1

Two-sample T for Bulk Density

Domain reference	N	Mean	StDev	SE Mean
63	11	2.081	0.118	0.036
64	13	2.1462	0.0859	0.024

Difference = mu (63) - mu (64)
Estimate for difference: -0.0652
95% CI for difference: (-0.1555, 0.0251)
T-Test of difference = 0 (vs not =): T-Value = -1.52 P-Value = 0.146 DF = 17

Two-sample T for Dry Density

Domain reference	N	Mean	StDev	SE Mean
63	11	1.806	0.147	0.044
64	13	1.8731	0.0910	0.025

Difference = mu (63) - mu (64)
Estimate for difference: -0.0667
95% CI for difference: (-0.1747, 0.0412)
T-Test of difference = 0 (vs not =): T-Value = -1.31 P-Value = 0.209 DF = 16

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain reference	N	Median	Ave Rank	Z
63	55	15.38	42.0	1.15
64	24	15.44	35.5	-1.15
Overall	79		40.0	

H = 1.33 DF = 1 P = 0.250
H = 1.33 DF = 1 P = 0.249 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
63	58	34.00	42.4	-0.34
64	27	34.00	44.3	0.34
Overall	85		43.0	

H = 0.12 DF = 1 P = 0.734
H = 0.12 DF = 1 P = 0.732 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
63	58	18.00	43.4	0.22
64	27	18.00	42.1	-0.22
Overall	85		43.0	

H = 0.05 DF = 1 P = 0.828
H = 0.05 DF = 1 P = 0.827 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
63	58	16.00	43.0	0.01
64	27	17.00	43.0	-0.01
Overall	85		43.0	

H = 0.00 DF = 1 P = 0.992
H = 0.00 DF = 1 P = 0.992 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
63	30	25.50	16.9	0.86
64	2	19.00	11.0	-0.86
Overall	32		16.5	

H = 0.73 DF = 1 P = 0.392
H = 0.74 DF = 1 P = 0.391 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
63	30	29.00	16.6	0.35
64	2	27.50	14.3	-0.35
Overall	32		16.5	

H = 0.12 DF = 1 P = 0.726
H = 0.12 DF = 1 P = 0.725 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
reference   N  Median  Ave Rank      Z
63         30   42.50      15.9  -1.28
64          2   53.50      24.8   1.28
Overall    32              16.5

H = 1.65  DF = 1  P = 0.199
H = 1.65  DF = 1  P = 0.199  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
63         11   2.090      10.7  -1.16
64         13   2.180      14.0   1.16
Overall    24              12.5

H = 1.34  DF = 1  P = 0.247
H = 1.35  DF = 1  P = 0.246  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
63         11   1.840      11.0  -0.93
64         13   1.900      13.7   0.93
Overall    24              12.5

H = 0.86  DF = 1  P = 0.354
H = 0.86  DF = 1  P = 0.353  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.01    DF = 1    P = 0.941

Domain                                Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
63          28  27   15.38   5.92                (-----*--------------)
64          12  12   15.44   4.00    (-------------------*-----------)
                                     -+---------+---------+---------+-----
                                    13.2      14.4      15.6      16.8

Overall median = 15.38

A 95.0% CI for median(63) - median(64): (-2.00,2.87)
```

```
Mood median test for WL (%)

Chi-Square = 0.17    DF = 1    P = 0.676

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
63          35  23   34.00   5.00    (----------------*---------------)
64          15  12   34.00   4.00    (----------------*----------------)
                                     +---------+---------+---------+------
                                   33.00     33.60     34.20     34.80

Overall median = 34.00

A 95.0% CI for median(63) - median(64): (-2.00,0.14)


Mood median test for Wp (%)

Chi-Square = 0.56    DF = 1    P = 0.456

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
63          36  22   18.00   4.25  (----------------*---------------)
64          19   8   18.00   2.00  (----------------*
                                   -------+---------+---------+---------
                                       17.40     18.00     18.60

Overall median = 18.00

A 95.0% CI for median(63) - median(64): (0.00,1.00)


Mood median test for Ip (%)

Chi-Square = 0.56    DF = 1    P = 0.456

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
63          36  22   16.00   4.00   *------------------------------)
64          19   8   17.00   3.00  (----------------*)
                                   ----+---------+---------+---------+--
                                    16.20     16.80     17.40     18.00

Overall median = 17.00

A 95.0% CI for median(63) - median(64): (-1.00,1.00)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
63          15  15    25.5   15.3                     (-----*---------)
64           1   1    19.0   16.0   (-------------*------------)
                                    --+---------+---------+---------+----
                                   12.0      18.0      24.0      30.0

Overall median = 25.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(64): (-20.0,37.0)
```

```
Mood median test for % SAND

Chi-Square = 1.66    DF = 1    P = 0.198

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
63          16  14   29.00   9.00  (------------------*-----------------)
64           2   0   27.50   3.00  (---------*--------)
                                   --------+---------+---------+--------
                                        27.2      28.8      30.4

Overall median = 29.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(64): (-8.00,21.00)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 2.13    DF = 1    P = 0.144

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
63          16  14    42.5   15.5  (-----*-----------)
64           0   2    53.5   13.0               (----------*----------)
                                   -----+---------+---------+---------+-
                                      42.0      48.0      54.0      60.0

Overall median = 44.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(64): (-37.0,13.0)


Mood median test for Bulk Density

Chi-Square = 1.51    DF = 1    P = 0.219

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63           7   4   2.090  0.260  (----------------*--------------)
64           5   8   2.180  0.140                  (------------*--)
                                   ------+---------+---------+---------+
                                       2.000     2.080     2.160     2.240

Overall median = 2.115

A 95.0% CI for median(63) - median(64): (-0.171,0.046)


Mood median test for Dry Density

Chi-Square = 1.51    DF = 1    P = 0.219

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
63           7   4   1.840  0.250   (--------------------*-----------)
64           5   8   1.900  0.145                    (----------*------)
                                    -+---------+---------+---------+-----
                                   1.680     1.760     1.840     1.920

Overall median = 1.860

A 95.0% CI for median(63) - median(64): (-0.173,0.069)
```

Results for: Domain 63 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
63	55	17.40	5.42	0.73
65	7	17.71	4.27	1.6

Difference = mu (63) - mu (65)
Estimate for difference: -0.32
95% CI for difference: (-4.40, 3.77)
T-Test of difference = 0 (vs not =): T-Value = -0.18 P-Value = 0.862 DF = 8

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
63	58	34.88	4.40	0.58
65	8	35.25	5.60	2.0

Difference = mu (63) - mu (65)
Estimate for difference: -0.37
95% CI for difference: (-5.13, 4.39)
T-Test of difference = 0 (vs not =): T-Value = -0.18 P-Value = 0.862 DF = 8

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
63	58	17.98	2.92	0.38
65	8	18.88	1.46	0.52

Difference = mu (63) - mu (65)
Estimate for difference: -0.892
95% CI for difference: (-2.253, 0.469)
T-Test of difference = 0 (vs not =): T-Value = -1.39 P-Value = 0.184 DF = 16

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
63	58	16.90	3.05	0.40
65	8	16.38	4.41	1.6

Difference = mu (63) - mu (65)
Estimate for difference: 0.52
95% CI for difference: (-3.28, 4.32)
T-Test of difference = 0 (vs not =): T-Value = 0.32 P-Value = 0.755 DF = 7

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
63	30	26.9	11.7	2.1
65	2	20.0	11.3	8.0

Difference = mu (63) - mu (65)
Estimate for difference: 6.93
95% CI for difference: (-98.30, 112.17)
T-Test of difference = 0 (vs not =): T-Value = 0.84 P-Value = 0.556 DF = 1

```
Two-sample T for % SAND

Domain
reference   N   Mean  StDev  SE Mean
63         30  29.70   8.47      1.5
65          2  34.00   1.41      1.0

Difference = mu (63) - mu (65)
Estimate for difference:  -4.30
95% CI for difference:  (-8.47, -0.13)
T-Test of difference = 0 (vs not =): T-Value = -2.34  P-Value = 0.044  DF = 9


Two-sample T for % Fines (SILT/CLAY)

Domain
reference   N  Mean  StDev  SE Mean
63         30  43.4   11.2      2.1
65          2  46.0   12.7      9.0

Difference = mu (63) - mu (65)
Estimate for difference:  -2.63
95% CI for difference:  (-119.92, 114.66)
T-Test of difference = 0 (vs not =): T-Value = -0.29  P-Value = 0.823  DF = 1


Two-sample T for Bulk Density

Domain
reference   N    Mean   StDev  SE Mean
63         11   2.081   0.118    0.036
65          7  2.0929  0.0496    0.019

Difference = mu (63) - mu (65)
Estimate for difference:  -0.0119
95% CI for difference:  (-0.0981, 0.0743)
T-Test of difference = 0 (vs not =): T-Value = -0.30  P-Value = 0.772  DF = 14


Two-sample T for Dry Density

Domain
reference   N    Mean   StDev  SE Mean
63         11   1.806   0.147    0.044
65          7  1.7800  0.0995    0.038

Difference = mu (63) - mu (65)
Estimate for difference:  0.0264
95% CI for difference:  (-0.0974, 0.1501)
T-Test of difference = 0 (vs not =): T-Value = 0.45  P-Value = 0.656  DF = 15
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
63         55   15.38      31.1  -0.54
65          7   17.00      35.0   0.54
Overall    62              31.5

H = 0.30  DF = 1  P = 0.586
H = 0.30  DF = 1  P = 0.586  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
63	58	34.00	32.9	-0.73
65	8	37.50	38.1	0.73
Overall	66		33.5	

H = 0.53 DF = 1 P = 0.467
H = 0.53 DF = 1 P = 0.465 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
63	58	18.00	32.5	-1.17
65	8	19.00	40.9	1.17
Overall	66		33.5	

H = 1.37 DF = 1 P = 0.242
H = 1.39 DF = 1 P = 0.239 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
63	58	16.00	33.2	-0.32
65	8	18.50	35.6	0.32
Overall	66		33.5	

H = 0.11 DF = 1 P = 0.746
H = 0.11 DF = 1 P = 0.744 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
63	30	25.50	16.8	0.70
65	2	20.00	12.0	-0.70
Overall	32		16.5	

H = 0.49 DF = 1 P = 0.484
H = 0.49 DF = 1 P = 0.483 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
63	30	29.00	15.9	-1.32
65	2	34.00	25.0	1.32
Overall	32		16.5	

H = 1.75 DF = 1 P = 0.186
H = 1.76 DF = 1 P = 0.184 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
reference   N  Median  Ave Rank      Z
63         30   42.50      16.4  -0.12
65          2   46.00      17.3   0.12
Overall    32              16.5

H = 0.01  DF = 1  P = 0.907
H = 0.01  DF = 1  P = 0.907  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain                  Ave
reference   N  Median  Rank      Z
63         11   2.090   9.5  -0.05
65          7   2.100   9.6   0.05
Overall    18           9.5

H = 0.00  DF = 1  P = 0.964
H = 0.00  DF = 1  P = 0.964  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
63         11   1.840      10.4   0.91
65          7   1.810       8.1  -0.91
Overall    18               9.5

H = 0.82  DF = 1  P = 0.365
H = 0.82  DF = 1  P = 0.364  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.16    DF = 1    P = 0.688

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
63          28  27   15.38   5.92   (---*--------)
65           3   4   17.00   4.00  (------------*-----------------)
                                   --------+---------+---------+--------
                                        16.0      18.0      20.0

Overall median = 15.55

A 95.0% CI for median(63) - median(65): (-5.07,1.28)
```

```
Mood median test for WL (%)

Chi-Square = 1.50    DF = 1    P = 0.220

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
63          35  23   34.00   5.00          (--*---)
65           3   5   37.50   8.25  (----------------------*-------)
                                   --------+---------+---------+--------
                                        33.0      36.0      39.0

Overall median = 34.00

A 95.0% CI for median(63) - median(65): (-6.00,3.07)


Mood median test for Wp (%)

Chi-Square = 3.95    DF = 1    P = 0.047

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
63          36  22   18.00   4.25     (---------*---------)
65           2   6   19.00   1.50              (----------*----------)
                                      +---------+---------+---------+------
                                   17.0      18.0      19.0      20.0

Overall median = 18.00

A 95.0% CI for median(63) - median(65): (-2.01,0.02)


Mood median test for Ip (%)

Chi-Square = 0.57    DF = 1    P = 0.451

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    -+---------+---------+---------+-----
63          30  28   16.00   4.00                         *---------)
65           3   5   18.50   6.25    (--------------------------------*--)
                                     -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 16.50

A 95.0% CI for median(63) - median(65): (-3.02,5.04)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
63          15  15    25.5   15.3                      (-----*---------)
65           1   1    20.0   16.0     (------------*-------------)
                                      +---------+---------+---------+------
                                   12.0      18.0      24.0      30.0

Overall median = 25.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(65): (-21.0,36.0)
```

```
Mood median test for % SAND

Chi-Square = 2.13    DF = 1    P = 0.144

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63          16  14   29.00   9.00  (-----------*----------)
65           0   2   34.00   2.00                             (---*---)
                                   ------+---------+---------+---------+
                                      27.5      30.0      32.5      35.0

Overall median = 29.50
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(65): (-14.00,14.00)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63          15  15    42.5   15.5      (------*-------------)
65           1   1    46.0   18.0  (-----------------*-----------------)
                                   ------+---------+---------+---------+
                                      40.0      45.0      50.0      55.0

Overall median = 42.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 95.0% CI for median(63) - median(65): (-32.0,23.0)


Mood median test for Bulk Density

Chi-Square = 0.23    DF = 1    P = 0.629

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63           6   5   2.090  0.260  (----------------*--------------)
65           3   4   2.100  0.070             (-------*--)
                                   ------+---------+---------+---------+
                                       2.000     2.080     2.160     2.240

Overall median = 2.095

A 95.0% CI for median(63) - median(65): (-0.065,0.081)


Mood median test for Dry Density

Chi-Square = 1.17    DF = 1    P = 0.280

Domain                             Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
63           5   6   1.840  0.250   (-----------------------*------------)
65           5   2   1.810  0.120     (-----------------*------)
                                    -+---------+---------+---------+-----
                                   1.680     1.750     1.820     1.890

Overall median = 1.820

A 95.0% CI for median(63) - median(65): (-0.032,0.161)
```

Results for: Domain 63 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
63	55	17.40	5.42	0.73
71	44	14.56	5.80	0.87

Difference = mu (63) - mu (71)
Estimate for difference: 2.84
95% CI for difference: (0.57, 5.10)
T-Test of difference = 0 (vs not =): T-Value = 2.49 P-Value = 0.015 DF = 89

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
63	58	34.88	4.40	0.58
71	17	31.24	2.61	0.63

Difference = mu (63) - mu (71)
Estimate for difference: 3.644
95% CI for difference: (1.916, 5.372)
T-Test of difference = 0 (vs not =): T-Value = 4.25 P-Value = 0.000 DF = 44

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
63	58	17.98	2.92	0.38
71	17	15.35	1.73	0.42

Difference = mu (63) - mu (71)
Estimate for difference: 2.630
95% CI for difference: (1.486, 3.774)
T-Test of difference = 0 (vs not =): T-Value = 4.63 P-Value = 0.000 DF = 45

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
63	58	16.90	3.05	0.40
71	17	15.88	1.96	0.48

Difference = mu (63) - mu (71)
Estimate for difference: 1.014
95% CI for difference: (-0.243, 2.272)
T-Test of difference = 0 (vs not =): T-Value = 1.63 P-Value = 0.111 DF = 40

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
63	30	26.9	11.7	2.1
71	16	20.69	6.81	1.7

Difference = mu (63) - mu (71)
Estimate for difference: 6.25
95% CI for difference: (0.73, 11.77)
T-Test of difference = 0 (vs not =): T-Value = 2.28 P-Value = 0.028 DF = 43

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
63         30  29.70   8.47      1.5
71         16  24.37   7.67      1.9

Difference = mu (63) - mu (71)
Estimate for difference:  5.33
95% CI for difference:  (0.31, 10.34)
T-Test of difference = 0 (vs not =): T-Value = 2.16  P-Value = 0.038  DF = 33


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N  Mean  StDev  SE Mean
63         30  43.4   11.2      2.1
71         16  52.1   11.3      2.8

Difference = mu (63) - mu (71)
Estimate for difference:  -8.76
95% CI for difference:  (-15.89, -1.63)
T-Test of difference = 0 (vs not =): T-Value = -2.51  P-Value = 0.018  DF = 30


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
63         11   2.081   0.118    0.036
71         12  2.2583  0.0486    0.014

Difference = mu (63) - mu (71)
Estimate for difference:  -0.1774
95% CI for difference:  (-0.2599, -0.0948)
T-Test of difference = 0 (vs not =): T-Value = -4.64  P-Value = 0.000  DF = 13


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
63         11   1.806   0.147    0.044
71         12  1.9937  0.0718    0.021

Difference = mu (63) - mu (71)
Estimate for difference:  -0.1873
95% CI for difference:  (-0.2921, -0.0826)
T-Test of difference = 0 (vs not =): T-Value = -3.83  P-Value = 0.002  DF = 14
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
63         55   15.38      58.3   3.23
71         44   13.00      39.6  -3.23
Overall    99              50.0

H = 10.42  DF = 1  P = 0.001
H = 10.46  DF = 1  P = 0.001  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
63	58	34.00	42.6	3.37
71	17	31.00	22.4	-3.37
Overall	75		38.0	

H = 11.33 DF = 1 P = 0.001
H = 11.47 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
63	58	18.00	42.6	3.40
71	17	16.00	22.2	-3.40
Overall	75		38.0	

H = 11.59 DF = 1 P = 0.001
H = 11.75 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
63	58	16.00	39.6	1.21
71	17	16.00	32.4	-1.21
Overall	75		38.0	

H = 1.46 DF = 1 P = 0.227
H = 1.49 DF = 1 P = 0.222 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
63	30	25.50	26.6	2.18
71	16	19.00	17.6	-2.18
Overall	46		23.5	

H = 4.75 DF = 1 P = 0.029
H = 4.76 DF = 1 P = 0.029 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
63	30	29.00	26.3	1.93
71	16	23.50	18.3	-1.93
Overall	46		23.5	

H = 3.71 DF = 1 P = 0.054
H = 3.73 DF = 1 P = 0.053 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
63	30	42.50	19.9	-2.49
71	16	53.00	30.3	2.49
Overall	46		23.5	

H = 6.20 DF = 1 P = 0.013
H = 6.21 DF = 1 P = 0.013 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
63	11	2.090	6.3	-3.88
71	12	2.260	17.3	3.88
Overall	23		12.0	

H = 15.03 DF = 1 P = 0.000
H = 15.07 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
63	11	1.840	6.9	-3.45
71	12	1.991	16.7	3.45
Overall	23		12.0	

H = 11.88 DF = 1 P = 0.001

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 9.90   DF = 1   P = 0.002

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
63          20  35   15.38   5.92                 (-----*--------------)
71          30  14   13.00   3.75    *--------)
                                    --+---------+---------+---------+----
                                   13.2      14.4      15.6      16.8
```

Overall median = 14.67

A 95.0% CI for median(63) - median(71): (1.00,3.60)

Mood median test for WL (%)

Chi-Square = 5.86   DF = 1   P = 0.016

```
Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
63          25  33   34.00   5.00                         (------*-----)
71          13   4   31.00   3.50     (------*-----)
                                      +---------+---------+---------+------
                                   30.0      31.5      33.0      34.5
```

Overall median = 33.00

A 95.0% CI for median(63) - median(71): (1.95,4.00)

```
Mood median test for Wp (%)

Chi-Square = 18.23    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
63          24  34   18.00   4.25                      (------*-----)
71          17   0   16.00   3.00  (-------------*-----)
                                   -------+---------+---------+---------
                                       15.0      16.5      18.0

Overall median = 17.00

A 95.0% CI for median(63) - median(71): (1.00,4.00)


Mood median test for Ip (%)

Chi-Square = 0.89    DF = 1    P = 0.344

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
63          30  28   16.00   4.00               *-----------------------)
71          11   6   16.00   2.50  (------------*-----------)
                                   ---+---------+---------+---------+---
                                   15.20     16.00     16.80     17.60

Overall median = 16.00

A 95.0% CI for median(63) - median(71): (-1.00,2.00)


Mood median test for % GRAVEL

Chi-Square = 4.22    DF = 1    P = 0.040

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63          13  17    25.5   15.3            (------*------------)
71          12   4    19.0    7.5  (---*-------)
                                   ------+---------+---------+---------+
                                      20.0      25.0      30.0      35.0

Overall median = 23.0

A 95.0% CI for median(63) - median(71): (0.0,11.0)


Mood median test for % SAND

Chi-Square = 0.38    DF = 1    P = 0.536

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
63          14  16    29.0    9.0                         (------*------)
71           9   7    23.5   14.0  (----------------*----------------)
                                   --------+---------+---------+--------
                                        20.0      24.0      28.0

Overall median = 28.5

A 95.0% CI for median(63) - median(71): (-5.0,14.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 6.13    DF = 1    P = 0.013

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
63          19  11    42.5   15.5  (-----*-----------)
71           4  12    53.0   15.5              (---------*---------)
                                   -----+---------+---------+---------+-
                                     42.0      48.0      54.0      60.0

Overall median = 47.5

A 95.0% CI for median(63) - median(71): (-19.0,-1.0)


Mood median test for Bulk Density

Chi-Square = 19.33    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
63          11   0   2.090  0.260  (-------------*-----------)
71           1  11   2.260  0.058                             (--*--)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.220

A 95.0% CI for median(63) - median(71): (-0.257,-0.092)


Mood median test for Dry Density

Chi-Square = 12.68    DF = 1    P = 0.000

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
63          10   1   1.840  0.250  (---------------*--------)
71           2  10   1.991  0.067                              (-*---)
                                   --+---------+---------+---------+----
                                   1.70      1.80      1.90      2.00

Overall median = 1.960

A 95.0% CI for median(63) - median(71): (-0.245,-0.082)
```

Results for: Domain 63 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
63	55	17.40	5.42	0.73
72	26	15.13	4.24	0.83

Difference = mu (63) - mu (72)
Estimate for difference: 2.27
95% CI for difference: (0.05, 4.49)
T-Test of difference = 0 (vs not =): T-Value = 2.05 P-Value = 0.045 DF = 61

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
63	58	34.88	4.40	0.58
72	10	30.50	4.84	1.5

Difference = mu (63) - mu (72)
Estimate for difference: 4.38
95% CI for difference: (0.78, 7.98)
T-Test of difference = 0 (vs not =): T-Value = 2.68 P-Value = 0.021 DF = 11

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
63	58	17.98	2.92	0.38
72	10	15.20	1.99	0.63

Difference = mu (63) - mu (72)
Estimate for difference: 2.783
95% CI for difference: (1.222, 4.344)
T-Test of difference = 0 (vs not =): T-Value = 3.78 P-Value = 0.002 DF = 16

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
63	58	16.90	3.05	0.40
72	10	15.30	3.71	1.2

Difference = mu (63) - mu (72)
Estimate for difference: 1.60
95% CI for difference: (-1.13, 4.33)
T-Test of difference = 0 (vs not =): T-Value = 1.29 P-Value = 0.225 DF = 11

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
63	30	26.9	11.7	2.1
72	9	20.56	7.14	2.4

Difference = mu (63) - mu (72)
Estimate for difference: 6.38
95% CI for difference: (-0.27, 13.02)
T-Test of difference = 0 (vs not =): T-Value = 1.99 P-Value = 0.059 DF = 22

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
63	30	29.70	8.47	1.5
72	9	27.56	7.20	2.4

Difference = mu (63) - mu (72)
Estimate for difference: 2.14
95% CI for difference: (-3.94, 8.23)
T-Test of difference = 0 (vs not =): T-Value = 0.75 P-Value = 0.464 DF = 15

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
63	30	43.4	11.2	2.1
72	9	51.89	7.66	2.6

Difference = mu (63) - mu (72)
Estimate for difference: -8.52
95% CI for difference: (-15.38, -1.67)
T-Test of difference = 0 (vs not =): T-Value = -2.60 P-Value = 0.017 DF = 19

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
63	11	2.081	0.118	0.036
72	7	2.221	0.100	0.038

Difference = mu (63) - mu (72)
Estimate for difference: -0.1405
95% CI for difference: (-0.2520, -0.0289)
T-Test of difference = 0 (vs not =): T-Value = -2.70 P-Value = 0.017 DF = 14

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
63	11	1.806	0.147	0.044
72	7	1.944	0.155	0.059

Difference = mu (63) - mu (72)
Estimate for difference: -0.1380
95% CI for difference: (-0.2981, 0.0221)
T-Test of difference = 0 (vs not =): T-Value = -1.88 P-Value = 0.085 DF = 12

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
63	55	15.38	44.4	1.89
72	26	13.00	33.8	-1.89
Overall	81		41.0	

H = 3.56 DF = 1 P = 0.059
H = 3.57 DF = 1 P = 0.059 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
63	58	34.00	37.6	3.13
72	10	30.00	16.4	-3.13
Overall	68		34.5	

H = 9.82 DF = 1 P = 0.002
H = 9.91 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
63	58	18.00	37.3	2.86
72	10	15.00	18.0	-2.86
Overall	68		34.5	

H = 8.16 DF = 1 P = 0.004
H = 8.29 DF = 1 P = 0.004 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
63	58	16.00	35.9	1.41
72	10	15.50	26.4	-1.41
Overall	68		34.5	

H = 1.99 DF = 1 P = 0.158
H = 2.02 DF = 1 P = 0.155 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
63	30	25.50	21.6	1.63
72	9	17.00	14.6	-1.63
Overall	39		20.0	

H = 2.67 DF = 1 P = 0.102
H = 2.68 DF = 1 P = 0.102 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
63	30	29.00	21.0	0.98
72	9	26.00	16.7	-0.98
Overall	39		20.0	

H = 0.97 DF = 1 P = 0.325
H = 0.98 DF = 1 P = 0.323 (adjusted for ties)

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
63	30	42.50	17.8	-2.17
72	9	53.00	27.2	2.17
Overall	39		20.0	

H = 4.69 DF = 1 P = 0.030
H = 4.70 DF = 1 P = 0.030 (adjusted for ties)

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
63	11	2.090	6.7	-2.76
72	7	2.240	13.9	2.76
Overall	18		9.5	

H = 7.63 DF = 1 P = 0.006
H = 7.68 DF = 1 P = 0.006 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
63	11	1.840	7.1	-2.40
72	7	2.000	13.3	2.40
Overall	18		9.5	

H = 5.76 DF = 1 P = 0.016

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 1.83   DF = 1   P = 0.176

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63          25  30   15.38   5.92              (----*----------)
72          16  10   13.00   5.75  (--*-------------------------)
                                   ------+---------+---------+---------+
                                      13.5      15.0      16.5      18.0
```

Overall median = 15.00

A 95.0% CI for median(63) - median(72): (-2.00,3.06)

Mood median test for WL (%)

Chi-Square = 7.50   DF = 1   P = 0.006

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
63          25  33   34.00   5.00                          (---*---)
72           9   1   30.00   5.25   (-----------*--------)
                                    --+---------+---------+---------+----
                                   27.5      30.0      32.5      35.0
```

Overall median = 33.50

A 95.0% CI for median(63) - median(72): (1.83,7.00)

```
Mood median test for Wp (%)

Chi-Square = 2.97    DF = 1    P = 0.085

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
63          36  22   18.00   4.25                        (------*-----)
72           9   1   15.00   2.75  (--------*----------)
                                   ---------+---------+---------+-------
                                         15.0      16.5      18.0

Overall median = 18.00

A 95.0% CI for median(63) - median(72): (1.67,4.17)
```

```
Mood median test for Ip (%)

Chi-Square = 0.23    DF = 1    P = 0.628

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
63          30  28   16.00   4.00                         *---------)
72           6   4   15.50   5.25     (----------------*---------)
                                      +---------+---------+---------+------
                                   12.0      14.0      16.0      18.0

Overall median = 16.00

A 95.0% CI for median(63) - median(72): (-1.17,5.00)
```

```
Mood median test for % GRAVEL

Chi-Square = 0.77    DF = 1    P = 0.379

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
63          15  15    25.5   15.3                   (------*------------)
72           6   3    17.0   13.5   (-----*---------------------)
                                    --+---------+---------+---------+----
                                   15.0      20.0      25.0      30.0

Overall median = 24.0

A 95.0% CI for median(63) - median(72): (-5.0,14.0)
```

```
Mood median test for % SAND

Chi-Square = 1.11    DF = 1    P = 0.292

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
63          14  16   29.00   9.00               (---------*--------)
72           6   3   26.00   7.50  (------------*--------------)
                                   ------+---------+---------+---------+
                                      24.0      27.0      30.0      33.0

Overall median = 28.00

A 95.0% CI for median(63) - median(72): (-5.00,9.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 1.51    DF = 1    P = 0.219

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
63          17  13    42.5   15.5  (-----*-----------)
72           3   6    53.0   15.5         (---------------*------------)
                                   -----+---------+---------+---------+-
                                     42.0      48.0      54.0      60.0

Overall median = 46.0

A 95.0% CI for median(63) - median(72): (-21.0,5.0)


Mood median test for Bulk Density

Chi-Square = 5.84    DF = 1    P = 0.016

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
63           8   3   2.090  0.260  (-------------*-----------)
72           1   6   2.240  0.040                          (-----*----)
                                   -----+---------+---------+---------+-
                                      2.00      2.10      2.20      2.30

Overall median = 2.170

A 95.0% CI for median(63) - median(72): (-0.225,-0.109)


Mood median test for Dry Density

Chi-Square = 5.84    DF = 1    P = 0.016

Domain                                  Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
63           8   3   1.840  0.250  (--------------*--------)
72           1   6   2.000  0.070                   (-------------*--)
                                   --+---------+---------+---------+----
                                   1.70      1.80      1.90      2.00

Overall median = 1.905

A 95.0% CI for median(63) - median(72): (-0.209,-0.067)
```

Results for: Domain 64 v 65

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain reference	N	Mean	StDev	SE Mean
64	24	15.34	2.86	0.58
65	7	17.71	4.27	1.6

Difference = mu (64) - mu (65)
Estimate for difference: -2.37
95% CI for difference: (-6.43, 1.69)
T-Test of difference = 0 (vs not =): T-Value = -1.38 P-Value = 0.209 DF = 7

Two-sample T for WL (%)

Domain reference	N	Mean	StDev	SE Mean
64	27	34.44	2.34	0.45
65	8	35.25	5.60	2.0

Difference = mu (64) - mu (65)
Estimate for difference: -0.81
95% CI for difference: (-5.61, 4.00)
T-Test of difference = 0 (vs not =): T-Value = -0.40 P-Value = 0.703 DF = 7

Two-sample T for Wp (%)

Domain reference	N	Mean	StDev	SE Mean
64	27	17.81	2.24	0.43
65	8	18.88	1.46	0.52

Difference = mu (64) - mu (65)
Estimate for difference: -1.060
95% CI for difference: (-2.477, 0.357)
T-Test of difference = 0 (vs not =): T-Value = -1.58 P-Value = 0.133 DF = 17

Two-sample T for Ip (%)

Domain reference	N	Mean	StDev	SE Mean
64	27	16.63	2.39	0.46
65	8	16.38	4.41	1.6

Difference = mu (64) - mu (65)
Estimate for difference: 0.25
95% CI for difference: (-3.49, 4.00)
T-Test of difference = 0 (vs not =): T-Value = 0.16 P-Value = 0.879 DF = 8

Two-sample T for % GRAVEL

Domain reference	N	Mean	StDev	SE Mean
64	2	19.0	11.3	8.0
65	2	20.0	11.3	8.0

Difference = mu (64) - mu (65)
Estimate for difference: -1.0
95% CI for difference: (-49.7, 47.7)
T-Test of difference = 0 (vs not =): T-Value = -0.09 P-Value = 0.938 DF = 2

```
Two-sample T for % SAND

Domain
reference  N   Mean  StDev  SE Mean
64         2  27.50   2.12      1.5
65         2  34.00   1.41      1.0

Difference = mu (64) - mu (65)
Estimate for difference:  -6.50
95% CI for difference:  (-29.41, 16.41)
T-Test of difference = 0 (vs not =): T-Value = -3.61  P-Value = 0.172  DF = 1


Two-sample T for % Fines (SILT/CLAY)

Domain
reference  N   Mean  StDev  SE Mean
64         2  53.50   9.19      6.5
65         2   46.0   12.7      9.0

Difference = mu (64) - mu (65)
Estimate for difference:  7.5
95% CI for difference:  (-133.6, 148.6)
T-Test of difference = 0 (vs not =): T-Value = 0.68  P-Value = 0.622  DF = 1


Two-sample T for Bulk Density

Domain
reference   N    Mean   StDev  SE Mean
64         13  2.1462  0.0859    0.024
65          7  2.0929  0.0496    0.019

Difference = mu (64) - mu (65)
Estimate for difference:  0.0533
95% CI for difference:  (-0.0106, 0.1172)
T-Test of difference = 0 (vs not =): T-Value = 1.76  P-Value = 0.097  DF = 17


Two-sample T for Dry Density

Domain
reference   N    Mean   StDev  SE Mean
64         13  1.8731  0.0910    0.025
65          7  1.7800  0.0995    0.038

Difference = mu (64) - mu (65)
Estimate for difference:  0.0931
95% CI for difference:  (-0.0066, 0.1927)
T-Test of difference = 0 (vs not =): T-Value = 2.06  P-Value = 0.064  DF = 11
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
64         24   15.44      14.8  -1.39
65          7   17.00      20.2   1.39
Overall    31              16.0

H = 1.94  DF = 1  P = 0.163
H = 1.95  DF = 1  P = 0.162  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
64	27	34.00	16.9	-1.14
65	8	37.50	21.6	1.14
Overall	35		18.0	

H = 1.30 DF = 1 P = 0.255
H = 1.32 DF = 1 P = 0.251 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
64	27	18.00	16.5	-1.57
65	8	19.00	23.0	1.57
Overall	35		18.0	

H = 2.47 DF = 1 P = 0.116
H = 2.53 DF = 1 P = 0.112 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
64	27	17.00	17.5	-0.53
65	8	18.50	19.7	0.53
Overall	35		18.0	

H = 0.28 DF = 1 P = 0.596
H = 0.29 DF = 1 P = 0.592 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
64	2	19.00	2.0	-0.77
65	2	20.00	3.0	0.77
Overall	4		2.5	

H = 0.60 DF = 1 P = 0.439

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
64	2	27.50	1.5	-1.55
65	2	34.00	3.5	1.55
Overall	4		2.5	

H = 2.40 DF = 1 P = 0.121

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain reference	N	Median	Ave Rank	Z
64	2	53.50	3.0	0.77
65	2	46.00	2.0	-0.77
Overall	4		2.5	

H = 0.60 DF = 1 P = 0.439

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain reference	N	Median	Ave Rank	Z
64	13	2.180	11.8	1.39
65	7	2.100	8.0	-1.39
Overall	20		10.5	

H = 1.92 DF = 1 P = 0.166
H = 1.93 DF = 1 P = 0.164 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain reference	N	Median	Ave Rank	Z
64	13	1.900	12.2	1.78
65	7	1.810	7.3	-1.78
Overall	20		10.5	

H = 3.18 DF = 1 P = 0.075
H = 3.21 DF = 1 P = 0.073 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.28   DF = 1   P = 0.598

```
Domain                                  Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
64          13  11   15.44   4.00  (---------*-----)
65           3   4   17.00   4.00        (---------*--------------)
                                   --------+---------+---------+--------
                                        15.0      17.5      20.0
```

Overall median = 15.88

A 95.0% CI for median(64) - median(65): (-5.62,1.18)

Mood median test for WL (%)

Chi-Square = 0.81   DF = 1   P = 0.369

```
Domain                                  Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
64          15  12   34.00   4.00          (--*---)
65           3   5   37.50   8.25  (----------------------*-------)
                                   --------+---------+---------+--------
                                        33.0      36.0      39.0
```

Overall median = 34.00

A 95.0% CI for median(64) - median(65): (-6.00,4.00)

```
Mood median test for Wp (%)

Chi-Square = 5.29    DF = 1    P = 0.021

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
64          19   8   18.00   2.00    (---------*
65           2   6   19.00   1.50             (----------*----------)
                                     +---------+---------+---------+------
                                   17.0      18.0      19.0      20.0

Overall median = 18.00

A 95.0% CI for median(64) - median(65): (-3.00,0.00)


Mood median test for Ip (%)

Chi-Square = 2.86    DF = 1    P = 0.091

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
64          19   8   17.00   3.00                         (----*
65           3   5   18.50   6.25   (--------------------------------*--)
                                    -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 17.00

A 95.0% CI for median(64) - median(65): (-2.39,5.00)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
64           1   1    19.0   16.0  (---------------*---------------)
65           1   1    20.0   16.0    (---------------*---------------)
                                   --------+---------+---------+--------
                                        15.0      20.0      25.0

Overall median = 19.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 68.3% CI for median(64) - median(65): (-17.0,15.0)


Mood median test for % SAND

Chi-Square = 4.00    DF = 1    P = 0.046

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
64           2   0   27.50   3.00  (-----*-----)
65           0   2   34.00   2.00                             (---*---)
                                   ------+---------+---------+---------+
                                      27.5      30.0      32.5      35.0

Overall median = 31.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 68.3% CI for median(64) - median(65): (-9.00,-4.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
64           1   1    53.5   13.0                (--------*---------)
65           1   1    46.0   18.0  (------------*------------)
                                   -------+---------+---------+---------
                                       42.0      49.0      56.0

Overall median = 51.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 68.3% CI for median(64) - median(65): (-8.0,23.0)
```


```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
64           1   1    53.5   13.0                (--------*---------)
65           1   1    46.0   18.0  (------------*------------)
                                   -------+---------+---------+---------
                                       42.0      49.0      56.0

Overall median = 51.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 68.3% CI for median(64) - median(65): (-8.0,23.0)
```


```
Mood median test for Bulk Density

Chi-Square = 2.97    DF = 1    P = 0.085

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
64           6   7   2.180  0.140         (--------------------*----)
65           6   1   2.100  0.070  (-----------*-----)
                                   --+---------+---------+---------+----
                                   2.050     2.100     2.150     2.200

Overall median = 2.120

A 95.0% CI for median(64) - median(65): (-0.012,0.151)


Mood median test for Dry Density

Chi-Square = 1.98    DF = 1    P = 0.160

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
64           5   8   1.900  0.145                 (----------*------)
65           5   2   1.810  0.120  (--------------*-----)
                                   ---------+---------+---------+-------
                                        1.760     1.840     1.920

Overall median = 1.835

A 95.0% CI for median(64) - median(65): (-0.012,0.232)
```

Results for: Domain 64 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
64	24	15.34	2.86	0.58
71	44	14.56	5.80	0.87

Difference = mu (64) - mu (71)
Estimate for difference: 0.78
95% CI for difference: (-1.32, 2.88)
T-Test of difference = 0 (vs not =): T-Value = 0.74 P-Value = 0.461 DF = 65

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
64	27	34.44	2.34	0.45
71	17	31.24	2.61	0.63

Difference = mu (64) - mu (71)
Estimate for difference: 3.209
95% CI for difference: (1.624, 4.794)
T-Test of difference = 0 (vs not =): T-Value = 4.13 P-Value = 0.000 DF = 31

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
64	27	17.81	2.24	0.43
71	17	15.35	1.73	0.42

Difference = mu (64) - mu (71)
Estimate for difference: 2.462
95% CI for difference: (1.247, 3.677)
T-Test of difference = 0 (vs not =): T-Value = 4.10 P-Value = 0.000 DF = 40

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
64	27	16.63	2.39	0.46
71	17	15.88	1.96	0.48

Difference = mu (64) - mu (71)
Estimate for difference: 0.747
95% CI for difference: (-0.593, 2.088)
T-Test of difference = 0 (vs not =): T-Value = 1.13 P-Value = 0.266 DF = 38

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
64	2	19.0	11.3	8.0
71	16	20.69	6.81	1.7

Difference = mu (64) - mu (71)
Estimate for difference: -1.69
95% CI for difference: (-105.61, 102.24)
T-Test of difference = 0 (vs not =): T-Value = -0.21 P-Value = 0.870 DF = 1

```
Two-sample T for % SAND

Domain
Reference   N   Mean  StDev  SE Mean
64          2  27.50   2.12      1.5
71         16  24.37   7.67      1.9


Difference = mu (64) - mu (71)
Estimate for difference:  3.13
95% CI for difference:  (-3.13, 9.38)
T-Test of difference = 0 (vs not =): T-Value = 1.28  P-Value = 0.255  DF = 5


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference   N   Mean  StDev  SE Mean
64          2  53.50   9.19      6.5
71         16   52.1   11.3      2.8

Difference = mu (64) - mu (71)
Estimate for difference:  1.37
95% CI for difference:  (-88.69, 91.44)
T-Test of difference = 0 (vs not =): T-Value = 0.19  P-Value = 0.878  DF = 1


Two-sample T for Bulk Density

Domain
Reference   N    Mean   StDev  SE Mean
64         13  2.1462  0.0859    0.024
71         12  2.2583  0.0486    0.014

Difference = mu (64) - mu (71)
Estimate for difference:  -0.1122
95% CI for difference:  (-0.1700, -0.0543)
T-Test of difference = 0 (vs not =): T-Value = -4.06  P-Value = 0.001  DF = 19


Two-sample T for Dry Density

Domain
Reference   N    Mean   StDev  SE Mean
64         13  1.8731  0.0910    0.025
71         12  1.9937  0.0718    0.021

Difference = mu (64) - mu (71)
Estimate for difference:  -0.1206
95% CI for difference:  (-0.1884, -0.0529)
T-Test of difference = 0 (vs not =): T-Value = -3.69  P-Value = 0.001  DF = 22
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
64         24   15.44      40.0   1.68
71         44   13.00      31.5  -1.68
Overall    68              34.5

H = 2.83  DF = 1  P = 0.093
H = 2.86  DF = 1  P = 0.091  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
64	27	34.00	28.0	3.58
71	17	31.00	13.8	-3.58
Overall	44		22.5	

H = 12.81 DF = 1 P = 0.000
H = 13.02 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
64	27	18.00	27.9	3.53
71	17	16.00	13.9	-3.53
Overall	44		22.5	

H = 12.47 DF = 1 P = 0.000
H = 12.89 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
64	27	17.00	24.4	1.23
71	17	16.00	19.5	-1.23
Overall	44		22.5	

H = 1.51 DF = 1 P = 0.219
H = 1.55 DF = 1 P = 0.213 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
64	2	19.00	9.0	-0.14
71	16	19.00	9.6	0.14
Overall	18		9.5	

H = 0.02 DF = 1 P = 0.888
H = 0.02 DF = 1 P = 0.888 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
64	2	27.50	10.5	0.28
71	16	23.50	9.4	-0.28
Overall	18		9.5	

H = 0.08 DF = 1 P = 0.779
H = 0.08 DF = 1 P = 0.777 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
64	2	53.50	9.5	0.00
71	16	53.00	9.5	0.00
Overall	18		9.5	

H = 0.00 DF = 1 P = 1.000
H = 0.00 DF = 1 P = 1.000 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
64	13	2.180	8.2	-3.43
71	12	2.260	18.3	3.43
Overall	25		13.0	

H = 11.74 DF = 1 P = 0.001
H = 11.77 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
64	13	1.900	7.9	-3.59
71	12	1.991	18.5	3.59
Overall	25		13.0	

H = 12.89 DF = 1 P = 0.000
H = 12.94 DF = 1 P = 0.000 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 4.51   DF = 1   P = 0.034

```
Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
64          10  14   15.44   4.00   (-------------------*------------)
71          30  14   13.00   3.75  *--------)
                                   --+---------+---------+---------+----
                                   13.2      14.4      15.6      16.8
```

Overall median = 14.00

A 95.0% CI for median(64) - median(71): (-0.34,3.84)

```
Mood median test for WL (%)

Chi-Square = 7.76    DF = 1    P = 0.005

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
64           9  18   34.00   4.00                        (------*------)
71          13   4   31.00   3.50    (------*-----)
                                     +---------+---------+---------+------
                                   30.0      31.5      33.0      34.5

Overall median = 33.50

A 95.0% CI for median(64) - median(71): (2.00,5.00)


Mood median test for Wp (%)

Chi-Square = 12.93    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
64          13  14   18.00   2.00                            (-------*
71          17   0   16.00   3.00  (---------------*--------)
                                   ---+---------+---------+---------+---
                                   14.4      15.6      16.8      18.0

Overall median = 17.00

A 95.0% CI for median(64) - median(71): (0.00,3.09)


Mood median test for Ip (%)

Chi-Square = 2.40    DF = 1    P = 0.122

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1    +---------+---------+---------+------
64          11  16   17.00   3.00                      (----------------*)
71          11   6   16.00   2.50    (----------------*---------------)
                                     +---------+---------+---------+------
                                   15.00     15.60     16.20     16.80

Overall median = 16.50

A 95.0% CI for median(64) - median(71): (-1.00,2.00)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
64           1   1    19.0   16.0  (---------------*---------------)
71           8   8    19.0    7.5              (---*-------)
                                   --------+---------+---------+--------
                                        15.0      20.0      25.0

Overall median = 19.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.5% CI for median(64) - median(71): (-31.0,15.0)
```

```
Mood median test for % SAND

Chi-Square = 0.03    DF = 1    P = 0.867

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
64           1   1    27.5    3.0                         (---*--)
71           9   7    23.5   14.0  (----------------*-----------------)
                                   --------+---------+---------+--------
                                        20.0      24.0      28.0

Overall median = 26.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.5% CI for median(64) - median(71): (-13.0,16.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
64           1   1    53.5   13.0  (----------------*---------------)
71           8   8    53.0   15.5   (-------------*----------------)
                                   ---+---------+---------+---------+---
                                   48.0      52.0      56.0      60.0

Overall median = 53.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.5% CI for median(64) - median(71): (-26.0,35.0)


Mood median test for Bulk Density

Chi-Square = 11.78    DF = 1    P = 0.001

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
64          12   1   2.180  0.140  (----------------*----)
71           3   9   2.260  0.058                            (----*----)
                                   ----+---------+---------+---------+--
                                     2.100     2.160     2.220     2.280

Overall median = 2.230

A 95.0% CI for median(64) - median(71): (-0.187,-0.040)


Mood median test for Dry Density

Chi-Square = 17.63    DF = 1    P = 0.000

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --+---------+---------+---------+----
64          12   1   1.900  0.145  (------------*-------)
71           1  11   1.991  0.067                         (--*------)
                                   --+---------+---------+---------+----
                                   1.820     1.890     1.960     2.030

Overall median = 1.950

A 95.0% CI for median(64) - median(71): (-0.203,-0.023)
```

Results for: Domain 64 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
64	24	15.34	2.86	0.58
72	26	15.13	4.24	0.83

Difference = mu (64) - mu (72)
Estimate for difference: 0.21
95% CI for difference: (-1.84, 2.26)
T-Test of difference = 0 (vs not =): T-Value = 0.21 P-Value = 0.835 DF = 44

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
64	27	34.44	2.34	0.45
72	10	30.50	4.84	1.5

Difference = mu (64) - mu (72)
Estimate for difference: 3.94
95% CI for difference: (0.39, 7.50)
T-Test of difference = 0 (vs not =): T-Value = 2.47 P-Value = 0.033 DF = 10

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
64	27	17.81	2.24	0.43
72	10	15.20	1.99	0.63

Difference = mu (64) - mu (72)
Estimate for difference: 2.615
95% CI for difference: (1.014, 4.216)
T-Test of difference = 0 (vs not =): T-Value = 3.43 P-Value = 0.003 DF = 18

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
64	27	16.63	2.39	0.46
72	10	15.30	3.71	1.2

Difference = mu (64) - mu (72)
Estimate for difference: 1.33
95% CI for difference: (-1.45, 4.11)
T-Test of difference = 0 (vs not =): T-Value = 1.05 P-Value = 0.314 DF = 11

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
64	2	19.0	11.3	8.0
72	9	20.56	7.14	2.4

Difference = mu (64) - mu (72)
Estimate for difference: -1.56
95% CI for difference: (-107.61, 104.50)
T-Test of difference = 0 (vs not =): T-Value = -0.19 P-Value = 0.883 DF = 1

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
64	2	27.50	2.12	1.5
72	9	27.56	7.20	2.4

Difference = mu (64) - mu (72)
Estimate for difference: -0.06
95% CI for difference: (-6.98, 6.87)
T-Test of difference = 0 (vs not =): T-Value = -0.02 P-Value = 0.985 DF = 6

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
64	2	53.50	9.19	6.5
72	9	51.89	7.66	2.6

Difference = mu (64) - mu (72)
Estimate for difference: 1.61
95% CI for difference: (-87.12, 90.34)
T-Test of difference = 0 (vs not =): T-Value = 0.23 P-Value = 0.856 DF = 1

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
64	13	2.1462	0.0859	0.024
72	7	2.221	0.100	0.038

Difference = mu (64) - mu (72)
Estimate for difference: -0.0753
95% CI for difference: (-0.1751, 0.0246)
T-Test of difference = 0 (vs not =): T-Value = -1.68 P-Value = 0.124 DF = 10

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
64	13	1.8731	0.0910	0.025
72	7	1.944	0.155	0.059

Difference = mu (64) - mu (72)
Estimate for difference: -0.0713
95% CI for difference: (-0.2185, 0.0760)
T-Test of difference = 0 (vs not =): T-Value = -1.12 P-Value = 0.297 DF = 8

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
64	24	15.44	26.9	0.64
72	26	13.00	24.2	-0.64
Overall	50		25.5	

H = 0.41 DF = 1 P = 0.522
H = 0.41 DF = 1 P = 0.520 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
64	27	34.00	22.4	3.18
72	10	30.00	9.7	-3.18
Overall	37		19.0	

H = 10.12 DF = 1 P = 0.001
H = 10.22 DF = 1 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
64	27	18.00	22.1	2.86
72	10	15.00	10.7	-2.86
Overall	37		19.0	

H = 8.15 DF = 1 P = 0.004
H = 8.32 DF = 1 P = 0.004 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
64	27	17.00	20.4	1.30
72	10	15.50	15.2	-1.30
Overall	37		19.0	

H = 1.69 DF = 1 P = 0.194
H = 1.73 DF = 1 P = 0.188 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
64	2	19.00	4.5	-0.71
72	9	17.00	6.3	0.71
Overall	11		6.0	

H = 0.50 DF = 1 P = 0.480
H = 0.50 DF = 1 P = 0.478 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
64	2	27.50	6.8	0.35
72	9	26.00	5.8	-0.35
Overall	11		6.0	

H = 0.13 DF = 1 P = 0.724
H = 0.13 DF = 1 P = 0.721 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain                  Ave
Reference   N  Median  Rank      Z
64          2   53.50   6.5   0.24
72          9   53.00   5.9  -0.24
Overall    11           6.0

H = 0.06  DF = 1  P = 0.814
H = 0.06  DF = 1  P = 0.813  (adjusted for ties)

* NOTE * One or more small samples
```


```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain                  Ave
Reference   N  Median  Rank      Z
64          2   53.50   6.5   0.24
72          9   53.00   5.9  -0.24
Overall    11           6.0

H = 0.06  DF = 1  P = 0.814
H = 0.06  DF = 1  P = 0.813  (adjusted for ties)

* NOTE * One or more small samples
```


```
Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
64         13   2.180       8.3  -2.26
72          7   2.240      14.6   2.26
Overall    20              10.5

H = 5.10  DF = 1  P = 0.024
H = 5.13  DF = 1  P = 0.024  (adjusted for ties)
```

```
Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
64         13   1.900       8.5  -2.10
72          7   2.000      14.3   2.10
Overall    20              10.5

H = 4.41  DF = 1  P = 0.036
H = 4.44  DF = 1  P = 0.035  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 1.28    DF = 1    P = 0.258

Domain                                   Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
64          10  14   15.44   4.00      (------------------*------------)
72          15  11   13.00   5.75  (--*--------------------------------)
                                   -----+---------+---------+---------+-
                                     13.2      14.4      15.6      16.8

Overall median = 14.50

A 95.0% CI for median(64) - median(72): (-2.15,3.78)
```

```
Mood median test for WL (%)

Chi-Square = 3.80    DF = 1    P = 0.051

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
64          15  12   34.00   4.00                         (---*---)
72           9   1   30.00   5.25   (-----------*--------)
                                    --+---------+---------+---------+----
                                   27.5      30.0      32.5      35.0

Overall median = 34.00

A 95.0% CI for median(64) - median(72): (1.95,8.00)


Mood median test for Wp (%)

Chi-Square = 3.02    DF = 1    P = 0.082

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
64          13  14   18.00   2.00                              (-------*
72           8   2   15.00   2.75  (----------*-------------)
                                   ------+---------+---------+---------+
                                      14.4      15.6      16.8      18.0

Overall median = 17.00

A 95.0% CI for median(64) - median(72): (0.90,4.05)


Mood median test for Ip (%)

Chi-Square = 1.09    DF = 1    P = 0.297

Domain                              Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1     +---------+---------+---------+------
64         11   16   17.00   3.00                                (------*)
72          6    4   15.50   5.25     (---------------------*------------)
                                      +---------+---------+---------+------
                                   12.0      13.5      15.0      16.5

Overall median = 17.00

A 95.0% CI for median(64) - median(72): (-1.05,5.00)


Mood median test for % GRAVEL

Chi-Square = 0.02    DF = 1    P = 0.887

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
64           1   1    19.0   16.0  (---------------*---------------)
72           5   4    17.0   13.5        (-----*--------------------)
                                   --------+---------+---------+--------
                                        15.0      20.0      25.0

Overall median = 17.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.4% CI for median(64) - median(72): (-21.0,14.0)
```

```
Mood median test for % SAND

Chi-Square = 0.02    DF = 1    P = 0.887

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
64           1   1   27.50   3.00                  (-----*-----)
72           5   4   26.00   7.50   (--------------*-----------------)
                                    -+---------+---------+---------+-----
                                   22.5      25.0      27.5      30.0

Overall median = 26.00
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.4% CI for median(64) - median(72): (-18.00,10.00)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.02    DF = 1    P = 0.887

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
64           1   1    53.5   13.0          (------------*------------)
72           5   4    53.0   15.5  (-------------------*--------------)
                                   ----+---------+---------+---------+--
                                    45.0      50.0      55.0      60.0

Overall median = 53.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.4% CI for median(64) - median(72): (-14.0,19.0)
```

```
Mood median test for Bulk Density

Chi-Square = 7.21    DF = 1    P = 0.007

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
64          10   3   2.180  0.140  (----------------*----)
72           1   6   2.240  0.040                  (---------*-------)
                                   ----+---------+---------+---------+--
                                     2.100     2.160     2.220     2.280

Overall median = 2.200

A 95.0% CI for median(64) - median(72): (-0.171,-0.036)
```

```
Mood median test for Dry Density

Chi-Square = 1.98    DF = 1    P = 0.160

Domain                             Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
64           8   5   1.900  0.145  (---------------*-------)
72           2   5   2.000  0.070          (----------------------*----)
                                   ---------+---------+---------+-------
                                          1.860     1.920     1.980

Overall median = 1.949

A 95.0% CI for median(64) - median(72): (-0.189,0.008)
```

Results for: Domain 65 v 71

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
65	7	17.71	4.27	1.6
71	44	14.56	5.80	0.87

Difference = mu (65) - mu (71)
Estimate for difference: 3.15
95% CI for difference: (-1.00, 7.30)
T-Test of difference = 0 (vs not =): T-Value = 1.72 P-Value = 0.120 DF = 9

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
65	8	35.25	5.60	2.0
71	17	31.24	2.61	0.63

Difference = mu (65) - mu (71)
Estimate for difference: 4.01
95% CI for difference: (-0.78, 8.81)
T-Test of difference = 0 (vs not =): T-Value = 1.93 P-Value = 0.090 DF = 8

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
65	8	18.88	1.46	0.52
71	17	15.35	1.73	0.42

Difference = mu (65) - mu (71)
Estimate for difference: 3.522
95% CI for difference: (2.113, 4.931)
T-Test of difference = 0 (vs not =): T-Value = 5.30 P-Value = 0.000 DF = 16

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
65	8	16.38	4.41	1.6
71	17	15.88	1.96	0.48

Difference = mu (65) - mu (71)
Estimate for difference: 0.49
95% CI for difference: (-3.26, 4.25)
T-Test of difference = 0 (vs not =): T-Value = 0.30 P-Value = 0.770 DF = 8

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
65	2	20.0	11.3	8.0
71	16	20.69	6.81	1.7

Difference = mu (65) - mu (71)
Estimate for difference: -0.69
95% CI for difference: (-104.61, 103.24)
T-Test of difference = 0 (vs not =): T-Value = -0.08 P-Value = 0.947 DF = 1

Two-sample T for % SAND

Domain Reference	N	Mean	StDev	SE Mean
65	2	34.00	1.41	1.0
71	16	24.37	7.67	1.9

Difference = mu (65) - mu (71)
Estimate for difference: 9.63
95% CI for difference: (4.87, 14.38)
T-Test of difference = 0 (vs not =): T-Value = 4.45 P-Value = 0.001 DF = 11

Two-sample T for % Fines (SILT/CLAY)

Domain Reference	N	Mean	StDev	SE Mean
65	2	46.0	12.7	9.0
71	16	52.1	11.3	2.8

Difference = mu (65) - mu (71)
Estimate for difference: -6.13
95% CI for difference: (-125.99, 113.74)
T-Test of difference = 0 (vs not =): T-Value = -0.65 P-Value = 0.633 DF = 1

Two-sample T for Bulk Density

Domain Reference	N	Mean	StDev	SE Mean
65	7	2.0929	0.0496	0.019
71	12	2.2583	0.0486	0.014

Difference = mu (65) - mu (71)
Estimate for difference: -0.1655
95% CI for difference: (-0.2165, -0.1145)
T-Test of difference = 0 (vs not =): T-Value = -7.07 P-Value = 0.000 DF = 12

Two-sample T for Dry Density

Domain Reference	N	Mean	StDev	SE Mean
65	7	1.7800	0.0995	0.038
71	12	1.9937	0.0718	0.021

Difference = mu (65) - mu (71)
Estimate for difference: -0.2137
95% CI for difference: (-0.3109, -0.1166)
T-Test of difference = 0 (vs not =): T-Value = -4.98 P-Value = 0.001 DF = 9

Kruskal-Wallis Test: (Parameter) versus Domain Reference

Kruskal-Wallis Test on w (%)

Domain Reference	N	Median	Ave Rank	Z
65	7	17.00	38.4	2.38
71	44	13.00	24.0	-2.38
Overall	51		26.0	

H = 5.67 DF = 1 P = 0.017
H = 5.78 DF = 1 P = 0.016 (adjusted for ties)

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
65	8	37.50	17.7	2.18
71	17	31.00	10.8	-2.18
Overall	25		13.0	

H = 4.77 DF = 1 P = 0.029
H = 4.82 DF = 1 P = 0.028 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
65	8	19.00	20.6	3.52
71	17	16.00	9.4	-3.52
Overall	25		13.0	

H = 12.42 DF = 1 P = 0.000
H = 12.73 DF = 1 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
65	8	18.50	15.2	1.02
71	17	16.00	12.0	-1.02
Overall	25		13.0	

H = 1.04 DF = 1 P = 0.308
H = 1.05 DF = 1 P = 0.304 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
65	2	20.00	9.3	-0.07
71	16	19.00	9.5	0.07
Overall	18		9.5	

H = 0.00 DF = 1 P = 0.944
H = 0.00 DF = 1 P = 0.944 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
65	2	34.00	16.5	1.97
71	16	23.50	8.6	-1.97
Overall	18		9.5	

H = 3.87 DF = 1 P = 0.049
H = 3.90 DF = 1 P = 0.048 (adjusted for ties)

* NOTE * One or more small samples

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain                  Ave
Reference   N  Median  Rank      Z
65          2   46.00   7.0  -0.70
71         16   53.00   9.8   0.70
Overall    18           9.5

H = 0.49  DF = 1  P = 0.482
H = 0.49  DF = 1  P = 0.482  (adjusted for ties)

* NOTE * One or more small samples


Kruskal-Wallis Test on Bulk Density

Domain
Reference   N  Median  Ave Rank      Z
65          7   2.100       4.1  -3.47
71         12   2.260      13.4   3.47
Overall    19              10.0

H = 12.01  DF = 1  P = 0.001
H = 12.05  DF = 1  P = 0.001  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
Reference   N  Median  Ave Rank      Z
65          7   1.810       4.4  -3.30
71         12   1.991      13.3   3.30
Overall    19              10.0

H = 10.86  DF = 1  P = 0.001
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 7.36    DF = 1    P = 0.007

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
65           1   6   17.00   4.00        (---------*--------------)
71          30  14   13.00   3.75  *---)
                                   --------+---------+---------+--------
                                        15.0      17.5      20.0

Overall median = 14.00

A 95.0% CI for median(65) - median(71): (0.70,7.05)


Mood median test for WL (%)

Chi-Square = 6.00    DF = 1    P = 0.014

Domain                               Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
65           2   6    37.5    8.3       (----------------------*-------)
71          13   4    31.0    3.5     (--*---)
                                      +---------+---------+---------+------
                                   30.0      33.0      36.0      39.0

Overall median = 32.0

A 95.0% CI for median(65) - median(71): (-1.0,10.0)
```

```
Mood median test for Wp (%)

Chi-Square = 5.94    DF = 1    P = 0.015

Domain                              Individual 95.0% CIs
Reference  N<  N>=  Median  Q3-Q1    +---------+---------+---------+------
65          1    7   19.00   1.50                      (-----*----)
71         11    6   16.00   3.00    (---------*----)
                                     +---------+---------+---------+------
                                   14.0      16.0      18.0      20.0

Overall median = 17.00

A 95.0% CI for median(65) - median(71): (1.78,5.00)


Mood median test for Ip (%)

Chi-Square = 1.63    DF = 1    P = 0.201

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
65           3   5   18.50   6.25   (----------------------------------*--)
71          11   6   16.00   2.50                   (----*----)
                                    -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 16.00

A 95.0% CI for median(65) - median(71): (-4.22,3.22)


Mood median test for % GRAVEL

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
65           1   1    20.0   16.0  (---------------*---------------)
71           8   8    19.0    7.5            (---*-------)
                                   ------+---------+---------+---------+
                                      15.0      20.0      25.0      30.0

Overall median = 19.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.5% CI for median(65) - median(71): (-30.0,16.0)


Mood median test for % SAND

Chi-Square = 2.25    DF = 1    P = 0.134

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
65           0   2    34.0    2.0                                 (-*-)
71           9   7    23.5   14.0  (-------------*--------------)
                                   ------+---------+---------+---------+
                                      20.0      25.0      30.0      35.0

Overall median = 27.5
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.5% CI for median(65) - median(71): (-6.0,22.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
65           1   1    46.0   18.0  (------------*------------)
71           8   8    53.0   15.5                (--------*--------)
                                   -------+---------+---------+---------
                                       42.0      49.0      56.0

Overall median = 53.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.5% CI for median(65) - median(71): (-36.0,30.0)
```

```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.00    DF = 1    P = 1.000

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
65           1   1    46.0   18.0  (------------*------------)
71           8   8    53.0   15.5                (--------*--------)
                                   -------+---------+---------+---------
                                       42.0      49.0      56.0

Overall median = 53.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 94.5% CI for median(65) - median(71): (-36.0,30.0)
```

```
Mood median test for Bulk Density

Chi-Square = 9.98    DF = 1    P = 0.002

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
65           7   0   2.100  0.070  (--------*---)
71           3   9   2.260  0.058                              (---*---)
                                   ---------+---------+---------+-------
                                          2.100     2.170     2.240

Overall median = 2.230

A 95.0% CI for median(65) - median(71): (-0.240,-0.120)
```

```
Mood median test for Dry Density

Chi-Square = 9.98    DF = 1    P = 0.002

Domain                              Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
65           7   0   1.810  0.120   (-----------*----)
71           3   9   1.991  0.067                               (-*---)
                                    -+---------+---------+---------+-----
                                   1.70      1.80      1.90      2.00

Overall median = 1.965

A 95.0% CI for median(65) - median(71): (-0.308,-0.133)
```

Results for: Domain 65 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

Two-sample T for w (%)

Domain Reference	N	Mean	StDev	SE Mean
65	7	17.71	4.27	1.6
72	26	15.13	4.24	0.83

Difference = mu (65) - mu (72)
Estimate for difference: 2.59
95% CI for difference: (-1.52, 6.70)
T-Test of difference = 0 (vs not =): T-Value = 1.42 P-Value = 0.188 DF = 9

Two-sample T for WL (%)

Domain Reference	N	Mean	StDev	SE Mean
65	8	35.25	5.60	2.0
72	10	30.50	4.84	1.5

Difference = mu (65) - mu (72)
Estimate for difference: 4.75
95% CI for difference: (-0.65, 10.15)
T-Test of difference = 0 (vs not =): T-Value = 1.90 P-Value = 0.080 DF = 13

Two-sample T for Wp (%)

Domain Reference	N	Mean	StDev	SE Mean
65	8	18.88	1.46	0.52
72	10	15.20	1.99	0.63

Difference = mu (65) - mu (72)
Estimate for difference: 3.675
95% CI for difference: (1.942, 5.408)
T-Test of difference = 0 (vs not =): T-Value = 4.52 P-Value = 0.000 DF = 15

Two-sample T for Ip (%)

Domain Reference	N	Mean	StDev	SE Mean
65	8	16.38	4.41	1.6
72	10	15.30	3.71	1.2

Difference = mu (65) - mu (72)
Estimate for difference: 1.07
95% CI for difference: (-3.14, 5.29)
T-Test of difference = 0 (vs not =): T-Value = 0.55 P-Value = 0.591 DF = 13

Two-sample T for % GRAVEL

Domain Reference	N	Mean	StDev	SE Mean
65	2	20.0	11.3	8.0
72	9	20.56	7.14	2.4

Difference = mu (65) - mu (72)
Estimate for difference: -0.56
95% CI for difference: (-106.61, 105.50)
T-Test of difference = 0 (vs not =): T-Value = -0.07 P-Value = 0.958 DF = 1

```
Two-sample T for % SAND

Domain
Reference  N   Mean  StDev  SE Mean
65         2  34.00   1.41      1.0
72         9  27.56   7.20      2.4

Difference = mu (65) - mu (72)
Estimate for difference:  6.44
95% CI for difference:  (0.45, 12.44)
T-Test of difference = 0 (vs not =): T-Value = 2.48  P-Value = 0.038  DF = 8


Two-sample T for % Fines (SILT/CLAY)

Domain
Reference  N   Mean  StDev  SE Mean
65         2   46.0   12.7      9.0
72         9  51.89   7.66      2.6

Difference = mu (65) - mu (72)
Estimate for difference:  -5.89
95% CI for difference:  (-124.75, 112.98)
T-Test of difference = 0 (vs not =): T-Value = -0.63  P-Value = 0.642  DF = 1


Two-sample T for Bulk Density

Domain
Reference  N    Mean   StDev  SE Mean
65         7  2.0929  0.0496    0.019
72         7   2.221   0.100    0.038

Difference = mu (65) - mu (72)
Estimate for difference:  -0.1286
95% CI for difference:  (-0.2262, -0.0310)
T-Test of difference = 0 (vs not =): T-Value = -3.04  P-Value = 0.016  DF = 8


Two-sample T for Dry Density

Domain
Reference  N    Mean   StDev  SE Mean
65         7  1.7800  0.0995    0.038
72         7   1.944   0.155    0.059

Difference = mu (65) - mu (72)
Estimate for difference:  -0.1643
95% CI for difference:  (-0.3196, -0.0090)
T-Test of difference = 0 (vs not =): T-Value = -2.36  P-Value = 0.040  DF = 10
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
Reference   N  Median  Ave Rank      Z
65          7   17.00      22.1   1.56
72         26   13.00      15.6  -1.56
Overall    33              17.0

H = 2.44  DF = 1  P = 0.118
H = 2.48  DF = 1  P = 0.115  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain Reference	N	Median	Ave Rank	Z
65	8	37.50	12.1	1.82
72	10	30.00	7.5	-1.82
Overall	18		9.5	

H = 3.32 DF = 1 P = 0.069
H = 3.34 DF = 1 P = 0.068 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain Reference	N	Median	Ave Rank	Z
65	8	19.00	13.8	3.02
72	10	15.00	6.1	-3.02
Overall	18		9.5	

H = 9.13 DF = 1 P = 0.003
H = 9.40 DF = 1 P = 0.002 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
65	8	18.50	10.9	1.02
72	10	15.50	8.3	-1.02
Overall	18		9.5	

H = 1.04 DF = 1 P = 0.307
H = 1.06 DF = 1 P = 0.303 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain Reference	N	Median	Ave Rank	Z
65	8	18.50	10.9	1.02
72	10	15.50	8.3	-1.02
Overall	18		9.5	

H = 1.04 DF = 1 P = 0.307
H = 1.06 DF = 1 P = 0.303 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain Reference	N	Median	Ave Rank	Z
65	2	20.00	5.0	-0.47
72	9	17.00	6.2	0.47
Overall	11		6.0	

H = 0.22 DF = 1 P = 0.637
H = 0.23 DF = 1 P = 0.634 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % SAND

Domain Reference	N	Median	Ave Rank	Z
65	2	34.00	9.5	1.65
72	9	26.00	5.2	-1.65
Overall	11		6.0	

H = 2.72 DF = 1 P = 0.099
H = 2.73 DF = 1 P = 0.098 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain Reference	N	Median	Ave Rank	Z
65	2	46.00	4.3	-0.82
72	9	53.00	6.4	0.82
Overall	11		6.0	

H = 0.68 DF = 1 P = 0.409
H = 0.69 DF = 1 P = 0.407 (adjusted for ties)

* NOTE * One or more small samples

Kruskal-Wallis Test on Bulk Density

Domain Reference	N	Median	Ave Rank	Z
65	7	2.100	5.0	-2.24
72	7	2.240	10.0	2.24
Overall	14		7.5	

H = 5.00 DF = 1 P = 0.025
H = 5.06 DF = 1 P = 0.025 (adjusted for ties)

Kruskal-Wallis Test on Dry Density

Domain Reference	N	Median	Ave Rank	Z
65	7	1.810	4.9	-2.30
72	7	2.000	10.1	2.30
Overall	14		7.5	

H = 5.29 DF = 1 P = 0.021
H = 5.30 DF = 1 P = 0.021 (adjusted for ties)

Mood Median Test: (Parameter) versus Domain Reference

Mood median test for w (%)

Chi-Square = 0.79   DF = 1   P = 0.375

```
Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
65           3   4   17.00   4.00         (---------*--------------)
72          16  10   13.00   5.75  (*---------------)
                                   ---------+---------+---------+-------
                                         15.0      17.5      20.0
```

Overall median = 15.00

A 95.0% CI for median(65) - median(72): (-0.20,6.68)

```
Mood median test for WL (%)

Chi-Square = 3.60    DF = 1    P = 0.058

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
65           2   6    37.5    8.3           (-----------------*-----)
72           7   3    30.0    5.3  (-------*-----)
                                   ---+---------+---------+---------+---
                                   28.0      32.0      36.0      40.0

Overall median = 31.5

A 95.0% CI for median(65) - median(72): (-1.0,13.0)


Mood median test for Wp (%)

Chi-Square = 8.10    DF = 1    P = 0.004

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   --+---------+---------+---------+----
65           1   7   19.00   1.50                         (-----*----)
72           8   2   15.00   2.75   (------*-------)
                                    --+---------+---------+---------+----
                                   14.0      16.0      18.0      20.0

Overall median = 17.00

A 95.0% CI for median(65) - median(72): (2.00,6.00)


Mood median test for Ip (%)

Chi-Square = 0.90    DF = 1    P = 0.343

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1     -+---------+---------+---------+-----
65           3   5   18.50   6.25     (---------------------------------*--)
72           6   4   15.50   5.25      (-----------------*--------)
                                      -+---------+---------+---------+-----
                                   12.0      14.0      16.0      18.0

Overall median = 16.50

A 95.0% CI for median(65) - median(72): (-5.00,7.00)


Mood median test for % GRAVEL

Chi-Square = 0.02    DF = 1    P = 0.887

Domain                                 Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
65           1   1    20.0   16.0  (---------------*---------------)
72           5   4    17.0   13.5      (-----*--------------------)
                                   ------+---------+---------+---------+
                                      15.0      20.0      25.0      30.0

Overall median = 17.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.4% CI for median(65) - median(72): (-20.0,15.0)
```

```
Mood median test for % SAND

Chi-Square = 2.93    DF = 1    P = 0.087

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ------+---------+---------+---------+
65           0   2    34.0    2.0                              (--*--)
72           6   3    26.0    7.5  (---------*------------)
                                   ------+---------+---------+---------+
                                      24.5      28.0      31.5      35.0

Overall median = 28.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.4% CI for median(65) - median(72): (-11.0,16.0)


Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.02    DF = 1    P = 0.887

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  -------+---------+---------+---------
65           1   1    46.0   18.0  (------------*------------)
72           5   4    53.0   15.5          (--------------*---------)
                                   -------+---------+---------+---------
                                       42.0      49.0      56.0

Overall median = 53.0
* NOTE * Levels with < 6 observations have confidence < 95.0%

A 92.4% CI for median(65) - median(72): (-24.0,14.0)


Mood median test for Bulk Density

Chi-Square = 7.14    DF = 1    P = 0.008

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
65           6   1   2.100  0.070  (--------*---)
72           1   6   2.240  0.040                    (--------*-----)
                                   ---------+---------+---------+-------
                                          2.100     2.170     2.240

Overall median = 2.140

A 95.0% CI for median(65) - median(72): (-0.230,-0.120)


Mood median test for Dry Density

Chi-Square = 7.14    DF = 1    P = 0.008

Domain                                Individual 95.0% CIs
Reference  N<=  N>  Median  Q3-Q1   -+---------+---------+---------+-----
65           6   1   1.810  0.120   (-----------*----)
72           1   6   2.000  0.070                    (-------------*--)
                                    -+---------+---------+---------+-----
                                   1.70      1.80      1.90      2.00

Overall median = 1.875

A 95.0% CI for median(65) - median(72): (-0.298,-0.108)
```

Results for: Domain 71 v 72

Two-Sample T-Test and CI: (Parameter) versus Domain Reference

```
Two-sample T for w (%)

Domain
reference   N   Mean  StDev  SE Mean
71         44  14.56   5.80     0.87
72         26  15.13   4.24     0.83

Difference = mu (71) - mu (72)
Estimate for difference:  -0.57
95% CI for difference:  (-2.98, 1.85)
T-Test of difference = 0 (vs not =): T-Value = -0.47  P-Value = 0.641  DF = 64


Two-sample T for WL (%)

Domain
reference   N   Mean  StDev  SE Mean
71         17  31.24   2.61     0.63
72         10  30.50   4.84      1.5

Difference = mu (71) - mu (72)
Estimate for difference:  0.74
95% CI for difference:  (-2.87, 4.34)
T-Test of difference = 0 (vs not =): T-Value = 0.44  P-Value = 0.665  DF = 12


Two-sample T for Wp (%)

Domain
reference   N   Mean  StDev  SE Mean
71         17  15.35   1.73     0.42
72         10  15.20   1.99     0.63

Difference = mu (71) - mu (72)
Estimate for difference:  0.153
95% CI for difference:  (-1.450, 1.756)
T-Test of difference = 0 (vs not =): T-Value = 0.20  P-Value = 0.842  DF = 16


Two-sample T for Ip (%)

Domain
reference   N   Mean  StDev  SE Mean
71         17  15.88   1.96     0.48
72         10  15.30   3.71      1.2

Difference = mu (71) - mu (72)
Estimate for difference:  0.58
95% CI for difference:  (-2.18, 3.34)
T-Test of difference = 0 (vs not =): T-Value = 0.46  P-Value = 0.654  DF = 12


Two-sample T for % GRAVEL

Domain
reference   N   Mean  StDev  SE Mean
71         16  20.69   6.81      1.7
72          9  20.56   7.14      2.4

Difference = mu (71) - mu (72)
Estimate for difference:  0.13
95% CI for difference:  (-6.07, 6.34)
T-Test of difference = 0 (vs not =): T-Value = 0.05  P-Value = 0.965  DF = 16
```

```
Two-sample T for % SAND

Domain
reference   N   Mean  StDev  SE Mean
71         16  24.38   7.67      1.9
72          9  27.56   7.20      2.4

Difference = mu (71) - mu (72)
Estimate for difference:  -3.18
95% CI for difference:  (-9.66, 3.30)
T-Test of difference = 0 (vs not =): T-Value = -1.04  P-Value = 0.315  DF = 17


Two-sample T for % Fines (SILT/CLAY)

Domain
reference   N   Mean  StDev  SE Mean
71         16   52.1   11.3      2.8
72          9  51.89   7.66      2.6

Difference = mu (71) - mu (72)
Estimate for difference:  0.24
95% CI for difference:  (-7.66, 8.13)
T-Test of difference = 0 (vs not =): T-Value = 0.06  P-Value = 0.951  DF = 22


Two-sample T for Bulk Density

Domain
reference   N    Mean   StDev  SE Mean
71         12  2.2583  0.0486    0.014
72          7   2.221   0.100    0.038

Difference = mu (71) - mu (72)
Estimate for difference:  0.0369
95% CI for difference:  (-0.0588, 0.1326)
T-Test of difference = 0 (vs not =): T-Value = 0.91  P-Value = 0.392  DF = 7


Two-sample T for Dry Density

Domain
reference   N    Mean   StDev  SE Mean
71         12  1.9937  0.0718    0.021
72          7   1.944   0.155    0.059

Difference = mu (71) - mu (72)
Estimate for difference:  0.0494
95% CI for difference:  (-0.0978, 0.1965)
T-Test of difference = 0 (vs not =): T-Value = 0.79  P-Value = 0.454  DF = 7
```

Kruskal-Wallis Test: (Parameter) versus Domain Reference

```
Kruskal-Wallis Test on w (%)

Domain
reference   N  Median  Ave Rank      Z
71         44   13.00      34.4  -0.58
72         26   13.00      37.3   0.58
Overall    70              35.5

H = 0.34  DF = 1  P = 0.560
H = 0.35  DF = 1  P = 0.556  (adjusted for ties)
```

Kruskal-Wallis Test on WL (%)

Domain reference	N	Median	Ave Rank	Z
71	17	31.00	15.2	1.00
72	10	30.00	12.0	-1.00
Overall	27		14.0	

H = 1.01 DF = 1 P = 0.315
H = 1.03 DF = 1 P = 0.311 (adjusted for ties)

Kruskal-Wallis Test on Wp (%)

Domain reference	N	Median	Ave Rank	Z
71	17	16.00	14.7	0.60
72	10	15.00	12.8	-0.60
Overall	27		14.0	

H = 0.36 DF = 1 P = 0.547
H = 0.37 DF = 1 P = 0.540 (adjusted for ties)

Kruskal-Wallis Test on Ip (%)

Domain reference	N	Median	Ave Rank	Z
71	17	16.00	14.8	0.65
72	10	15.50	12.7	-0.65
Overall	27		14.0	

H = 0.43 DF = 1 P = 0.514
H = 0.44 DF = 1 P = 0.509 (adjusted for ties)

Kruskal-Wallis Test on % GRAVEL

Domain reference	N	Median	Ave Rank	Z
71	16	19.00	13.3	0.28
72	9	17.00	12.4	-0.28
Overall	25		13.0	

H = 0.08 DF = 1 P = 0.777
H = 0.08 DF = 1 P = 0.777 (adjusted for ties)

Kruskal-Wallis Test on % SAND

Domain reference	N	Median	Ave Rank	Z
71	16	23.50	12.2	-0.74
72	9	26.00	14.4	0.74
Overall	25		13.0	

H = 0.54 DF = 1 P = 0.462
H = 0.55 DF = 1 P = 0.460 (adjusted for ties)

```
Kruskal-Wallis Test on % Fines (SILT/CLAY)

Domain
reference   N  Median  Ave Rank      Z
71         16   53.00      13.2   0.17
72          9   53.00      12.7  -0.17
Overall    25              13.0

H = 0.03  DF = 1  P = 0.865
H = 0.03  DF = 1  P = 0.865  (adjusted for ties)


Kruskal-Wallis Test on Bulk Density

Domain
reference   N  Median  Ave Rank      Z
71         12   2.260      10.8   0.76
72          7   2.240       8.7  -0.76
Overall    19              10.0

H = 0.58  DF = 1  P = 0.447
H = 0.59  DF = 1  P = 0.444  (adjusted for ties)


Kruskal-Wallis Test on Dry Density

Domain
reference   N  Median  Ave Rank      Z
71         12   1.991      10.3   0.30
72          7   2.000       9.5  -0.30
Overall    19              10.0

H = 0.09  DF = 1  P = 0.767
H = 0.09  DF = 1  P = 0.767  (adjusted for ties)
```

Mood Median Test: (Parameter) versus Domain Reference

```
Mood median test for w (%)

Chi-Square = 0.02    DF = 1    P = 0.899

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  -----+---------+---------+---------+-
71          23  21   13.00   3.75     *--------)
72          14  12   13.00   5.75  (--*-----------------------------------)
                                   -----+---------+---------+---------+-
                                     13.2      14.4      15.6      16.8

Overall median = 13.00

A 95.0% CI for median(71) - median(72): (-3.36,1.00)


Mood median test for WL (%)

Chi-Square = 0.76    DF = 1    P = 0.384

Domain                                 Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
71           9   8   31.00   3.50                         (------*-----)
72           7   3   30.00   5.25     (-------------------*---------------)
                                      +---------+---------+---------+------
                                   27.0      28.5      30.0      31.5

Overall median = 31.00

A 95.0% CI for median(71) - median(72): (-2.00,5.00)
```

```
Mood median test for Wp (%)

Chi-Square = 1.34    DF = 1    P = 0.247

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---+---------+---------+---------+---
71           8   9   16.00   3.00     (-------------------*---------)
72           7   3   15.00   2.75  (------------*----------------)
                                   ---+---------+---------+---------+---
                                   14.0      15.0      16.0      17.0

Overall median = 15.00

A 95.0% CI for median(71) - median(72): (-1.00,2.38)


Mood median test for Ip (%)

Chi-Square = 0.06    DF = 1    P = 0.807

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1     +---------+---------+---------+------
71          11   6   16.00   2.50                         (------*-----)
72           6   4   15.50   5.25     (---------------------*------------)
                                      +---------+---------+---------+------
                                   12.0      13.5      15.0      16.5

Overall median = 16.00

A 95.0% CI for median(71) - median(72): (-1.38,4.38)


Mood median test for % GRAVEL

Chi-Square = 0.07    DF = 1    P = 0.790

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
71           8   8    19.0    7.5        (-----*---------)
72           5   4    17.0   13.5  (------*-------------------------)
                                   ----+---------+---------+---------+--
                                    16.0      20.0      24.0      28.0

Overall median = 18.0

A 95.0% CI for median(71) - median(72): (-10.0,6.2)


Mood median test for % SAND

Chi-Square = 0.00    DF = 1    P = 0.973

Domain                              Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
71           9   7    23.5   14.0  (----------------*-----------------)
72           5   4    26.0    7.5                (--------*----------)
                                   --------+---------+---------+--------
                                        20.0      24.0      28.0

Overall median = 26.0

A 95.0% CI for median(71) - median(72): (-9.4,7.2)
```

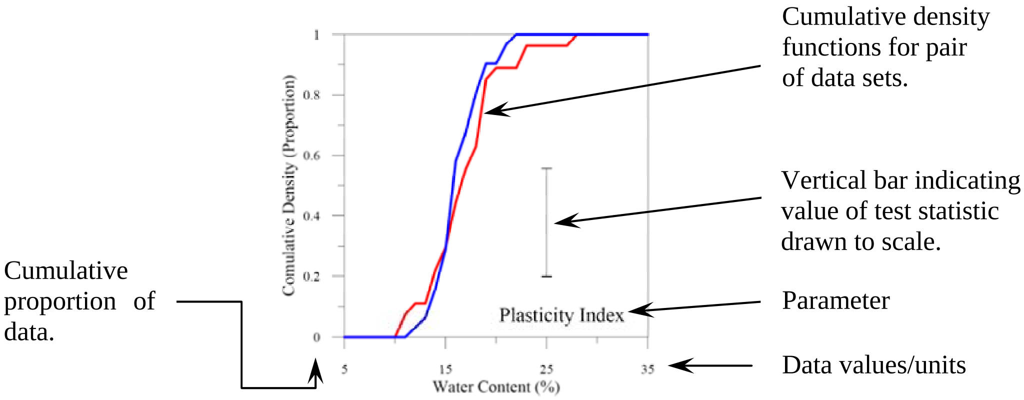
```
Mood median test for % Fines (SILT/CLAY)

Chi-Square = 0.07    DF = 1    P = 0.790

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ----+---------+---------+---------+--
71           8   8    53.0   15.5          (-----------*------------)
72           5   4    53.0   15.5  (-------------------*--------------)
                                   ----+---------+---------+---------+--
                                    45.0      50.0      55.0      60.0

Overall median = 53.0

A 95.0% CI for median(71) - median(72): (-8.6,10.7)


Mood median test for Bulk Density

Chi-Square = 1.57    DF = 1    P = 0.210

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  --------+---------+---------+--------
71           5   7   2.260  0.058                  (-------*-------)
72           5   2   2.240  0.040  (-----------------*------------)
                                   --------+---------+---------+--------
                                         2.205     2.240     2.275

Overall median = 2.250

A 95.0% CI for median(71) - median(72): (-0.040,0.052)


Mood median test for Dry Density

Chi-Square = 0.42    DF = 1    P = 0.515

Domain                               Individual 95.0% CIs
reference  N<=  N>  Median  Q3-Q1  ---------+---------+---------+-------
71           7   5   1.991  0.067                        (----*--------)
72           3   4   2.000  0.070  (---------------------------*----)
                                   ---------+---------+---------+-------
                                          1.900     1.950     2.000

Overall median = 1.991

A 95.0% CI for median(71) - median(72): (-0.045,0.082)
```

Appendix D.3: Results of Kolmogorov – Smirnov Analysis

This appendix is split into three sections, the first containing a series of graphical comparisons of cumulative density plots of data, the second being a spreadsheet summary of the comparison between upper and lower tills within individual domains, the third and final section being a summary of the comparison between domains.

The graphical summary is limited to the comparison of upper and lower tills within each domain. The graphs are arranged in groups of three to each page, and each Domain is ordered in the same way. The first page is for index properties (liquid limit, plastic limit and plasticity index), the second page is for density and natural water content and the third page is for principal grading fractions (gravel, sand and fines). Where there is insufficient data for a meaningful comparison the corresponding graph is omitted.

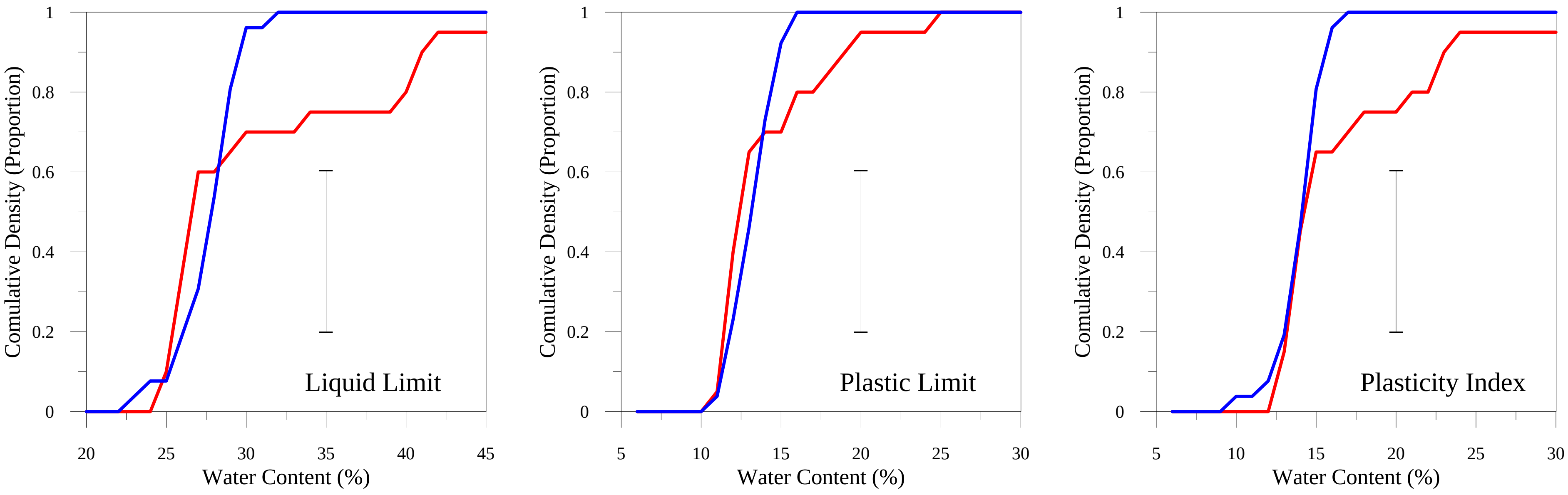
Each graph is constructed in the same way. A cumulative density function is drawn for the data from each till horizon and overlaid on the same panel. The Kolmogorov – Smirnov test statistic is calculated for the data counts involved, and a vertical bar is constructed to the scale length of the test statistic. If this bar can fit between the two cumulative density functions the data sets are statistically different at the chosen α level, in this case chosen to be $\alpha = 0.05$.



Appendix D.3, Figure 1: Example Kolmogorov – Smirnov graphical comparison

In practice, constructing the several hundred graphs necessary proved to be too time consuming, and a simple spreadsheet application was employed to filter the data by comparing the differences between the cumulative density functions with the calculated test statistic values for $\alpha = 0.01$ and $\alpha = 0.05$. These comparisons are included in the second and third sections of the appendix. A red cell background indicates that the distance between the two curves is greater than the $\alpha = 0.01$ test statistic, while an orange cell background indicates that the distance between the two curves exceeds the $\alpha = 0.05$ test statistic: the remaining cells are coloured green.

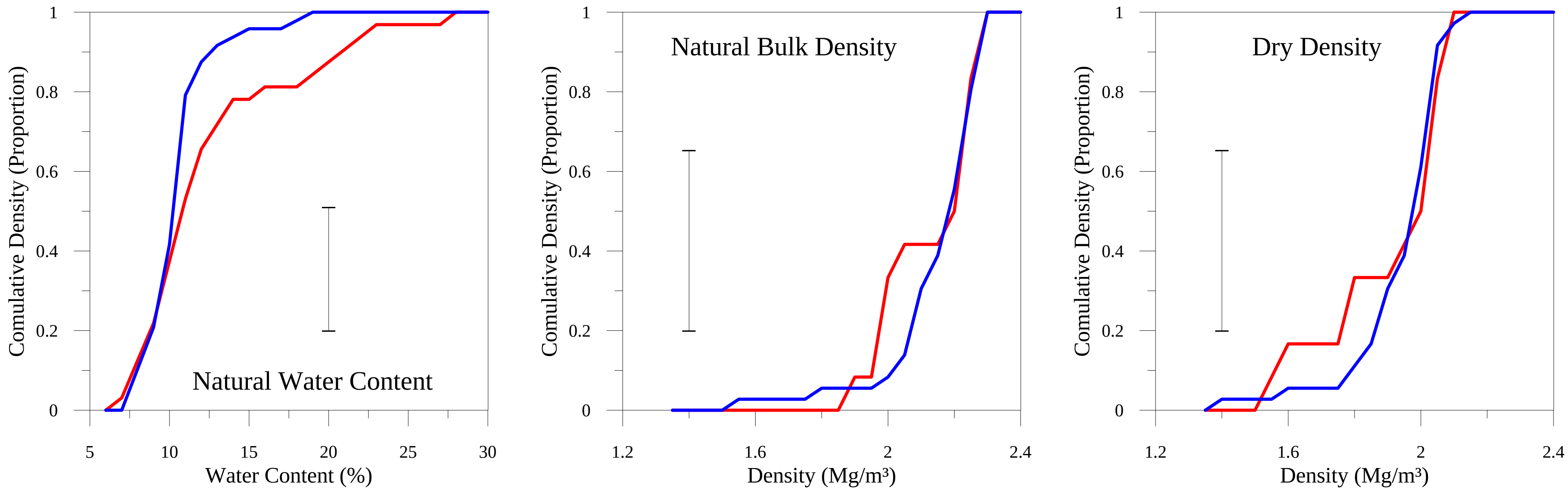
Columns containing red cells indicate a statistical difference at the $\alpha = 0.01$ level while columns containing orange cells indicate a difference at the $\alpha = 0.05$ level. Green cells throughout a column indicate no statistically significant difference.



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

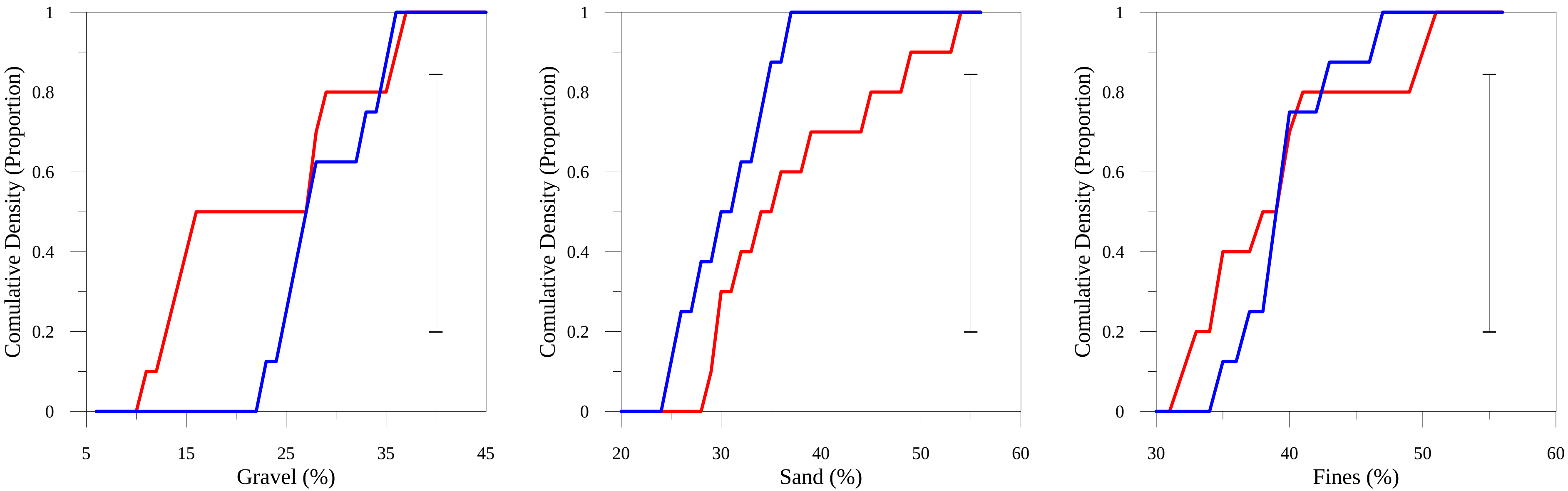
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 11: Index Results, Upper vs Lower till	Figure No.: 2



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

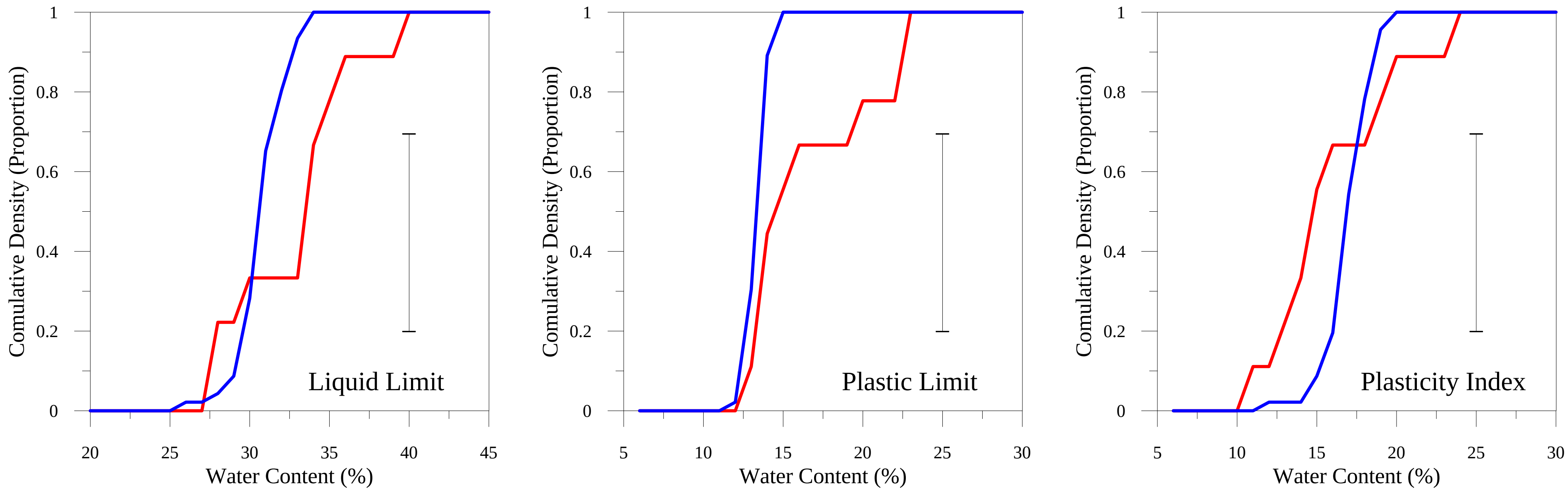
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 11: Density, Upper vs Lower till	Figure No.: 3



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

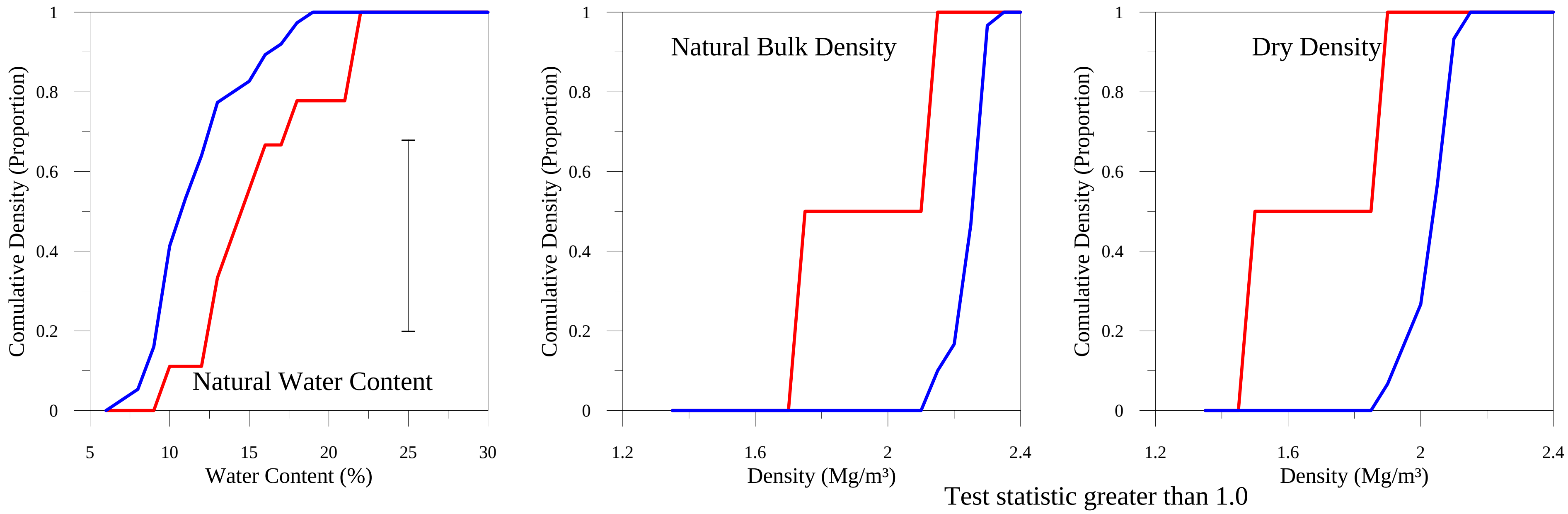
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 11: Grading Fractions, Upper vs Lower till	Figure No.: 4



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

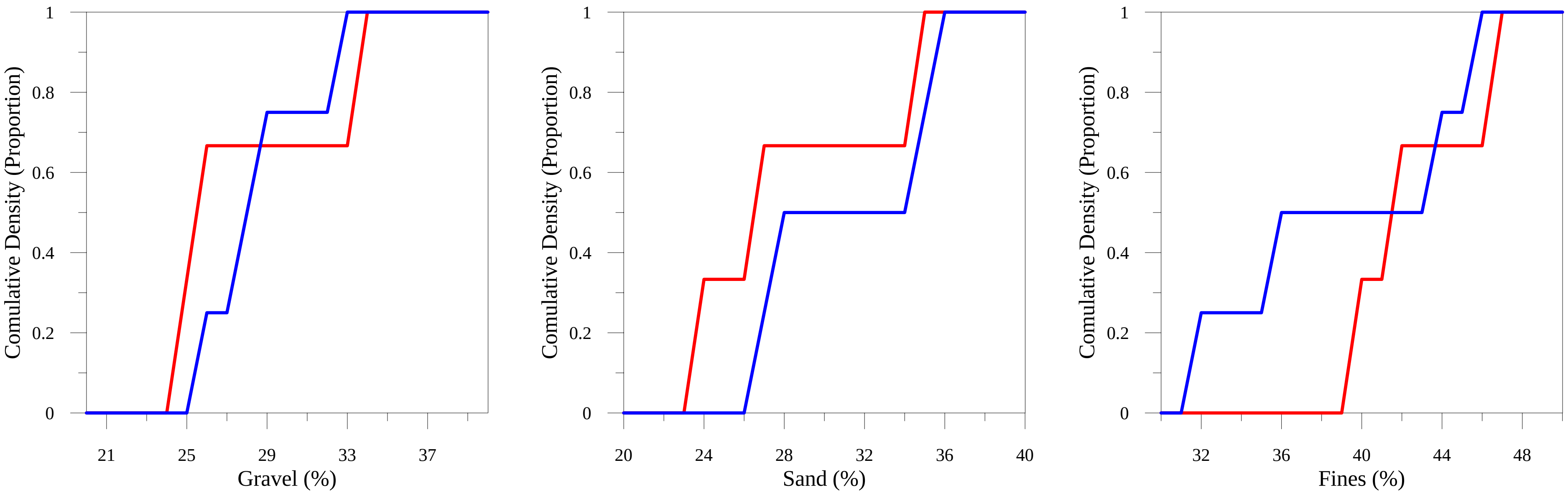
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 12: Index Results, Upper vs Lower till	Figure No.: 5



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 12: Density, Upper vs Lower till	Figure No.: 6

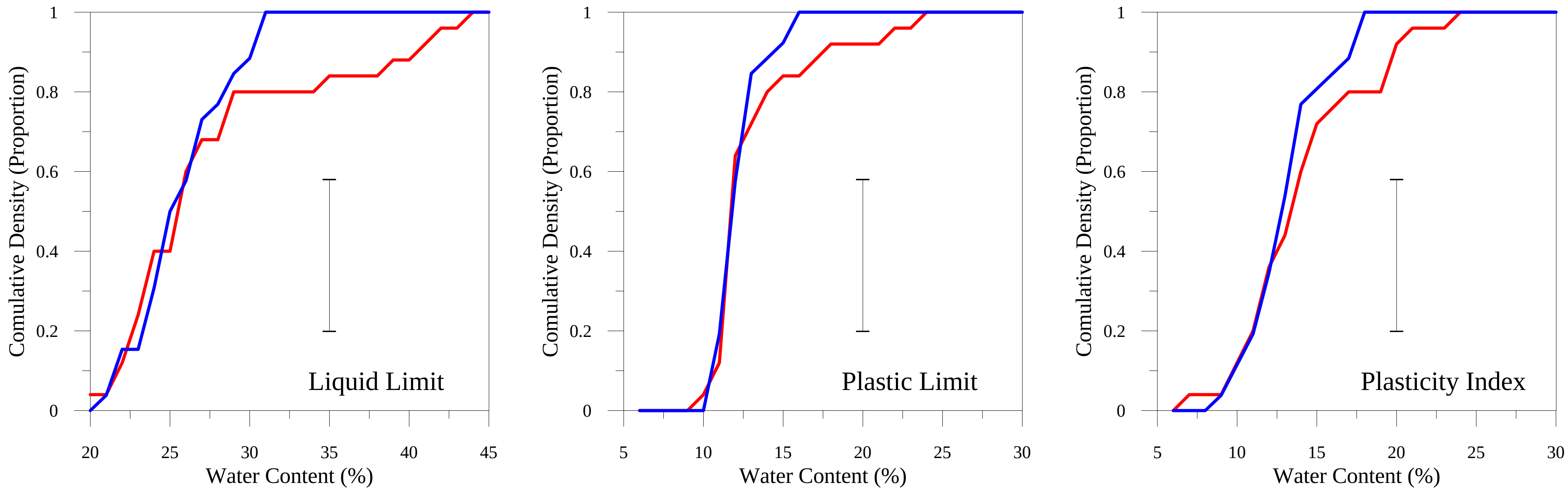


Test statistic greater than 1.0

Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

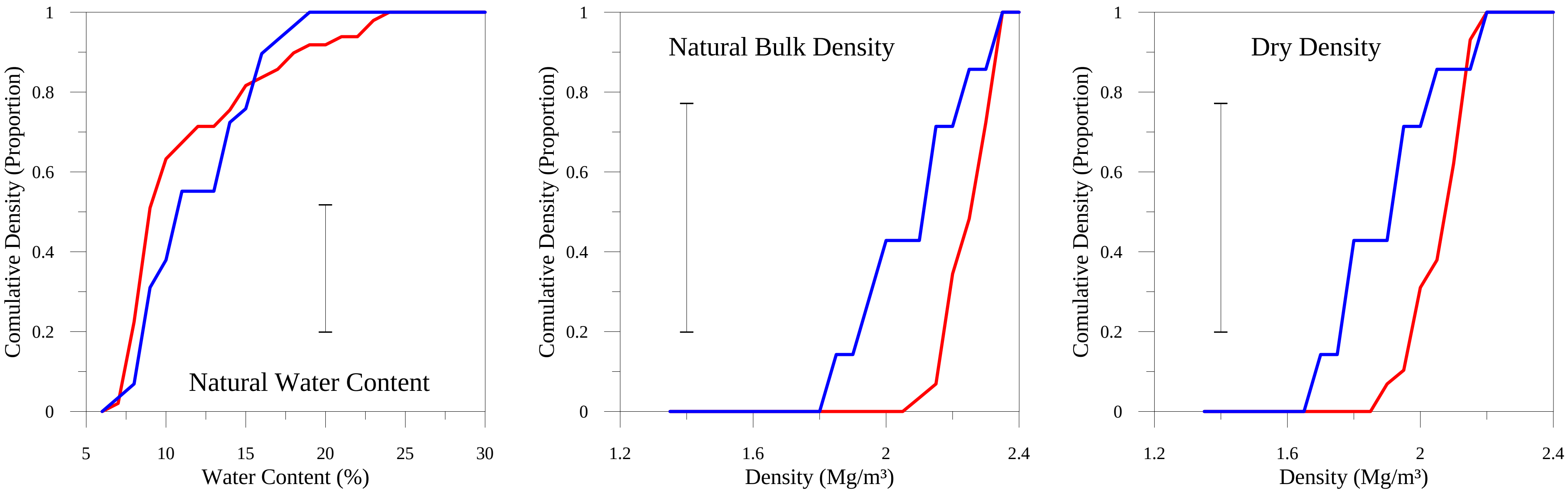
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 12: Grading Fractions, Upper vs Lower till	Figure No.: 7



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

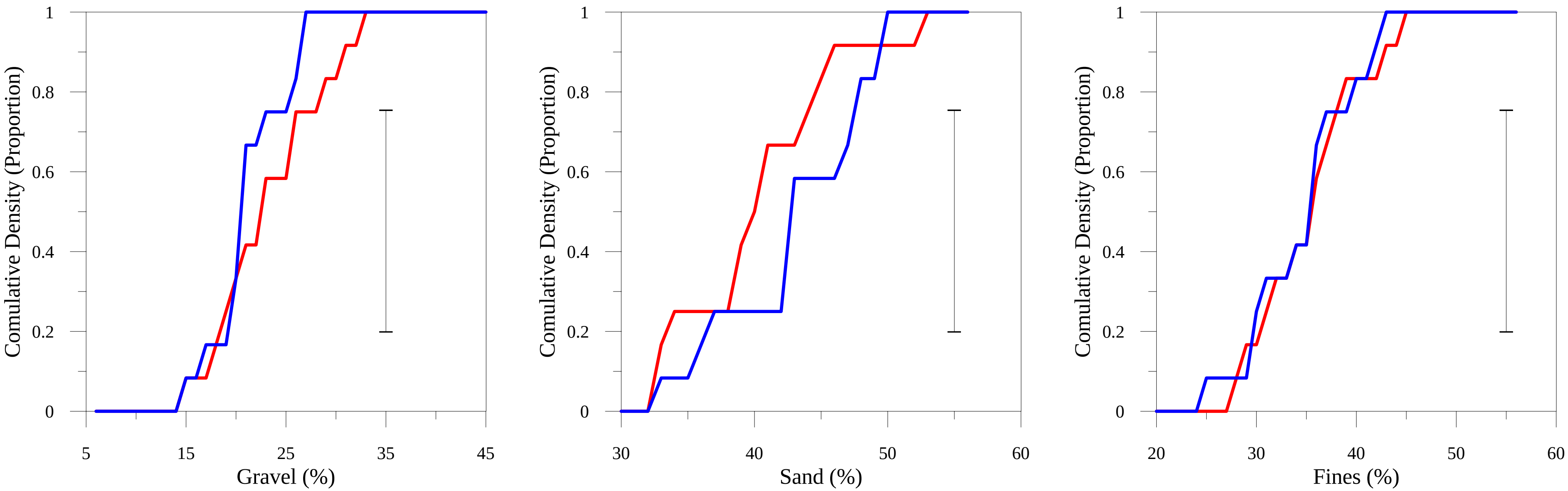
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 14: Index Results, Upper vs Lower till	Figure No.: 8



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

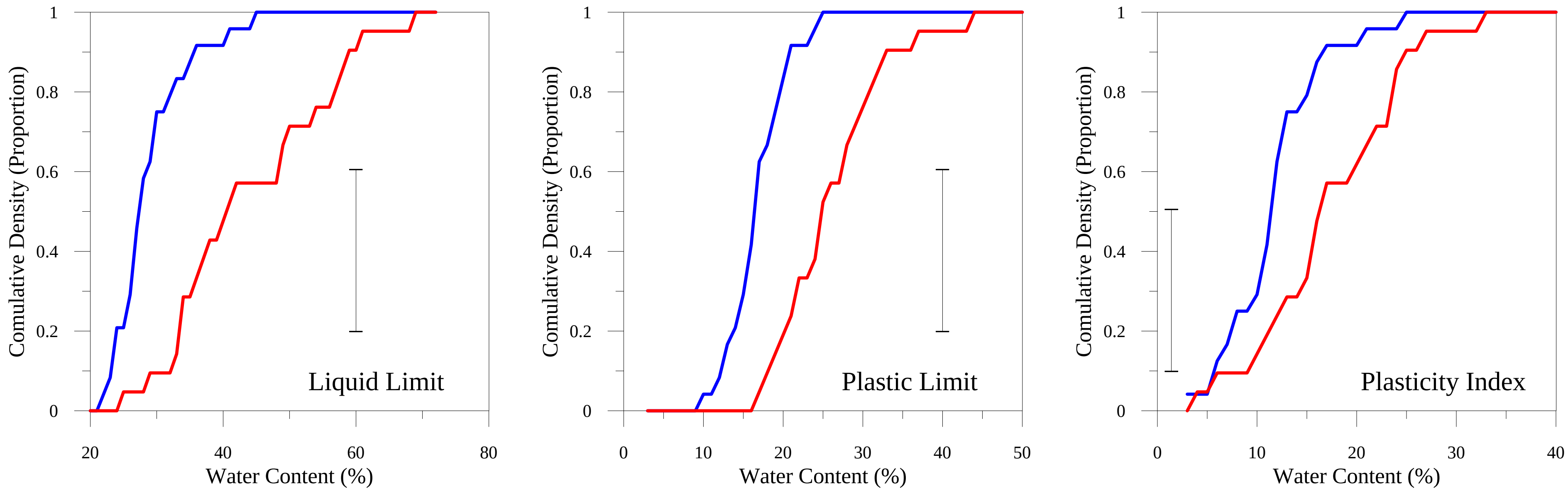
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 14: Density, Upper vs Lower till	Figure No.: 9



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

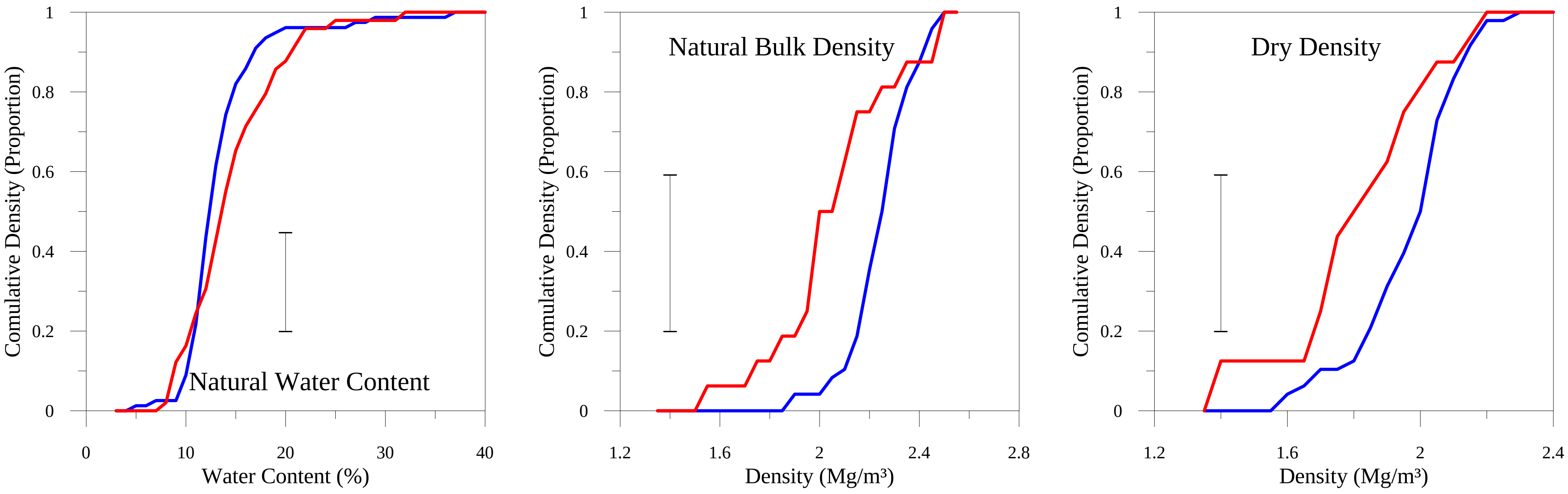
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 14: Grading Fractions, Upper vs Lower till	Figure No.: 10



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

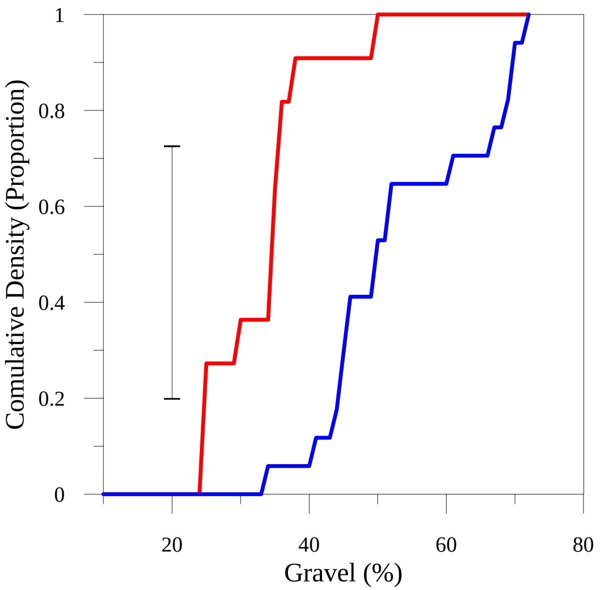
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 21: Index Results, Hillwash vs Till	Figure No.: 11

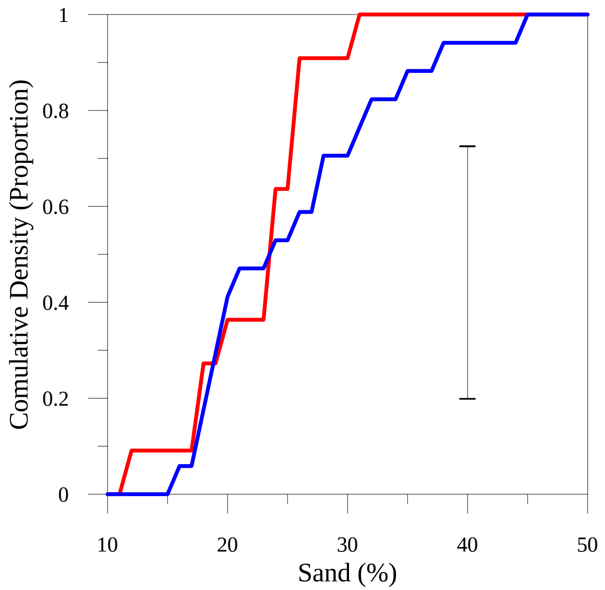


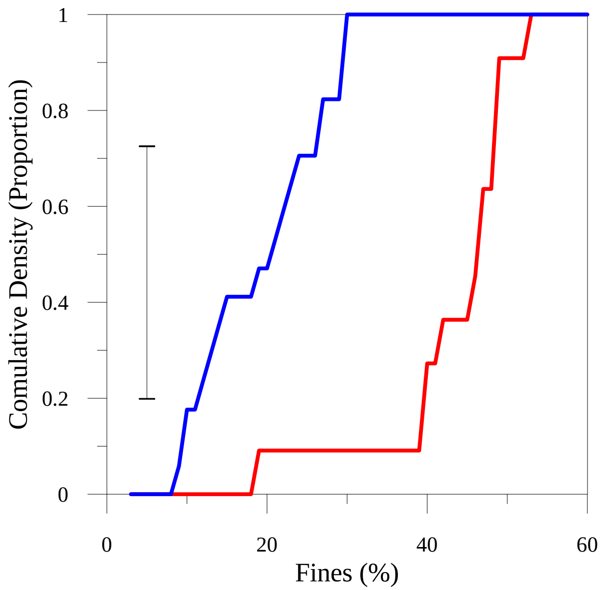
Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 21: Density, Hillwash vs Till	Figure No.: 12



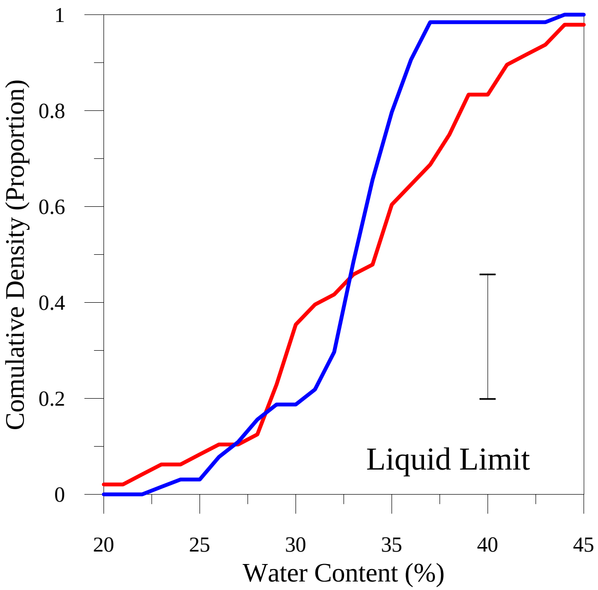


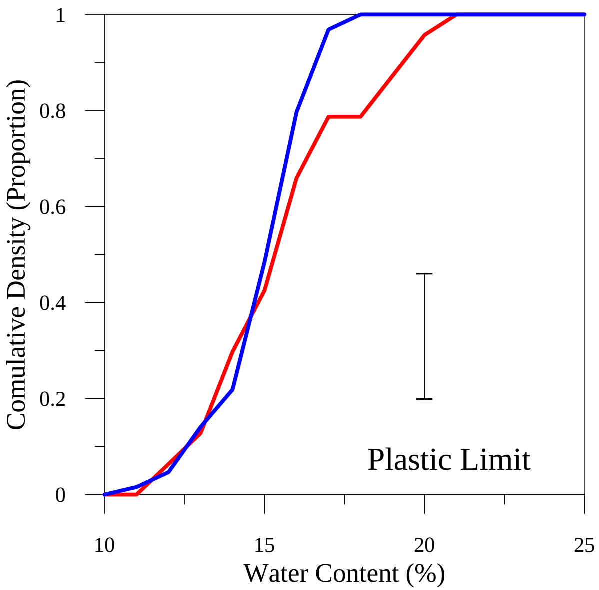


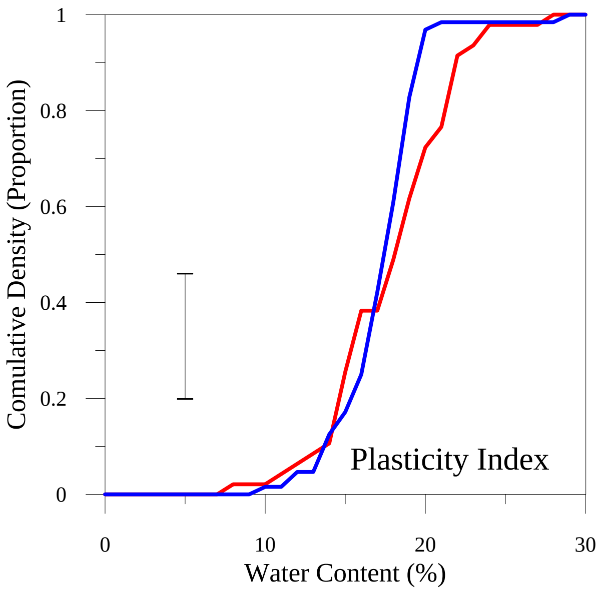
Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 21: Grading Fractions, Hillwash vs Till	Figure No.: 13



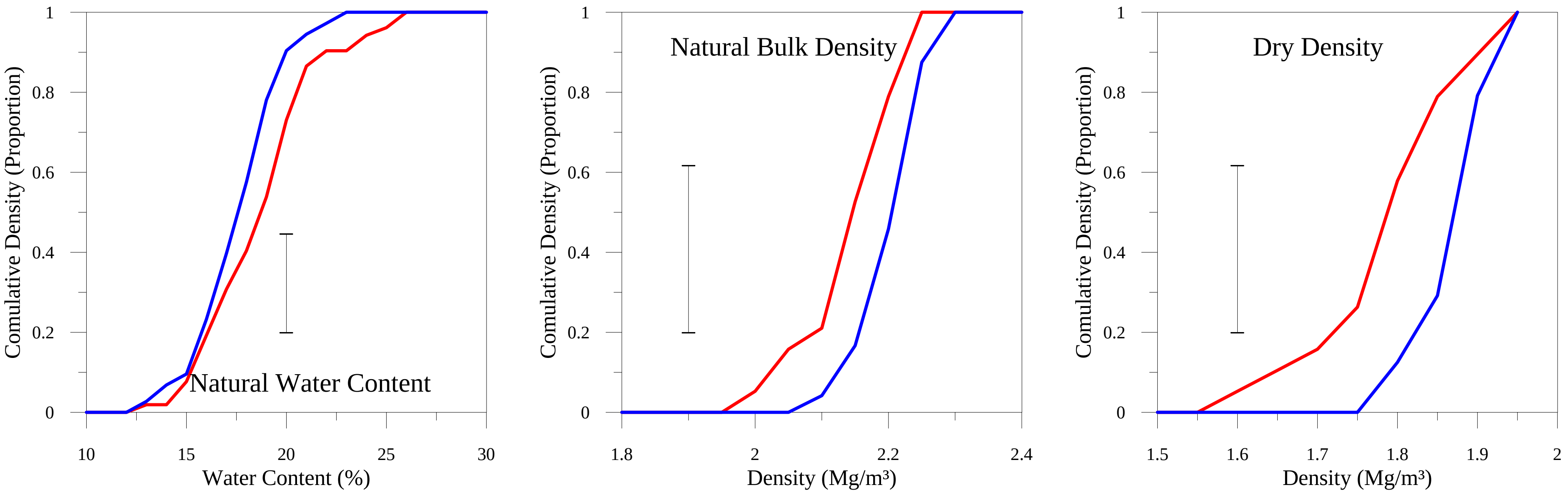




Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

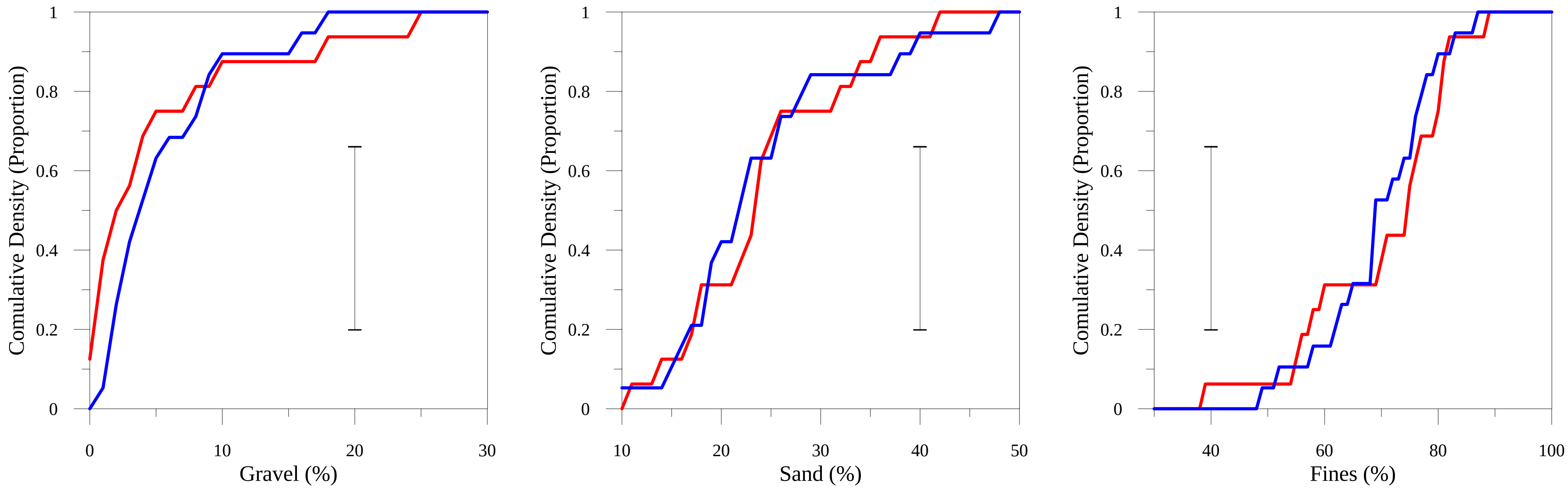
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 31: Index Results, Upper vs Lower till	Figure No.: 14



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

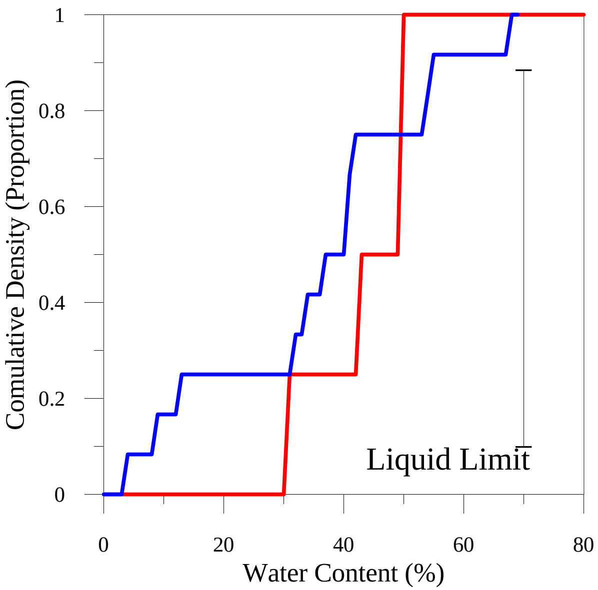
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 31: Density, Upper vs Lower till	Figure No.: 15

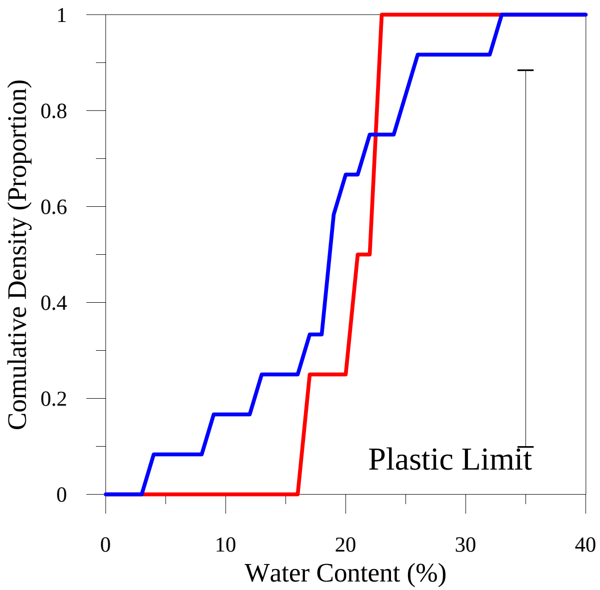


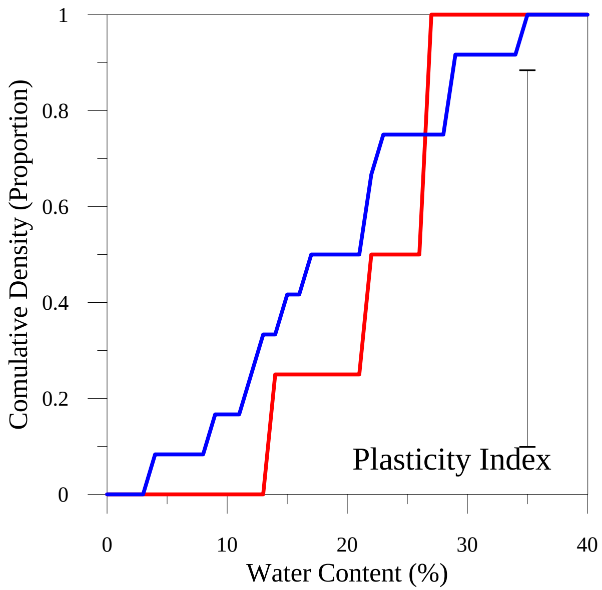
Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 31: Grading Fractions, Upper vs Lower till	Figure No.: 16



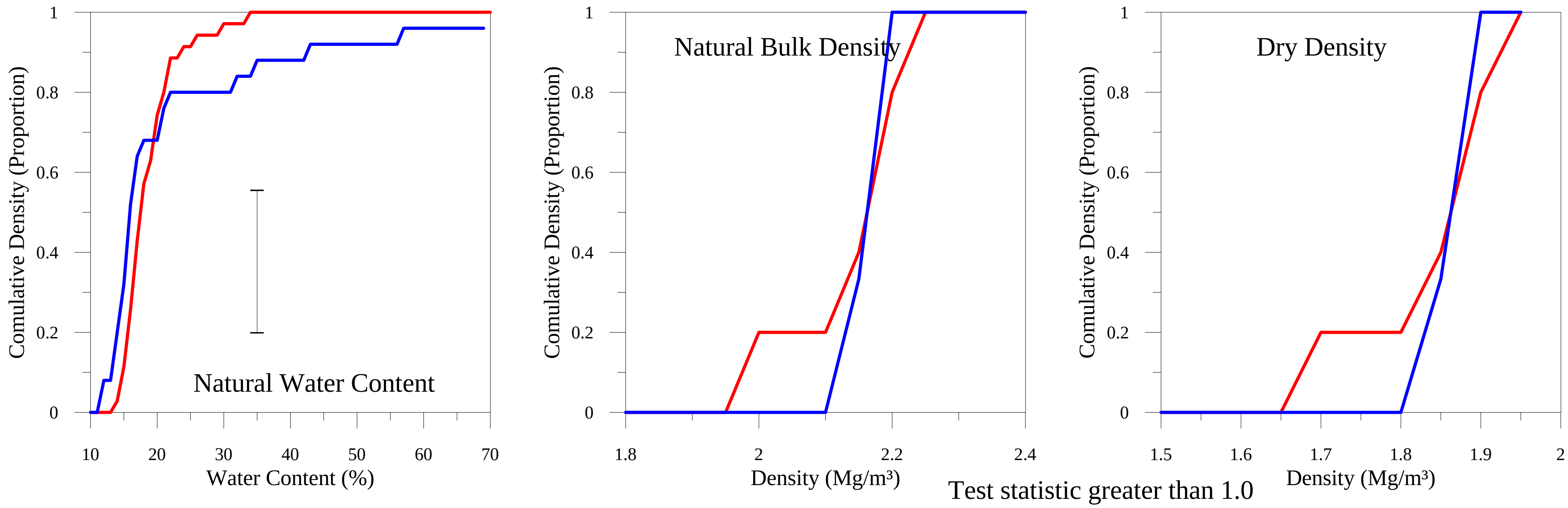




Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

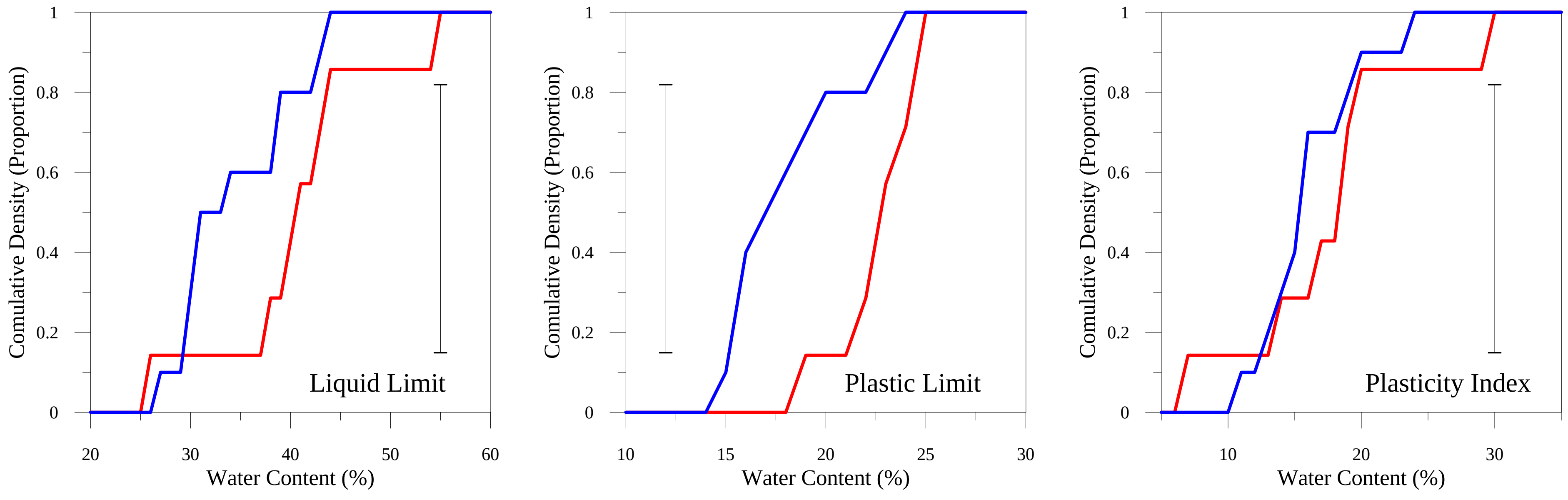
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 41: Index Results, Upper vs Lower till	Figure No.: 17



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

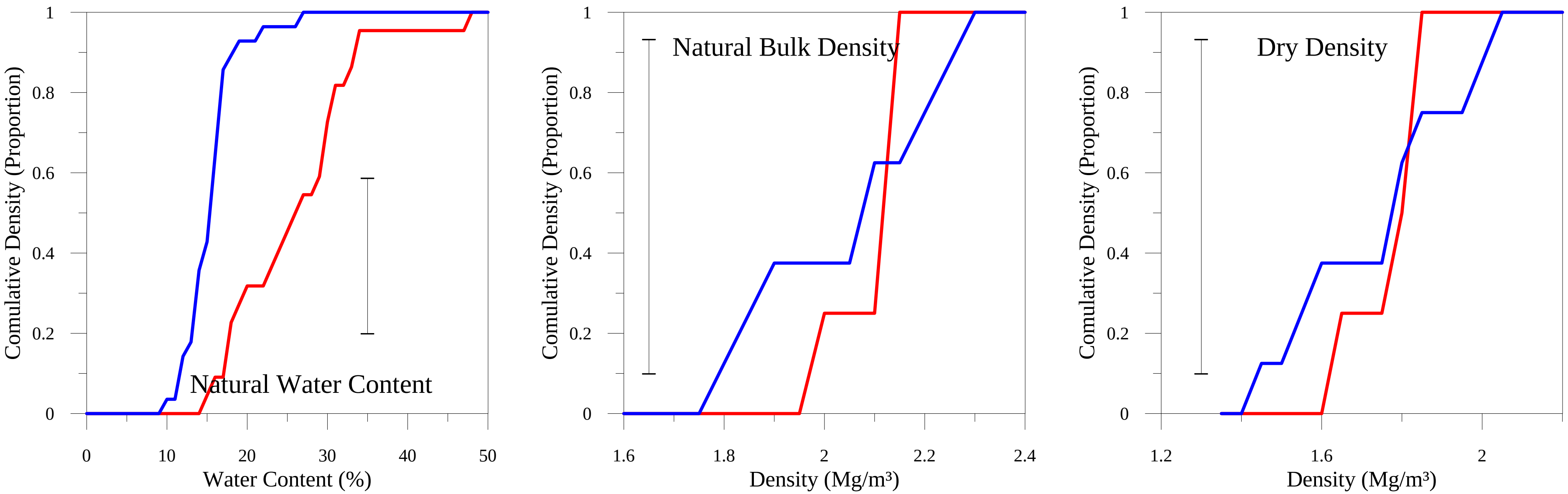
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 41: Density, Upper vs Lower till	Figure No.: 18



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

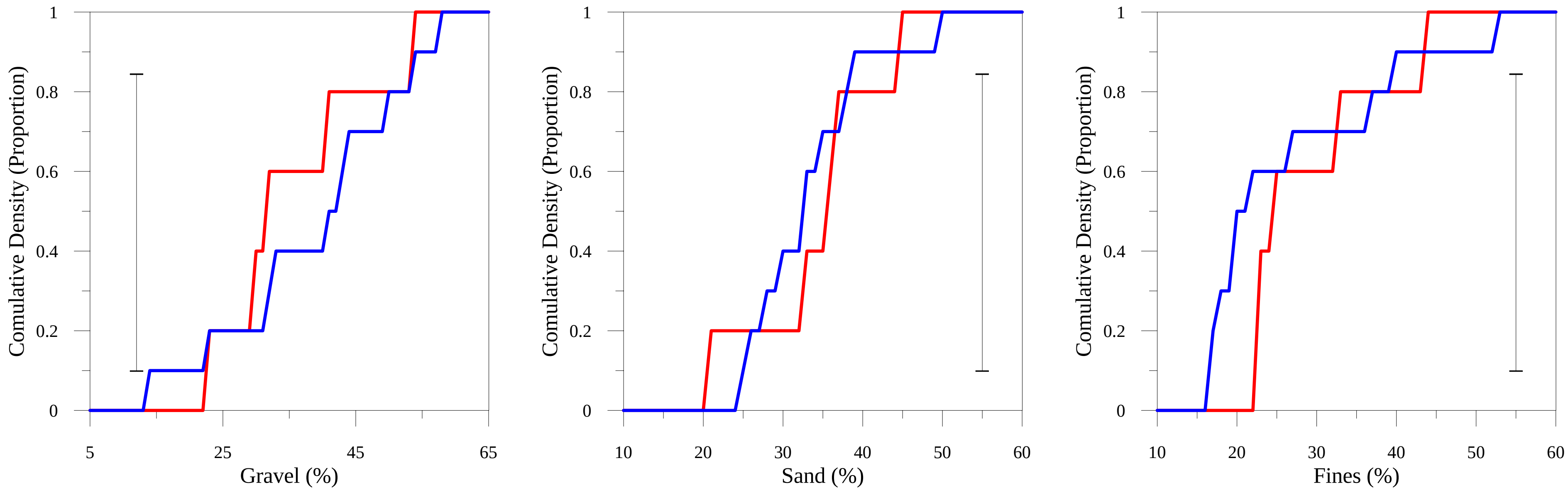
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 43: Index Results, Upper vs Lower till	Figure No.: 19



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

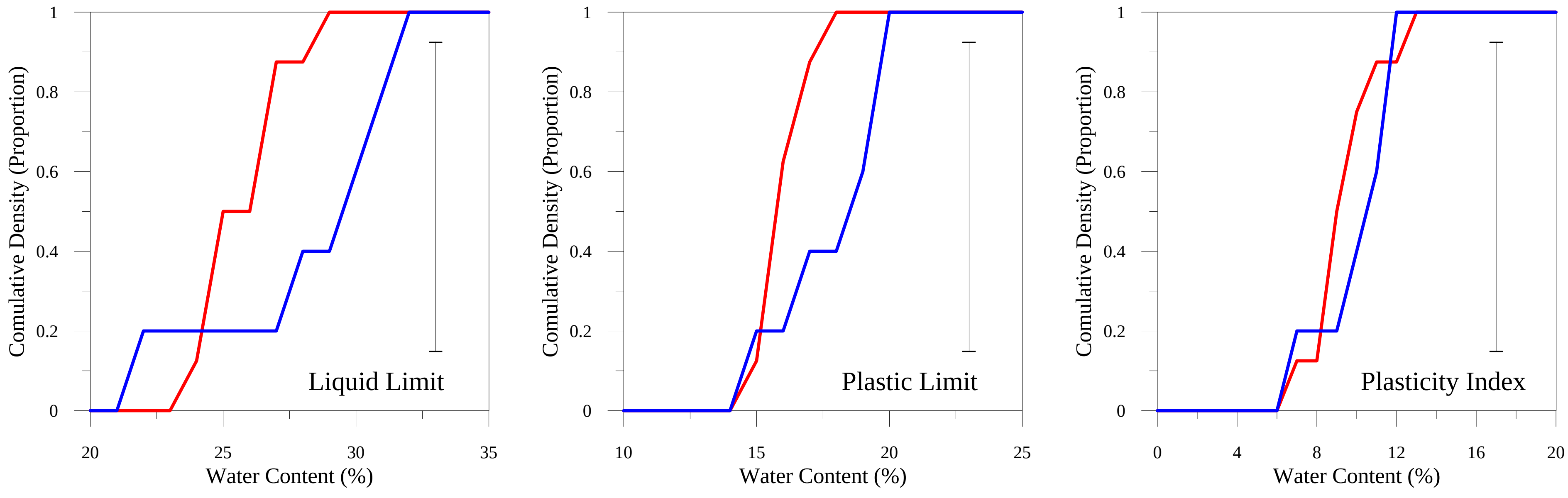
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 43: Density, Upper vs Lower till	Figure No.: 20



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

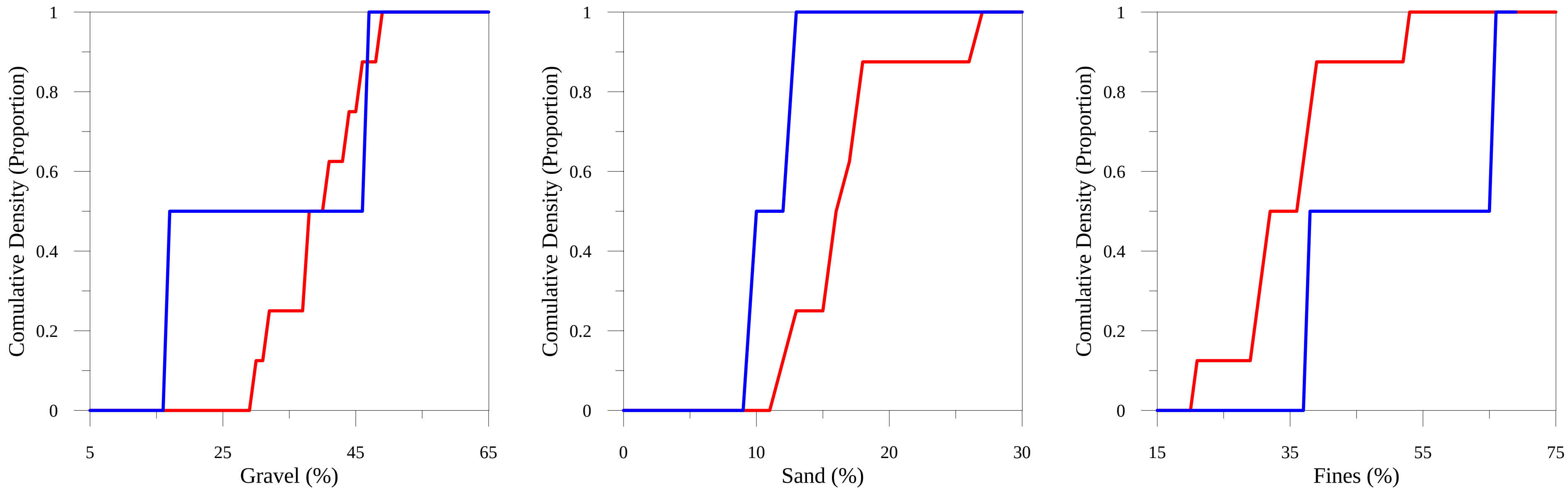
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 43: Grading Fractions, Upper vs Lower till	Figure No.: 21



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 51: Index Results, Upper vs Lower till	Figure No.: 22

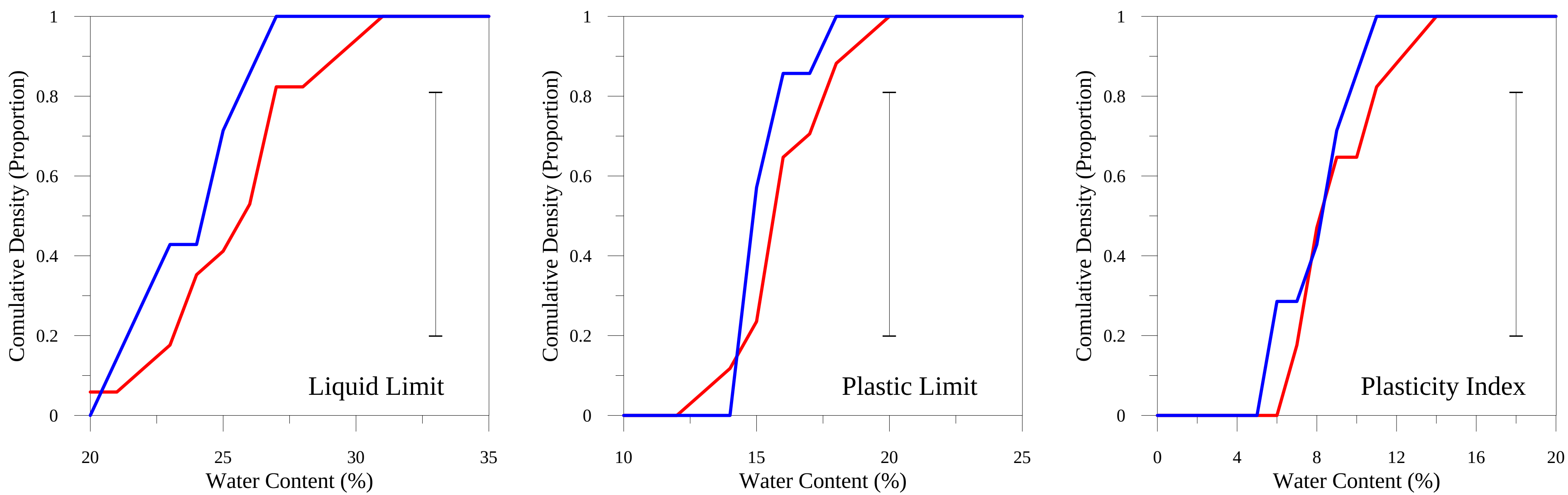


Value of test statistic greater than 1.0

Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

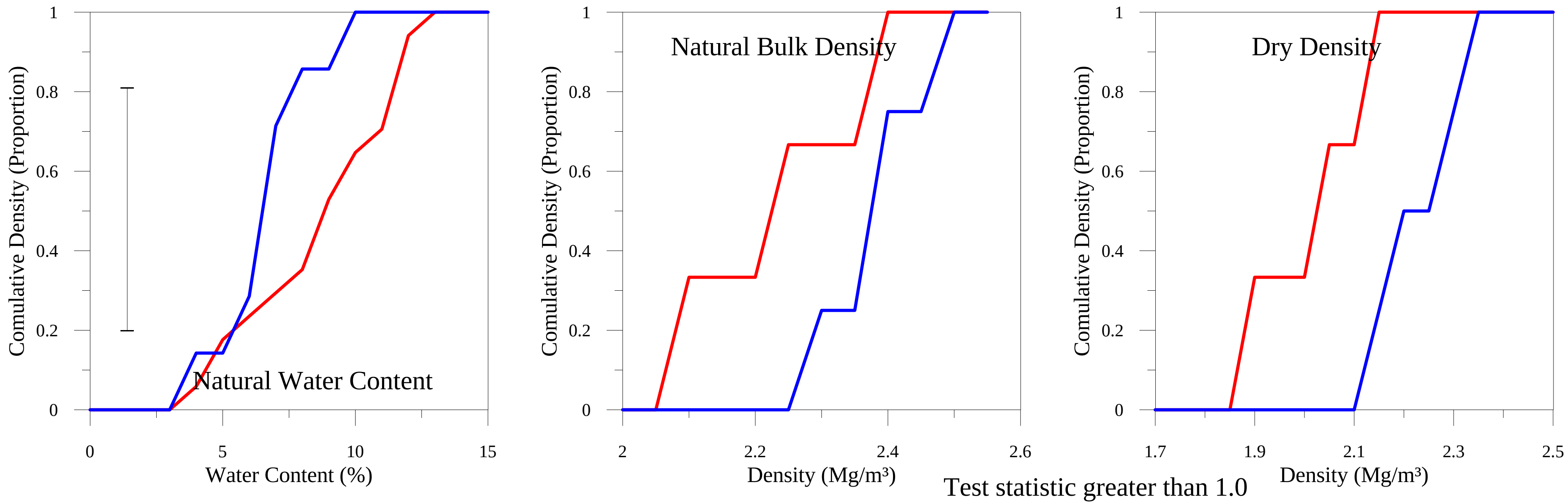
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 51: Grading Fractions, Upper vs Lower till	Figure No.: 23



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

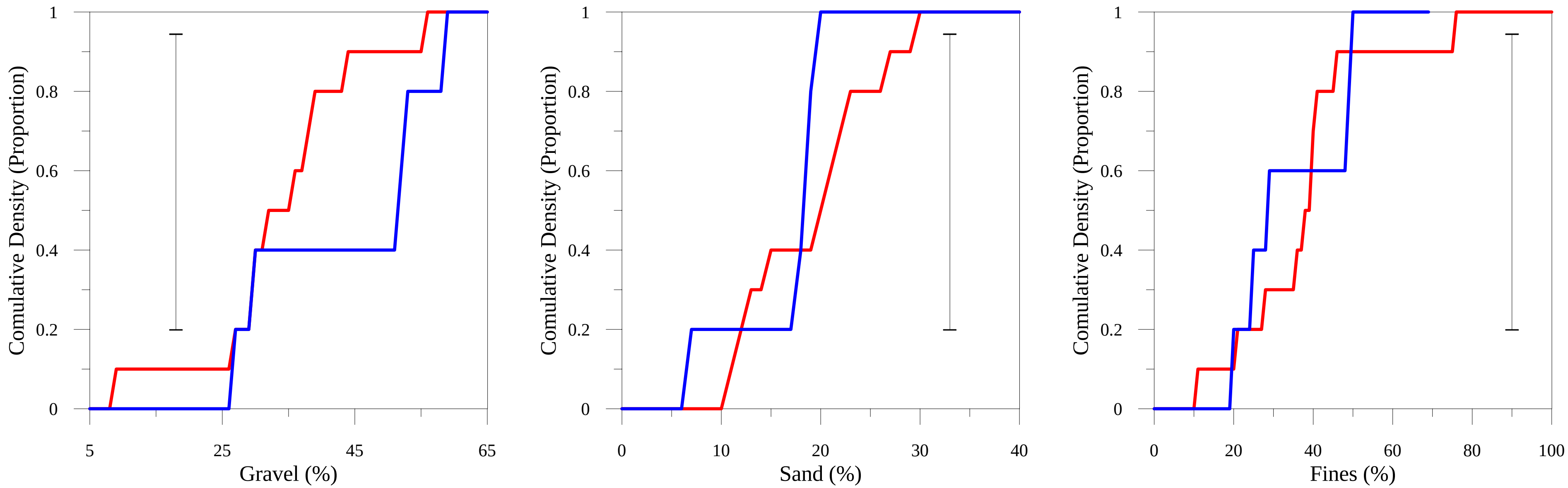
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 52: Index Results, Upper vs Lower till	Figure No.: 24



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

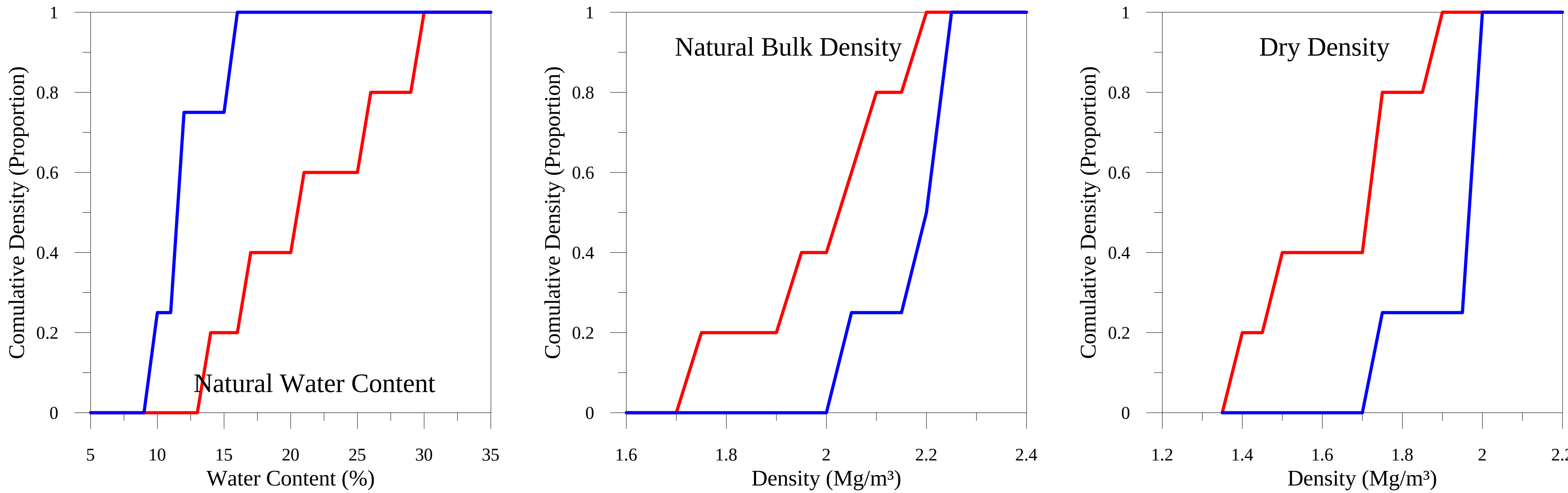
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 52: Density, Upper vs Lower till	Figure No.: 25



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 52: Grading Fractions, Upper vs Lower till	Figure No.: 26

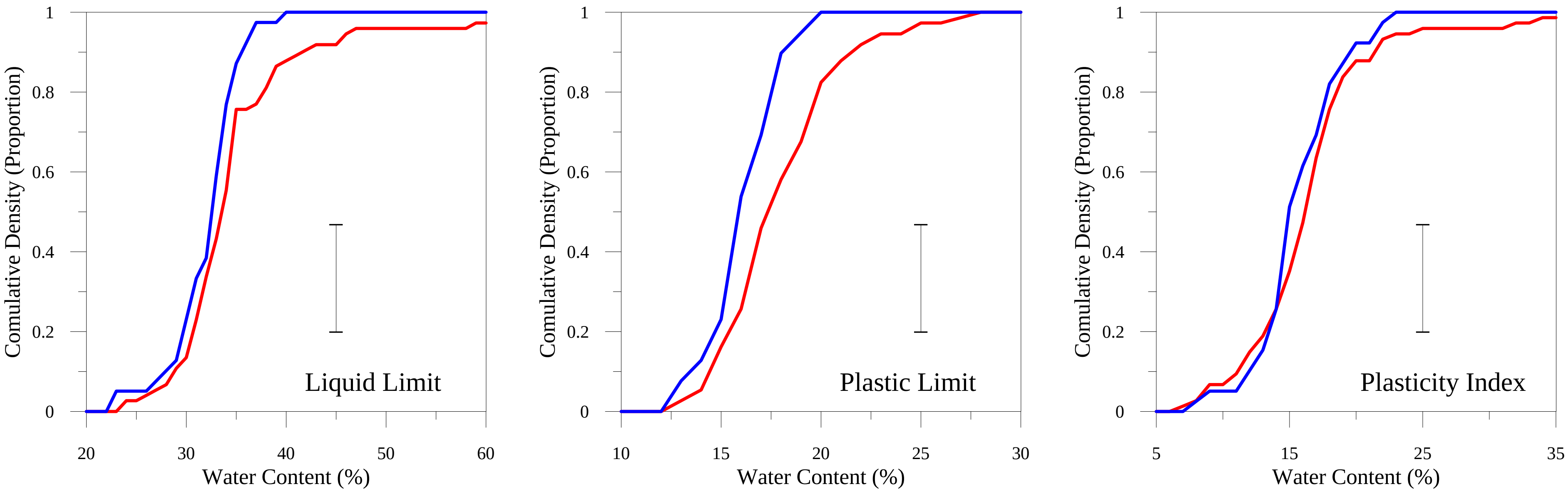


Test statistic = 0.91

Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

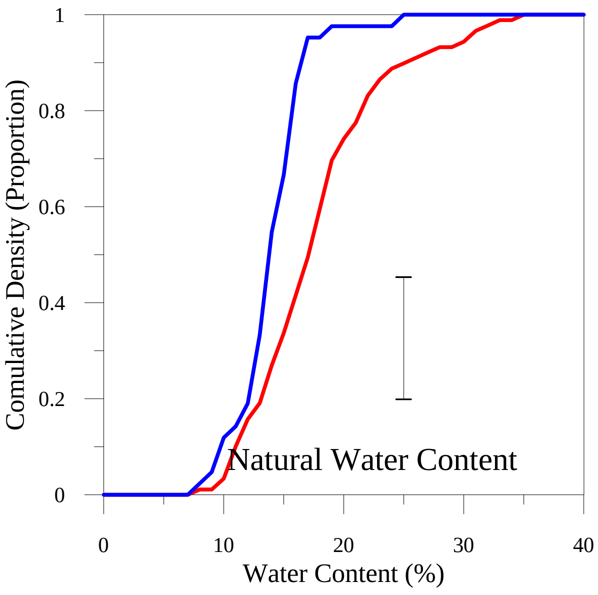
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 61: Density, Upper vs Lower till	Figure No.: 27

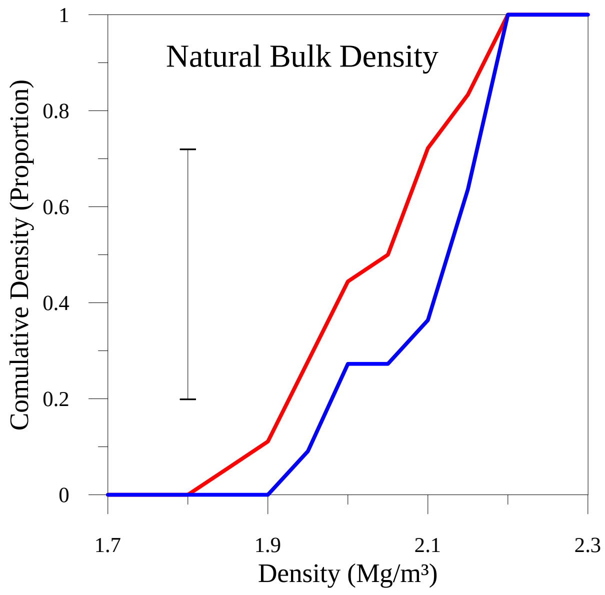


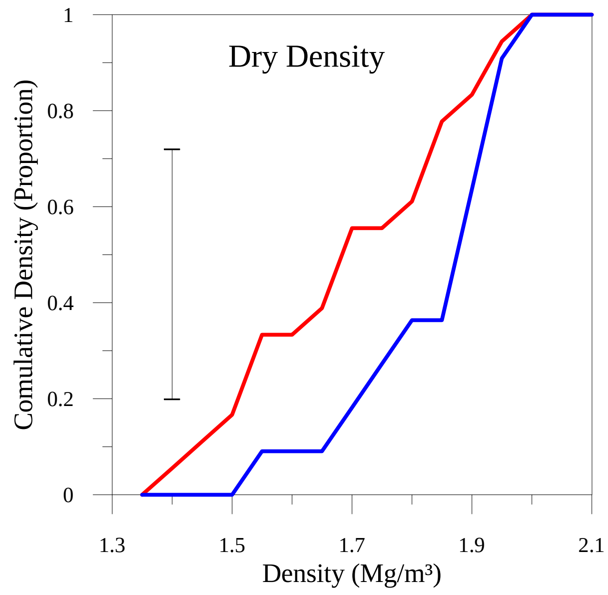
Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 62: Index Results, Upper vs Lower till	Figure No.: 28



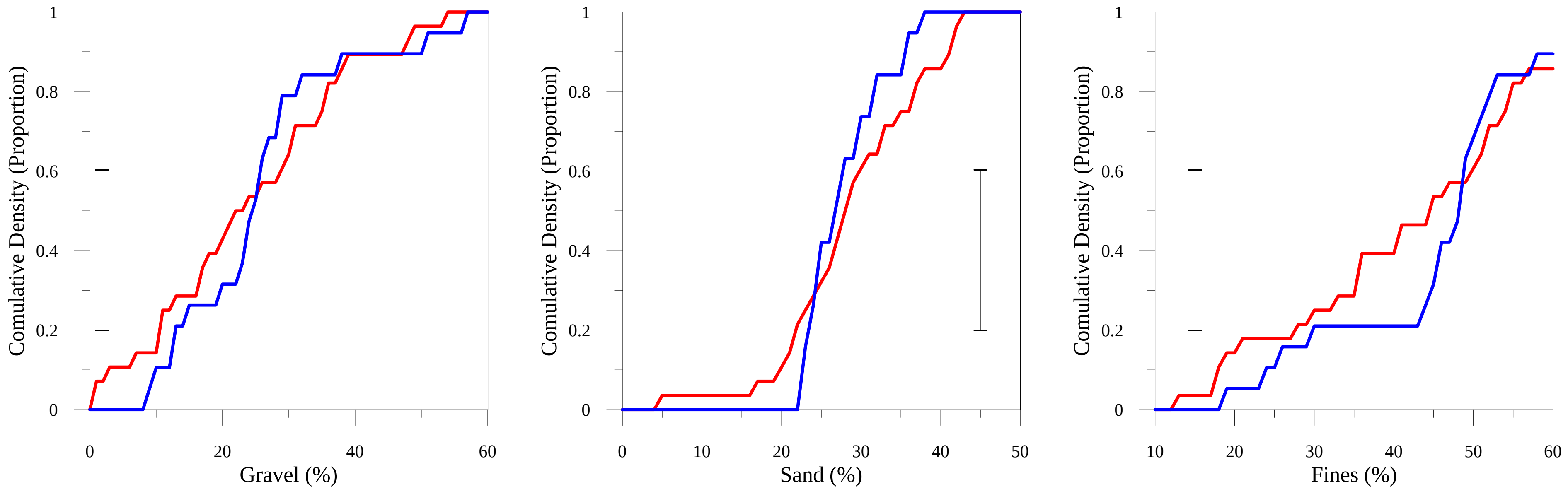




Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

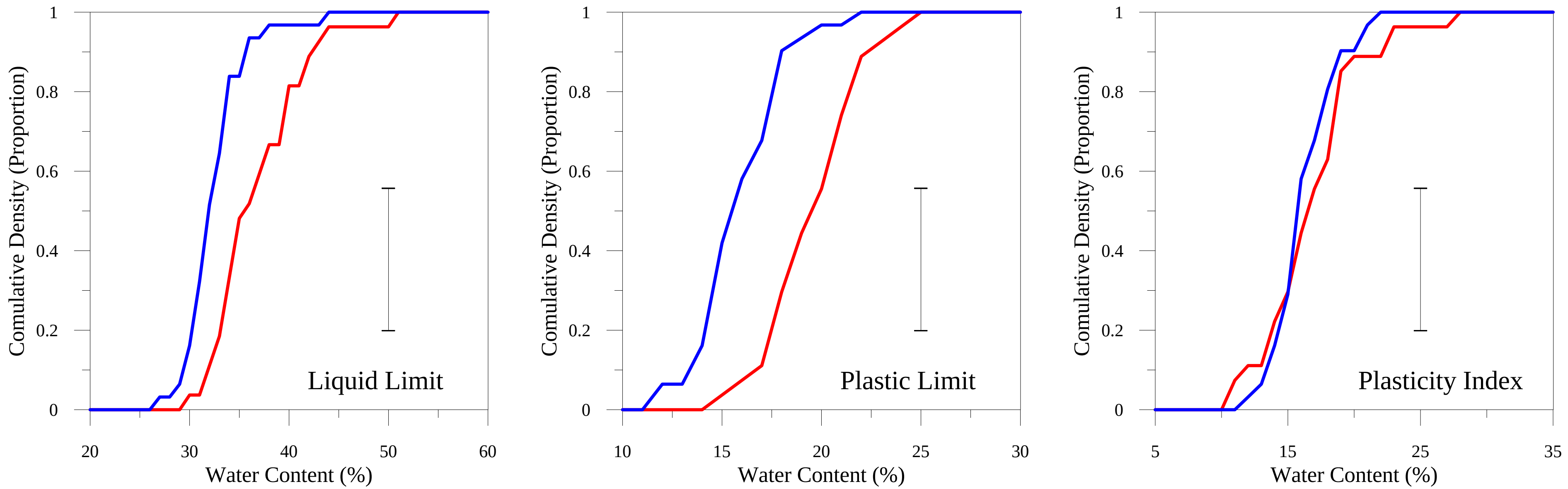
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 62: Density, Upper vs Lower till	Figure No.: 29



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

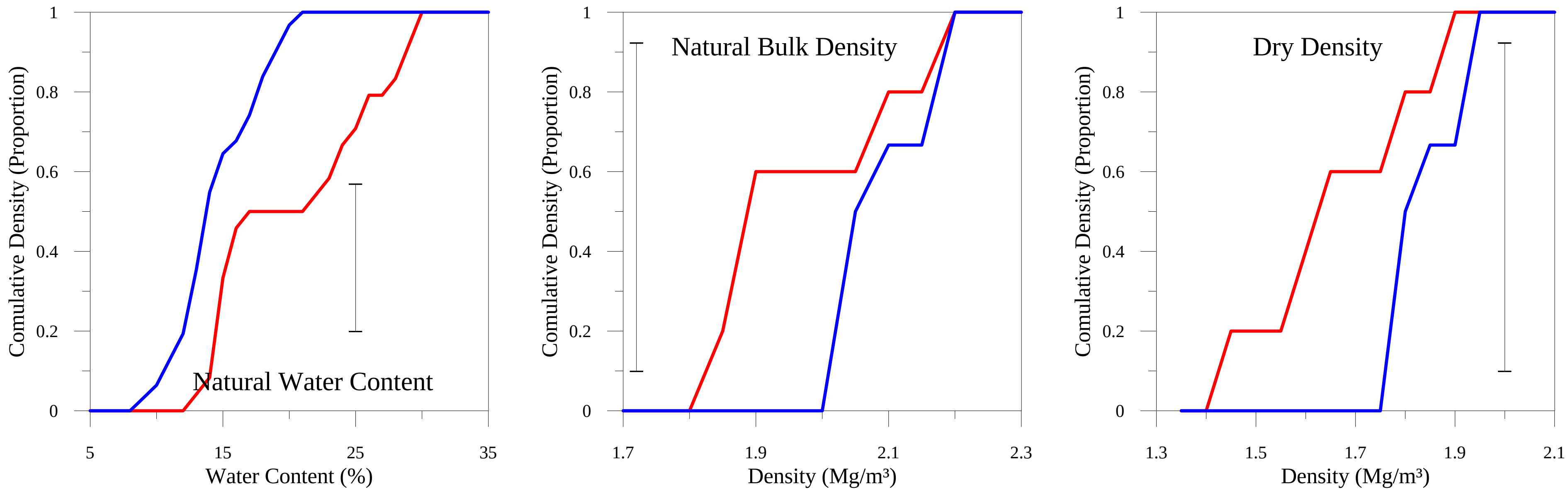
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 62: Grading Fractions, Upper vs Lower till	Figure No.: 30



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

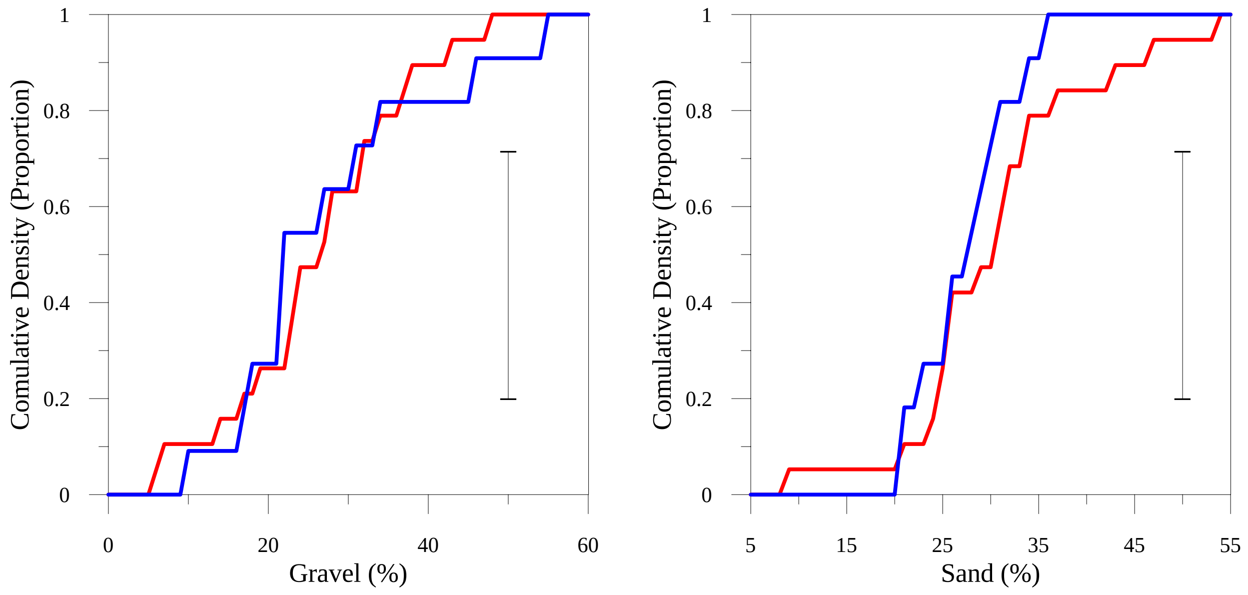
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 63: Index Results, Upper vs Lower till	Figure No.: 31



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

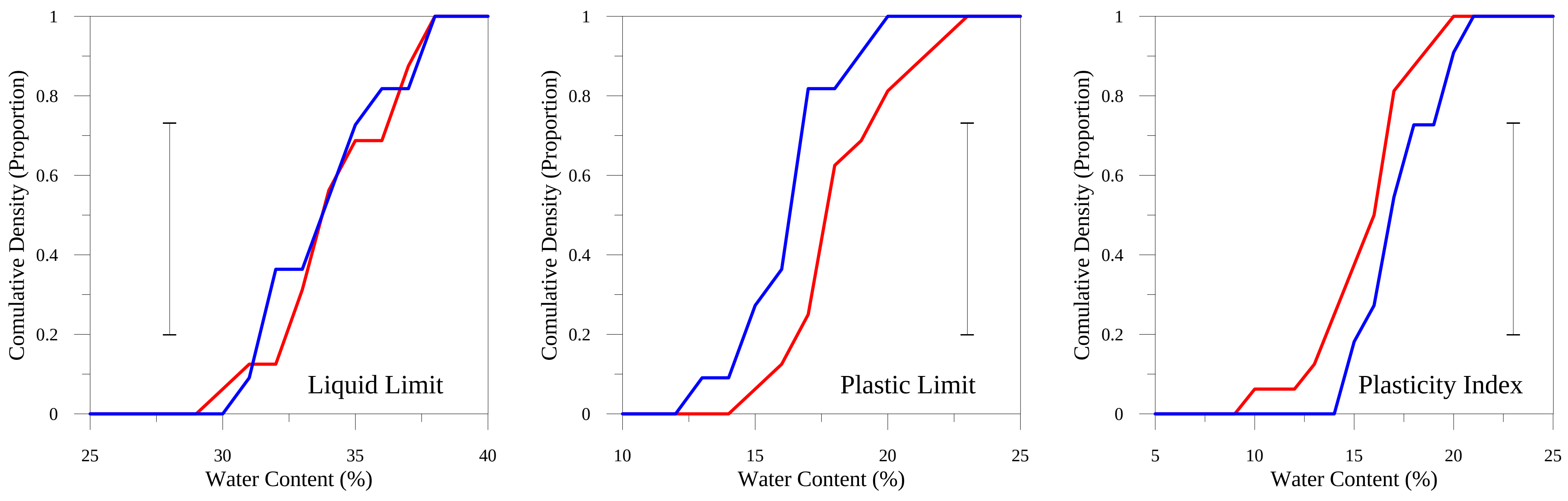
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 63: Density, Upper vs Lower till	Figure No.: 32



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

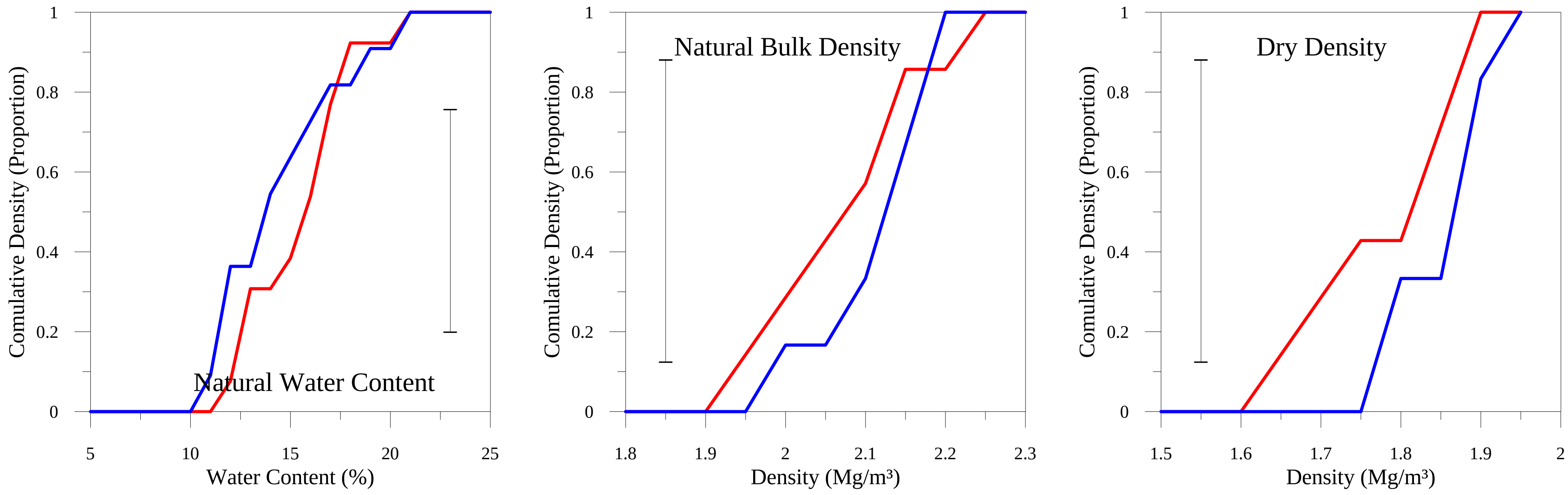
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 63: Grading Fractions, Upper vs Lower till	Figure No.: 33



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

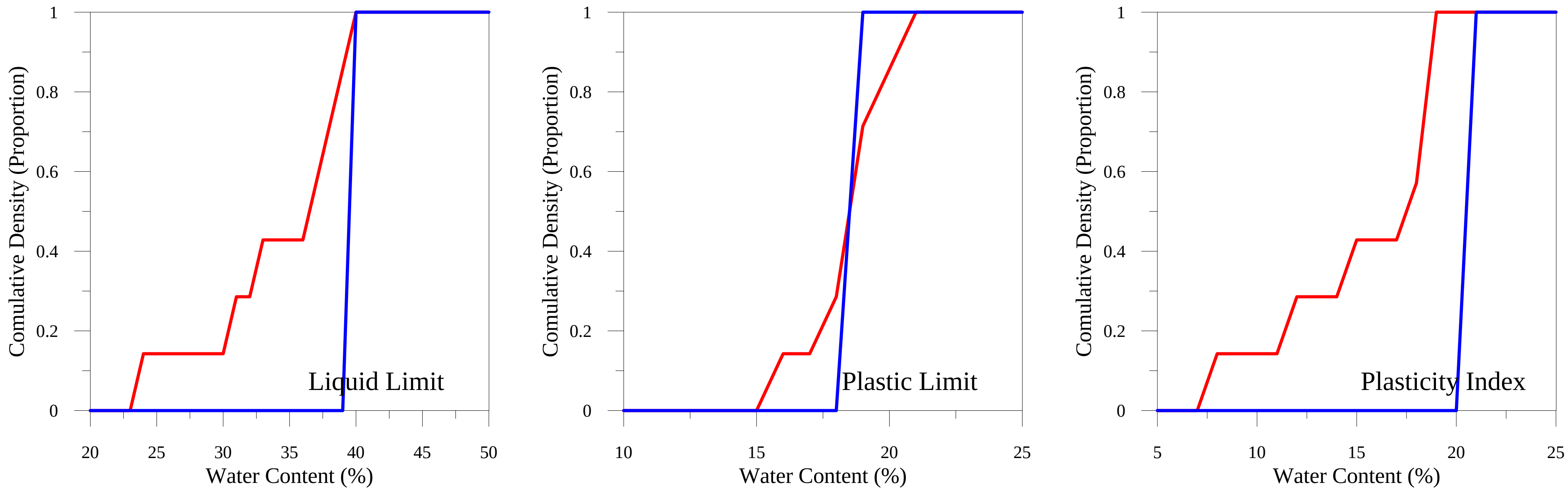
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 64: Index Results, Upper vs Lower till	Figure No.: 34



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 64: Density, Upper vs Lower till	Figure No.: 35

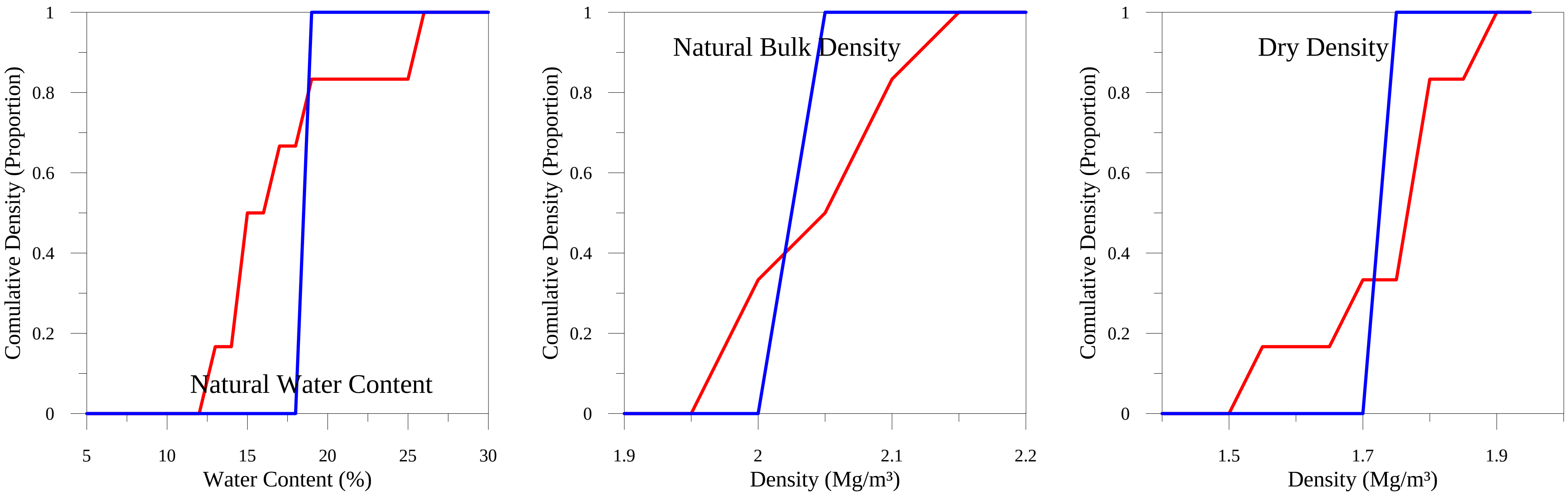


Value of test statistic exceeds 1.0

Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 65: Index Results, Upper vs Lower till	Figure No.: 36

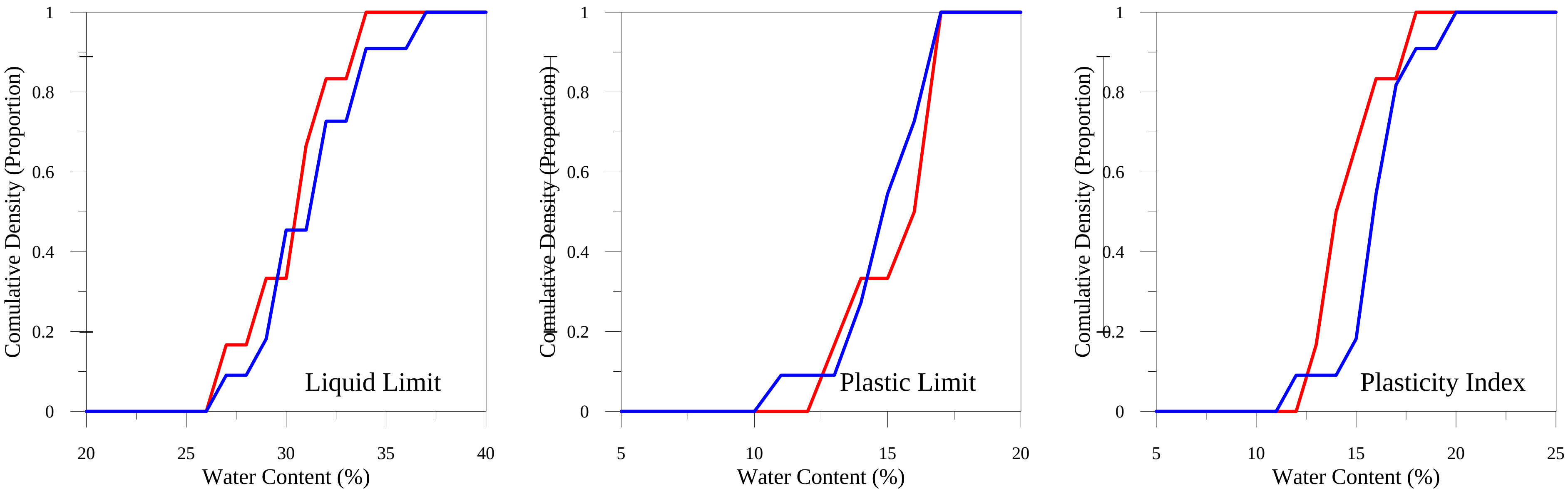


Value of tests statistic exceeds 1.0

Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

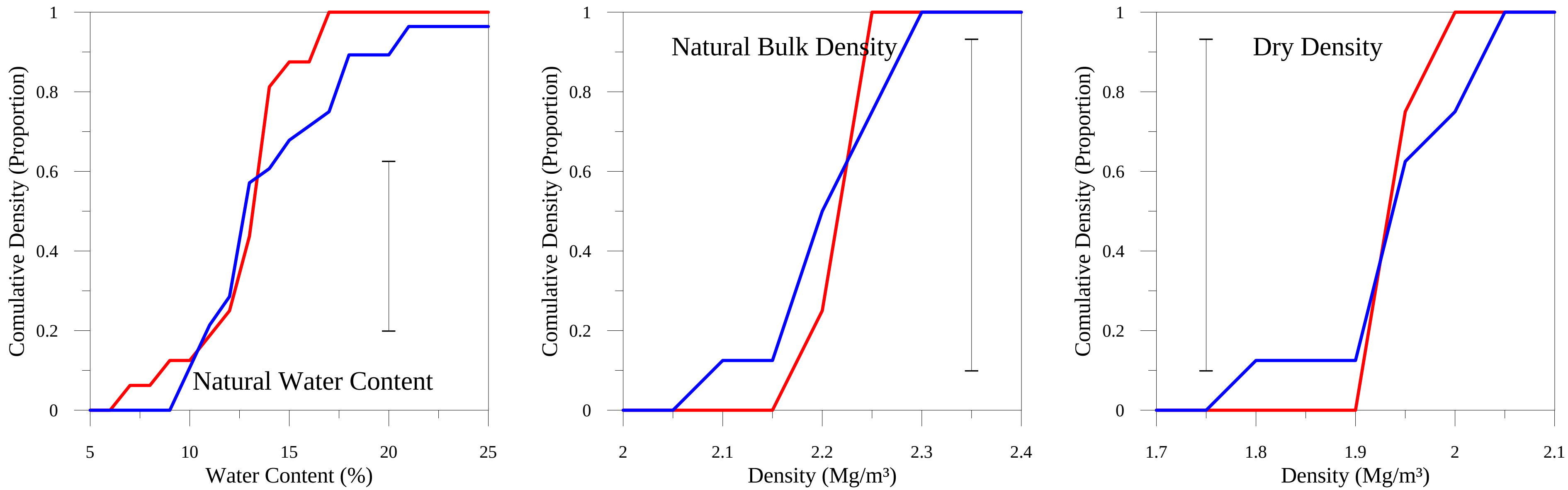
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 65: Density, Upper vs Lower till	Figure No.: 37



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

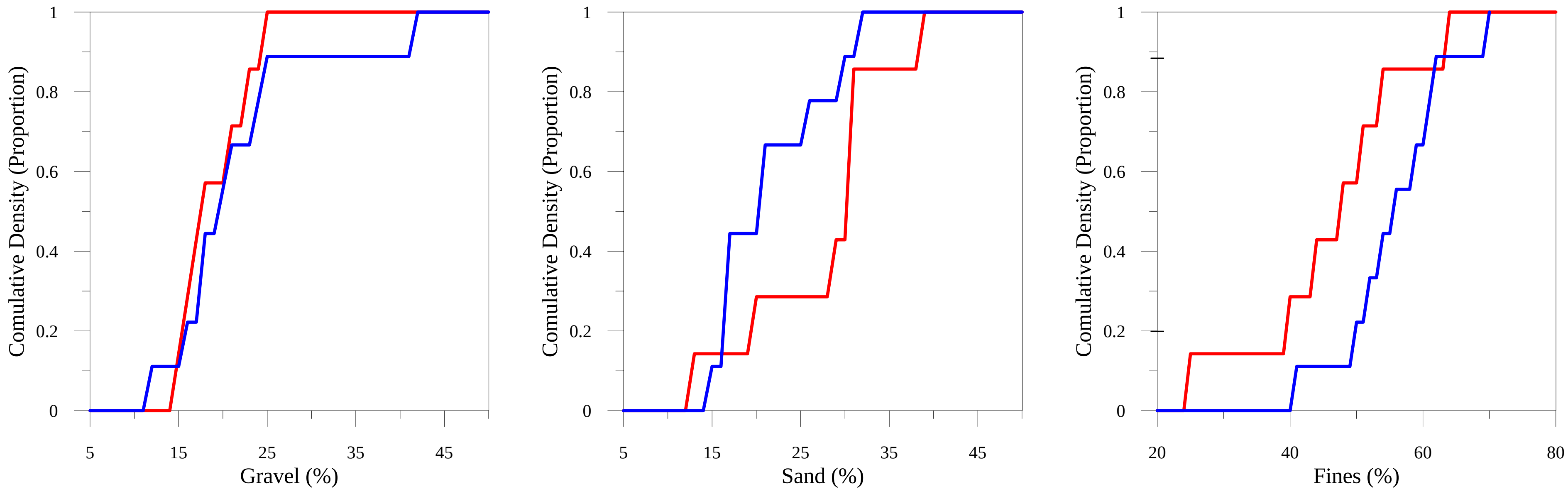
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 71: Index Results, Upper vs Lower till	Figure No.: 38



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

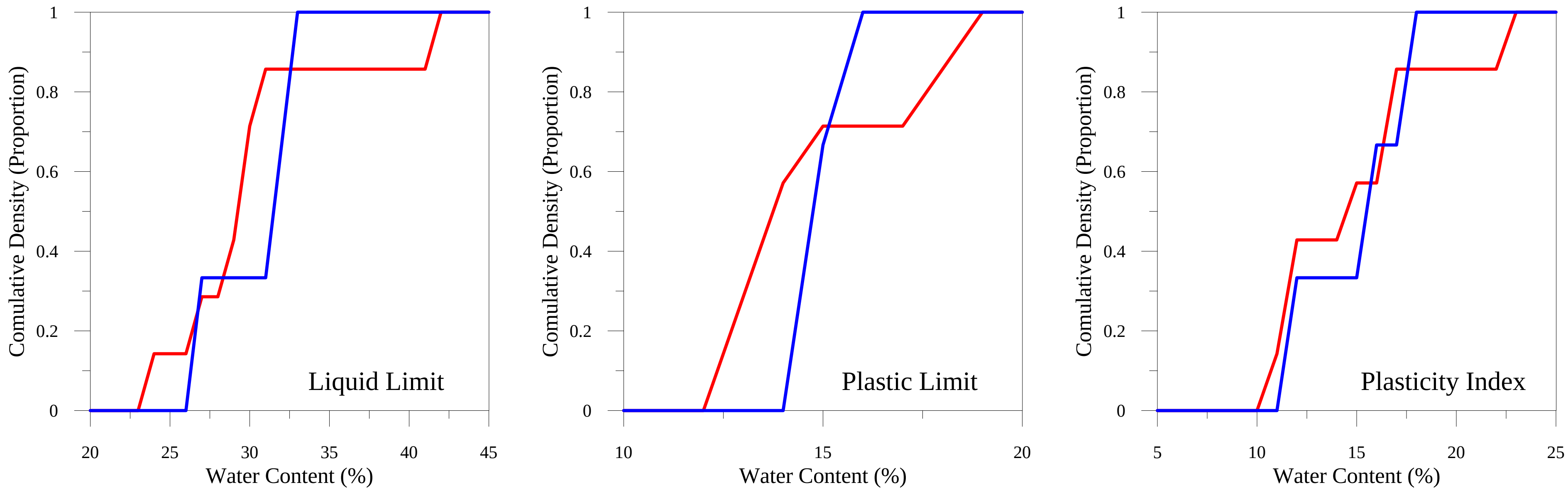
Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 71: Density, Upper vs Lower till	Figure No.: 39



Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 71: Grading Fractions, Upper vs Lower till	Figure No.: 40

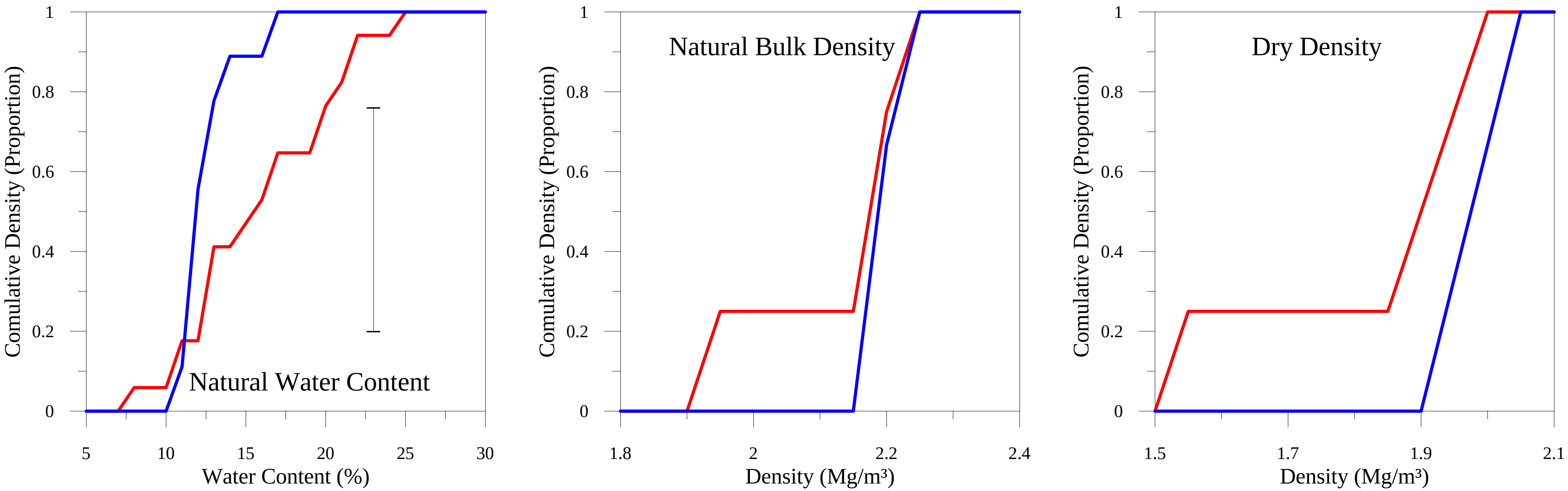


Test statistic = 0.94

Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 72: Index Results, Upper vs Lower till	Figure No.: 41

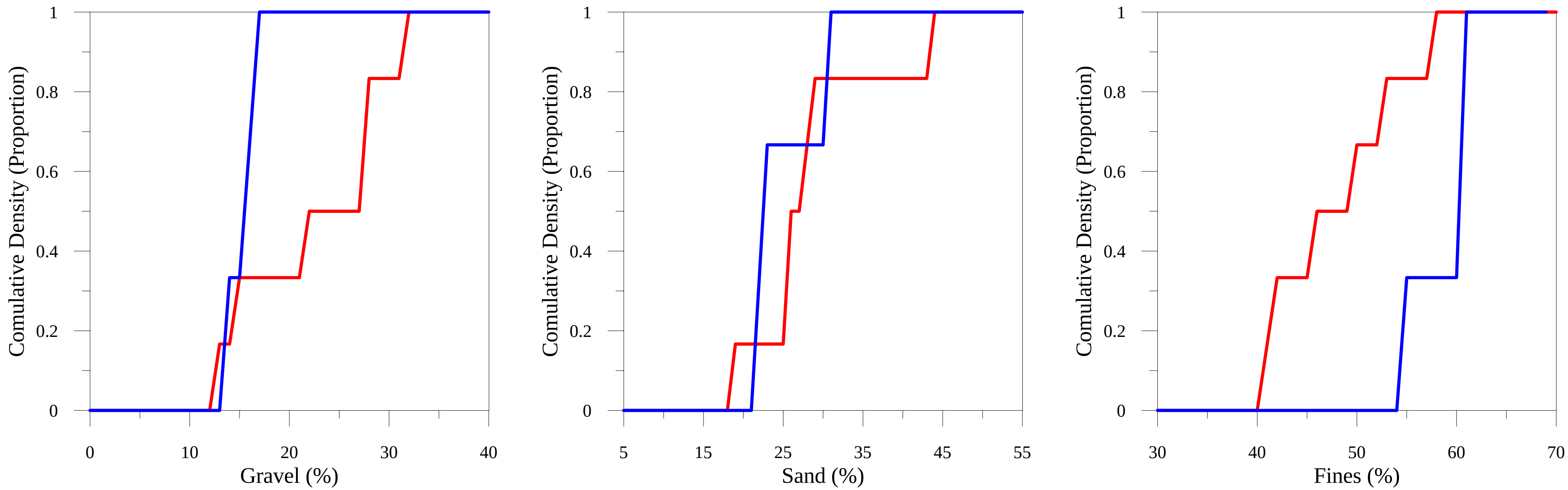


Value of test statistic exceeds 1.0

Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 72: Density, Upper vs Lower till	Figure No.: 42



Value of test statistic = 0.96

Red curves: Upper Till
Blue curves: Lower Till

Bar Lengths equal to value of test statistic

Appendix D.3	Kolmogorov - Smirnov Test Charts Domain 72: Grading Fractions, Upper vs Lower till	Figure No.: 43

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.03125	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.027777778**
	0.0208333	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.027777778**
	0.0104167	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.027777778**
	0.0416667	**0**	**0**	**0.0384615**	**0**	**0**	**0**	**0.027777778**	**0.055555556**
	0.2604167	**0**	**0.0115385**	**0.0384615**	**0.1**	**0**	**0**	**0.027777778**	**0.111111111**
	0.21875	**0**	**0.1692308**	**0.0769231**	**0.1**	**0**	**0**	**0.027777778**	**0.111111111**
	0.1979167	**0**	**0.1884615**	**0.0423077**	**0.2**	**0**	**0**	**0.027777778**	**0.111111111**
	0.15625	**0**	**0.0307692**	**0.0115385**	**0.3**	**0**	**0**	**0.027777778**	**0.111111111**
	0.1770833	**0**	**0.2230769**	**0.1576923**	**0.4**	**0**	**0**	**0.055555556**	**0.222222222**
	0.1458333	**0**	**0.2**	**0.3115385**	**0.5**	**0**	**0**	**0.055555556**	**0.166666667**
	0.1458333	**0**	**0.2**	**0.3**	**0.5**	**0**	**0**	**0.027777778**	**0.027777778**
	0.1666667	**0**	**0.15**	**0.25**	**0.5**	**0**	**0**	**0.027777778**	**0.027777778**
	0.15625	**0**	**0.1**	**0.25**	**0.5**	**0**	**0**	**0.25**	**0.111111111**
	0.125	**0**	**0.05**	**0.25**	**0.5**	**0**	**0**	**0.277777778**	**0.083333333**
	0.09375	**0**	**0.05**	**0.2**	**0.5**	**0**	**0**	**0.111111111**	**0.027777778**
	0.0625	**0**	**0.05**	**0.2**	**0.5**	**0**	**0**	**0.027777778**	**1.11022E-16**
	0.03125	**0.0384615**	**0.05**	**0.1**	**0.375**	**0**	**0**	**0.055555556**	**1.11022E-16**
	0.03125	**0.0769231**	**0.05**	**0.05**	**0.375**	**0**	**0**	**0.027777778**	**1.11022E-16**
	0.03125	**0.0230769**	**0**	**0.05**	**0.25**	**0.125**	**0**	**1.11022E-16**	**1.11022E-16**
	0.03125	**0.1576923**	**0**	**0.05**	**0.125**	**0.25**	**0**	**1.11022E-16**	**1.11022E-16**
	0.03125	**0.2923077**	**0**	**0.05**	**0**	**0.25**	**0**	**1.11022E-16**	**1.11022E-16**
	2.22E-16	**0.0615385**	**0**	**0.05**	**0.075**	**0.375**	**0**		
	2.22E-16	**0.1576923**	**0**	**0.05**	**0.175**	**0.275**	**0**		
	2.22E-16	**0.2615385**	**0**	**0.05**	**0.175**	**0.2**	**0**		
	2.22E-16	**0.2615385**	**0**	**0**	**0.175**	**0.2**	**0**		
	2.22E-16	**0.3**	**0**	**0**	**0.175**	**0.225**	**0.1**		
	2.22E-16	**0.3**	**0**	**0**	**0.05**	**0.225**	**0.2**		
	2.22E-16	**0.25**	**0**	**0**	**0.05**	**0.25**	**0.2**		
	2.22E-16	**0.25**	**0**	**0**	**0.075**	**0.375**	**0.275**		
	2.22E-16	**0.25**	**0**	**0**	**0.1**	**0.275**	**0.275**		
	2.22E-16	**0.25**	**0**	**0**	**1.11E-16**	**0.4**	**0.15**		
	2.22E-16	**0.25**	**0**	**0**	**1.11E-16**	**0.4**	**0.25**		
	2.22E-16	**0.25**	**0**	**0**	**1.11E-16**	**0.3**	**0**		
	2.22E-16	**0.2**	**0**	**0**	**1.11E-16**	**0.3**	**0.05**		
	2.22E-16	**0.1**	**0**	**0**	**1.11E-16**	**0.3**	**0.05**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.3**	**0.05**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.3**	**0.075**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.3**	**0.075**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.2**	**0.075**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.2**	**0.075**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.2**	**0.2**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.2**	**0.2**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.1**	**0.2**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.1**	**0.1**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.1**	**1.11E-16**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.1**	**1.11E-16**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**0.1**	**1.11E-16**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0.05**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, α = 0.05	0.3103761	0.4044978	0.4044978	0.4044978	0.6451046	0.6451046	0.6451046	0.453333333	0.453333333
Test Statistic, α = 0.01	0.3719949	0.4848025	0.4848025	0.4848025	0.7731769	0.7731769	0.7731769	0.543333333	0.543333333

Appendix D.3: Spreadsheet for Domain 11 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0266667	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0533333	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.16	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.5**
	0.3022222	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.5**
	0.4222222	**0**	**0**	**0.1111111**	**0**	**0**	**0**	**0**	**0.5**
	0.5288889	**0**	**0.0217391**	**0.089372**	**0**	**0**	**0**	**0**	**0.5**
	0.44	**0**	**0.1932367**	**0.2004831**	**0**	**0**	**0**	**0**	**0.5**
	0.3555556	**0**	**0.4468599**	**0.3115942**	**0**	**0**	**0**	**0.5**	**0.5**
	0.2711111	**0**	**0.4444444**	**0.468599**	**0**	**0**	**0**	**0.5**	**0.5**
	0.2266667	**0**	**0.3333333**	**0.4710145**	**0**	**0**	**0**	**0.5**	**0.5**
	0.2533333	**0**	**0.3333333**	**0.1231884**	**0**	**0**	**0**	**0.5**	**0.933333333**
	0.1955556	**0**	**0.3333333**	**0.115942**	**0**	**0**	**0**	**0.5**	**0.833333333**
	0.2222222	**0**	**0.3333333**	**0.178744**	**0**	**0**	**0**	**0.5**	**0.733333333**
	0.2222222	**0**	**0.2222222**	**0.1111111**	**0**	**0**	**0**	**0.5**	**0.433333333**
	0.2222222	**0**	**0.2222222**	**0.1111111**	**0**	**0**	**0**	**0.5**	**0.066666667**
	2.22E-16	**0**	**0.2222222**	**0.1111111**	**0**	**0**	**0**	**0.9**	**0**
	2.22E-16	**0**	**0**	**0.1111111**	**0**	**0**	**0**	**0.833333333**	**0**
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0.3333333**	**0**	**0.533333333**	**0**
	2.22E-16	**0**	**0**	**3.331E-16**	**0.3333333**	**0.3333333**	**0**	**0.033333333**	**0**
	2.22E-16	**0.0217391**	**0**	**3.331E-16**	**0.4166667**	**0.3333333**	**0**	**0**	**0**
	2.22E-16	**0.0217391**	**0**	**3.331E-16**	**0.4166667**	**0.4166667**	**0**	**0**	**0**
	2.22E-16	**0.178744**	**0**	**3.331E-16**	**0.1666667**	**0.1666667**	**0**		
	2.22E-16	**0.1352657**	**0**	**3.331E-16**	**0.0833333**	**0.1666667**	**0**		
	2.22E-16	**0.0507246**	**0**	**3.331E-16**	**0.0833333**	**0.1666667**	**0**		
	2.22E-16	**0.3188406**	**0**	**3.331E-16**	**0.0833333**	**0.1666667**	**0**		
	2.22E-16	**0.4710145**	**0**	**3.331E-16**	**0.0833333**	**0.1666667**	**0.25**		
	2.22E-16	**0.6014493**	**0**	**3.331E-16**	**0.3333333**	**0.1666667**	**0.25**		
	2.22E-16	**0.3333333**	**0**	**3.331E-16**	**0**	**0.1666667**	**0.25**		
	2.22E-16	**0.2222222**	**0**	**3.331E-16**	**0**	**0.25**	**0.25**		
	2.22E-16	**0.1111111**	**0**	**3.331E-16**	**0**	**0**	**0.5**		
	2.22E-16	**0.1111111**	**0**	**3.331E-16**	**0**	**0**	**0.5**		
	2.22E-16	**0.1111111**	**0**	**3.331E-16**	**0**	**0**	**0.5**		
	2.22E-16	**0.1111111**	**0**	**3.331E-16**	**0**	**0**	**0.5**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0.1666667**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0.1666667**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0.1666667**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0.1666667**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0.0833333**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0.0833333**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0.3333333**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**3.331E-16**	**0**	**0**	**0**		
Test Statistic, $\alpha = 0.05$	0.4797629	0.4957013	0.4957013	0.4957013	1.0387172	1.0387172	1.0387172	0.993203571	0.993203571
Test Statistic, $\alpha = 0.01$	0.57501	0.5941126	0.5941126	0.5941126	1.2449331	1.2449331	1.2449331	1.190383692	1.190383692

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0140746	**0**	**0**	**0.04**	**0**	**0**	**0**	**0**	**0**
	0.1555243	**0**	**0**	**0.04**	**0**	**0**	**0**	**0**	**0**
	0.1998593	**0**	**0**	**0.0015385**	**0**	**0**	**0**	**0**	**0**
	0.2533427	**0**	**0.04**	**0.0046154**	**0**	**0**	**0**	**0**	**0**
	0.1217452	**0**	**0.0723077**	**0.0076923**	**0**	**0**	**0**	**0**	**0**
	0.1625616	**0**	**0.0630769**	**0.0138462**	**0**	**0**	**0**	**0**	**0**
	0.1625616	**0**	**0.1261538**	**0.0984615**	**0**	**0**	**0**	**0**	**0.142857143**
	0.0309641	**0**	**0.0846154**	**0.1692308**	**0**	**0**	**0**	**0**	**0.142857143**
	0.0577058	**0**	**0.0830769**	**0.0876923**	**0**	**0**	**0**	**0**	**0.428571429**
	0.059817	**0**	**0.16**	**0.0861538**	**0**	**0**	**0**	**0.142857143**	**0.428571429**
	0.0738916	**0**	**0.12**	**0.0846154**	**0.0833333**	**0**	**0**	**0.142857143**	**0.359605911**
	0.0675581	**0**	**0.08**	**0.2**	**0**	**0**	**0**	**0.285714286**	**0.610837438**
	0.0816327	**0.04**	**0.08**	**0.2**	**0.0833333**	**0**	**0**	**0.428571429**	**0.403940887**
	0.0816327	**0.04**	**0.08**	**0.08**	**0**	**0**	**0**	**0.428571429**	**0.477832512**
	0.0612245	**0.0015385**	**0.08**	**0.04**	**0.25**	**0**	**0**	**0.39408867**	**0.236453202**
	0.0612245	**0.0338462**	**0.04**	**0.04**	**0.25**	**0**	**0**	**0.645320197**	**0.073891626**
	0.0204082	**0.0861538**	**0.04**	**0.04**	**0.1666667**	**0**	**0**	**0.369458128**	**2.22045E-16**
	3.331E-16	**0.0923077**	**0**	**1.11E-16**	**0.1666667**	**0**	**0**	**0.374384236**	**2.22045E-16**
	3.331E-16	**0.1**	**0**	**1.11E-16**	**0.1666667**	**0**	**0.0833333**	**0.133004926**	**2.22045E-16**
	3.331E-16	**0.0230769**	**0**	**1.11E-16**	**0.0833333**	**0**	**0.0833333**	**2.22045E-16**	**2.22045E-16**
	3.331E-16	**0.0507692**	**0**	**1.11E-16**	**0.25**	**0**	**0.0833333**	**2.22045E-16**	**2.22045E-16**
	3.331E-16	**0.0892308**	**0**	**1.11E-16**	**0.25**	**0**	**0**		
	3.331E-16	**0.0461538**	**0**	**1.11E-16**	**0.1666667**	**0**	**0.0833333**		
	3.331E-16	**0.0846154**	**0**	**1.11E-16**	**0.1666667**	**0**	**0.0833333**		
	3.331E-16	**0.2**	**0**	**1.11E-16**	**0.0833333**	**0**	**0.0833333**		
	3.331E-16	**0.2**	**0**	**1.11E-16**	**0.0833333**	**0**	**0**		
	3.331E-16	**0.2**	**0**	**1.11E-16**	**0**	**0.0833333**	**0**		
	3.331E-16	**0.2**	**0**	**1.11E-16**	**0**	**0.1666667**	**0**		
	3.331E-16	**0.16**	**0**	**1.11E-16**	**0**	**0.1666667**	**0**		
	3.331E-16	**0.16**	**0**	**1.11E-16**	**0**	**0.0833333**	**0.0833333**		
	3.331E-16	**0.16**	**0**	**1.11E-16**	**0**	**0**	**0.0833333**		
	3.331E-16	**0.16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	3.331E-16	**0.12**	**0**	**1.11E-16**	**0**	**0.1666667**	**0.0833333**		
	3.331E-16	**0.12**	**0**	**1.11E-16**	**0**	**0.25**	**0**		
	3.331E-16	**0.08**	**0**	**1.11E-16**	**0**	**0.4166667**	**0**		
	3.331E-16	**0.04**	**0**	**1.11E-16**	**0**	**0.4166667**	**0.0833333**		
	3.331E-16	**0.04**	**0**	**1.11E-16**	**0**	**0.0833333**	**0.0833333**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0.1666667**	**0.0833333**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0.25**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0.3333333**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0.25**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0.0833333**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0.0833333**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0.0833333**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0.0833333**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0.0833333**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**1.11E-16**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**1.11E-16**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**1.11E-16**	**0**		
	3.331E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**1.11E-16**	**0**		
Test Statistic, $\alpha = 0.05$	0.3186318	0.3809494	0.3809494	0.3809494	0.5552177	0.5552177	0.5552177	0.572719724	0.572719724
Test Statistic, $\alpha = 0.01$	0.3818896	0.4565791	0.4565791	0.4565791	0.6654447	0.6654447	0.6654447	0.686421433	0.686421433

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0.0416667**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0.0059524**	**0**	**0**	**0**	**0**	**0.125**
	0.0128205	**0**	**0**	**0.0059524**	**0**	**0**	**0**	**0**	**0.125**
	0.0128205	**0**	**0**	**0.0297619**	**0**	**0**	**0**	**0**	**0.125**
	0.025641	**0**	**0**	**0.0714286**	**0**	**0**	**0**	**0.0625**	**0.125**
	0.0052329	**0**	**0**	**0.1547619**	**0**	**0**	**0**	**0.0625**	**0.083333333**
	0.096808	**0**	**0**	**0.1547619**	**0**	**0**	**0.0588235**	**0.0625**	**0.0625**
	0.0735217	**0**	**0.0416667**	**0.1488095**	**0**	**0**	**0.1764706**	**0.0625**	**0.145833333**
	0.0269492	**0**	**0.0416667**	**0.2261905**	**0**	**0**	**0.1764706**	**0.125**	**0.333333333**
	0.129775	**0**	**0.0833333**	**0.3869048**	**0**	**0.0909091**	**0.2352941**	**0.125**	**0.375**
	0.1868132	**0**	**0.1666667**	**0.4642857**	**0**	**0.0909091**	**0.2941176**	**0.1875**	**0.354166667**
	0.1925693	**0**	**0.2083333**	**0.4642857**	**0**	**0.0909091**	**0.3529412**	**0.145833333**	**0.3125**
	0.1674516	**0**	**0.2916667**	**0.4583333**	**0**	**0.0909091**	**0.4117647**	**0.208333333**	**0.354166667**
	0.1446886	**0**	**0.4166667**	**0.3988095**	**0**	**0.0320856**	**0.4117647**	**0.458333333**	**0.3125**
	0.1551544	**0**	**0.577381**	**0.3452381**	**0**	**0.0320856**	**0.4117647**	**0.416666667**	**0.145833333**
	0.1399791	**0**	**0.5714286**	**0.3452381**	**0**	**0.0962567**	**0.4117647**	**0.520833333**	**0.041666667**
	0.0915751	**0**	**0.6071429**	**0.3452381**	**0**	**0.0213904**	**0.3796791**	**0.5625**	**0.020833333**
	0.0839874	**0**	**0.6428571**	**0.297619**	**0**	**0.0481283**	**0.3796791**	**0.395833333**	**0.020833333**
	0.0431711	**0**	**0.6785714**	**0.2916667**	**0**	**0.1069519**	**0.4385027**	**0.3125**	**0.020833333**
	0.0023548	**0.0416667**	**0.5833333**	**0.2440476**	**0**	**0.1069519**	**0.4973262**	**0.104166667**	**0**
	0.0023548	**0.0833333**	**0.5833333**	**0.2440476**	**0**	**0.1069519**	**0.5561497**	**0.0625**	**0**
	0.0023548	**0.2083333**	**0.577381**	**0.1011905**	**0**	**0.1069519**	**0.6149733**	**0**	**0**
	0.0180534	**0.1607143**	**0.4761905**	**0.0952381**	**0.2727273**	**0.1069519**	**0.6149733**	**0.083333333**	**0**
	0.0180534	**0.2440476**	**0.4285714**	**0.0952381**	**0.2727273**	**0.3208556**	**0.6149733**	**0**	**0**
	0.0052329	**0.4107143**	**0.4285714**	**0.047619**	**0.2727273**	**0.3208556**	**0.7326203**	**0**	**0**
	0.0052329	**0.5357143**	**0.3333333**	**0.047619**	**0.2727273**	**0.2032086**	**0.7326203**		
	0.0075877	**0.5297619**	**0.2857143**	**0.047619**	**0.2727273**	**0.2032086**	**0.7326203**		
	0.0075877	**0.6547619**	**0.2380952**	**0.047619**	**0.3636364**	**0.2032086**	**0.9090909**		
	0.0075877	**0.6547619**	**0.1904762**	**0.047619**	**0.3636364**	**0.2352941**	**0.9090909**		
	0.0128205	**0.6964286**	**0.1428571**	**0.047619**	**0.3636364**	**0.1764706**	**0.9090909**		
	0.0128205	**0.6904762**	**0.0952381**	**3.331E-16**	**0.3636364**	**0.1764706**	**0.9090909**		
	0.0128205	**0.547619**	**0.0952381**	**3.331E-16**	**0.3048128**	**0.1764706**	**0.9090909**		
	0.0128205	**0.5892857**	**0.0952381**	**3.331E-16**	**0.5775401**	**0.1176471**	**0.9090909**		
	0.0128205	**0.5833333**	**0.0952381**	**3.331E-16**	**0.7593583**	**0.1176471**	**0.9090909**		
	4.441E-16	**0.5357143**	**0.047619**	**3.331E-16**	**0.7593583**	**0.1176471**	**0.9090909**		
	4.441E-16	**0.4880952**	**0.047619**	**3.331E-16**	**0.8502674**	**0.0588235**	**0.9090909**		
	4.441E-16	**0.4880952**	**0.047619**	**3.331E-16**	**0.8502674**	**0.0588235**	**0.9090909**		
	4.441E-16	**0.4404762**	**0.047619**	**3.331E-16**	**0.8502674**	**0.0588235**	**0.7272727**		
	4.441E-16	**0.4345238**	**0.047619**	**3.331E-16**	**0.7914439**	**0.0588235**	**0.7272727**		
	4.441E-16	**0.3869048**	**0.047619**	**3.331E-16**	**0.7914439**	**0.0588235**	**0.6363636**		
	4.441E-16	**0.3869048**	**0.047619**	**3.331E-16**	**0.7914439**	**0.0588235**	**0.6363636**		
	4.441E-16	**0.3869048**	**2.22E-16**	**3.331E-16**	**0.7326203**	**0.0588235**	**0.6363636**		
	4.441E-16	**0.4285714**	**2.22E-16**	**3.331E-16**	**0.6149733**	**0**	**0.6363636**		
	4.441E-16	**0.4285714**	**2.22E-16**	**3.331E-16**	**0.4973262**	**0**	**0.5454545**		
	4.441E-16	**0.4285714**	**2.22E-16**	**3.331E-16**	**0.4973262**	**0**	**0.3636364**		
	4.441E-16	**0.4285714**	**2.22E-16**	**3.331E-16**	**0.4973262**	**0**	**0.3636364**		
	4.441E-16	**0.3333333**	**2.22E-16**	**3.331E-16**	**0.4973262**	**0**	**0.0909091**		
	4.441E-16	**0.2857143**	**2.22E-16**	**3.331E-16**	**0.4705882**	**0**	**0.0909091**		
	4.441E-16	**0.2857143**	**2.22E-16**	**3.331E-16**	**0.4705882**	**0**	**0.0909091**		
	4.441E-16	**0.2857143**	**2.22E-16**	**3.331E-16**	**0.3529412**	**0**	**0.0909091**		
	4.441E-16	**0.2857143**	**2.22E-16**	**3.331E-16**	**0.3529412**	**0**	**0**		
	4.441E-16	**0.2380952**	**2.22E-16**	**3.331E-16**	**0.3529412**	**0**	**0**		
	4.441E-16	**0.2380952**	**2.22E-16**	**3.331E-16**	**0.3529412**	**0**	**0**		
	4.441E-16	**0.2380952**	**2.22E-16**	**3.331E-16**	**0.3529412**	**0**	**0**		
	4.441E-16	**0.1904762**	**2.22E-16**	**3.331E-16**	**0.3529412**	**0**	**0**		
	4.441E-16	**0.1428571**	**2.22E-16**	**3.331E-16**	**0.3529412**	**0**	**0**		
	4.441E-16	**0.0952381**	**2.22E-16**	**3.331E-16**	**0.3529412**	**0**	**0**		
	4.441E-16	**0.0952381**	**2.22E-16**	**3.331E-16**	**0.3529412**	**0**	**0**		
	4.441E-16	**0.047619**	**2.22E-16**	**3.331E-16**	**0.2941176**	**0**	**0**		
	4.441E-16	**0.047619**	**2.22E-16**	**3.331E-16**	**0.2941176**	**0**	**0**		
	4.441E-16	**0.047619**	**2.22E-16**	**3.331E-16**	**0.2941176**	**0**	**0**		
	4.441E-16	**0.047619**	**2.22E-16**	**3.331E-16**	**0.2941176**	**0**	**0**		
	4.441E-16	**0.047619**	**2.22E-16**	**3.331E-16**	**0.2941176**	**0**	**0**		
	4.441E-16	**0.047619**	**2.22E-16**	**3.331E-16**	**0.2941176**	**0**	**0**		
	4.441E-16	**0.047619**	**2.22E-16**	**3.331E-16**	**0.2352941**	**0**	**0**		
	4.441E-16	**0.047619**	**2.22E-16**	**3.331E-16**	**0.2352941**	**0**	**0**		
	4.441E-16	**5.551E-16**	**2.22E-16**	**3.331E-16**	**0.1764706**	**0**	**0**		
	4.441E-16	**5.551E-16**	**2.22E-16**	**3.331E-16**	**0.0588235**	**0**	**0**		
	4.441E-16	**5.551E-16**	**2.22E-16**	**3.331E-16**	**0.0588235**	**0**	**0**		
	4.441E-16	**5.551E-16**	**2.22E-16**	**3.331E-16**	**0**	**0**	**0**		
Test Statistic, α = 0.05	0.2479108	0.4063777	0.4063777	0.4063777	0.5262561	0.5262561	0.5262561	0.392598183	0.392598183
Test Statistic, α = 0.01	0.2971284	0.4870557	0.4870557	0.4870557	0.6307334	0.6307334	0.6307334	0.470540469	0.470540469

Appendix D.3: Spreadsheet for Domain 21 (Till v Hillwash)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0.125**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.3223684**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.2368421**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.1414474**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.1611842**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.1184211**	**0**	**0**	**0**	**0.052631579**
	0	**0**	**0**	**0**	**0.0657895**	**0**	**0**	**0**	**0.105263158**
	0	**0**	**0**	**0**	**0.0657895**	**0**	**0**	**0**	**0.157894737**
	0	**0**	**0**	**0.0212766**	**0.0756579**	**0**	**0**	**0**	**0.263157895**
	0	**0**	**0**	**0.0212766**	**0.0296053**	**0**	**0**	**0**	**0.453947368**
	0	**0**	**0**	**0.0056516**	**0.0197368**	**0.0526316**	**0**	**0**	**0.497807018**
	0	**0**	**0.015625**	**0.0269282**	**0.0197368**	**0.0098684**	**0**	**0**	**0.103070175**
	0	**0**	**0.0169548**	**0.0169548**	**0.0197368**	**0.0098684**	**0**	**0**	**0**
	0.0081665	**0**	**0.0129654**	**0.0382314**	**0.0197368**	**0.0098684**	**0**	**0.052631579**	**0**
	0.0492624	**0**	**0.0791223**	**0.018617**	**0.0197368**	**0.0723684**	**0**	**0.157894737**	**0**
	0.0189673	**0**	**0.0588431**	**0.0834441**	**0.0197368**	**0.0197368**	**0**	**0.168859649**	**0**
	0.040569	**0**	**0.1373005**	**0.1329787**	**0.0723684**	**0.0328947**	**0**	**0.359649123**	**0**
	0.089568	**0**	**0.181516**	**0.0388963**	**0.0723684**	**0.0230263**	**0**	**0.331140351**	**0**
	0.1714963	**0**	**0.212766**	**0.1200133**	**0.0625**	**0.1019737**	**0**	**0.125**	**0**
	0.2423604	**0**	**0.1276596**	**0.2111037**	**0.0625**	**0.0559211**	**0**	**0**	**0**
	0.1733404	**0.0208333**	**0.0425532**	**0.2453457**	**0.0625**	**0.1085526**	**0**	**0**	**0**
	0.0798209	**0.0208333**	**1.11E-16**	**0.2184176**	**0.0625**	**0.1085526**	**0**	**0**	**0**
	0.0687566	**0.0416667**	**1.11E-16**	**0.0694814**	**0.0625**	**0.1513158**	**0**	**0**	**0**
	0.0961538	**0.046875**	**1.11E-16**	**0.0482048**	**0.0625**	**0.1940789**	**0**	**0**	**0**
	0.0576923	**0.03125**	**1.11E-16**	**0.0056516**	**0.0625**	**0.0065789**	**0**	**0**	**0**
	0.0384615	**0.0520833**	**1.11E-16**	**0.0056516**	**2.22E-16**	**0.0559211**	**0**		
	1.11E-16	**0.0260417**	**1.11E-16**	**0.0056516**	**2.22E-16**	**0.0131579**	**0**		
	1.11E-16	**0.0052083**	**1.11E-16**	**0.0056516**	**2.22E-16**	**0.0131579**	**0**		
	1.11E-16	**0.03125**	**1.11E-16**	**0.015625**	**2.22E-16**	**0.0394737**	**0**		
	1.11E-16	**0.0416667**	**1.11E-16**	**0**	**2.22E-16**	**0.0921053**	**0**		
	1.11E-16	**0.1666667**	**1.11E-16**	**0**	**2.22E-16**	**0.0921053**	**0**		
	1.11E-16	**0.1770833**	**1.11E-16**	**0**	**2.22E-16**	**0.0921053**	**0**		
	1.11E-16	**0.1197917**	**1.11E-16**	**0**	**2.22E-16**	**0.0296053**	**0**		
	1.11E-16	**0.0260417**	**1.11E-16**	**0**	**2.22E-16**	**0.0296053**	**0**		
	1.11E-16	**0.1770833**	**1.11E-16**	**0**	**2.22E-16**	**0.0328947**	**0**		
	1.11E-16	**0.1927083**	**1.11E-16**	**0**	**2.22E-16**	**0.0328947**	**0**		
	1.11E-16	**0.2604167**	**1.11E-16**	**0**	**2.22E-16**	**0.0953947**	**0**		
	1.11E-16	**0.296875**	**1.11E-16**	**0**	**2.22E-16**	**0.0953947**	**0**		
	1.11E-16	**0.234375**	**1.11E-16**	**0**	**2.22E-16**	**0.0427632**	**0**		
	1.11E-16	**0.1510417**	**1.11E-16**	**0**	**2.22E-16**	**0.0427632**	**0.0625**		
	1.11E-16	**0.1510417**	**1.11E-16**	**0**	**2.22E-16**	**0.0098684**	**0.0625**		
	1.11E-16	**0.0885417**	**1.11E-16**	**0**	**2.22E-16**	**0.0098684**	**0.0625**		
	1.11E-16	**0.0677083**	**1.11E-16**	**0**	**2.22E-16**	**0.0526316**	**0.0625**		
	1.11E-16	**0.046875**	**1.11E-16**	**0**	**2.22E-16**	**0.0526316**	**0.0625**		
	1.11E-16	**0.0208333**	**1.11E-16**	**0**	**2.22E-16**	**0.0526316**	**0.0625**		
	1.11E-16	**0.0208333**	**1.11E-16**	**0**	**2.22E-16**	**0.0526316**	**0.0625**		
	1.11E-16	**0.0208333**	**1.11E-16**	**0**	**2.22E-16**	**0.0526316**	**0.0625**		
	1.11E-16	**0.0208333**	**1.11E-16**	**0**	**2.22E-16**	**0.0526316**	**0.0625**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0625**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0098684**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0098684**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0098684**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0427632**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0427632**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0427632**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0197368**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0822368**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0822368**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0921053**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0921053**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.1546053**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.1546053**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.1019737**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0493421**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0493421**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0032895**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0032895**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0032895**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0032895**		
	1.11E-16	**0**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.2138158**		
Test Statistic, $\alpha = 0.05$	0.2467918	0.2596793	0.2612531	0.2612531	0.4614622	0.4614622	0.4614622	0.417629064	0.417629064
Test Statistic, $\alpha = 0.01$	0.2957873	0.3112333	0.3131195	0.3131195	0.553076	0.553076	0.553076	0.500540716	0.500540716

Appendix D.3: Spreadsheet for Domain 31 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.125**	**0.125**	**0.125**	**0**	**0**
	0	**0**	**0**	**0**	**0.125**	**0.125**	**0.125**	**0**	**0**
	0	**0**	**0**	**0**	**0.125**	**0.125**	**0.125**	**0**	**0**
	0	**0.0833333**	**0.0833333**	**0.0833333**	**0.125**	**0.125**	**0.125**	**0**	**0**
	0	**0.0833333**	**0.0833333**	**0.0833333**	**0.25**	**0.25**	**0.25**	**0**	**0**
	0	**0.0833333**	**0.0833333**	**0.0833333**	**0.5**	**0.375**	**0.375**	**0**	**0**
	0	**0.0833333**	**0.0833333**	**0.0833333**	**0.5**	**0.375**	**0.375**	**0**	**0.2**
	0	**0.0833333**	**0.0833333**	**0.0833333**	**0.5**	**0.375**	**0.375**	**0**	**0.2**
	0	**0.1666667**	**0.1666667**	**0.1666667**	**0.625**	**0.375**	**0.375**	**0**	**0.2**
	0	**0.1666667**	**0.1666667**	**0.1666667**	**0.625**	**0.375**	**0.375**	**0**	**0.066666667**
	0	**0.1666667**	**0.1666667**	**0.1666667**	**0.625**	**0.375**	**0.375**	**0**	**0.2**
	0.08	**0.1666667**	**0.1666667**	**0.25**	**0.625**	**0.375**	**0.375**	**0**	**0**
	0.08	**0.25**	**0.25**	**0.3333333**	**0.625**	**0.375**	**0.375**	**0.2**	**0**
	0.1714286	**0.25**	**0.25**	**0.0833333**	**0.625**	**0.375**	**0.375**	**0.2**	**0**
	0.2057143	**0.25**	**0.25**	**0.1666667**	**0.625**	**0.375**	**0.375**	**0.2**	**0**
	0.2628571	**0.25**	**0.25**	**0.1666667**	**0.625**	**0.375**	**0.375**	**0.066666667**	**0**
	0.2114286	**0.25**	**0.0833333**	**0.25**	**0.75**	**0.5**	**0.375**	**0.2**	**0**
	0.1085714	**0.25**	**0.0833333**	**0.25**	**0.75**	**0.5**	**0.375**	**0**	**0**
	0.0514286	**0.25**	**0.3333333**	**0.25**	**0.75**	**0.5**	**0.375**	**0**	**0**
	0.0628571	**0.25**	**0.4166667**	**0.25**	**0.75**	**0.5**	**0.375**	**0**	**0**
	0.04	**0.25**	**0.1666667**	**0.25**	**0.75**	**0.5**	**0.375**	**0**	**0**
	0.0857143	**0.25**	**0.25**	**0.1666667**	**0.75**	**0.625**	**0.375**	**0**	**0**
	0.0857143	**0.25**	**0.25**	**0.25**	**0.75**	**0.625**	**0.375**	**0**	**0**
	0.1142857	**0.25**	**0.25**	**0.25**	**0.75**	**0.625**	**0.375**	**0**	**0**
	0.1142857	**0.25**	**0.1666667**	**0.25**	**0.75**	**0.625**	**0.375**		
	0.1428571	**0.25**	**0.0833333**	**0.25**	**0.75**	**0.75**	**0.375**		
	0.1428571	**0.25**	**0.0833333**	**0.25**	**0.75**	**0.75**	**0.375**		
	0.1428571	**0.25**	**0.0833333**	**0.25**	**0.75**	**0.75**	**0.375**		
	0.1428571	**0.25**	**0.0833333**	**0.0833333**	**0.75**	**0.875**	**0.375**		
	0.1714286	**0.25**	**0.0833333**	**0.0833333**	**0.25**	**0.875**	**0.375**		
	0.1714286	**0**	**0.0833333**	**0.0833333**	**0.25**	**1**	**0.375**		
	0.1314286	**0.0833333**	**0.0833333**	**0.0833333**	**0.25**	**1**	**0.375**		
	0.1314286	**0.0833333**	**0**	**0.0833333**	**0.25**	**1**	**0.625**		
	0.16	**0.1666667**	**0**	**0.0833333**	**0.125**	**1**	**0.625**		
	0.12	**0.1666667**	**0**	**0**	**0.125**	**1**	**0.625**		
	0.12	**0.1666667**	**0**	**0**	**0.125**	**1**	**0.625**		
	0.12	**0.25**	**0**	**0**	**0.125**	**0**	**0.625**		
	0.12	**0.25**	**0**	**0**	**0**	**0**	**0.625**		
	0.12	**0.25**	**0**	**0**	**0**	**0**	**0.625**		
	0.12	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.12	**0.4166667**	**0**	**0**	**0**	**0**	**0.375**		
	0.12	**0.5**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.375**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.25**		
	0.08	**0.25**	**0**	**0**	**0**	**0**	**0.25**		
	0.08	**0.1666667**	**0**	**0**	**0**	**0**	**0.25**		
	0.08	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.08	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.25**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.125**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.125**		
	0.04	**0.0833333**	**0**	**0**	**0**	**0**	**0.125**		
	0.04	**0**	**0**	**0**	**0**	**0**	**0.125**		
	0.04	**0**	**0**	**0**	**0**	**0**	**0.125**		
Test Statistic, $\alpha = 0.05$	0.3561316	0.7851964	0.7851964	0.7851964	1.4424978	1.4424978	1.4424978	0.993203571	0.993203571
Test Statistic, $\alpha = 0.01$	0.4268342	0.9410809	0.9410809	0.9410809	1.7288761	1.7288761	1.7288761	1.190383692	1.190383692

Appendix D.3: Spreadsheet for Domain 41 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.125
	0	0	0	0	0	0	0	0	0.125
	0	0	0	0	0	0	0	0	0.25
	0	0	0	0	0	0	0	0	0.375
	0	0	0	0	0	0	0	0	0.125
	0	0	0	0.1428571	0	0	0	0	0.125
	0	0	0	0.1428571	0	0	0	0	0.125
	0	0	0	0.1428571	0	0	0	0.125	0.125
	0.0357143	0	0	0.1428571	0	0	0	0.25	0.25
	0.0357143	0	0	0.0428571	0	0	0	0.375	0.25
	0.1428571	0	0	0.0428571	0	0	0	0.375	0.25
	0.1785714	0	0	0.0571429	0	0	0	0.125	0.125
	0.3571429	0	0	0.0142857	0.1	0	0	0.125	0
	0.3831169	0	0.1	0.1142857	0.1	0	0	0.375	0
	0.5519481	0	0.4	0.4142857	0.1	0	0	0.375	0
	0.7662338	0	0.5	0.2714286	0.1	0	0.2	0.25	0
	0.6655844	0	0.6	0.2714286	0.1	0	0.3	0.125	0
	0.6558442	0	0.5571429	0.0857143	0.1	0	0.3	0	0
	0.6103896	0	0.6571429	0.0428571	0.1	0	0.5	0	0
	0.6103896	0	0.6571429	0.0428571	0.1	0.2	0.5	0	0
	0.6461039	0	0.5142857	0.0428571	0.1	0.2	0.6	0	0
	0.6006494	0	0.3285714	0.0428571	0	0.2	0.2	0	0
	0.5551948	0	0.2857143	0.1428571	0	0.2	0.2	0	0
	0.5097403	0	0	0.1428571	0	0.1	1.11E-16		
	0.4642857	0.1428571	0	0.1428571	0	0	1.11E-16		
	0.4545455	0.0428571	0	0.1428571	0	0	0.1		
	0.4545455	0.0428571	0	0.1428571	0	0.1	0.1		
	0.4090909	0.0428571	0	0.1428571	0	0.1	0.1		
	0.2727273	0.1571429	0	1.11E-16	0.2	0.2	0.1		
	0.1818182	0.3571429	0	1.11E-16	0.2	0.2	0.1		
	0.1818182	0.3571429	0	1.11E-16	0.3	0.2	0.1		
	0.1363636	0.3571429	0	1.11E-16	0.2	0.2	0.1		
	0.0454545	0.4571429	0	1.11E-16	0.2	0.2	0.1		
	0.0454545	0.4571429	0	1.11E-16	0.2	0.3	0.1		
	0.0454545	0.4571429	0	1.11E-16	0.2	0.1	0.1		
	0.0454545	0.4571429	0	1.11E-16	0.2	0.1	1.11E-16		
	0.0454545	0.3142857	0	1.11E-16	0.2	0	1.11E-16		
	0.0454545	0.5142857	0	1.11E-16	0.2	0.1	1.11E-16		
	0.0454545	0.3714286	0	1.11E-16	0.2	0.1	0.1		
	0.0454545	0.2285714	0	1.11E-16	0.3	0.1	0.1		
	0.0454545	0.2285714	0	1.11E-16	0.3	0.1	0.1		
	0.0454545	0.1857143	0	1.11E-16	0.2	0.1	0.1		
	0.0454545	0.1428571	0	1.11E-16	0.1	0.1	0.1		
	0.0454545	0.1428571	0	1.11E-16	0.1	0.1	0.1		
	0.0454545	0.1428571	0	1.11E-16	0.1	0.1	0.1		
	0.0454545	0.1428571	0	1.11E-16	0.1	0.1	0.1		
	0	0.1428571	0	1.11E-16	0.1	0.1	0.1		
	0	0.1428571	0	1.11E-16	0.1	0.1	0.1		
	0	0.1428571	0	1.11E-16	1.11E-16	0	0.1		
	0	0.1428571	0	1.11E-16	1.11E-16	0	0.1		
	0	0.1428571	0	1.11E-16	1.11E-16	0	0.1		
	0	0.1428571	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	0.1428571	0	1.11E-16	0.1	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	0.1	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	0.1	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	0.1	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
	0	2.22E-16	0	1.11E-16	1.11E-16	0	1.11E-16		
Test Statistic, α = 0.05	0.387466	0.6702153	0.6702153	0.6702153	0.7449027	0.7449027	0.7449027	0.832826513	0.832826513
Test Statistic, α = 0.01	0.4643893	0.8032728	0.8032728	0.8032728	0.8927878	0.8927878	0.8927878	0.99816707	0.99816707

Appendix D.3: Spreadsheet for Domain 43 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0.2	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0.075**	**0**	**0**	**0**		
	0.2	**0**	**0**	**0.075**	**0**	**0**	**0**		
	0.4	**0**	**0**	**0.3**	**0**	**0**	**0**		
	0.6	**0**	**0**	**0.35**	**0**	**0.5**	**0**		
	0.6	**0**	**0**	**0.275**	**0**	**0.5**	**0**		
	0.6	**0**	**0**	**0.125**	**0**	**0.375**	**0**		
	0.6	**0**	**0**	**0**	**0**	**0.75**	**0**		
	0.6	**0**	**0**	**0**	**0**	**0.75**	**0**		
	0.6	**0**	**0.075**	**0**	**0**	**0.75**	**0**		
	0.6	**0**	**0.425**	**0**	**0**	**0.5**	**0**		
	0.4	**0**	**0.475**	**0**	**0.5**	**0.375**	**0**		
	0.4	**0**	**0.6**	**0**	**0.5**	**0.125**	**0**		
	0.4	**0**	**0.4**	**0**	**0.5**	**0.125**	**0**		
	0.4	**0**	**0**	**0**	**0.5**	**0.125**	**0**		
	0.4	**0**	**0**	**0**	**0.5**	**0.125**	**0.125**		
	0.4	**0.2**	**0**	**0**	**0.5**	**0.125**	**0.125**		
	0.4	**0.2**	**0**	**0**	**0.5**	**0.125**	**0.125**		
	0.4	**0.075**	**0**	**0**	**0.5**	**0.125**	**0.125**		
	0.4	**0.3**	**0**	**0**	**0.5**	**0.125**	**0.125**		
	0.4	**0.3**	**0**	**0**	**0.5**	**0.125**	**0.125**		
	0.2	**0.675**	**0**	**0**	**0.5**	**0**	**0.125**		
	0.2	**0.475**	**0**	**0**	**0.5**	**0**	**0.125**		
	0.2	**0.6**	**0**	**0**	**0.5**	**0**	**0.125**		
	0.2	**0.4**	**0**	**0**	**0.375**	**0**	**0.25**		
	0.2	**0.2**	**0**	**0**	**0.375**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0.25**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0.25**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0.25**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0.25**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0.25**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0.25**	**0**	**0.625**		
	0	**0**	**0**	**0**	**0**	**0**	**0.25**		
	0	**0**	**0**	**0**	**0**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0.125**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0.125**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0.125**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0.25**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0.25**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0.375**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0.125**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0.125**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0**	**0**	**0.375**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0.5**		
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0**	**0**	**0**	**0**		
Test Statistic, α = 0.05	0.8601395	0.7753193	0.7753193	0.7753193	1.0751744	1.0751744	1.0751744		
Test Statistic, α = 0.01	1.0309025	0.929243	0.929243	0.929243	1.2886281	1.2886281	1.2886281		

Appendix D.3: Spreadsheet for Domain 51 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**		
	0	**0**	**0**	**0.1428571**	**0**	**0**	**0**		
	0	**0**	**0**	**0.1428571**	**0**	**0**	**0**		
	0	**0**	**0**	**0.1428571**	**0.1111111**	**0**	**0**		
	0	**0**	**0**	**0.1428571**	**0.1111111**	**0.1111111**	**0**		
	0	**0**	**0**	**0.7142857**	**0.1111111**	**0.1111111**	**0**		
	0.1	**0**	**0**	**0.7142857**	**0.1111111**	**0.1111111**	**0**		
	0.2	**0**	**0**	**0.5604396**	**0.1111111**	**0.1111111**	**0**		
	0.1571429	**0**	**0**	**0.5604396**	**0.1111111**	**0.2222222**	**0**		
	0.2571429	**0**	**0**	**0.6153846**	**0.1111111**	**0.2222222**	**0**		
	0.3571429	**0**	**0**	**0.3846154**	**0.1111111**	**0.1222222**	**0**		
	0.2142857	**0**	**0**	**0.2307692**	**0.1111111**	**0.1222222**	**0**		
	0.2142857	**0**	**0**	**0.0769231**	**0.1111111**	**0.0222222**	**0**		
	0.0714286	**0**	**0**	**1.11E-16**	**0.1111111**	**0.1777778**	**0**		
	0.1285714	**0**	**0**	**1.11E-16**	**0.1111111**	**0.1777778**	**0**		
	0.1285714	**0**	**0.1538462**	**1.11E-16**	**0.1111111**	**0.0444444**	**0**		
	0.1285714	**0**	**0.1098901**	**1.11E-16**	**0.1111111**	**0.0444444**	**0.1111111**		
	0.2285714	**0**	**0.1208791**	**1.11E-16**	**0.0111111**	**0.1444444**	**0.1111111**		
	0.2285714	**0**	**0.1978022**	**1.11E-16**	**0.0111111**	**0.3444444**	**0.2222222**		
	0.2285714	**0**	**0.2747253**	**1.11E-16**	**0.0111111**	**0.2333333**	**0.2222222**		
	0.2285714	**0**	**0.4285714**	**1.11E-16**	**0.0111111**	**0.1222222**	**0.2222222**		
	0.2285714	**0.5714286**	**0.4285714**	**1.11E-16**	**0.0111111**	**0.1222222**	**0.1222222**		
	0.2285714	**0.4945055**	**0.4285714**	**1.11E-16**	**0.0111111**	**0.1222222**	**0.1222222**		
	0.2285714	**0.4945055**	**0.4285714**	**1.11E-16**	**0.0111111**	**0.1222222**	**0.1222222**		
	0.2285714	**0.4175824**	**0.2857143**	**1.11E-16**	**0.0111111**	**0.1222222**	**0.1222222**		
	0.2285714	**0.1868132**	**0.2857143**	**1.11E-16**	**0.1222222**	**0.1222222**	**0.1222222**		
	0.2285714	**0.1868132**	**0.2857143**	**1.11E-16**	**0.1222222**	**0.1222222**	**0.1222222**		
	0.0428571	**0.043956**	**0.2857143**	**1.11E-16**	**0.1222222**	**0.2222222**	**0.1222222**		
	0.0428571	**0.1208791**	**0.2857143**	**1.11E-16**	**0.1222222**	**0.2222222**	**0.2333333**		
	0.0428571	**0.1978022**	**0.2857143**	**1.11E-16**	**0.1222222**	**0.1111111**	**0.2333333**		
	0.0428571	**0.2747253**	**0.2857143**	**1.11E-16**	**0.0222222**	**0.1111111**	**0.1333333**		
	0.0428571	**0.3516484**	**0.2857143**	**1.11E-16**	**0.3555556**	**0.1111111**	**0.0333333**		
	0.1428571	**0.4285714**	**0.2857143**	**1.11E-16**	**0.2555556**	**0.1111111**	**0.0666667**		
	0.1428571	**0.2857143**	**0.2857143**	**1.11E-16**	**0.2555556**	**0.1111111**	**0.0666667**		
	0.1428571	**0.2857143**	**0.2857143**	**1.11E-16**	**0.2555556**	**0.1111111**	**0.0666667**		
	0.1428571	**0.2857143**	**0.2857143**	**1.11E-16**	**0.2555556**	**0**	**0.0444444**		
	0.1428571	**0.2857143**	**0.1428571**	**1.11E-16**	**0.2555556**	**0**	**0.1555556**		
	0.1428571	**0.2857143**	**0.1428571**	**1.11E-16**	**0.2555556**	**0**	**0.0555556**		
	0.1428571	**0.2857143**	**0.1428571**	**1.11E-16**	**0.0555556**	**0**	**0.1444444**		
	1.11E-16	**0.2857143**	**0.1428571**	**1.11E-16**	**0.0555556**	**0**	**0.2444444**		
	1.11E-16	**0.2857143**	**1.11E-16**	**1.11E-16**	**0.0555556**	**0**	**0.2444444**		
	1.11E-16	**0.1428571**	**1.11E-16**	**1.11E-16**	**0.0444444**	**0**	**0.1333333**		
	1.11E-16	**0.1428571**	**1.11E-16**	**1.11E-16**	**0.0444444**	**0**	**0.1333333**		
	1.11E-16	**0.1428571**	**1.11E-16**	**1.11E-16**	**0.0666667**	**0**	**0.1333333**		
	1.11E-16	**0.1428571**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0**	**0.1333333**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0**	**0.1333333**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1333333**	**0**	**0.0222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1222222**	**0**	**0.0222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1222222**	**0**	**0.0222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.2222222**	**0**	**0.0222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.2222222**	**0**	**0.0222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.0222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.0222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.1222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.1222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.1222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.1222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.1222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.1222222**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.0111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.0111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.0111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.0111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**0.1111111**	**0**	**0.0111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0**	**0.0111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0**	**0.0111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0**	**0.1111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0**	**0.1111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0**	**0.1111111**		
	1.11E-16	**0**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0**	**0.1111111**		
Test Statistic, α = 0.05	0.6702153	0.6375778	0.6375778	0.6375778	0.6248769	0.6248769	0.6248769		
Test Statistic, α = 0.01	0.8032728	0.7641558	0.7641558	0.7641558	0.7489333	0.7489333	0.7489333		

Appendix D.3: Spreadsheet for Domain 51 (Till v Silt)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0840336	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0336134	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0504202	**0**	**0**	**0.2857143**	**0**	**0**	**0**	**0**	**0**
	0.4201681	**0**	**0**	**0.1092437**	**0**	**0.2**	**0**	**0**	**0**
	0.5042017	**0**	**0**	**0.0420168**	**0**	**0.2**	**0**	**0**	**0**
	0.3277311	**0**	**0**	**0.0672269**	**0.1**	**0.2**	**0**	**0**	**0**
	0.3529412	**0**	**0**	**0.210084**	**0.1**	**0.2**	**0**	**0**	**0**
	0.2941176	**0**	**0**	**0.1764706**	**0.1**	**0.1**	**0.1**	**0**	**0.333333333**
	0.0588235	**0**	**0**	**0.1176471**	**0.1**	**0**	**0.1**	**0**	**0.333333333**
	2.22E-16	**0**	**0.0588235**	**0.0588235**	**0.1**	**0.1**	**0.1**	**0**	**0.333333333**
	2.22E-16	**0**	**0.1176471**	**2.22E-16**	**0.1**	**0.1**	**0.1**	**0**	**0.666666667**
	2.22E-16	**0**	**0.3361345**	**2.22E-16**	**0.1**	**0.2**	**0.1**	**0.333333333**	**0.666666667**
	2.22E-16	**0**	**0.210084**	**2.22E-16**	**0.1**	**0.2**	**0.1**	**0.333333333**	**0.75**
	2.22E-16	**0**	**0.1512605**	**2.22E-16**	**0.1**	**0.2**	**0.1**	**0.333333333**	**0.5**
	2.22E-16	**0**	**0.1176471**	**2.22E-16**	**0.1**	**0**	**0.1**	**0.666666667**	**0.5**
	2.22E-16	**0**	**0.0588235**	**2.22E-16**	**0.1**	**0.4**	**0.1**	**0.416666667**	**0.25**
	2.22E-16	**0.0588235**	**0**	**2.22E-16**	**0.1**	**0.5**	**0.1**	**0.416666667**	**0**
	2.22E-16	**0.0840336**	**0**	**2.22E-16**	**0.1**	**0.4**	**0**	**0.25**	**0**
	2.22E-16	**0.1680672**	**0**	**2.22E-16**	**0.1**	**0.3**	**0**	**0.25**	**0**
	2.22E-16	**0.2521008**	**0**	**2.22E-16**	**0.1**	**0.2**	**0**	**0**	**0**
	2.22E-16	**0.0756303**	**0**	**2.22E-16**	**0.1**	**0.2**	**0**	**0**	**0**
	2.22E-16	**0.302521**	**0**	**2.22E-16**	**0.1**	**0.2**	**0.2**		
	2.22E-16	**0.3277311**	**0**	**2.22E-16**	**0.1**	**0.2**	**0.2**		
	2.22E-16	**0.1764706**	**0**	**2.22E-16**	**0**	**0.1**	**0.2**		
	2.22E-16	**0.1764706**	**0**	**2.22E-16**	**0**	**0.1**	**0.1**		
	2.22E-16	**0.1176471**	**0**	**2.22E-16**	**0**	**0.1**	**0.3**		
	2.22E-16	**0.0588235**	**0**	**2.22E-16**	**0**	**1.11E-16**	**0.3**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0**	**1.11E-16**	**0.3**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.1**	**1.11E-16**	**0.3**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.1**	**1.11E-16**	**0.3**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.1**	**1.11E-16**	**0.3**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.1**	**1.11E-16**	**0.3**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.2**	**1.11E-16**	**0.2**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.2**	**1.11E-16**	**0.2**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.3**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.4**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.4**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.4**	**1.11E-16**	**0.2**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.4**	**1.11E-16**	**0.2**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.4**	**1.11E-16**	**0.2**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.5**	**1.11E-16**	**0.2**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.5**	**1.11E-16**	**0.2**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.5**	**1.11E-16**	**0.3**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.5**	**1.11E-16**	**0.3**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.5**	**1.11E-16**	**0.3**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.5**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.5**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.5**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.3**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.1**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.1**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.1**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.2**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.2**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**0.2**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	2.22E-16	**2.22E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
Test Statistic, $\alpha = 0.05$	0.6107606	0.6107606	0.6107606	0.6107606	0.7449027	0.7449027	0.7449027	1.038717158	1.038717158
Test Statistic, $\alpha = 0.01$	0.7320146	0.7320146	0.7320146	0.7320146	0.8927878	0.8927878	0.8927878	1.244933064	1.244933064

Appendix D.3: Spreadsheet for Domain 52 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0.1**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0.2**	**0.1**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0.2**	**0.1**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0.2**	**0.1**	**0**	**0**	**0**	**0**
	0.0833333	**0**	**0**	**0.4**	**0.1**	**0**	**0**	**0.25**	**0**
	0.1666667	**0**	**0**	**0.4**	**0.1**	**0**	**0**	**0.25**	**0.333333333**
	0.25	**0**	**0**	**0.3166667**	**0.1**	**0**	**0**	**0.25**	**0.333333333**
	0.4166667	**0**	**0**	**0.1916667**	**0.1**	**0.0666667**	**0**	**0.25**	**0.666666667**
	0.5	**0**	**0**	**0.0583333**	**0.1**	**0.0666667**	**0**	**0.25**	**0.666666667**
	0.625	**0**	**0**	**0.0666667**	**0.0333333**	**0.0666667**	**0**	**0.25**	**0.666666667**
	0.625	**0**	**0**	**0.0916667**	**0.0333333**	**0.0666667**	**0**	**0.25**	**1**
	0.6666667	**0**	**0**	**0.075**	**0.0333333**	**0.1333333**	**0.0666667**	**0.25**	**0.857142857**
	0.8333333	**0**	**0**	**0.0833333**	**0.0333333**	**0.2**	**0.0333333**	**0.25**	**0.857142857**
	0.875	**0.1428571**	**0.0416667**	**0.0416667**	**0.0333333**	**0.2666667**	**0.0333333**	**0.75**	**0.857142857**
	0.875	**0.1428571**	**0.0833333**	**2.22E-16**	**0.0333333**	**0.1666667**	**0.0333333**	**1**	**0.714285714**
	0.875	**0.1428571**	**0.3333333**	**2.22E-16**	**0.0333333**	**0.1333333**	**0.0333333**	**0.857142857**	**0.714285714**
	0.875	**0.1428571**	**0.7083333**	**2.22E-16**	**0.0333333**	**0.1333333**	**0.0333333**	**0.857142857**	**0.428571429**
	0.875	**0.1428571**	**0.75**	**2.22E-16**	**0.0333333**	**0.1333333**	**0.0333333**	**0.857142857**	**0.285714286**
	0.875	**0.1428571**	**0.9166667**	**2.22E-16**	**0.0333333**	**0.2**	**0.0333333**	**0.714285714**	**0.285714286**
	0.875	**0.1428571**	**0.9583333**	**2.22E-16**	**0.0333333**	**0.3333333**	**0.0333333**	**0.571428571**	**0.142857143**
	0.75	**0.1011905**	**1**	**2.22E-16**	**0.0333333**	**0.3666667**	**0.0333333**	**0.571428571**	**2.22045E-16**
	0.625	**0.0595238**	**1**	**2.22E-16**	**0.0333333**	**0.4333333**	**0.1**	**0.142857143**	**2.22045E-16**
	0.5	**0.0238095**	**1**	**2.22E-16**	**0.0333333**	**0.3**	**0.1**	**0.142857143**	**2.22045E-16**
	0.5	**0.1071429**	**0.8**	**2.22E-16**	**0.0333333**	**0.3666667**	**0.1**	**0**	**2.22045E-16**
	0.375	**0.0892857**	**0.8**	**2.22E-16**	**0.0333333**	**0.2666667**	**0.1**	**0**	**2.22045E-16**
	0.375	**0.2142857**	**0.6**	**2.22E-16**	**0.0333333**	**0.2666667**	**0.1666667**		
	0.25	**0.1964286**	**0.6**	**2.22E-16**	**0.0333333**	**0.1666667**	**0.1666667**		
	0.25	**0.3035714**	**0.6**	**2.22E-16**	**0.1**	**0.2333333**	**0.1666667**		
	0.25	**0.3035714**	**0.6**	**2.22E-16**	**0.1**	**0.0333333**	**0.2333333**		
	0.25	**0.3452381**	**0.6**	**2.22E-16**	**0.1**	**0.0333333**	**0.3**		
	0.125	**0.3869048**	**0.6**	**2.22E-16**	**0.3**	**0.1**	**0.3**		
	0.125	**0.4285714**	**0.6**	**2.22E-16**	**0.2**	**0**	**0.3**		
	0.125	**0.4285714**	**0.6**	**2.22E-16**	**0.2666667**	**0**	**0.3**		
	0.125	**0.4285714**	**0.6**	**2.22E-16**	**0.0666667**	**0**	**0.3**		
	0.125	**0.4285714**	**0.6**	**2.22E-16**	**0.0666667**	**0**	**0.2**		
	0.125	**0.4285714**	**0.6**	**2.22E-16**	**0.0666667**	**0**	**0.1**		
	0.125	**0.4285714**	**0.6**	**2.22E-16**	**0.0666667**	**0**	**0.0333333**		
	0.125	**0.4285714**	**0.4**	**2.22E-16**	**0.1666667**	**0**	**0.0333333**		
	0.125	**0.4285714**	**0.2**	**2.22E-16**	**0.1**	**0**	**0.0333333**		
	0.125	**0.4285714**	**0.2**	**2.22E-16**	**0.0333333**	**0**	**0.0333333**		
	0.125	**0.4285714**	**0.2**	**2.22E-16**	**0.1333333**	**0**	**0.1666667**		
	0.125	**0.4285714**	**0.2**	**2.22E-16**	**0.1333333**	**0**	**0.2333333**		
	0.125	**0.4285714**	**0.2**	**2.22E-16**	**0.1333333**	**0**	**0.0333333**		
	0.125	**0.4285714**	**0.2**	**2.22E-16**	**0.1333333**	**0**	**0.0666667**		
	0.125	**0.4285714**	**0.2**	**2.22E-16**	**0.0666667**	**0**	**0.0666667**		
	0.125	**0.4285714**	**0.2**	**2.22E-16**	**0.0666667**	**0**	**0.0666667**		
	0.125	**0.2857143**	**0.2**	**2.22E-16**	**0.0666667**	**0**	**0.1**		
	0.125	**0.2857143**	**0.2**	**2.22E-16**	**0.0666667**	**0**	**0.1**		
	1.11E-16	**0.2857143**	**0.2**	**2.22E-16**	**0.0666667**	**0**	**0.1**		
	1.11E-16	**0.2857143**	**0.2**	**2.22E-16**	**0.1666667**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.1666667**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.1666667**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.1**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.0333333**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.0333333**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.0333333**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.0333333**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.0333333**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.0333333**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.1**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**0.2**	**2.22E-16**	**0.1**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0**	**0.0333333**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0**	**0.0666667**		
Test Statistic, α = 0.05	0.5552177	0.5842048	0.6685706	0.6685706	0.5552177	0.5552177	0.5552177	0.852425112	0.938489161
Test Statistic, α = 0.01	0.6654447	0.7001866	0.8013015	0.8013015	0.6654447	0.6654447	0.6654447	1.021656568	1.124806862

Appendix D.3: Spreadsheet for Domain 52 (Till v Silt)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0							**0**	**0.2**
	0							**0**	**0.2**
	0							**0**	**0.4**
	0							**0**	**0.4**
	0							**0**	**0.4**
	0							**0**	**0.4**
	0							**0**	**0.4**
	0							**0.2**	**0.55**
	0							**0.2**	**0.55**
	0.25							**0.2**	**0.55**
	0.25							**0.2**	**0.75**
	0.75							**0.4**	**0.75**
	0.75							**0.4**	**0**
	0.55							**0.35**	**0**
	0.55							**0.55**	**0**
	0.8							**0.55**	**0**
	0.6							**0.5**	**0**
	0.6							**0**	**0**
	0.6							**0**	**0**
	0.6							**0**	**0**
	0.4							**0**	**0**
	0.4							**0**	**0**
	0.4							**0**	**0**
	0.4							**0**	**0**
	0.4								
	0.2								
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Test Statistic, α = 0.05	0.9123157							0.912315735	0.912315735
Test Statistic, α = 0.01	1.0934372							1.093437241	1.093437241

Appendix D.3: Spreadsheet for Domain 61 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0714286**	**0**	**0**	**0**	**0.055555556**
	0	**0**	**0**	**0**	**0.0714286**	**0**	**0**	**0**	**0.111111111**
	0	**0**	**0**	**0**	**0.1071429**	**0**	**0**	**0**	**0.166666667**
	0	**0**	**0**	**0**	**0.1071429**	**0**	**0**	**0**	**0.242424242**
	0	**0**	**0**	**0**	**0.1071429**	**0.0357143**	**0**	**0**	**0.242424242**
	0	**0**	**0**	**0**	**0.1071429**	**0.0357143**	**0**	**0**	**0.297979798**
	0	**0**	**0**	**0.0135135**	**0.1428571**	**0.0357143**	**0**	**0**	**0.373737374**
	0.0125736	**0**	**0**	**0.001386**	**0.1428571**	**0.0357143**	**0**	**0**	**0.282828283**
	0.0363831	**0**	**0**	**0.0162855**	**0.0902256**	**0.0357143**	**0**	**0**	**0.247474747**
	0.0853398	**0**	**0**	**0.0162855**	**0.037594**	**0.0357143**	**0**	**0.055555556**	**0.414141414**
	0.0417335	**0**	**0**	**0.0433125**	**0.1447368**	**0.0357143**	**0**	**0.111111111**	**0.196969697**
	0.0331728	**0**	**0**	**0.0460845**	**0.1447368**	**0.0357143**	**0**	**0.186868687**	**0.035353535**
	0.1423221	**0**	**0.049896**	**0.035343**	**0.075188**	**0.0357143**	**0.0357143**	**0.171717172**	**0**
	0.2779561	**0**	**0.0741511**	**0.0003465**	**0.075188**	**0.0357143**	**0.0357143**	**0.227272727**	**0**
	0.329588	**0**	**0.0686071**	**0.1614692**	**0.0225564**	**0.0357143**	**0.0357143**	**0.358585859**	**0**
	0.4414125	**0**	**0.2817048**	**0.1424116**	**0.0225564**	**0.0357143**	**0.0357143**	**0.196969697**	**0**
	0.4579989	**0**	**0.2328482**	**0.0571726**	**0.093985**	**0.0714286**	**0.0357143**	**1.11022E-16**	**0**
	0.3568753	**0**	**0.3163548**	**0.0637561**	**0.1296992**	**0.0714286**	**0.1071429**	**1.11022E-16**	**0**
	0.2795613	**0**	**0.2730423**	**0.033957**	**0.1296992**	**0.0714286**	**0.0902256**	**1.11022E-16**	**0**
	0.2346174	**0**	**0.1756757**	**0.0446985**	**0.112782**	**0.1071429**	**0.0902256**	**1.11022E-16**	**0**
	0.2009096	**0**	**0.1216216**	**0.0446985**	**0.1484962**	**0.1428571**	**0.1259398**	**1.11022E-16**	**0**
	0.1447298	**0**	**0.0810811**	**0.0419265**	**0.1842105**	**0.2142857**	**0.1259398**	**1.11022E-16**	**0**
	0.1110219	**0.0512821**	**0.0540541**	**0.0540541**	**0.1315789**	**0.0921053**	**0.1259398**	**1.11022E-16**	**0**
	0.08855	**0.024255**	**0.0540541**	**0.0540541**	**0.0620301**	**0.0225564**	**0.0733083**	**1.11022E-16**	**0**
	0.1011236	**0.024255**	**0.027027**	**0.0405405**	**0.0093985**	**0.0996241**	**0.0733083**		
	0.0898876	**0.0107415**	**0.027027**	**0.0405405**	**0.0601504**	**0.0639098**	**0.0206767**		
	0.0786517	**0.022869**	**0.0135135**	**0.0405405**	**0.112782**	**0.0977444**	**0.0206767**		
	0.0674157	**0.0349965**	**0**	**0.0405405**	**0.112782**	**0.1315789**	**0.056391**		
	0.0674157	**0.020097**	**0**	**0.0405405**	**0.1823308**	**0.0601504**	**0.056391**		
	0.0561798	**0.0956341**	**0**	**0.0405405**	**0.1466165**	**0.1296992**	**0.0394737**		
	0.0337079	**0.1036036**	**0**	**0.0405405**	**0.075188**	**0.093985**	**0.0394737**		
	0.0224719	**0.0467775**	**0**	**0.027027**	**0.1278195**	**0.1992481**	**0.0394737**		
	0.011236	**0.1573112**	**0**	**0.027027**	**0.1278195**	**0.1278195**	**0.075188**		
	0.011236	**0.2151767**	**0**	**0.0135135**	**0.1278195**	**0.1278195**	**0.075188**		
	2.22E-16	**0.1150381**	**0**	**0.0135135**	**0.0921053**	**0.0921053**	**0.075188**		
	2.22E-16	**0.1663202**	**0**	**0.0135135**	**0.0206767**	**0.1973684**	**0.1823308**		
	2.22E-16	**0.2040887**	**0**	**0**	**0.0206767**	**0.1259398**	**0.1823308**		
	2.22E-16	**0.1635482**	**0**	**0**	**0.037594**	**0.1428571**	**0.1823308**		
	2.22E-16	**0.1094941**	**0**	**0**	**0.0018797**	**0.1428571**	**0.1823308**		
	2.22E-16	**0.1216216**	**0**	**0**	**0.0018797**	**0.1428571**	**0.1823308**		
	2.22E-16	**0.1081081**	**0**	**0**	**0.0018797**	**0.1071429**	**0.2537594**		
	2.22E-16	**0.0945946**	**0**	**0**	**0.0018797**	**0.0357143**	**0.2537594**		
	2.22E-16	**0.0810811**	**0**	**0**	**0.0018797**	**3.331E-16**	**0.2537594**		
	2.22E-16	**0.0810811**	**0**	**0**	**0.0018797**	**3.331E-16**	**0.2011278**		
	2.22E-16	**0.0810811**	**0**	**0**	**0.0018797**	**3.331E-16**	**0.2199248**		
	2.22E-16	**0.0540541**	**0**	**0**	**0.0018797**	**3.331E-16**	**0.1146617**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0018797**	**3.331E-16**	**0.1503759**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0338346**	**3.331E-16**	**0.0977444**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0695489**	**3.331E-16**	**0.0601504**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0695489**	**3.331E-16**	**0.0770677**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0169173**	**3.331E-16**	**0.093985**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0169173**	**3.331E-16**	**0.075188**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0169173**	**3.331E-16**	**0.1278195**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0526316**	**3.331E-16**	**0.0921053**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0526316**	**3.331E-16**	**0.0206767**		
	2.22E-16	**0.0405405**	**0**	**0**	**0.0526316**	**3.331E-16**	**0.0206767**		
	2.22E-16	**0.0405405**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.0150376**		
	2.22E-16	**0.0405405**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.037594**		
	2.22E-16	**0.027027**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.037594**		
	2.22E-16	**0.027027**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.037594**		
	2.22E-16	**0.027027**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.0902256**		
	2.22E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1428571**		
	2.22E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1428571**		
	2.22E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1428571**		
	2.22E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1428571**		
	2.22E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1428571**		
	2.22E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1428571**		
	2.22E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1428571**		
	2.22E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1428571**		
Test Statistic, $\alpha = 0.05$	0.254598	0.2691101	0.2691101	0.2691101	0.4042332	0.4042332	0.4042332	0.520481518	0.520481518
Test Statistic, $\alpha = 0.01$	0.3051431	0.3225363	0.3225363	0.3225363	0.4844854	0.4844854	0.4844854	0.623812407	0.623812407

Appendix D.3: Spreadsheet for Domain 62 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.2**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.2**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.2**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.4**
	0	**0**	**0**	**0**	**0.0526316**	**0**	**0**	**0**	**0.6**
	0	**0**	**0**	**0**	**0.1052632**	**0**	**0**	**0**	**0.6**
	0	**0**	**0**	**0**	**0.1052632**	**0**	**0**	**0**	**0.6**
	0.0322581	**0**	**0**	**0**	**0.1052632**	**0.0526316**	**0**	**0**	**0.3**
	0.0645161	**0**	**0**	**0**	**0.0143541**	**0.0526316**	**0**	**0.2**	**0.133333333**
	0.1290323	**0**	**0**	**0.0740741**	**0.0143541**	**0.0526316**	**0**	**0.6**	**0.333333333**
	0.1935484	**0**	**0.0645161**	**0.078853**	**0.0143541**	**0.0526316**	**0**	**0.6**	**0**
	0.313172	**0**	**0.0645161**	**0.046595**	**0.0143541**	**0.0526316**	**0**	**0.6**	**0**
	0.4650538	**0**	**0.1612903**	**0.0609319**	**0.0669856**	**0.0526316**	**0**	**0.1**	**0**
	0.311828	**0**	**0.3823178**	**0.0059737**	**0.0669856**	**0.0526316**	**0**	**0.133333333**	**0**
	0.219086	**0**	**0.5065711**	**0.1362007**	**0.0669856**	**0.0526316**	**0**	**0.133333333**	**0**
	0.2419355	**0**	**0.5663082**	**0.1218638**	**0.0287081**	**0.0526316**	**0**	**0**	**0**
	0.3387097	**0**	**0.6069295**	**0.176822**	**0.062201**	**0.0526316**	**0**	**0**	**0**
	0.4032258	**0**	**0.4910394**	**0.051374**	**0.0095694**	**0.0526316**	**0**	**0**	**0**
	0.4677419	**0**	**0.4121864**	**0.0143369**	**0.0095694**	**0.0526316**	**0.0526316**	**0**	**0**
	0.5	**0**	**0.2270012**	**0.078853**	**0.0095694**	**0.076555**	**0.0526316**	**0**	**0**
	0.4583333	**0**	**0.1111111**	**0.1111111**	**0.2822967**	**0.076555**	**0.0526316**	**0**	**0**
	0.4166667	**0**	**0.0740741**	**0.037037**	**0.1770335**	**0.1674641**	**0.1052632**	**0**	**0**
	0.3333333	**0**	**0.037037**	**0.037037**	**0.0717703**	**0.1148325**	**0.0143541**	**0**	**0**
	0.2916667	**0**	**1.11E-16**	**0.037037**	**0.0717703**	**0.0095694**	**0.0143541**		
	0.2083333	**0**	**1.11E-16**	**0.037037**	**0.0717703**	**0.0334928**	**0.0143541**		
	0.2083333	**0.0322581**	**1.11E-16**	**0.037037**	**0.1100478**	**0.0334928**	**0.0143541**		
	0.1666667	**0.0322581**	**1.11E-16**	**0**	**0.0047847**	**0.1244019**	**0.0143541**		
	0.0833333	**0.0645161**	**1.11E-16**	**0**	**0.0047847**	**0.1626794**	**0.0143541**		
	0	**0.1242533**	**1.11E-16**	**0**	**0.0047847**	**0.2535885**	**0.076555**		
	0	**0.2855436**	**1.11E-16**	**0**	**0.0956938**	**0.2392344**	**0.1674641**		
	0	**0.4050179**	**1.11E-16**	**0**	**0.0095694**	**0.1339713**	**0.1674641**		
	0	**0.4599761**	**1.11E-16**	**0**	**0.0095694**	**0.1339713**	**0.1674641**		
	0	**0.5053763**	**1.11E-16**	**0**	**0.0287081**	**0.1196172**	**0.1148325**		
	0	**0.3572282**	**1.11E-16**	**0**	**0.0287081**	**0.1196172**	**0.1148325**		
	0	**0.4169654**	**1.11E-16**	**0**	**0.0287081**	**0.2105263**	**0.062201**		
	0	**0.3428913**	**1.11E-16**	**0**	**0.0239234**	**0.1578947**	**0.062201**		
	0	**0.3010753**	**1.11E-16**	**0**	**0.076555**	**0.1578947**	**0.0430622**		
	0	**0.3010753**	**1.11E-16**	**0**	**0.076555**	**0.1578947**	**0.1483254**		
	0	**0.1529271**	**1.11E-16**	**0**	**0.076555**	**0.1578947**	**0.2535885**		
	0	**0.1529271**	**1.11E-16**	**0**	**0.076555**	**0.1578947**	**0.3588517**		
	0	**0.078853**	**1.11E-16**	**0**	**0.076555**	**0.1578947**	**0.3588517**		
	0	**0.041816**	**1.11E-16**	**0**	**0.1291866**	**0.1052632**	**0.3588517**		
	0	**0.037037**	**1.11E-16**	**0**	**0.1291866**	**0.1052632**	**0.2679426**		
	0	**0.037037**	**1.11E-16**	**0**	**0.1291866**	**0.1052632**	**0.3205742**		
	0	**0.037037**	**1.11E-16**	**0**	**0.0382775**	**0.1052632**	**0.3205742**		
	0	**0.037037**	**1.11E-16**	**0**	**0.0382775**	**0.0526316**	**0.138756**		
	0	**0.037037**	**1.11E-16**	**0**	**0.0909091**	**0.0526316**	**0.0478469**		
	0	**0.037037**	**1.11E-16**	**0**	**0.0909091**	**0.0526316**	**0.0478469**		
	0	**0.037037**	**1.11E-16**	**0**	**0.0909091**	**0.0526316**	**0.0095694**		
	0	**1.11E-16**	**1.11E-16**	**0**	**0.0909091**	**0.0526316**	**0.0095694**		
	0	**1.11E-16**	**1.11E-16**	**0**	**0.0909091**	**0.0526316**	**0.0095694**		
	0	**1.11E-16**	**1.11E-16**	**0**	**0.0909091**	**0.0526316**	**0.0287081**		
	0	**1.11E-16**	**1.11E-16**	**0**	**0.0909091**	**2.22E-16**	**0.0287081**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0239234**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.076555**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0143541**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0382775**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0382775**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0526316**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0526316**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0526316**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**0.0526316**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**4.441E-16**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**4.441E-16**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**4.441E-16**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**4.441E-16**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**4.441E-16**		
	0	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**4.441E-16**		
Test Statistic, α = 0.05	0.3697718	0.3580059	0.3580059	0.3580059	0.51526	0.51526	0.51526	0.823520896	0.823520896
Test Statistic, α = 0.01	0.4431824	0.4290806	0.4290806	0.4290806	0.6175542	0.6175542	0.6175542	0.987014015	0.987014015

Appendix D.3: Spreadsheet for Domain 63 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.285714286**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.428571429**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.095238095**
	0	**0**	**0**	**0.0625**	**0**	**0**	**0**	**0**	**0.380952381**
	0.0909091	**0**	**0**	**0.0625**	**1**	**0**	**0**	**0**	**0.166666667**
	0.2867133	**0**	**0**	**0.0625**	**1**	**0**	**0**	**0.142857143**	**0**
	0.0559441	**0**	**0.0909091**	**0.125**	**1**	**0**	**0**	**0.119047619**	**0**
	0.2377622	**0**	**0.0909091**	**0.25**	**1**	**0**	**0**	**0.261904762**	**0**
	0.2517483	**0**	**0.2102273**	**0.1931818**	**1**	**0**	**0**	**0.238095238**	**0**
	0.1888112	**0**	**0.2386364**	**0.2272727**	**1**	**0**	**0**	**0.19047619**	**0**
	0.048951	**0**	**0.5681818**	**0.2670455**	**1**	**0**	**0**	**0.142857143**	**0**
	0.1048951	**0**	**0.1931818**	**0.1477273**	**1**	**0**	**0**	**0**	**0**
	0.013986	**0**	**0.2215909**	**0.2102273**	**1**	**0**	**0**	**0**	**0**
	0.013986	**0**	**0.1875**	**0.0909091**	**1**	**0**	**0**	**0**	**0**
	2.22E-16	**0**	**0.125**	**0**	**1**	**0**	**0**	**0**	**0**
	2.22E-16	**0**	**0.0625**	**0**	**1**	**0**	**0**	**0**	**0**
	2.22E-16	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
	2.22E-16	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
	2.22E-16	**0**	**0**	**0**	**1**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**1**	**1**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**1**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**1**	**0**		
	2.22E-16	**0.0625**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0.0340909**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0.2386364**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0.0511364**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0.0170455**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0.0397727**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0.1306818**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0.0568182**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**1**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**0**	**0**	**0**	**0**		
Test Statistic, α = 0.05	0.5571556	0.5326776	0.5326776	0.5326776	1.9233304	1.9233304	1.9233304	0.756634151	0.756634151
Test Statistic, α = 0.01	0.6677674	0.6384298	0.6384298	0.6384298	2.3051681	2.3051681	2.3051681	0.906848284	0.906848284

Appendix D.3: Spreadsheet for Domain 64 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**				**0**	**0**
	0	**0**	**0**	**0**				**0**	**0**
	0	**0**	**0**	**0**				**0**	**0**
	0	**0**	**0**	**0**				**0**	**0**
	0	**0**	**0**	**0**				**0**	**0.166666667**
	0	**0**	**0**	**0**				**0**	**0.166666667**
	0	**0**	**0**	**0**				**0**	**0.166666667**
	0	**0**	**0**	**0**				**0**	**0.333333333**
	0	**0**	**0**	**0.1428571**				**0**	**0.666666667**
	0	**0**	**0**	**0.1428571**				**0**	**0.166666667**
	0	**0**	**0**	**0.1428571**				**0**	**0.166666667**
	0	**0**	**0**	**0.1428571**				**0**	**1.11022E-16**
	0	**0**	**0**	**0.2857143**				**0**	**1.11022E-16**
	0.1666667	**0**	**0**	**0.2857143**				**0.333333333**	**1.11022E-16**
	0.1666667	**0**	**0**	**0.2857143**				**0.5**	**1.11022E-16**
	0.5	**0**	**0**	**0.4285714**				**0.166666667**	**1.11022E-16**
	0.5	**0**	**0.1428571**	**0.4285714**				**1.11022E-16**	**1.11022E-16**
	0.6666667	**0**	**0.1428571**	**0.4285714**				**1.11022E-16**	**1.11022E-16**
	0.6666667	**0**	**0.2857143**	**0.5714286**				**1.11022E-16**	**1.11022E-16**
	0.1666667	**0**	**0.2857143**	**1**				**1.11022E-16**	**1.11022E-16**
	0.1666667	**0**	**0.1428571**	**1**				**1.11022E-16**	**1.11022E-16**
	0.1666667	**0**	**2.22E-16**	**0**				**1.11022E-16**	**1.11022E-16**
	0.1666667	**0**	**2.22E-16**	**0**				**1.11022E-16**	**1.11022E-16**
	0.1666667	**0**	**2.22E-16**	**0**				**1.11022E-16**	**1.11022E-16**
	0.1666667	**0.1428571**	**2.22E-16**	**0**				**1.11022E-16**	**1.11022E-16**
	0.1666667	**0.1428571**	**2.22E-16**	**0**					
	1.11E-16	**0.1428571**	**2.22E-16**	**0**					
	1.11E-16	**0.1428571**	**2.22E-16**	**0**					
	1.11E-16	**0.1428571**	**2.22E-16**	**0**					
	1.11E-16	**0.1428571**	**2.22E-16**	**0**					
	1.11E-16	**0.1428571**	**2.22E-16**	**0**					
	1.11E-16	**0.2857143**	**2.22E-16**	**0**					
	1.11E-16	**0.2857143**	**2.22E-16**	**0**					
	1.11E-16	**0.4285714**	**2.22E-16**	**0**					
	1.11E-16	**0.4285714**	**2.22E-16**	**0**					
	1.11E-16	**0.4285714**	**2.22E-16**	**0**					
	1.11E-16	**0.4285714**	**2.22E-16**	**0**					
	1.11E-16	**0.5714286**	**2.22E-16**	**0**					
	1.11E-16	**0.7142857**	**2.22E-16**	**0**					
	1.11E-16	**0.8571429**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**					
Test Statistic, $\alpha = 0.05$	1.4689679	1.4539012	1.4539012	1.4539012				1.468967892	1.468967892
Test Statistic, $\alpha = 0.01$	1.7606012	1.7425433	1.7425433	1.7425433				1.760601223	1.760601223

Appendix D.3: Spreadsheet for Domain 65 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0625	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0625	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.125	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.125**
	0.0178571	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.125**
	0.0267857	**0**	**0.0909091**	**0**	**0**	**0**	**0**	**0**	**0.125**
	0.0357143	**0**	**0.0909091**	**0.0909091**	**0.1111111**	**0**	**0**	**0**	**0.125**
	0.1339286	**0**	**0.0757576**	**0.0757576**	**0.1111111**	**0.1428571**	**0**	**0**	**0.25**
	0.2053571	**0**	**0.0606061**	**0.4090909**	**0.1111111**	**0.1428571**	**0**	**0**	**0**
	0.1964286	**0**	**0.2121212**	**0.4848485**	**0.031746**	**0.031746**	**0**	**0.125**	**0**
	0.1607143	**0**	**0.2272727**	**0.2878788**	**0.0634921**	**0.031746**	**0**	**0.125**	**0**
	0.25	**0**	**0**	**0.0151515**	**0.2063492**	**0.3015873**	**0**	**0.25**	**0**
	0.1071429	**0**	**0**	**0.0909091**	**0.1269841**	**0.3015873**	**0**	**0.25**	**0**
	0.1071429	**0**	**0**	**0.0909091**	**0.1269841**	**0.3015873**	**0**	**0**	**0**
	0.1071429	**0**	**0**	**1.11E-16**	**0.015873**	**0.1587302**	**0**	**0**	**0**
	0.0357143	**0**	**0**	**1.11E-16**	**0.047619**	**0.3809524**	**0**	**0**	**0**
	0.0357143	**0**	**0**	**1.11E-16**	**0.047619**	**0.3809524**	**0**	**0**	**0**
	0.0357143	**0**	**0**	**1.11E-16**	**0.1904762**	**0.3809524**	**0**	**0**	**0**
	0.0357143	**0**	**0**	**1.11E-16**	**0.0793651**	**0.3809524**	**0**	**0**	**0**
	0.0357143	**0**	**0**	**1.11E-16**	**0.1111111**	**0.3809524**	**0.1428571**		
	0.0357143	**0**	**0**	**1.11E-16**	**0.1111111**	**0.4920635**	**0.1428571**		
	0.0357143	**0.0757576**	**0**	**1.11E-16**	**0.1111111**	**0.4920635**	**0.1428571**		
	0.0357143	**0.0757576**	**0**	**1.11E-16**	**0.1111111**	**0.4920635**	**0.1428571**		
	0.0357143	**0.1515152**	**0**	**1.11E-16**	**0.1111111**	**0.3492063**	**0.1428571**		
	0.0357143	**0.1212121**	**0**	**1.11E-16**	**0.1111111**	**0.4603175**	**0.1428571**		
	0.0357143	**0.2121212**	**0**	**1.11E-16**	**0.1111111**	**0.031746**	**0.1428571**		
	0.0357143	**0.1060606**	**0**	**1.11E-16**	**0.1111111**	**0.1428571**	**0.1428571**		
	0.0357143	**0.1060606**	**0**	**1.11E-16**	**0.1111111**	**0.1428571**	**0.1428571**		
	0.0357143	**0.0909091**	**0**	**1.11E-16**	**0.1111111**	**0.1428571**	**0.1428571**		
	0.0357143	**0.0909091**	**0**	**1.11E-16**	**0.1111111**	**0.1428571**	**0.1428571**		
	0.0357143	**0.0909091**	**0**	**1.11E-16**	**0.1111111**	**0.1428571**	**0.1428571**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**0.1111111**	**0.1428571**	**0.1428571**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**0.1111111**	**0.1428571**	**0.1428571**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**0.1111111**	**0**	**0.1428571**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**0.1111111**	**0**	**0.2857143**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**0.1111111**	**0**	**0.1746032**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1746032**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1746032**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3174603**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3174603**		
	0.0357143	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3174603**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3174603**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.4603175**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.4603175**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3492063**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.4920635**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3809524**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3809524**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.4126984**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.4126984**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3015873**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3015873**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.3015873**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1904762**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1904762**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.0793651**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.031746**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.031746**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1111111**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1111111**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1111111**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1111111**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1111111**		
	1.11E-16	**1.11E-16**	**0**	**1.11E-16**	**4.441E-16**	**0**	**0.1111111**		
Test Statistic, $\alpha = 0.05$	0.4262126	0.6902261	0.6902261	0.6902261	0.6853756	0.6853756	0.6853756	0.832826513	0.832826513
Test Statistic, $\alpha = 0.01$	0.5108283	0.8272563	0.8272563	0.8272563	0.8214428	0.8214428	0.8214428	0.99816707	0.99816707

Appendix D.3: Spreadsheet for Domain 71 (Upper v Lower)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.25**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.25**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.25**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.25**
0.0588235	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.25**
0.0588235	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.25**
0.0588235	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.25**
0.0653595	**0**	**0**	**0.1428571**	**0**	**0**	**0**	**0**	**0.5**
0.379085	**0**	**0**	**0.0952381**	**0**	**0**	**0**	**0.25**	**0.416666667**
0.3660131	**0**	**0.2857143**	**0.0952381**	**0.1666667**	**0**	**0**	**0.25**	**0.333333333**
0.4771242	**0**	**0.5714286**	**0.0952381**	**0.1666667**	**0**	**0**	**0.25**	**0**
0.4183007	**0**	**0.047619**	**0.2380952**	**0**	**0**	**0**	**0.25**	**0**
0.3594771	**0**	**0.2857143**	**0.0952381**	**0.3333333**	**0**	**0**	**0.25**	**0**
0.3529412	**0**	**0.2857143**	**0.1904762**	**0.6666667**	**0**	**0**	**0.083333333**	**0**
0.3529412	**0**	**0.1428571**	**0.1428571**	**0.6666667**	**0**	**0**	**0**	**0**
0.3529412	**0**	**2.22E-16**	**0.1428571**	**0.6666667**	**0.1666667**	**0**	**0**	**0**
0.2352941	**0**	**2.22E-16**	**0.1428571**	**0.6666667**	**0.1666667**	**0**	**0**	**0**
0.1764706	**0**	**2.22E-16**	**0.1428571**	**0.6666667**	**0.1666667**	**0**	**0**	**0**
0.0588235	**0**	**2.22E-16**	**0.1428571**	**0.5**	**0.1666667**	**0**	**0**	**0**
0.0588235	**0**	**2.22E-16**	**0**	**0.5**	**0.5**	**0**	**0**	**0**
0.0588235	**0.1428571**	**2.22E-16**	**0**	**0.5**	**0.5**	**0**	**0**	**0**
0	**0.1428571**	**2.22E-16**	**0**	**0.5**	**0.5**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**0.5**	**0.1666667**	**0**		
0	**0.047619**	**2.22E-16**	**0**	**0.5**	**0.1666667**	**0**		
0	**0.047619**	**2.22E-16**	**0**	**0.1666667**	**0**	**0**		
0	**0.0952381**	**2.22E-16**	**0**	**0.1666667**	**0.1666667**	**0**		
0	**0.3809524**	**2.22E-16**	**0**	**0.1666667**	**0.1666667**	**0**		
0	**0.5238095**	**2.22E-16**	**0**	**0.1666667**	**0.1666667**	**0**		
0	**0.1904762**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0**		
0	**0.1428571**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0.1666667**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0.3333333**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.1666667**	**0.3333333**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.6666667**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.6666667**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.6666667**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.8333333**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.8333333**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.6666667**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.6666667**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.6666667**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		

	w (%)	wL (%)	wP (%)	IP (%)	% Gravel	% Sand	% Fines	Bulk Density	Dry Density
Test Statistic, $\alpha = 0.05$	0.5606346	0.9384892	0.9384892	0.9384892	0.9616652	0.9616652	0.9616652	1.038717158	1.038717158
Test Statistic, $\alpha = 0.01$	0.671937	1.1248069	1.1248069	1.1248069	1.1525841	1.1525841	1.1525841	1.244933064	1.244933064

Appendix D.3: Spreadsheet for Domain 72 (Upper v Lower)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0113095	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0.064881	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0.0696429	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.010416667**
	0.0190476	**0**	**0**	**0.0217391**	**0**	**0**	**0**	**0.020833333**	**0.010416667**
	0.1994048	**0**	**0.0434783**	**0.0035573**	**0.0555556**	**0**	**0**	**0.020833333**	**0.052083333**
	0.2041667	**0**	**0.286166**	**0.0071146**	**0.0555556**	**0**	**0**	**0.020833333**	**0.052083333**
	0.1113095	**0**	**0.270751**	**0.1193676**	**0.1111111**	**0**	**0**	**0.020833333**	**0.052083333**
	0.1130952	**0**	**0.1007905**	**0.3837945**	**0.1666667**	**0**	**0**	**0.010416667**	**0.052083333**
	0.089881	**0**	**0.1011858**	**0.5754941**	**0.2222222**	**0**	**0**	**0.010416667**	**0.135416667**
	0.0309524	**0**	**0.0324111**	**0.5533597**	**0.2777778**	**0**	**0**	**0.010416667**	**0.177083333**
	0.0071429	**0**	**0.0324111**	**0.3059289**	**0.2777778**	**0**	**0**	**0.03125**	**0.1875**
	0.039881	**0**	**0.0106719**	**0.127668**	**0.2777778**	**0**	**0**	**0.03125**	**0.177083333**
	0.0386905	**0**	**0.0110672**	**0.0359684**	**0.2777778**	**0**	**0**	**0.114583333**	**0.270833333**
	0.0261905	**0**	**0.0146245**	**0.0905138**	**0.2777778**	**0**	**0**	**0.177083333**	**0.302083333**
	0.0136905	**0**	**0.0146245**	**0.0687747**	**0.2777778**	**0**	**0**	**0.302083333**	**0.041666667**
	0.025	**0**	**0.0146245**	**0.0687747**	**0.2777778**	**0**	**0**	**0.239583333**	**0**
	0.0125	**0.0217391**	**0.0217391**	**0.0252964**	**0.3333333**	**0**	**0**	**0.322916667**	**0**
	0.0125	**0.0434783**	**0.0217391**	**0.0217391**	**0.3333333**	**0.1428571**	**0**	**0.3125**	**0**
	0.0125	**0.0869565**	**0**	**0.0217391**	**0.2460317**	**0.0873016**	**0**	**0.03125**	**0**
	0.0125	**0.2426877**	**0**	**0.0217391**	**0.015873**	**0.031746**	**0**	**0**	**0**
	0.0125	**0.4166008**	**0**	**0.0217391**	**0.0714286**	**0.3174603**	**0**	**0**	**0**
	2.22E-16	**0.4924901**	**0**	**0.0217391**	**0.0952381**	**0.4047619**	**0**		
	2.22E-16	**0.6300395**	**0**	**0.0217391**	**0.0079365**	**0.3492063**	**0**		
	2.22E-16	**0.556917**	**0**	**0.0217391**	**0.0079365**	**0.1825397**	**0**		
	2.22E-16	**0.2478261**	**0**	**2.22E-16**	**0.0079365**	**0.1825397**	**0**		
	2.22E-16	**0.1422925**	**0**	**2.22E-16**	**0.0079365**	**0.0714286**	**0.0873016**		
	2.22E-16	**0.0332016**	**0**	**2.22E-16**	**0.0793651**	**0.0714286**	**0.031746**		
	2.22E-16	**0.0541502**	**0**	**2.22E-16**	**0.2222222**	**0.0396825**	**0.031746**		
	2.22E-16	**0.072332**	**0**	**2.22E-16**	**0.1666667**	**0.1904762**	**0.1349206**		
	2.22E-16	**0.0905138**	**0**	**2.22E-16**	**0.0555556**	**0.2777778**	**0.0079365**		
	2.22E-16	**0.0905138**	**0**	**2.22E-16**	**4.441E-16**	**0.2222222**	**0.047619**		
	2.22E-16	**0.0905138**	**0**	**2.22E-16**	**4.441E-16**	**0.2222222**	**0.1031746**		
	2.22E-16	**0.0905138**	**0**	**2.22E-16**	**4.441E-16**	**0.1666667**	**0.2142857**		
	2.22E-16	**0.0869565**	**0**	**2.22E-16**	**4.441E-16**	**0.1666667**	**0.2936508**		
	2.22E-16	**0.0434783**	**0**	**2.22E-16**	**4.441E-16**	**0.1666667**	**0.3492063**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.1666667**	**0.2063492**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.1666667**	**0.2619048**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.1666667**	**0.1190476**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.1111111**	**0.1190476**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.1111111**	**0.0238095**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.1111111**	**0.1111111**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.1111111**	**0.1111111**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.0555556**	**0.1111111**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.0555556**	**0.0555556**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.0555556**	**2.22E-16**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.0555556**	**2.22E-16**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0.0555556**	**2.22E-16**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0**	**2.22E-16**		
	2.22E-16	**0.0217391**	**0**	**2.22E-16**	**4.441E-16**	**0**	**2.22E-16**		
	2.22E-16	**1.11E-16**	**0**	**2.22E-16**	**4.441E-16**	**0**	**2.22E-16**		
Test Statistic, $\alpha = 0.05$	0.2124595	0.2717311	0.2717311	0.2717311	0.6057921	0.6057921	0.6057921	0.310376116	0.310376116
Test Statistic, $\alpha = 0.01$	0.254639	0.3256777	0.3256777	0.3256777	0.7260597	0.7260597	0.7260597	0.371994904	0.371994904

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0.013141	0	0	0.0196078	0	0	0	0	0.020833333
	0.0541667	0	0	0.0196078	0	0	0	0	0.020833333
	0.2233974	0	0	0.0392157	0	0	0	0	0.020833333
	0.1384615	0	0.0196078	0.0959079	0	0	0	0.020833333	0.041666667
	0.0592949	0	0.1133845	0.1743393	0.0555556	0	0	0.020833333	0.083333333
	0.1336538	0	0.3034953	0.3094629	0.0555556	0	0	0.020833333	0.083333333
	0.1836538	0	0.2408355	0.316283	0.1111111	0	0	0.020833333	0.055555556
	0.1314103	0	0.125746	0.2297528	0.1666667	0	0	0.020833333	0.055555556
	0.0926282	0	0.056266	0.0255754	0.1388889	0	0	0.041666667	0.083333333
	0.0410256	0	0.0085251	0.0221654	0.1944444	0	0	0.013888889	0.125
	0.0153846	0	0.028133	0.026428	0.1527778	0	0	0.034722222	0.173611111
	0.0105769	0	0.0260017	0.0106564	0.1111111	0	0	0.006944444	0.173611111
	0.0112179	0.0196078	0.0042626	0.0106564	0.0694444	0	0	0.0625	0.194444444
	0.0012821	0.0196078	0.0174766	0.06948	0.0555556	0	0	0.125	0.423611111
	0.0009615	0.0392157	0.0174766	0.0673487	0.2638889	0	0	0.222222222	0.3125
	0.0134615	0.1372549	0.0021313	0.0673487	0.2638889	0	0	0.201388889	0.083333333
	0.0003205	0.1743393	0.0021313	0.0238704	0.3333333	0	0	0.125	0
	0.0125	0.3094629	0.0217391	0.0217391	0.3333333	0	0	0.256944444	0
	0.0125	0.3640239	2.22E-16	0.0217391	0.2777778	0.0555556	0.0416667	0.25	0
	0.0125	0.3273657	2.22E-16	0.0217391	0.3472222	0.1111111	0.0416667	0	0
	0.0125	0.2710997	2.22E-16	0.0217391	0.375	0.1111111	0.0416667	0	0
	3.331E-16	0.1602728	2.22E-16	0.0217391	0.2083333	0.1666667	0.0833333		
	3.331E-16	0.084399	2.22E-16	0.0217391	0.1944444	0.2222222	0.125		
	3.331E-16	0.0046888	2.22E-16	0.0217391	0.1944444	0.3888889	0.2083333		
	3.331E-16	0.0541347	2.22E-16	2.22E-16	0.2361111	0.3888889	0.2916667		
	3.331E-16	0.0323956	2.22E-16	2.22E-16	0.2361111	0.5	0.2777778		
	3.331E-16	0.0323956	2.22E-16	2.22E-16	0.2222222	0.375	0.2222222		
	3.331E-16	0.0106564	2.22E-16	2.22E-16	0.2222222	0.4444444	0.3055556		
	3.331E-16	0.0302643	2.22E-16	2.22E-16	0.1666667	0.5	0.1388889		
	3.331E-16	0.0302643	2.22E-16	2.22E-16	0.0555556	0.5138889	0.3472222		
	3.331E-16	0.0302643	2.22E-16	2.22E-16	3.331E-16	0.5277778	0.375		
	3.331E-16	0.0302643	2.22E-16	2.22E-16	3.331E-16	0.5277778	0.3611111		
	3.331E-16	0.0498721	2.22E-16	2.22E-16	3.331E-16	0.5	0.2916667		
	3.331E-16	0.028133	2.22E-16	2.22E-16	3.331E-16	0.4583333	0.1111111		
	3.331E-16	0.0042626	2.22E-16	2.22E-16	3.331E-16	0.375	0.0555556		
	3.331E-16	0.0021313	2.22E-16	2.22E-16	3.331E-16	0.375	0.0972222		
	3.331E-16	0.0021313	2.22E-16	2.22E-16	3.331E-16	0.2083333	0.125		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.1666667	0.125		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.1805556	0.1666667		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.1388889	0.1666667		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.0972222	0.1111111		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.0138889	0.1111111		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.0694444	0.1111111		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.0138889	0.0555556		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.0138889	1.11E-16		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.0138889	1.11E-16		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	0.0555556	1.11E-16		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	1.11E-16	1.11E-16		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	3.331E-16	1.11E-16	1.11E-16		
	3.331E-16	3.331E-16	2.22E-16	2.22E-16	3.331E-16	1.11E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2164089	0.2765418	0.2765418	0.2765418	0.4240545	0.4240545	0.4240545	0.299851815	0.299851815
Test Statistic, $\alpha = 0.01$	0.2593725	0.3314435	0.3314435	0.3314435	0.5082418	0.5082418	0.5082418	0.35938122	0.35938122

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.041666667**
	0.0128205	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.041666667**
	0.0128205	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0.020833333**	**0.020833333**
	0.013141	**0**	**0**	**0.125**	**0**	**0**	**0**	**0.020833333**	**0.020833333**
	0.086859	**0**	**0**	**0.2083333**	**0**	**0**	**0**	**0.020833333**	**0.020833333**
	0.186859	**0**	**0**	**0.2083333**	**0**	**0**	**0**	**0.041666667**	**0.041666667**
	0.3102564	**0**	**0.0416667**	**0.2282609**	**0**	**0**	**0**	**0.041666667**	**0**
	0.4695513	**0**	**0.0018116**	**0.3532609**	**0.0555556**	**0**	**0**	**0.020833333**	**0**
	0.3516026	**0**	**0.2210145**	**0.5398551**	**0.0555556**	**0.0909091**	**0**	**0.020833333**	**0**
	0.2221154	**0**	**0.3768116**	**0.576087**	**0.1111111**	**0.0909091**	**0**	**0.104166667**	**0.083333333**
	0.1314103	**0**	**0.509058**	**0.2934783**	**0.1666667**	**0.0909091**	**0**	**0.125**	**0.166666667**
	0.0669872	**0**	**0.5344203**	**0.0525362**	**0.2222222**	**0.0909091**	**0**	**0.229166667**	**0.145833333**
	0.0410256	**0**	**0.4963768**	**0.048913**	**0.2777778**	**0.0909091**	**0**	**0.208333333**	**0.083333333**
	0.0102564	**0**	**0.2880435**	**0.0471014**	**0.2777778**	**0.0909091**	**0**	**0.1875**	**0.020833333**
	0.0233974	**0**	**0.2681159**	**0.0253623**	**0.2777778**	**0.2727273**	**0**	**0.3125**	**0.020833333**
	0.0112179	**0**	**0.2065217**	**0.0253623**	**0.2777778**	**0.2727273**	**0.0909091**	**0.291666667**	**0**
	0.0115385	**0**	**0.1449275**	**0.0253623**	**0.2777778**	**0.3636364**	**0.0909091**	**0.1875**	**0**
	0.0009615	**0**	**0.0615942**	**0.0452899**	**0.2777778**	**0.3636364**	**0.0909091**	**0.125**	**0**
	0.0134615	**0.0416667**	**0.0615942**	**0.0452899**	**0.2777778**	**0.3636364**	**0.0909091**	**0.041666667**	**0**
	0.0259615	**0.0615942**	**0.0615942**	**0.0018116**	**0.3333333**	**0.3636364**	**0.0909091**	**0**	**0**
	0.0259615	**0.1231884**	**0.0199275**	**0.0199275**	**0.3333333**	**0.6363636**	**0.0909091**	**0**	**0**
	0.0259615	**0.0797101**	**0**	**0.0217391**	**0.1161616**	**0.5808081**	**0.0909091**		
	0.0259615	**0.0108696**	**0**	**0.0217391**	**0.1161616**	**0.7979798**	**0.0909091**		
	0.013141	**0.0181159**	**0**	**0.0217391**	**0.2272727**	**0.7979798**	**0.0909091**		
	0.025641	**0.0235507**	**0**	**0.0217391**	**0.3939394**	**0.7424242**	**0.0909091**		
	0.0128205	**0.1557971**	**0**	**0.0217391**	**0.4494949**	**0.6868687**	**0.0909091**		
	0.0128205	**0.1394928**	**0**	**0.0217391**	**0.3585859**	**0.520202**	**0.0909091**		
	0.0128205	**0.1394928**	**0**	**1.11E-16**	**0.3585859**	**0.6111111**	**0.0909091**		
	0.0128205	**0.1195652**	**0**	**1.11E-16**	**0.3585859**	**0.5**	**0.0353535**		
	0.0128205	**0.0778986**	**0**	**1.11E-16**	**0.4141414**	**0.5**	**0.020202**		
	0.0128205	**0.057971**	**0**	**1.11E-16**	**0.4141414**	**0.3888889**	**0.020202**		
	0.0128205	**0.0163043**	**0**	**1.11E-16**	**0.1969697**	**0.3333333**	**0.1868687**		
	0.0128205	**0.0253623**	**0**	**1.11E-16**	**0.1262626**	**0.2777778**	**0.1868687**		
	1.11E-16	**0.0253623**	**0**	**1.11E-16**	**0.1818182**	**0.2222222**	**0.2424242**		
	1.11E-16	**0.0253623**	**0**	**1.11E-16**	**0.0909091**	**0.2222222**	**0.2979798**		
	1.11E-16	**0.0253623**	**0**	**1.11E-16**	**0.0909091**	**0.1666667**	**0.4090909**		
	1.11E-16	**0.0036232**	**0**	**1.11E-16**	**0.0909091**	**0.1666667**	**0.3939394**		
	1.11E-16	**0.0018116**	**0**	**1.11E-16**	**0.0909091**	**0.1666667**	**0.5050505**		
	1.11E-16	**0.0199275**	**0**	**1.11E-16**	**0.0909091**	**0.1666667**	**0.4141414**		
	1.11E-16	**0.0199275**	**0**	**1.11E-16**	**0.0909091**	**0.1666667**	**0.4141414**		
	1.11E-16	**0.0199275**	**0**	**1.11E-16**	**0.0909091**	**0.1666667**	**0.469697**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.469697**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.3787879**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.2525253**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.2525253**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0.0909091**	**0.0555556**	**0.020202**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0**	**0.0555556**	**0.0353535**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0**	**0.0555556**	**0.0353535**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0**	**0.0555556**	**0.0909091**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0**	**0.0555556**	**0**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**0.0217391**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
	1.11E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
Test Statistic, α = 0.05	0.2164089	0.3424549	0.3424549	0.3424549	0.5204815	0.5204815	0.5204815	0.277608838	0.277608838
Test Statistic, α = 0.01	0.2593725	0.4104423	0.4104423	0.4104423	0.6238124	0.6238124	0.6238124	0.332722357	0.332722357

Appendix D.3: Spreadsheet for Domain (11 v 21)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0.0571429	0	0	0	0
	0	0	0	0	0.2	0	0	0	0.020833333
	0	0	0	0	0.3714286	0	0	0	0.020833333
	0	0	0	0	0.4857143	0	0	0	0.020833333
	0	0	0	0	0.6	0	0	0.020833333	0.041666667
	0	0	0	0	0.6857143	0	0	0.020833333	0.060077519
	0	0	0	0	0.7142857	0	0	0.020833333	0.036821705
	0.0125	0	0	0	0.7142857	0	0	0.020833333	0.013565891
	0.1125	0	0	0.009009	0.7714286	0	0	0.020833333	0.032945736
	0.2125	0	0	0.009009	0.8285714	0	0	0.041666667	0.158914729
	0.4	0	0	0.0037211	0.8857143	0.0285714	0	0.041666667	0.303294574
	0.6875	0	0.0344693	0.0052879	0.8301587	0.0571429	0	0.0625	0.524709302
	0.7875	0	0.2502938	0.0105758	0.8301587	0.0571429	0	0.0625	0.604166667
	0.8135	0	0.4083431	0.11085	0.7746032	0.0571429	0	0.122577519	0.416666667
	0.827	0	0.4651391	0.3394046	0.7190476	0.0857143	0	0.138565891	0.104166667
	0.7995	0	0.3666275	0.5319232	0.6634921	0.1142857	0	0.217054264	0.020833333
	0.684	0	0.1743047	0.5197807	0.6365079	0.1428571	0	0.070251938	0
	0.54	0	0.0211516	0.4641598	0.6365079	0.2	0	0.062984496	0
	0.4085	0	0.0248727	0.3327458	0.6936508	0.2571429	0	0.117732558	0
	0.2575	0	0.0105758	0.1525656	0.6936508	0.3428571	0	0	0
	0.118	0.0089286	0.0037211	0.0264395	0.6936508	0.3714286	0	0	0
	0.0505	0.0089286	0.0217391	0.0211516	0.6936508	0.3714286	0	0	0
	0.031	0.0178571	0.0217391	0.0419115	0.6936508	0.4571429	0	0	0
	0.0275	0.0139752	0.0217391	0.0074422	0.6380952	0.5428571	0	0	0
	0.0115	0.0011646	0.0217391	0.0037211	0.6380952	0.6285714	0	0	0
	0.0035	0.0333851	0	0.0037211	0.6111111	0.6015873	0		
	0.0125	0.1715839	0	0.0037211	0.6111111	0.631746	0		
	0.0125	0.3276398	0	0.0037211	0.5	0.631746	0		
	3.331E-16	0.4223602	0	0.0127301	0.3333333	0.6047619	0		
	3.331E-16	0.5337733	0	0.0217391	0.2777778	0.5777778	0		
	3.331E-16	0.5888975	0	0.0217391	0.2777778	0.4111111	0		
	3.331E-16	0.5531832	0	2.22E-16	0.2777778	0.4111111	0		
	3.331E-16	0.5213509	0	2.22E-16	0.2777778	0.3285714	0.0555556		
	3.331E-16	0.3963509	0	2.22E-16	0.2222222	0.3285714	0.1111111		
	3.331E-16	0.3109472	0	2.22E-16	0.2222222	0.2460317	0.1111111		
	3.331E-16	0.1770186	0	2.22E-16	0.1666667	0.1904762	0.2777778		
	3.331E-16	0.0966615	0	2.22E-16	0.0555556	0.1634921	0.2777778		
	3.331E-16	0.0341615	0	2.22E-16	0	0.1079365	0.3333333		
	3.331E-16	0.0073758	0	2.22E-16	0	0.1365079	0.3888889		
	3.331E-16	0.0283385	0	2.22E-16	0	0.0809524	0.4714286		
	3.331E-16	0.0065994	0	2.22E-16	0	0.1095238	0.6380952		
	3.331E-16	0.0100932	0	2.22E-16	0	0.1095238	0.7492063		
	3.331E-16	0.0229037	0	2.22E-16	0	0.1380952	0.7492063		
	3.331E-16	0.0139752	0	2.22E-16	0	0.1380952	0.7492063		
	3.331E-16	0.0128106	0	2.22E-16	0	0.1380952	0.8047619		
	3.331E-16	0.0128106	0	2.22E-16	0	0.0825397	0.8047619		
	3.331E-16	0.0128106	0	2.22E-16	0	0.0825397	0.8047619		
	3.331E-16	0.0128106	0	2.22E-16	0	0.0825397	0.8603175		
	3.331E-16	0.0217391	0	2.22E-16	0	0.1111111	0.8603175		
	3.331E-16	0.0217391	0	2.22E-16	0	0.0555556	0.831746		
	3.331E-16	0.0217391	0	2.22E-16	0	0.0555556	0.8873016		
	3.331E-16	0.0217391	0	2.22E-16	0	0.0555556	0.8873016		
	3.331E-16	0.0217391	0	2.22E-16	0	0.0555556	0.9142857		
	3.331E-16	0.0217391	0	2.22E-16	0	0.0555556	0.9142857		
	3.331E-16	0.0217391	0	2.22E-16	0	2.22E-16	0.9142857		
	3.331E-16	0.0217391	0	2.22E-16	0	2.22E-16	0.8857143		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.8571429		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.8571429		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.8		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.8		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.7714286		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.7714286		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.7428571		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.7142857		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.7142857		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.6857143		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.6857143		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.6857143		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.6857143		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.5714286		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.5428571		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.5142857		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.4857143		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.4857143		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.4571429		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.4		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.3142857		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.2571429		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.2285714		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.2285714		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.1714286		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.1142857		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.0857143		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.0571429		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.0571429		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.0571429		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.0571429		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.0285714		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0.0285714		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
	3.331E-16	0	0	2.22E-16	0	2.22E-16	0		
Test Statistic, $\alpha = 0.05$	0.1947224	0.2381659	0.238478	0.238478	0.3944633	0.3944633	0.3944633	0.285564856	0.285564856
Test Statistic, $\alpha = 0.01$	0.2333805	0.2854488	0.2858229	0.2858229	0.4727758	0.4727758	0.4727758	0.342257879	0.342257879

Appendix D.3: Spreadsheet for Domain (11 v 31)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.041666667**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.083333333**
	0	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0.020833333**	**0.083333333**
	0.0125	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0.020833333**	**0.041666667**
	0.1125	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0.020833333**	**0.041666667**
	0.2125	**0**	**0**	**0**	**0.3333333**	**0**	**0**	**0.041666667**	**0.041666667**
	0.4	**0**	**0**	**0.0217391**	**0.3333333**	**0**	**0**	**0.041666667**	**0.166666667**
	0.6875	**0**	**0.0434783**	**0.0217391**	**0.2777778**	**0**	**0**	**0.0625**	**0.5625**
	0.7524123	**0**	**0.3043478**	**0.0334448**	**0.2777778**	**0**	**0**	**0.0625**	**0.604166667**
	0.8024123	**0**	**0.5434783**	**0.09699**	**0.2222222**	**0**	**0**	**0.020833333**	**0.416666667**
	0.7697368	**0**	**0.7173913**	**0.3026756**	**0.1666667**	**0**	**0**	**0.083333333**	**0.104166667**
	0.6769737	**0**	**0.826087**	**0.5083612**	**0.1111111**	**0**	**0**	**0.208333333**	**0.020833333**
	0.5140351	**0**	**0.9130435**	**0.5953177**	**0.0555556**	**0**	**0**	**0.020833333**	**0**
	0.3561404	**0**	**0.7591973**	**0.5618729**	**0.2222222**	**0.1666667**	**0**	**0.333333333**	**0**
	0.2633772	**0**	**0.7809365**	**0.583612**	**0.2222222**	**0.1666667**	**0**	**0.1875**	**0**
	0.2532895	**0**	**0.5719064**	**0.583612**	**0.2222222**	**0.1666667**	**0**	**0**	**0**
	0.195614	**0**	**0.5167224**	**0.583612**	**0.2222222**	**0.1666667**	**0**	**0**	**0**
	0.1379386	**0**	**0.4397993**	**0.6053512**	**0.2222222**	**0.1666667**	**0**	**0**	**0**
	0.097807	**0**	**0.3628763**	**0.3745819**	**0.2222222**	**0.3333333**	**0**	**0**	**0**
	0.110307	**0.0217391**	**0.2090301**	**0.3411371**	**0.1666667**	**0.3333333**	**0**	**0**	**0**
	0.0927632	**0.0434783**	**0.2090301**	**0.3628763**	**0.1666667**	**0.3333333**	**0**	**0**	**0**
	0.0927632	**0.0869565**	**0.1538462**	**0.3628763**	**0.1111111**	**0.2777778**	**0**		
	0.0752193	**0.2608696**	**0.0769231**	**0.3628763**	**0.1111111**	**0.3888889**	**0**		
	0.0752193	**0.4347826**	**0.0769231**	**0.2090301**	**0**	**0.3888889**	**0**		
	0.0877193	**0.5652174**	**0.0769231**	**0.2090301**	**0.1666667**	**0.3333333**	**0**		
	0.0877193	**0.7391304**	**0.0769231**	**0.0551839**	**0.2222222**	**0.4444444**	**0**		
	0.0701754	**0.8478261**	**0.0769231**	**0.0551839**	**0.0555556**	**0.2777778**	**0**		
	0.0701754	**0.770903**	**0.0769231**	**0.0769231**	**0.0555556**	**0.4444444**	**0**		
	0.0526316	**0.7157191**	**0.0769231**	**0.0769231**	**0.0555556**	**0.3333333**	**0.0555556**		
	0.0526316	**0.7157191**	**0**	**0.0769231**	**0.1111111**	**0.3333333**	**0.0555556**		
	0.0350877	**0.6605351**	**0**	**0.0769231**	**0.0555556**	**0.2222222**	**0.0555556**		
	0.0350877	**0.6605351**	**0**	**2.22E-16**	**1.11E-16**	**0.1666667**	**0.1111111**		
	0.0350877	**0.6605351**	**0**	**2.22E-16**	**0.1111111**	**0.1111111**	**0.1111111**		
	0.0350877	**0.583612**	**0**	**2.22E-16**	**0.1666667**	**0.2222222**	**0.1666667**		
	0.0350877	**0.583612**	**0**	**2.22E-16**	**1.11E-16**	**0.2222222**	**0.2222222**		
	0.0350877	**0.583612**	**0**	**2.22E-16**	**1.11E-16**	**0.1666667**	**0.3333333**		
	0.0350877	**0.6053512**	**0**	**2.22E-16**	**1.11E-16**	**0.1666667**	**0.1666667**		
	0.0350877	**0.4949833**	**0**	**2.22E-16**	**1.11E-16**	**0.1666667**	**0.2777778**		
	0.0350877	**0.4397993**	**0**	**2.22E-16**	**1.11E-16**	**0.1666667**	**0.2777778**		
	0.0175439	**0.3628763**	**0**	**2.22E-16**	**1.11E-16**	**0.1666667**	**0.2777778**		
	0.0175439	**0.3628763**	**0**	**2.22E-16**	**1.11E-16**	**0.1666667**	**0.3333333**		
	0.0175439	**0.3628763**	**0**	**2.22E-16**	**1.11E-16**	**0.1111111**	**0.3333333**		
	0.0175439	**0.3628763**	**0**	**2.22E-16**	**1.11E-16**	**0.1111111**	**0.3333333**		
	0.0175439	**0.3628763**	**0**	**2.22E-16**	**1.11E-16**	**0.1111111**	**0.3888889**		
	0.0175439	**0.3628763**	**0**	**2.22E-16**	**1.11E-16**	**0.1111111**	**0.3888889**		
	0.0175439	**0.3628763**	**0**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.3888889**		
	0.0175439	**0.2090301**	**0**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.4444444**		
	0.0175439	**0.2090301**	**0**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.4444444**		
	0.0175439	**0.2090301**	**0**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.3333333**		
	0.0175439	**0.2090301**	**0**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.3333333**		
	0.0175439	**0.132107**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0551839**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	5.551E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, α = 0.05	0.235731	0.4271834	0.4271834	0.4271834	0.6411101	0.6411101	0.6411101	0.519358579	0.519358579
Test Statistic, α = 0.01	0.2825306	0.5119918	0.5119918	0.5119918	0.7683894	0.7683894	0.7683894	0.622466532	0.622466532

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0.020833333
0	0	0	0	0	0	0	0	0.0625
0	0	0	0	0	0	0	0	0.0625
0	0	0	0	0	0	0	0.020833333	0.125
0	0	0	0	0	0	0	0.020833333	0.166666667
0	0	0	0	0	0	0	0.020833333	0.25
0.0125	0	0	0.0588235	0	0	0	0.020833333	0.25
0.1125	0	0	0.0588235	0	0	0	0.020833333	0.25
0.2125	0	0	0.0588235	0	0	0	0.041666667	0.416666667
0.38	0	0	0.0370844	0	0	0	0.125	0.625
0.6675	0	0.0434783	0.0959079	0.0555556	0	0	0.1875	0.520833333
0.7075	0	0.3043478	0.0741688	0.0555556	0	0	0.1875	0.4375
0.7375	0	0.5434783	0.0025575	0.1111111	0	0	0.1875	0.333333333
0.675	0	0.7173913	0.1624041	0.1	0	0	0.125	0.104166667
0.6275	0	0.7672634	0.3861893	0.1555556	0	0	0.166666667	0.020833333
0.5	0	0.6777494	0.2966752	0.2111111	0	0	0.354166667	0
0.38	0	0.6189258	0.2813299	0.2111111	0	0.1333333	0.291666667	0
0.3125	0	0.5818414	0.3030691	0.2111111	0	0.2	0.104166667	0
0.2975	0	0.4859335	0.1265985	0.2111111	0	0.2	0	0
0.29	0	0.4488491	0.0089514	0.2111111	0	0.3333333	0	0
0.3025	0	0.4488491	0.0306905	0.2111111	0.0666667	0.3333333	0	0
0.295	0	0.3900256	0.0306905	0.2111111	0.0666667	0.4	0	0
0.2875	0.0217391	0.213555	0.0741688	0.1333333	0.0666667	0.5333333	0	0
0.2675	0.0434783	0.0959079	0.0370844	0.1333333	0.0666667	0.5333333	0	0
0.2475	0.0869565	0	0.0370844	0.1888889	0.0777778	0.6		
0.2275	0.202046	0	0.0370844	0.1888889	0.0888889	0.6		
0.1875	0.3171355	0	0.0370844	0.3	0.0888889	0.6666667		
0.2	0.4475703	0	0.0370844	0.4666667	0.1	0.6666667		
0.18	0.6214834	0	0.0370844	0.5222222	0.0444444	0.6666667		
0.12	0.612532	0	0.0217391	0.4555556	0.0555556	0.6666667		
0.08	0.4948849	0	2.22E-16	0.4555556	0.0555556	0.6666667		
0.08	0.516624	0	2.22E-16	0.3222222	0.1666667	0.6111111		
0.06	0.516624	0	2.22E-16	0.3111111	0.0333333	0.6222222		
0.02	0.4795396	0	2.22E-16	0.3111111	0.0777778	0.6222222		
0.02	0.4795396	0	2.22E-16	0.3666667	0.0666667	0.4555556		
0.02	0.4795396	0	2.22E-16	0.4777778	0.0555556	0.4555556		
0.02	0.4795396	0	2.22E-16	0.5333333	0.0444444	0.4666667		
0.02	0.4207161	0	2.22E-16	0.5333333	0.0222222	0.4111111		
0.02	0.3030691	0	2.22E-16	0.5333333	0.0333333	0.3		
0.02	0.2659847	0	2.22E-16	0.5333333	0.0333333	0.2		
0.02	0.2506394	0	2.22E-16	0.4	0.0333333	0.0888889		
0.02	0.2723785	0	2.22E-16	0.4	0.0333333	0.0888889		
0.02	0.1547315	0	2.22E-16	0.3333333	0.0333333	0.0888889		
0.02	0.0370844	0	2.22E-16	0.2666667	0.0333333	0.1		
0.02	0.0370844	0	2.22E-16	0.2666667	0.0444444	0.1		
0.02	0.0370844	0	2.22E-16	0.2666667	0.0444444	0.1		
0.02	0.0370844	0	2.22E-16	0.2666667	0.0444444	0.0444444		
5.551E-16	0.0370844	0	2.22E-16	0.2666667	0.0444444	0.0444444		
5.551E-16	0.0370844	0	2.22E-16	0.2666667	0.0111111	0.0444444		
5.551E-16	0.0370844	0	2.22E-16	0.2	0.0555556	0.0111111		
5.551E-16	0.0370844	0	2.22E-16	0.2	0.0555556	0.0111111		
5.551E-16	0.0370844	0	2.22E-16	0.2	0.0555556	0.0666667		
5.551E-16	0.0370844	0	2.22E-16	0.2	0.0555556	1.11E-16		
5.551E-16	0.0370844	0	2.22E-16	0.0666667	1.11E-16	1.11E-16		
5.551E-16	0.0217391	0	2.22E-16	0.0666667	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	0.0666667	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	0.0666667	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		
5.551E-16	1.11E-16	0	2.22E-16	1.11E-16	1.11E-16	1.11E-16		

	w (%)	wL (%)	wP (%)	IP (%)	% Gravel	% Sand	% Fines	Bulk Density	Dry Density
Test Statistic, $\alpha = 0.05$	0.2451775	0.3860164	0.3860164	0.3860164	0.47546	0.47546	0.47546	0.438938113	0.438938113
Test Statistic, $\alpha = 0.01$	0.2938524	0.4626521	0.4626521	0.4626521	0.5698528	0.5698528	0.5698528	0.526080238	0.526080238

Appendix D.3: Spreadsheet for Domain (11 v 43)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.041666667**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.083333333**
	0.1	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.083333333**
	0.1875	**0**	**0**	**0.1538462**	**0**	**0**	**0**	**0.020833333**	**0.083333333**
	0.1875	**0**	**0**	**0.1538462**	**0**	**0**	**0**	**0.020833333**	**0.083333333**
	0.1875	**0**	**0**	**0.3846154**	**0**	**0**	**0**	**0.041666667**	**0.166666667**
	0.1	**0**	**0**	**0.5936455**	**0**	**0.1**	**0**	**0.041666667**	**0.208333333**
	0.1875	**0**	**0.0434783**	**0.7474916**	**0.0555556**	**0.1**	**0**	**0.0625**	**0.3125**
	0.2875	**0**	**0.3043478**	**0.8795987**	**0.0555556**	**0.2**	**0**	**0.0625**	**0.395833333**
	0.3375	**0**	**0.5434783**	**0.826087**	**0.1111111**	**0.4**	**0**	**0.145833333**	**0.583333333**
	0.175	**0**	**0.7173913**	**0.5434783**	**0.1666667**	**0.4**	**0**	**0.208333333**	**0.895833333**
	0.1875	**0**	**0.6722408**	**0.2608696**	**0.2222222**	**0.4**	**0**	**0.333333333**	**0.3125**
	0.2	**0**	**0.451505**	**0.173913**	**0.2777778**	**0.6**	**0**	**0.395833333**	**0**
	0.1	**0**	**0.2207358**	**0.1304348**	**0.1777778**	**0.7**	**0**	**0.541666667**	**0**
	0.1125	**0**	**0.1655518**	**0.1086957**	**0.1777778**	**0.9**	**0**	**0.479166667**	**0**
	0.1375	**0**	**0.1103679**	**0.1086957**	**0.1777778**	**0.9**	**0**	**0.333333333**	**0**
	0.15	**0**	**0.0217391**	**0.1086957**	**0.1777778**	**0.9**	**0**	**0**	**0**
	0.1625	**0**	**0.0217391**	**0.0869565**	**0.1777778**	**0.9**	**0.1**	**0**	**0**
	0.175	**0.0769231**	**0.0217391**	**0.0869565**	**0.1777778**	**0.9**	**0.1**	**0**	**0**
	0.1875	**0.0551839**	**0.0217391**	**0.0434783**	**0.2333333**	**0.9**	**0.1**	**0**	**0**
	0.1875	**0.1103679**	**0.0217391**	**0.0217391**	**0.2333333**	**0.9**	**0.1**	**0**	**0**
	0.1875	**0.2976589**	**1.11E-16**	**0.0217391**	**0.2888889**	**0.8444444**	**0.1**		
	0.1875	**0.1237458**	**1.11E-16**	**0.0217391**	**0.2888889**	**0.7888889**	**0.1**		
	0.0875	**0.180602**	**1.11E-16**	**0.0217391**	**0.4**	**0.8888889**	**0.1**		
	0.1	**0.1270903**	**1.11E-16**	**0.0217391**	**0.5666667**	**0.8333333**	**0.1**		
	0.1	**0.0301003**	**1.11E-16**	**0.0217391**	**0.6222222**	**0.7777778**	**0.1**		
	0.1	**0.0016722**	**1.11E-16**	**0.0217391**	**0.5222222**	**0.6111111**	**0.2**		
	0.1	**0.0752508**	**1.11E-16**	**2.22E-16**	**0.5222222**	**0.6111111**	**0.3**		
	2.22E-16	**0.1304348**	**1.11E-16**	**2.22E-16**	**0.4222222**	**0.5**	**0.3444444**		
	2.22E-16	**0.1304348**	**1.11E-16**	**2.22E-16**	**0.4777778**	**0.5**	**0.2888889**		
	2.22E-16	**0.1086957**	**1.11E-16**	**2.22E-16**	**0.4777778**	**0.3888889**	**0.2888889**		
	2.22E-16	**0.1086957**	**1.11E-16**	**2.22E-16**	**0.5333333**	**0.3333333**	**0.1222222**		
	2.22E-16	**0.1086957**	**1.11E-16**	**2.22E-16**	**0.6444444**	**0.2777778**	**0.1222222**		
	2.22E-16	**0.1086957**	**1.11E-16**	**2.22E-16**	**0.7**	**0.2222222**	**0.1666667**		
	2.22E-16	**0.1086957**	**1.11E-16**	**2.22E-16**	**0.5**	**0.2222222**	**0.3111111**		
	2.22E-16	**0.1086957**	**1.11E-16**	**2.22E-16**	**0.5**	**0.1666667**	**0.3**		
	2.22E-16	**0.0869565**	**1.11E-16**	**2.22E-16**	**0.5**	**0.1666667**	**0.1333333**		
	2.22E-16	**0.0434783**	**1.11E-16**	**2.22E-16**	**0.4**	**0.1666667**	**0.0222222**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**0.4**	**0.1666667**	**0.0222222**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**0.4**	**0.1666667**	**0.0222222**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**0.3**	**0.1666667**	**0.0333333**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**0.3**	**0.1111111**	**0.0333333**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**0.2**	**0.1111111**	**0.0333333**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**0.1**	**0.1111111**	**0.0888889**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**0.1**	**0.1111111**	**0.0888889**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.0888889**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.1444444**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.1444444**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.2**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**0.0555556**	**0.1**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**0.0217391**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
Test Statistic, $\alpha = 0.05$	0.4561579	0.4271834	0.4271834	0.4271834	0.5363912	0.5363912	0.5363912	0.809361889	0.809361889
Test Statistic, $\alpha = 0.01$	0.5467186	0.5119918	0.5119918	0.5119918	0.6428807	0.6428807	0.6428807	0.970044028	0.970044028

Appendix D.3: Spreadsheet for Domain (11 v 51)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0.020833333
0	0	0	0	0	0	0	0	0.020833333
0	0	0	0	0	0	0	0	0.020833333
0.0833333	0	0	0	0	0	0	0.020833333	0.041666667
0.1666667	0	0	0	0	0	0	0.020833333	0.083333333
0.25	0	0	0.0833333	0	0	0	0.020833333	0.083333333
0.4041667	0	0	0.2083333	0	0.0666667	0	0.020833333	0.083333333
0.3875	0	0	0.4583333	0	0.0666667	0	0.020833333	0.083333333
0.4125	0	0	0.6666667	0.0666667	0.0666667	0	0.041666667	0.166666667
0.35	0	0	0.6865942	0.0666667	0.0666667	0	0.041666667	0.208333333
0.1041667	0	0.0434783	0.8532609	0.0111111	0.1333333	0.0666667	0.0625	0.169642857
0.1708333	0	0.3043478	0.8731884	0.0111111	0.2	0.0666667	0.0625	0.25297619
0.1625	0	0.5018116	0.7844203	0.0444444	0.2666667	0.0666667	0.145833333	0.44047619
0.125	0	0.634058	0.5434783	0.1	0.2666667	0.0666667	0.208333333	0.610119048
0.1125	0	0.4927536	0.2608696	0.1555556	0.3333333	0.0666667	0.19047619	0.693452381
0.1	0	0.2047101	0.173913	0.2111111	0.3333333	0.0666667	0.25297619	0.428571429
0.1	0	0.1630435	0.1304348	0.2111111	0.3333333	0.0666667	0.398809524	0.285714286
0.0875	0	0.0181159	0.1086957	0.2111111	0.4	0.0666667	0.526785714	0.285714286
0.0625	0	0.0018116	0.1086957	0.2111111	0.5333333	0.0666667	0.571428571	0.142857143
0.05	0.0416667	0.0217391	0.1086957	0.2111111	0.6666667	0.1333333	0.571428571	2.22045E-16
0.0375	0.0833333	0.0217391	0.0869565	0.2111111	0.7333333	0.2	0.142857143	2.22045E-16
0.025	0.1666667	0.0217391	0.0869565	0.2111111	0.8	0.2	0.142857143	2.22045E-16
0.0125	0.2282609	0.0217391	0.0434783	0.2666667	0.8666667	0.2	0	2.22045E-16
0.0125	0.3315217	0.0217391	0.0217391	0.2666667	0.8666667	0.2	0	2.22045E-16
0.0125	0.4130435	2.22E-16	0.0217391	0.3222222	0.8111111	0.2666667		
0.0125	0.3641304	2.22E-16	0.0217391	0.3222222	0.7555556	0.2666667		
0.0125	0.4402174	2.22E-16	0.0217391	0.3	0.8222222	0.2666667		
2.22E-16	0.3097826	2.22E-16	0.0217391	0.4666667	0.7666667	0.3333333		
2.22E-16	0.1775362	2.22E-16	0.0217391	0.5222222	0.7111111	0.4		
2.22E-16	0.1105072	2.22E-16	0.0217391	0.3222222	0.6111111	0.4		
2.22E-16	0.1521739	2.22E-16	0	0.3222222	0.6111111	0.4		
2.22E-16	0.1304348	2.22E-16	0	0.2555556	0.5	0.3444444		
2.22E-16	0.1304348	2.22E-16	0	0.3111111	0.5	0.2888889		
2.22E-16	0.1086957	2.22E-16	0	0.3111111	0.3888889	0.2888889		
2.22E-16	0.1086957	2.22E-16	0	0.3666667	0.3333333	0.1222222		
2.22E-16	0.1086957	2.22E-16	0	0.4111111	0.2777778	0.1888889		
2.22E-16	0.1086957	2.22E-16	0	0.4666667	0.2222222	0.1333333		
2.22E-16	0.1086957	2.22E-16	0	0.4	0.2222222	0.1444444		
2.22E-16	0.1086957	2.22E-16	0	0.3333333	0.1666667	0.0333333		
2.22E-16	0.0869565	2.22E-16	0	0.3333333	0.1666667	0		
2.22E-16	0.0434783	2.22E-16	0	0.3333333	0.1666667	0.0444444		
2.22E-16	0.0217391	2.22E-16	0	0.3333333	0.1666667	0.0444444		
2.22E-16	0.0217391	2.22E-16	0	0.3333333	0.1666667	0.0444444		
2.22E-16	0.0217391	2.22E-16	0	0.2666667	0.1666667	0.1		
2.22E-16	0.0217391	2.22E-16	0	0.2666667	0.1111111	0.1		
2.22E-16	0.0217391	2.22E-16	0	0.2666667	0.1111111	0.0333333		
2.22E-16	0.0217391	2.22E-16	0	0.2666667	0.1111111	0.0888889		
2.22E-16	0.0217391	2.22E-16	0	0.2666667	0.1111111	0.0888889		
2.22E-16	0.0217391	2.22E-16	0	0.2666667	0.0555556	0.0222222		
2.22E-16	0.0217391	2.22E-16	0	0.2666667	0.0555556	0.0111111		
2.22E-16	0.0217391	2.22E-16	0	0.2666667	0.0555556	0.0111111		
2.22E-16	0.0217391	2.22E-16	0	0.2	0.0555556	0.0666667		
2.22E-16	0.0217391	2.22E-16	0	0.1333333	0.0555556	0.0666667		
2.22E-16	0.0217391	2.22E-16	0	0.1333333	1.11E-16	0.0666667		
2.22E-16	0.0217391	2.22E-16	0	0.1333333	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	0.0666667	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	0.0666667	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	0.0666667	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	0.0666667		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	1.11E-16	1.11E-16	1.11E-16		

Test Statistic, $\alpha = 0.05$	0.3165228	0.3424549	0.3424549	0.3424549	0.47546	0.47546	0.47546	0.550238044	0.550238044
Test Statistic, $\alpha = 0.01$	0.3793619	0.4104423	0.4104423	0.4104423	0.5698528	0.5698528	0.5698528	0.659476479	0.659476479

Appendix D.3: Spreadsheet for Domain (11 v 52)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0				**No data from Domain 61**			**0**	**0.090277778**
	0							**0**	**0.090277778**
	0							**0**	**0.201388889**
	0							**0.020833333**	**0.180555556**
	0							**0.020833333**	**0.138888889**
	0							**0.020833333**	**0.138888889**
	0.0125							**0.020833333**	**0.138888889**
	0.1125							**0.090277778**	**0.472222222**
	0.2125							**0.069444444**	**0.388888889**
	0.2888889							**0.069444444**	**0.347222222**
	0.5763889							**0.048611111**	**0.354166667**
	0.4541667							**0.159722222**	**0.270833333**
	0.5041667							**0.076388889**	**0.416666667**
	0.4305556							**0.236111111**	**0.104166667**
	0.4430556							**0.222222222**	**0.020833333**
	0.3444444							**0.159722222**	**0**
	0.2333333							**0.236111111**	**0**
	0.2458333							**0.1875**	**0**
	0.2708333							**0**	**0**
	0.2833333							**0**	**0**
	0.1847222							**0**	**0**
	0.1972222							**0**	**0**
	0.2097222							**0**	**0**
	0.2097222							**0**	**0**
	0.2097222								
	0.0986111								
	0.0986111								
	0.1111111								
	0.1111111								
	5.551E-16								
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Test Statistic, α = 0.05	0.4781539							0.494008547	0.494008547
Test Statistic, α = 0.01	0.5730815							0.592083773	0.592083773

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.013649425**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.048132184**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.082614943**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0.020833333**	**0.199712644**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0.020833333**	**0.158045977**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0.020833333**	**0.192528736**
	0.0125	**0**	**0**	**0.0088496**	**0.0851064**	**0.0212766**	**0**	**0.020833333**	**0.33045977**
	0.0972328	**0**	**0**	**0.0265487**	**0.0851064**	**0.0212766**	**0**	**0.020833333**	**0.364942529**
	0.1895992	**0**	**0**	**0.0619469**	**0.106383**	**0.0212766**	**0**	**0.041666667**	**0.350574713**
	0.3389313	**0**	**0**	**0.0402078**	**0.1276596**	**0.0212766**	**0**	**0.007183908**	**0.412356322**
	0.5729962	**0**	**0.0434783**	**0.0579069**	**0.1359338**	**0.0212766**	**0**	**0.006465517**	**0.44612069**
	0.6195611	**0**	**0.3043478**	**0.0892651**	**0.1359338**	**0.0212766**	**0**	**0.144396552**	**0.535201149**
	0.6008588	**0**	**0.4992305**	**0.0030781**	**0.144208**	**0.0212766**	**0.0212766**	**0.233477011**	**0.416666667**
	0.5162214	**0**	**0.6377453**	**0.1998846**	**0.0886525**	**0.0212766**	**0.0212766**	**0.20545977**	**0.104166667**
	0.4447519	**0**	**0.6402462**	**0.3320508**	**0.0543735**	**0.0212766**	**0.0212766**	**0.252873563**	**0.020833333**
	0.3427481	**0**	**0.5590612**	**0.3039631**	**0.001182**	**0.0212766**	**0.0212766**	**0.362787356**	**0**
	0.2587786	**0**	**0.3732205**	**0.214698**	**0.0413712**	**0.0425532**	**0.0212766**	**0.458333333**	**0**
	0.2025763	**0**	**0.2445171**	**0.1125433**	**0.0626478**	**0.0425532**	**0.0638298**	**0.1875**	**0**
	0.1512405	**0**	**0.1866102**	**0.0417468**	**0.0626478**	**0.0425532**	**0.106383**	**0**	**0**
	0.1332061	**0**	**0.0933051**	**0.002501**	**0.1052009**	**0.0638298**	**0.106383**	**0**	**0**
	0.1228053	**0**	**0.0579069**	**0.0192382**	**0.1264775**	**0.0851064**	**0.1276596**	**0**	**0**
	0.0971374	**0**	**0.0313582**	**0.0338592**	**0.1477541**	**0.1276596**	**0.1276596**	**0**	**0**
	0.0867366	**0.00404**	**0.0136591**	**0.00808**	**0.1134752**	**0.212766**	**0.1276596**	**0**	**0**
	0.0714695	**0.00808**	**0.0136591**	**0.0136591**	**0.177305**	**0.2765957**	**0.1489362**	**0**	**0**
	0.0562023	**0.0515583**	**0.0176991**	**0.0048095**	**0.143026**	**0.3061466**	**0.1489362**		
	0.0485687	**0.2166218**	**0.0176991**	**0.0048095**	**0.2068558**	**0.2718676**	**0.1702128**		
	0.0409351	**0.3728357**	**0.0088496**	**0.0048095**	**0.1170213**	**0.356974**	**0.1702128**		
	0.0458015	**0.4855714**	**0**	**0.0048095**	**0.0496454**	**0.3865248**	**0.1914894**		
	0.0458015	**0.6240862**	**0**	**0.0048095**	**0.0413712**	**0.3735225**	**0.1914894**		
	0.0381679	**0.6796845**	**0**	**0.0048095**	**0.0200946**	**0.2706856**	**0.2340426**		
	0.0229008	**0.5823394**	**0**	**0.0265487**	**0.0224586**	**0.2919622**	**0.2340426**		
	0.0152672	**0.5155829**	**0**	**0.0176991**	**0.0437352**	**0.2234043**	**0.178487**		
	0.0076336	**0.3828396**	**0**	**0.0176991**	**0.0118203**	**0.2659574**	**0.144208**		
	0.0076336	**0.2629858**	**0**	**0.0088496**	**0.0118203**	**0.1548463**	**0.144208**		
	5.551E-16	**0.0948442**	**0**	**0.0088496**	**0.0460993**	**0.1205674**	**0.0224586**		
	5.551E-16	**0.0771451**	**0**	**0.0088496**	**0.1146572**	**0.107565**	**0.0413712**		
	5.551E-16	**0.0505964**	**0**	**2.22E-16**	**0.1702128**	**0.0945626**	**0.0141844**		
	5.551E-16	**0.0240477**	**0**	**2.22E-16**	**0.1276596**	**0.1371158**	**0.06974**		
	5.551E-16	**0.0113505**	**0**	**2.22E-16**	**0.106383**	**0.0815603**	**0.1808511**		
	5.551E-16	**0.0073105**	**0**	**2.22E-16**	**0.106383**	**0.0815603**	**0.3475177**		
	5.551E-16	**0.0273182**	**0**	**2.22E-16**	**0.106383**	**0.1028369**	**0.4160757**		
	5.551E-16	**0.0402078**	**0**	**2.22E-16**	**0.106383**	**0.1453901**	**0.4160757**		
	5.551E-16	**0.0313582**	**0**	**2.22E-16**	**0.106383**	**0.1666667**	**0.4160757**		
	5.551E-16	**0.0313582**	**0**	**2.22E-16**	**0.106383**	**0.1666667**	**0.4503546**		
	5.551E-16	**0.0313582**	**0**	**2.22E-16**	**0.106383**	**0.1111111**	**0.3865248**		
	5.551E-16	**0.0136591**	**0**	**2.22E-16**	**0.106383**	**0.1111111**	**0.3439716**		
	5.551E-16	**0.0048095**	**0**	**2.22E-16**	**0.106383**	**0.1111111**	**0.3782506**		
	5.551E-16	**0.0048095**	**0**	**2.22E-16**	**0.0851064**	**0.1111111**	**0.356974**		
	5.551E-16	**0.0048095**	**0**	**2.22E-16**	**0.0638298**	**0.0555556**	**0.2931442**		
	5.551E-16	**0.0048095**	**0**	**2.22E-16**	**0.0638298**	**0.0555556**	**0.3061466**		
	5.551E-16	**0.0048095**	**0**	**2.22E-16**	**0.0425532**	**0.0555556**	**0.2635934**		
	5.551E-16	**0.0048095**	**0**	**2.22E-16**	**0.0425532**	**0.0555556**	**0.2553191**		
	5.551E-16	**0.0048095**	**0**	**2.22E-16**	**0.0425532**	**0.0555556**	**0.2340426**		
	5.551E-16	**0.0048095**	**0**	**2.22E-16**	**0.0212766**	**3.331E-16**	**0.212766**		
	5.551E-16	**0.0048095**	**0**	**2.22E-16**	**0.0212766**	**3.331E-16**	**0.1702128**		
	5.551E-16	**0.0265487**	**0**	**2.22E-16**	**0.0212766**	**3.331E-16**	**0.1702128**		
	5.551E-16	**0.0265487**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.1489362**		
	5.551E-16	**0.0265487**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.1276596**		
	5.551E-16	**0.0176991**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.1276596**		
	5.551E-16	**0.0176991**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.1276596**		
	5.551E-16	**0.0176991**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.106383**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0851064**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0638298**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0425532**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0425532**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0425532**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0425532**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0425532**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0425532**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0425532**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0.0212766**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0**		
	5.551E-16	**3.331E-16**	**0**	**2.22E-16**	**0**	**3.331E-16**	**0**		
Test Statistic, α = 0.05	0.1929743	0.2378589	0.2378589	0.2378589	0.3769731	0.3769731	0.3769731	0.319863477	0.319863477
Test Statistic, α = 0.01	0.2312854	0.2850808	0.2850808	0.2850808	0.4518134	0.4518134	0.4518134	0.383365784	0.383365784

Appendix D.3: Spreadsheet for Domain (11 v 62)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.070075758**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.070075758**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.049242424**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.098484848**
	0	**0**	**0**	**0**	**0.0333333**	**0**	**0**	**0.020833333**	**0.189393939**
	0.0125	**0**	**0**	**0**	**0.0666667**	**0**	**0**	**0.020833333**	**0.189393939**
	0.1125	**0**	**0**	**0**	**0.0666667**	**0**	**0**	**0.020833333**	**0.189393939**
	0.1943182	**0**	**0**	**0**	**0.0666667**	**0.0333333**	**0**	**0.041666667**	**0.46969697**
	0.3636364	**0**	**0**	**0.0217391**	**0.1**	**0.0333333**	**0**	**0.049242424**	**0.518939394**
	0.6147727	**0**	**0.0434783**	**0.0127436**	**0.0444444**	**0.0333333**	**0**	**0.210227273**	**0.505681818**
	0.6784091	**0**	**0.2698651**	**0.0254873**	**0.0444444**	**0.0333333**	**0**	**0.210227273**	**0.604166667**
	0.6193182	**0**	**0.5089955**	**0.0877061**	**0.0111111**	**0.0333333**	**0**	**0.126893939**	**0.416666667**
	0.5295455	**0**	**0.6311844**	**0.2668666**	**0.0333333**	**0.0333333**	**0**	**0.337121212**	**0.104166667**
	0.3784091	**0**	**0.5847076**	**0.446027**	**0.0888889**	**0.0333333**	**0**	**0.393939394**	**0.020833333**
	0.3181818	**0**	**0.5682159**	**0.3088456**	**0.1444444**	**0.0333333**	**0**	**0.331439394**	**0**
	0.2636364	**0**	**0.4992504**	**0.2488756**	**0.0777778**	**0.0333333**	**0**	**0.458333333**	**0**
	0.2215909	**0**	**0.314093**	**0.1671664**	**0.0444444**	**0.0333333**	**0**	**0.1875**	**0**
	0.2102273	**0**	**0.2496252**	**0.011994**	**0.0111111**	**0.0333333**	**0**	**0**	**0**
	0.1863636	**0**	**0.2023988**	**0.0052474**	**0.0111111**	**0.0333333**	**0.0333333**	**0**	**0**
	0.1806818	**0**	**0.1161919**	**0.017991**	**0.0111111**	**0.1333333**	**0.0333333**	**0**	**0**
	0.175	**0**	**0.029985**	**0.0352324**	**0.0888889**	**0.1333333**	**0.0333333**	**0**	**0**
	0.1693182	**0.0217391**	**0.0127436**	**0.0262369**	**0.1**	**0.1666667**	**0.0666667**	**0**	**0**
	0.1329545	**0.0434783**	**0.0044978**	**0.0044978**	**0.1666667**	**0.2**	**0.1**	**0**	**0**
	0.1147727	**0.0869565**	**0**	**0.0044978**	**0.1111111**	**0.2111111**	**0.1**		
	0.0784091	**0.2608696**	**0**	**0.0044978**	**0.1111111**	**0.3222222**	**0.1**		
	0.0784091	**0.4175412**	**0**	**0.0044978**	**0.0666667**	**0.3222222**	**0.1**		
	0.0727273	**0.547976**	**0**	**0.0217391**	**0.0333333**	**0.3**	**0.1**		
	0.0363636	**0.7046477**	**0**	**0.0217391**	**0.0888889**	**0.3111111**	**0.1**		
	3.331E-16	**0.7443778**	**0**	**0.0217391**	**0.0888889**	**0.1777778**	**0.1333333**		
	3.331E-16	**0.6581709**	**0**	**1.11E-16**	**0.0555556**	**0.2777778**	**0.1666667**		
	3.331E-16	**0.541979**	**0**	**1.11E-16**	**0.0111111**	**0.2333333**	**0.1111111**		
	3.331E-16	**0.4385307**	**0**	**1.11E-16**	**0.0444444**	**0.2333333**	**0.0555556**		
	3.331E-16	**0.2878561**	**0**	**1.11E-16**	**0.0222222**	**0.2222222**	**0.0888889**		
	3.331E-16	**0.2188906**	**0**	**1.11E-16**	**0.0333333**	**0.1666667**	**0.0777778**		
	3.331E-16	**0.149925**	**0**	**1.11E-16**	**0.1444444**	**0.1444444**	**0.0444444**		
	3.331E-16	**0.1154423**	**0**	**1.11E-16**	**0.1666667**	**0.1222222**	**0.1**		
	3.331E-16	**0.0637181**	**0**	**1.11E-16**	**0.1333333**	**0.1222222**	**0.0888889**		
	3.331E-16	**0.0637181**	**0**	**1.11E-16**	**0.1333333**	**0.0666667**	**0.1333333**		
	3.331E-16	**0.0164918**	**0**	**1.11E-16**	**0.1333333**	**0.0666667**	**0.2333333**		
	3.331E-16	**0.05997**	**0**	**1.11E-16**	**0.1333333**	**0.0666667**	**0.2777778**		
	3.331E-16	**0.0472264**	**0**	**1.11E-16**	**0.1333333**	**0.0666667**	**0.2777778**		
	3.331E-16	**0.029985**	**0**	**1.11E-16**	**0.1**	**0.1**	**0.2777778**		
	3.331E-16	**0.0044978**	**0**	**1.11E-16**	**0.1**	**0.1**	**0.3**		
	3.331E-16	**0.0044978**	**0**	**1.11E-16**	**0.1**	**0.0444444**	**0.2666667**		
	3.331E-16	**0.0044978**	**0**	**1.11E-16**	**0.0666667**	**0.0444444**	**0.2666667**		
	3.331E-16	**0.0044978**	**0**	**1.11E-16**	**0.0666667**	**0.0777778**	**0.2555556**		
	3.331E-16	**0.0044978**	**0**	**1.11E-16**	**0.0333333**	**0.0777778**	**0.2222222**		
	3.331E-16	**0.0044978**	**0**	**1.11E-16**	**0.0333333**	**0.0222222**	**0.2222222**		
	3.331E-16	**0.0044978**	**0**	**1.11E-16**	**0.0333333**	**0.0222222**	**0.2111111**		
	3.331E-16	**0.0217391**	**0**	**1.11E-16**	**0.0333333**	**0.0222222**	**0.2111111**		
	3.331E-16	**0.0217391**	**0**	**1.11E-16**	**0.0333333**	**0.0222222**	**0.2666667**		
	3.331E-16	**0.0217391**	**0**	**1.11E-16**	**0.0333333**	**0.0222222**	**0.2**		
	3.331E-16	**0.0217391**	**0**	**1.11E-16**	**0.0333333**	**1.11E-16**	**0.2**		
	3.331E-16	**0.0217391**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.1333333**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**1.11E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, $\alpha = 0.05$	0.2382207	0.2685114	0.2685114	0.2685114	0.4054737	0.4054737	0.4054737	0.454619388	0.454619388
Test Statistic, $\alpha = 0.01$	0.2855145	0.3218188	0.3218188	0.3218188	0.4859721	0.4859721	0.4859721	0.544874708	0.544874708

Appendix D.3: Spreadsheet for Domain (11 v 63)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.020833333
	0	0	0	0	0	0	0	0	0.020833333
	0	0	0	0	0	0	0	0	0.020833333
	0	0	0	0	0	0	0	0.020833333	0.041666667
	0	0	0	0	0	0	0	0.020833333	0.083333333
	0	0	0	0	0	0	0	0.020833333	0.006410256
	0.0125	0	0	0	0	0	0	0.020833333	0.070512821
	0.1125	0	0	0	0	0	0	0.020833333	0.147435897
	0.2125	0	0	0	0	0	0	0.041666667	0.217948718
	0.4	0	0	0.0152979	0	0	0	0.041666667	0.330128205
	0.6458333	0	0.0434783	0.0152979	0.4444444	0	0	0.0625	0.610576923
	0.5791667	0	0.3043478	0.0064412	0.4444444	0	0	0.014423077	0.604166667
	0.5041667	0	0.5064412	0.099839	0.3888889	0	0	0.084935897	0.416666667
	0.4583333	0	0.6803543	0.3083736	0.3333333	0	0	0.099358974	0.104166667
	0.3875	0	0.6779388	0.4428341	0.2777778	0	0	0.128205128	0.020833333
	0.275	0	0.6908213	0.4186795	0.2222222	0	0	0.373397436	0
	0.1083333	0	0.431562	0.1658615	0.2222222	0	0	0.381410256	0
	0.0375	0	0.2310789	0.0764895	0.2222222	0	0	0.1875	0
	0.0208333	0	0.178744	0.0394525	0.2222222	0	0	0	0
	0.0333333	0	0.089372	0.0716586	0.2222222	0	0	0	0
	0.0375	0	0.0523349	0.0869565	0.2222222	0	0	0	0
	0.025	0	0.0152979	0.0869565	0.2222222	0	0	0	0
	0.0125	0.0217391	0.0217391	0.0434783	0.1666667	0	0	0	0
	0.0125	0.0434783	0.0217391	0.0217391	0.1666667	0	0	0	0
	0.0125	0.0869565	2.22E-16	0.0217391	0.1111111	0.0555556	0		
	0.0125	0.2608696	2.22E-16	0.0217391	0.1111111	0.3888889	0		
	0.0125	0.4347826	2.22E-16	0.0217391	0.5	0.3888889	0		
	3.331E-16	0.5652174	2.22E-16	0.0217391	0.3333333	0.3333333	0		
	3.331E-16	0.7391304	2.22E-16	0.0217391	0.2777778	0.7777778	0		
	3.331E-16	0.810789	2.22E-16	0.0217391	0.2777778	0.6111111	0		
	3.331E-16	0.736715	2.22E-16	2.22E-16	0.2777778	0.6111111	0		
	3.331E-16	0.647343	2.22E-16	2.22E-16	0.2777778	0.5	0.0555556		
	3.331E-16	0.5362319	2.22E-16	2.22E-16	0.2222222	0.5	0.1111111		
	3.331E-16	0.3357488	2.22E-16	2.22E-16	0.2222222	0.3888889	0.1111111		
	3.331E-16	0.1876006	2.22E-16	2.22E-16	0.1666667	0.3333333	0.2777778		
	3.331E-16	0.1505636	2.22E-16	2.22E-16	0.0555556	0.2777778	0.2777778		
	3.331E-16	0.0394525	2.22E-16	2.22E-16	0	0.2222222	0.3333333		
	3.331E-16	0.1086957	2.22E-16	2.22E-16	0	0.2222222	0.3888889		
	3.331E-16	0.1086957	2.22E-16	2.22E-16	0	0.1666667	0.5		
	3.331E-16	0.0869565	2.22E-16	2.22E-16	0	0.1666667	0.6666667		
	3.331E-16	0.0434783	2.22E-16	2.22E-16	0	0.1666667	0.7777778		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.1666667	0.7777778		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.1666667	0.7777778		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.1666667	0.8333333		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.1111111	0.8333333		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.1111111	0.8333333		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.1111111	0.3888889		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.1111111	0.3888889		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.0555556	0.3888889		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.0555556	0.4444444		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.0555556	0.4444444		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.0555556	0.5		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0.0555556	0.5		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0	0.5		
	3.331E-16	0.0217391	2.22E-16	2.22E-16	0	0	0.5		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.5		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.5		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.5		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.5		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
	3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
Test Statistic, $\alpha = 0.05$	0.3165228	0.3297156	0.3297156	0.3297156	1.0136841	1.0136841	1.0136841	0.425217893	0.425217893
Test Statistic, $\alpha = 0.01$	0.3793619	0.3951739	0.3951739	0.3951739	1.2149303	1.2149303	1.2149303	0.509636151	0.509636151

Appendix D.3: Spreadsheet for Domain (11 v 64)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.101190476**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.05952381**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.05952381**
	0.0125	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.202380952**
	0.1125	**0**	**0**	**0.125**	**0**	**0**	**0**	**0.020833333**	**0.345238095**
	0.2125	**0**	**0**	**0.125**	**0**	**0**	**0**	**0.041666667**	**0.69047619**
	0.4	**0**	**0**	**0.1032609**	**0**	**0**	**0**	**0.041666667**	**0.648809524**
	0.6875	**0**	**0.0434783**	**0.1032609**	**0.0555556**	**0**	**0**	**0.0625**	**0.6875**
	0.7875	**0**	**0.3043478**	**0.2065217**	**0.4444444**	**0**	**0**	**0.0625**	**0.604166667**
	0.6946429	**0**	**0.5434783**	**0.076087**	**0.3888889**	**0**	**0**	**0.139880952**	**0.416666667**
	0.7321429	**0**	**0.7173913**	**0.2065217**	**0.3333333**	**0**	**0**	**0.363095238**	**0.104166667**
	0.4589286	**0**	**0.826087**	**0.3641304**	**0.2777778**	**0**	**0**	**0.523809524**	**0.020833333**
	0.4714286	**0**	**0.7880435**	**0.451087**	**0.2222222**	**0**	**0**	**0.604166667**	**0**
	0.3285714	**0**	**0.7880435**	**0.4945652**	**0.2222222**	**0**	**0**	**0.458333333**	**0**
	0.3410714	**0**	**0.6847826**	**0.3913043**	**0.2222222**	**0**	**0**	**0.1875**	**0**
	0.0803571	**0**	**0.2065217**	**0.0163043**	**0.2222222**	**0**	**0**	**0**	**0**
	0.0928571	**0**	**0.1032609**	**0.0163043**	**0.2222222**	**0**	**0**	**0**	**0**
	0.1053571	**0**	**0.0217391**	**0.0869565**	**0.2222222**	**0**	**0**	**0**	**0**
	0.1178571	**0**	**0.0217391**	**0.0869565**	**0.2222222**	**0**	**0**	**0**	**0**
	0.1303571	**0.0217391**	**0.0217391**	**0.0434783**	**0.1666667**	**0**	**0**	**0**	**0**
	0.1303571	**0.0815217**	**0.0217391**	**0.0217391**	**0.1666667**	**0**	**0**	**0**	**0**
	0.1303571	**0.0380435**	**0**	**0.0217391**	**0.1111111**	**0.0555556**	**0**		
	0.0125	**0.1358696**	**0**	**0.0217391**	**0.1111111**	**0.1111111**	**0**		
	0.0125	**0.3097826**	**0**	**0.0217391**	**0**	**0.1111111**	**0**		
	3.331E-16	**0.4402174**	**0**	**0.0217391**	**0.3333333**	**0.1666667**	**0**		
	3.331E-16	**0.6141304**	**0**	**0.0217391**	**0.2777778**	**0.2222222**	**0**		
	3.331E-16	**0.7228261**	**0**	**0.0217391**	**0.2777778**	**0.3888889**	**0**		
	3.331E-16	**0.5978261**	**0**	**2.22E-16**	**0.2777778**	**0.3888889**	**0**		
	3.331E-16	**0.6195652**	**0**	**2.22E-16**	**0.2777778**	**0.5**	**0.0555556**		
	3.331E-16	**0.4945652**	**0**	**2.22E-16**	**0.2222222**	**5.551E-17**	**0.1111111**		
	3.331E-16	**0.5163043**	**0**	**2.22E-16**	**0.2222222**	**0.1111111**	**0.1111111**		
	3.331E-16	**0.5163043**	**0**	**2.22E-16**	**0.1666667**	**0.3333333**	**0.2777778**		
	3.331E-16	**0.5163043**	**0**	**2.22E-16**	**0.0555556**	**0.2777778**	**0.2777778**		
	3.331E-16	**0.3913043**	**0**	**2.22E-16**	**0**	**0.2222222**	**0.1666667**		
	3.331E-16	**0.2663043**	**0**	**2.22E-16**	**0**	**0.2222222**	**0.1111111**		
	3.331E-16	**0.1413043**	**0**	**2.22E-16**	**0**	**0.1666667**	**0**		
	3.331E-16	**0.0869565**	**0**	**2.22E-16**	**0**	**0.1666667**	**0.1666667**		
	3.331E-16	**0.0434783**	**0**	**2.22E-16**	**0**	**0.1666667**	**0.2777778**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.1666667**	**0.2777778**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.1666667**	**0.2777778**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.1666667**	**0.3333333**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.1111111**	**0.3333333**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.1111111**	**0.3333333**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.1111111**	**0.3888889**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.1111111**	**0.3888889**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.0555556**	**0.3888889**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.0555556**	**0.4444444**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.0555556**	**0.4444444**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.0555556**	**0.5**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0.0555556**	**0.5**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0**	**0.5**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**0**	**0**	**0**		
Test Statistic, α = 0.05	0.536049	0.520969	0.520969	0.520969	1.0136841	1.0136841	1.0136841	0.550238044	0.550238044
Test Statistic, α = 0.01	0.6424705	0.6243967	0.6243967	0.6243967	1.2149303	1.2149303	1.2149303	0.659476479	0.659476479

Appendix D.3: Spreadsheet for Domain (11 v 65)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.041666667**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.083333333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.083333333**
	0.0125	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.083333333**
	0.1125	**0**	**0**	**0**	**0**	**0**	**0**	**0.020833333**	**0.083333333**
	0.2125	**0**	**0**	**0**	**0**	**0**	**0**	**0.041666667**	**0.075757576**
	0.3142857	**0**	**0**	**0.0217391**	**0**	**0**	**0**	**0.041666667**	**0.117424242**
	0.4875	**0**	**0.0474308**	**0.0217391**	**0.0555556**	**0**	**0**	**0.0625**	**0.221590909**
	0.5303571	**0**	**0.2134387**	**0.0474308**	**0.015873**	**0**	**0**	**0.0625**	**0.240530303**
	0.2660714	**0**	**0.4525692**	**0.083004**	**0.0396825**	**0**	**0**	**0.145833333**	**0.234848485**
	0.2178571	**0**	**0.444664**	**0.3656126**	**0.0952381**	**0**	**0**	**0.208333333**	**0.104166667**
	0.1732143	**0**	**0.2806324**	**0.5573123**	**0.0793651**	**0.0714286**	**0**	**0.242424242**	**0.020833333**
	0.1571429	**0**	**0.1857708**	**0.2806324**	**0.0079365**	**0.0714286**	**0**	**0.304924242**	**0**
	0.1	**0**	**0.0869565**	**0.0513834**	**0.0079365**	**0.2857143**	**0**	**0.087121212**	**0**
	0.0017857	**0**	**0.0652174**	**0.0177866**	**0.2222222**	**0.2857143**	**0**	**0.005681818**	**0**
	0.0232143	**0**	**0.0434783**	**0.0177866**	**0.2222222**	**0.2857143**	**0**	**0**	**0**
	0.0357143	**0**	**0.0217391**	**0.1086957**	**0.2936508**	**0.3571429**	**0**	**0**	**0**
	0.0089286	**0**	**0.0217391**	**0.0869565**	**0.4365079**	**0.5**	**0**	**0**	**0**
	0.0035714	**0**	**0.0217391**	**0.0869565**	**0.4365079**	**0.5**	**0**	**0**	**0**
	0.0160714	**0.0217391**	**0.0217391**	**0.0434783**	**0.3809524**	**0.5**	**0**	**0**	**0**
	0.0160714	**0.0434783**	**0.0217391**	**0.0217391**	**0.452381**	**0.5**	**0**	**0**	**0**
	0.0160714	**0.0869565**	**0**	**0.0217391**	**0.5396825**	**0.4444444**	**0**		
	0.0160714	**0.2608696**	**0**	**0.0217391**	**0.5396825**	**0.4603175**	**0**		
	0.0160714	**0.3438735**	**0**	**0.0217391**	**0.4285714**	**0.4603175**	**0**		
	0.0285714	**0.4743083**	**0**	**0.0217391**	**0.2619048**	**0.4047619**	**0**		
	0.0285714	**0.5573123**	**0**	**0.0217391**	**0.2063492**	**0.3492063**	**0**		
	0.0285714	**0.3932806**	**0**	**0.0217391**	**0.2063492**	**0.2539683**	**0**		
	0.0285714	**0.3932806**	**0**	**2.22E-16**	**0.2063492**	**0.468254**	**0**		
	0.0285714	**0.1422925**	**0**	**2.22E-16**	**0.2063492**	**0.4285714**	**0.0555556**		
	0.0285714	**0.1422925**	**0**	**2.22E-16**	**0.1507937**	**0.4285714**	**0.1111111**		
	0.0285714	**0.0177866**	**0**	**2.22E-16**	**0.1507937**	**0.3174603**	**0.1111111**		
	0.0285714	**0.0177866**	**0**	**2.22E-16**	**0.0952381**	**0.2619048**	**0.2777778**		
	0.0285714	**0.0177866**	**0**	**2.22E-16**	**0.015873**	**0.2063492**	**0.2777778**		
	0.0285714	**0.1086957**	**0**	**2.22E-16**	**0.0714286**	**0.1507937**	**0.3333333**		
	0.0285714	**0.1086957**	**0**	**2.22E-16**	**0.0714286**	**0.1507937**	**0.3888889**		
	0.0285714	**0.1086957**	**0**	**2.22E-16**	**0.0714286**	**0.1666667**	**0.5**		
	0.0285714	**0.0869565**	**0**	**2.22E-16**	**0.0714286**	**0.1666667**	**0.5952381**		
	0.0285714	**0.0434783**	**0**	**2.22E-16**	**0.0714286**	**0.1666667**	**0.6349206**		
	0.0285714	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.1666667**	**0.6349206**		
	0.0285714	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.1666667**	**0.6349206**		
	0.0285714	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.1666667**	**0.6190476**		
	0.0285714	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.1111111**	**0.6190476**		
	0.0285714	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.1111111**	**0.6190476**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.1111111**	**0.6746032**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.1111111**	**0.6746032**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.0555556**	**0.6746032**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.0555556**	**0.6587302**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.0555556**	**0.5873016**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.0555556**	**0.5714286**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**0.0555556**	**0.5714286**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.4285714**		
	3.331E-16	**0.0217391**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.4285714**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.3571429**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.3571429**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.3571429**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.2857143**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.2857143**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.2142857**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1428571**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1428571**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0714286**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0714286**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0714286**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0714286**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0714286**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0714286**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0714286**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0714286**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0714286**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
	3.331E-16	**1.11E-16**	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**		
Test Statistic, α = 0.05	0.2756188	0.4564583	0.4564583	0.4564583	0.4846337	0.4846337	0.4846337	0.454619388	0.454619388
Test Statistic, α = 0.01	0.3303372	0.5470787	0.5470787	0.5470787	0.5808478	0.5808478	0.5808478	0.544874708	0.544874708

Appendix D.3: Spreadsheet for Domain (11 v 71)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.020833333
	0	0	0	0	0	0	0	0	0.020833333
	0	0	0	0	0	0	0	0	0.020833333
	0	0	0	0	0	0	0	0.020833333	0.101190476
	0	0	0	0	0	0	0	0.020833333	0.05952381
	0	0	0	0	0	0	0	0.020833333	0.05952381
	0.0125	0	0	0	0	0	0	0.020833333	0.05952381
	0.0740385	0	0	0	0	0	0	0.020833333	0.05952381
	0.1740385	0	0	0	0	0	0	0.041666667	0.023809524
	0.3615385	0	0	0.0217391	0	0	0	0.041666667	0.06547619
	0.5336538	0	0.0434783	0.0782609	0.0555556	0	0	0.0625	0.026785714
	0.4798077	0	0.3043478	0.3565217	0.0555556	0	0	0.080357143	0.175595238
	0.2990385	0	0.3434783	0.226087	0	0	0	0.00297619	0.273809524
	0.2980769	0	0.3173913	0.0565217	0.0555556	0	0	0.06547619	0.104166667
	0.2721154	0	0.126087	0.2391304	0.1111111	0	0	0.19047619	0.020833333
	0.2461538	0	0.1130435	0.226087	0.1666667	0	0	0.25297619	0
	0.1307692	0	0.1130435	0.0695652	0.2777778	0	0	0.172619048	0
	0.1432692	0	0.0347826	0.0086957	0.2777778	0	0	0.1875	0
	0.1682692	0	0.0434783	0.0086957	0.2777778	0.1111111	0	1.11022E-16	0
	0.1038462	0	0.0217391	0.0086957	0.2777778	0.1111111	0	1.11022E-16	0
	0.0778846	0	0.0217391	0.0130435	0.2777778	0.1111111	0	1.11022E-16	0
	0.0134615	0	0.0217391	0.0130435	0.3888889	0.2222222	0	1.11022E-16	0
	0.0259615	0.0217391	0.0217391	0.0434783	0.3333333	0.3333333	0	1.11022E-16	0
	0.0259615	0.0565217	0.0217391	0.0217391	0.3333333	0.3333333	0	1.11022E-16	0
	0.0125	0.0130435	1.11E-16	0.0217391	0.2777778	0.2777778	0		
	0.0125	0.1608696	1.11E-16	0.0217391	0.2777778	0.4444444	0		
	0.0125	0.1347826	1.11E-16	0.0217391	0.1666667	0.4444444	0		
	5.551E-16	0.2652174	1.11E-16	0.0217391	0.2222222	0.5	0		
	5.551E-16	0.3391304	1.11E-16	0.0217391	0.1666667	0.5555556	0		
	5.551E-16	0.2478261	1.11E-16	0.0217391	0.1666667	0.3888889	0		
	5.551E-16	0.1478261	1.11E-16	2.22E-16	0.1666667	0.5	0		
	5.551E-16	0.0695652	1.11E-16	2.22E-16	0.2777778	0.3888889	0.0555556		
	5.551E-16	0.0304348	1.11E-16	2.22E-16	0.2222222	0.3888889	0.1111111		
	5.551E-16	0.0086957	1.11E-16	2.22E-16	0.2222222	0.2777778	0.1111111		
	5.551E-16	0.0086957	1.11E-16	2.22E-16	0.1666667	0.2222222	0.2777778		
	5.551E-16	0.0086957	1.11E-16	2.22E-16	0.0555556	0.1666667	0.2777778		
	5.551E-16	0.0086957	1.11E-16	2.22E-16	0	0.1111111	0.3333333		
	5.551E-16	0.0086957	1.11E-16	2.22E-16	0	0.1111111	0.3888889		
	5.551E-16	0.0086957	1.11E-16	2.22E-16	0	0.0555556	0.5		
	5.551E-16	0.0130435	1.11E-16	2.22E-16	0	0.0555556	0.6666667		
	5.551E-16	0.0565217	1.11E-16	2.22E-16	0	0.0555556	0.6666667		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.0555556	0.5555556		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.0555556	0.5555556		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.1666667	0.6111111		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.1111111	0.6111111		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.1111111	0.5		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.1111111	0.5555556		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.1111111	0.5555556		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.0555556	0.5555556		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.0555556	0.5		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.0555556	0.5		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.0555556	0.5555556		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	0.0555556	0.4444444		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	2.22E-16	0.4444444		
	5.551E-16	0.0217391	1.11E-16	2.22E-16	0	2.22E-16	0.3333333		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0.3333333		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0.3333333		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0.2222222		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0.2222222		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0.2222222		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
	5.551E-16	1.11E-16	1.11E-16	2.22E-16	0	2.22E-16	0		
Test Statistic, $\alpha = 0.05$	0.3070154	0.4745194	0.4745194	0.4745194	0.5552177	0.5552177	0.5552177	0.550238044	0.550238044
Test Statistic, $\alpha = 0.01$	0.367967	0.5687255	0.5687255	0.5687255	0.6654447	0.6654447	0.6654447	0.659476479	0.659476479

Appendix D.3: Spreadsheet for Domain (11 v 72)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0018315	**0**	**0**	**0.0196078**	**0**	**0**	**0**	**0**	**0**
	0.1190476	**0**	**0**	**0.0196078**	**0**	**0**	**0**	**0**	**0**
	0.2930403	**0**	**0**	**0.0392157**	**0**	**0**	**0**	**0**	**0.03125**
	0.1575092	**0**	**0.0196078**	**0.1176471**	**0**	**0**	**0**	**0**	**0.03125**
	0.1401099	**0**	**0.1568627**	**0.1778966**	**0**	**0**	**0**	**0**	**0.03125**
	0.0705128	**0**	**0.5896613**	**0.3165775**	**0**	**0**	**0**	**0**	**0.03125**
	0.0723443	**0**	**0.5115865**	**0.4356506**	**0**	**0**	**0**	**0**	**0.003472222**
	0.018315	**0**	**0.0249554**	**0.6135472**	**0**	**0**	**0**	**0.03125**	**0.003472222**
	0.0027473	**0**	**0.0449198**	**0.6010695**	**0.0833333**	**0**	**0**	**0.03125**	**0.052083333**
	0.0100733	**0**	**0.0238859**	**0.5311943**	**0.0833333**	**0**	**0**	**0.003472222**	**0.052083333**
	0.0082418	**0**	**0.0042781**	**0.2795009**	**0.125**	**0**	**0**	**0.003472222**	**0.013888889**
	0.029304	**0**	**0.0153298**	**0.1383244**	**0.1666667**	**0**	**0**	**0.024305556**	**0.003472222**
	0.0274725	**0.0196078**	**0.0153298**	**0.0253119**	**0.2083333**	**0**	**0**	**0.052083333**	**0.076388889**
	0.0274725	**0.0196078**	**0.002852**	**0.0210339**	**0.3333333**	**0**	**0**	**0.052083333**	**0.121527778**
	0.014652	**0.0392157**	**0.002852**	**0.001426**	**0.5416667**	**0**	**0**	**0.079861111**	**0.270833333**
	0.0384615	**0.1372549**	**0.0167558**	**0.001426**	**0.5416667**	**0**	**0**	**0.038194444**	**0.083333333**
	0.0128205	**0.1960784**	**0.0196078**	**0.001426**	**0.6666667**	**0**	**0**	**0.197916667**	**0**
	1.11E-16	**0.3529412**	**2.22E-16**	**0**	**0.6666667**	**0.1428571**	**0**	**0.055555556**	**0**
	1.11E-16	**0.4509804**	**2.22E-16**	**0**	**0.5238095**	**0.1428571**	**0.0416667**	**0.21875**	**0**
	1.11E-16	**0.5700535**	**2.22E-16**	**0**	**0.3630952**	**0.1428571**	**0.0416667**	**0**	**0**
	1.11E-16	**0.6877005**	**2.22E-16**	**0**	**0.4464286**	**0.4285714**	**0.0416667**	**0**	**0**
	1.11E-16	**0.6527629**	**2.22E-16**	**0**	**0.3035714**	**0.5714286**	**0.0833333**		
	1.11E-16	**0.7144385**	**2.22E-16**	**0**	**0.202381**	**0.5714286**	**0.125**		
	1.11E-16	**0.5522282**	**2.22E-16**	**0**	**0.202381**	**0.5714286**	**0.2083333**		
	1.11E-16	**0.3019608**	**2.22E-16**	**0**	**0.2440476**	**0.5714286**	**0.2916667**		
	1.11E-16	**0.1746881**	**2.22E-16**	**0**	**0.2440476**	**0.5714286**	**0.1904762**		
	1.11E-16	**0.0655971**	**2.22E-16**	**0**	**0.1428571**	**0.4464286**	**0.1904762**		
	1.11E-16	**0.0434938**	**2.22E-16**	**0**	**1.11E-16**	**0.4047619**	**0.2738095**		
	1.11E-16	**0.0420677**	**2.22E-16**	**0**	**1.11E-16**	**0.6904762**	**0.2738095**		
	1.11E-16	**0.0602496**	**2.22E-16**	**0**	**1.11E-16**	**0.7916667**	**0.3392857**		
	1.11E-16	**0.0602496**	**2.22E-16**	**0**	**1.11E-16**	**0.75**	**0.422619**		
	1.11E-16	**0.0602496**	**2.22E-16**	**0**	**1.11E-16**	**0.75**	**0.4642857**		
	1.11E-16	**0.0406417**	**2.22E-16**	**0**	**1.11E-16**	**0.6666667**	**0.5059524**		
	1.11E-16	**0.0588235**	**2.22E-16**	**0**	**1.11E-16**	**0.625**	**0.4047619**		
	1.11E-16	**0.0392157**	**2.22E-16**	**0**	**1.11E-16**	**0.5416667**	**0.4047619**		
	1.11E-16	**0.0196078**	**2.22E-16**	**0**	**1.11E-16**	**0.5416667**	**0.3035714**		
	1.11E-16	**0.0196078**	**2.22E-16**	**0**	**1.11E-16**	**0.375**	**0.3869048**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.3333333**	**0.2440476**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.2916667**	**0.2857143**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.25**	**0.1428571**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.2083333**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.125**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.125**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.0416667**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.0416667**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**0.0416667**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, $\alpha = 0.05$	0.2138501	0.2643781	0.2643781	0.2643781	0.5842048	0.5842048	0.5842048	0.330420607	0.330420607
Test Statistic, $\alpha = 0.01$	0.2563056	0.3168649	0.3168649	0.3168649	0.7001866	0.7001866	0.7001866	0.396018816	0.396018816

Appendix D.3: Spreadsheet for Domains (12v14)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.03125
	0	0	0	0	0	0	0	0	0.03125
	0.0128205	0	0	0	0	0	0	0	0.010416667
	0.0128205	0	0	0.0833333	0	0	0	0	0.03125
	0.0018315	0	0	0.125	0	0	0	0	0.072916667
	0.021978	0	0	0.2083333	0	0	0	0.03125	0.072916667
	0.1172161	0	0	0.2083333	0	0	0	0.03125	0.09375
	0.2912088	0	0.0416667	0.25	0	0	0	0.03125	0.177083333
	0.2701465	0	0.0416667	0.3568182	0	0	0	0.010416667	0.1875
	0.1474359	0	0.0651515	0.5469697	0	0.0909091	0	0.010416667	0.177083333
	0.1108059	0	0.1060606	0.6954545	0	0.0909091	0	0.010416667	0.1875
	0.018315	0	0.6098485	0.6772727	0	0.0909091	0	0.052083333	0.135416667
	0.0228938	0	0.6356061	0.6280303	0	0.0909091	0	0.072916667	0.104166667
	0.0100733	0	0.5287879	0.6022727	0	0.0909091	0	0.03125	0.083333333
	0.0173993	0	0.3204545	0.3530303	0	0.0909091	0	0.135416667	0.020833333
	0.0164835	0	0.2787879	0.1530303	0	0.2727273	0	0	0.020833333
	0.0274725	0	0.1954545	0.0106061	0	0.2727273	0.0909091	0.260416667	0
	0.014652	0	0.130303	0.0651515	0	0.3636364	0.0909091	0.1875	0
	0.014652	0	0.0469697	0.0234848	0	0.3636364	0.0909091	0.125	0
	0.0384615	0.0416667	0.0469697	0.0234848	0	0.3636364	0.0909091	0.041666667	0
	0.0384615	0.0833333	0.0833333	0.0234848	0	0.3636364	0.0909091	0	0
	0.0384615	0.1666667	0.0416667	0.0416667	0	0.4935065	0.0909091	0	0
	0.0384615	0.1666667	0	1.11E-16	0.1298701	0.4935065	0.0909091		
	0.0384615	0.2318182	0	1.11E-16	0.1558442	0.7662338	0.0909091		
	0.025641	0.3984848	0	1.11E-16	0.1558442	0.7662338	0.0909091		
	0.025641	0.4689394	0	1.11E-16	0.1558442	0.3376623	0.0909091		
	0.0128205	0.4742424	0	1.11E-16	0.4415584	0.3376623	0.0909091		
	0.0128205	0.4174242	0	1.11E-16	0.3506494	0.3376623	0.0909091		
	0.0128205	0.1083333	0	1.11E-16	0.3506494	0.4285714	0.0909091		
	0.0128205	0.0227273	0	1.11E-16	0.3506494	0.4285714	0.0519481		
	0.0128205	0.044697	0	1.11E-16	0.4935065	0.4285714	0.0519481		
	0.0128205	0.1121212	0	1.11E-16	0.4935065	0.4285714	0.0519481		
	0.0128205	0.0886364	0	1.11E-16	0.3636364	0.1428571	0.0519481		
	0.0128205	0.0651515	0	1.11E-16	0.1818182	0	0.1948052		
	1.11E-16	0.0651515	0	1.11E-16	0.1818182	0	0.1948052		
	1.11E-16	0.0651515	0	1.11E-16	0.0909091	0	0.1948052		
	1.11E-16	0.0651515	0	1.11E-16	0.0909091	0	0.1948052		
	1.11E-16	0.0833333	0	1.11E-16	0.0909091	0	0.1558442		
	1.11E-16	0.0416667	0	1.11E-16	0.0909091	0	0.1558442		
	1.11E-16	0.0416667	0	1.11E-16	0.0909091	0	0.2077922		
	1.11E-16	0.0416667	0	1.11E-16	0.0909091	0	0.2077922		
	1.11E-16	0.0416667	0	1.11E-16	0.0909091	0	0.3506494		
	1.11E-16	3.331E-16	0	1.11E-16	0.0909091	0	0.3506494		
	1.11E-16	3.331E-16	0	1.11E-16	0.0909091	0	0.4025974		
	1.11E-16	3.331E-16	0	1.11E-16	0.0909091	0	0.3636364		
	1.11E-16	3.331E-16	0	1.11E-16	0.0909091	0	0.3636364		
	1.11E-16	3.331E-16	0	1.11E-16	0.0909091	0	0.0909091		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	0.0909091		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	0.0909091		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	0.0909091		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
	1.11E-16	3.331E-16	0	1.11E-16	2.22E-16	0	2.22E-16		
Test Statistic, α = 0.05	0.2138501	0.3327097	0.3327097	0.3327097	0.6575515	0.6575515	0.6575515	0.310376116	0.310376116
Test Statistic, α = 0.01	0.2563056	0.3987624	0.3987624	0.3987624	0.7880949	0.7880949	0.7880949	0.371994904	0.371994904

Appendix D.3: Spreadsheet for Domain (12 v 21)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0.0571429	0	0	0	0
	0	0	0	0	0.2	0	0	0	0
	0	0	0	0	0.3714286	0	0	0	0
	0	0	0	0	0.4857143	0	0	0	0.03125
	0	0	0	0	0.6	0	0	0	0.03125
	0	0	0	0	0.6857143	0	0	0	0.007994186
	0	0	0	0	0.7142857	0	0	0	0.015261628
	0.0238095	0	0	0	0.7142857	0	0	0	0.038517442
	0.047619	0	0	0.009009	0.7714286	0	0	0.03125	0.08502907
	0.1428571	0	0	0.009009	0.8285714	0	0	0.03125	0.294331395
	0.3809524	0	0	0.018018	0.8857143	0.0285714	0	0.03125	0.480377907
	0.4880952	0	0.009009	0.0088452	0.8857143	0.0571429	0	0.03125	0.712209302
	0.5833333	0	0.0358722	0.0176904	0.8857143	0.0571429	0	0.03125	0.78125
	0.7021905	0	0.1375921	0.0085176	0.8857143	0.0571429	0	0.007994186	0.6875
	0.7139048	0	0.5659296	0.0443898	0.8857143	0.0857143	0	0.038517442	0.40625
	0.709619	0	0.4678133	0.0435708	0.8857143	0.1142857	0	0.08502907	0.0625
	0.6530476	0	0.2067158	0.033579	0.9142857	0.1428571	0	0.169331395	0
	0.5328571	0	0.0535627	0.158231	0.9142857	0.2	0	0.385901163	0
	0.448381	0	0.0355446	0.2050778	0.9714286	0.2571429	0	0.430232558	0
	0.2961905	0	0.0004914	0.188534	0.9714286	0.3428571	0	0.03125	0
	0.1441905	0.0089286	0.0183456	0.1169533	0.9714286	0.3714286	0	0	0
	0.0641905	0.0089286	0.0363636	0.0899263	0.9714286	0.3714286	0	0	0
	0.056	0.0178571	0.0363636	0.0268632	0.9714286	0.4571429	0	0	0
	0.04	0.0357143	0	0.0178542	0.9714286	0.5428571	0	0	0
	0.024	0.0446429	0	0.018018	0.9714286	0.4857143	0	0	0
	0.016	0.0535714	0	0.018018	0.8571429	0.5142857	0		
	1.11E-16	0.0711039	0	0.018018	0.5714286	0.6	0		
	1.11E-16	0.088961	0	0.018018	0.5714286	0.6	0		
	1.11E-16	0.0701299	0	0.009009	0.5714286	0.2	0		
	1.11E-16	0.0962662	0	0	0.2857143	0.2285714	0		
	1.11E-16	0.0319805	0	0	0.2857143	0.2285714	0		
	1.11E-16	0.3053571	0	0	0.2857143	0.2285714	0		
	1.11E-16	0.3790584	0	0	0.2857143	0.2571429	0.1428571		
	1.11E-16	0.3631494	0	0	0.1428571	0.2571429	0.1428571		
	1.11E-16	0.3650974	0	0	0.1428571	0.2857143	0.1428571		
	1.11E-16	0.2493506	0	0	2.22E-16	2.22E-16	0.1428571		
	1.11E-16	0.1871753	0	0	2.22E-16	0.1142857	0.2857143		
	1.11E-16	0.1246753	0	0	2.22E-16	0.1142857	0.2857143		
	1.11E-16	0.0978896	0	0	2.22E-16	0.0857143	0.2857143		
	1.11E-16	0.0621753	0	0	2.22E-16	0.0857143	0.2571429		
	1.11E-16	0.0803571	0	0	2.22E-16	0.0571429	0.4		
	1.11E-16	0.0535714	0	0	2.22E-16	0.0571429	0.4		
	1.11E-16	0.0446429	0	0	2.22E-16	0.0285714	0.5428571		
	1.11E-16	0.0357143	0	0	2.22E-16	0.0285714	0.5428571		
	1.11E-16	0.0089286	0	0	2.22E-16	0.0285714	0.6857143		
	1.11E-16	0.0089286	0	0	2.22E-16	0.0285714	0.6857143		
	1.11E-16	0.0089286	0	0	2.22E-16	0.0285714	0.8285714		
	1.11E-16	0.0089286	0	0	2.22E-16	0.0285714	0.9714286		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.9714286		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.9428571		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.9428571		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.9428571		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.9142857		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.9142857		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.9142857		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.8857143		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.8571429		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.8571429		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.8		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.8		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.7714286		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.7714286		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.7428571		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.7142857		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.7142857		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.6857143		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.6857143		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.6857143		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.6857143		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.5714286		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.5428571		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.5142857		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.4857143		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.4857143		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.4571429		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.4		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.3142857		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.2571429		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.2285714		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.2285714		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.1714286		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.1142857		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.0857143		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.0571429		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.0571429		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.0571429		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.0571429		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.0285714		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	0.0285714		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
	1.11E-16	1.11E-16	0	0	2.22E-16	2.22E-16	2.22E-16		
Test Statistic, $\alpha = 0.05$	0.1918746	0.2239272	0.2242591	0.2242591	0.5630935	0.5630935	0.5630935	0.317512131	0.317512131
Test Statistic, $\alpha = 0.01$	0.2299673	0.2683833	0.2687812	0.2687812	0.6748841	0.6748841	0.6748841	0.380547628	0.380547628

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0.03125
0	0	0	0	0	0	0	0	0.03125
0	0	0	0	0	0	0	0	0.03125
0	0	0	0	0.1666667	0	0	0	0.03125
0.0238095	0	0	0	0.1666667	0	0	0	0.09375
0.047619	0	0	0	0.1666667	0	0	0.03125	0.09375
0.1428571	0	0	0	0.3333333	0	0	0.03125	0.09375
0.3809524	0	0	0	0.3333333	0	0	0.03125	0.34375
0.4880952	0	0	0.0181818	0.3333333	0	0	0.03125	0.75
0.5482456	0	0.0181818	0.0405594	0.3333333	0	0	0.03125	0.78125
0.6911028	0	0.2727273	0.0223776	0.3333333	0	0	0.09375	0.6875
0.6566416	0	0.8181818	0.0811189	0.3333333	0	0	0.09375	0.40625
0.5870927	0	0.9272727	0.0671329	0.3333333	0	0	0.09375	0.0625
0.4830827	0	0.9454545	0.041958	0.3333333	0	0	0.21875	0
0.3489975	0	0.7916084	0.2559441	0.5	0.1666667	0	0.65625	0
0.3032581	0	0.7916084	0.4559441	0.5	0.1666667	0	0.5	0
0.2919799	0	0.5608392	0.6195804	0.5	0.1666667	0	0.03125	0
0.2218045	0	0.5020979	0.6741259	0.5	0.1666667	0	0	0
0.1516291	0	0.4251748	0.6741259	0.5	0.1666667	0	0	0
0.122807	0	0.3482517	0.4433566	0.5	0.3333333	0	0	0
0.122807	0	0.2307692	0.3664336	0.5	0.3333333	0	0	0
0.1052632	0	0.2307692	0.3846154	0.5	0.1904762	0	0	0
0.1052632	0	0.1538462	0.3846154	0.3571429	0.1904762	0		
0.0877193	0.0181818	0.0769231	0.3846154	0.0714286	0.3571429	0		
0.0877193	0.0181818	0.0769231	0.2307692	0.0714286	0.3571429	0		
0.0877193	0.0727273	0.0769231	0.2307692	0.0714286	0.0714286	0		
0.0877193	0.1090909	0.0769231	0.0769231	0.2142857	0.0952381	0		
0.0701754	0.2909091	0.0769231	0.0769231	0.047619	0.0952381	0		
0.0701754	0.5230769	0.0769231	0.0769231	0.047619	0.2619048	0		
0.0526316	0.5734266	0.0769231	0.0769231	0.047619	0.2619048	0.1428571		
0.0526316	0.6825175	0	0.0769231	0.1904762	0.2619048	0.0238095		
0.0350877	0.7146853	0	0.0769231	0.0238095	0.2619048	0.0238095		
0.0350877	0.7328671	0	0	0.1666667	0.0238095	0.0238095		
0.0350877	0.751049	0	0	0.1666667	0.1666667	0.1190476		
0.0350877	0.6741259	0	0	0.1666667	1.11E-16	0.1190476		
0.0350877	0.6741259	0	0	1.11E-16	1.11E-16	0.1190476		
0.0350877	0.6741259	0	0	1.11E-16	1.11E-16	0.1190476		
0.0350877	0.6923077	0	0	1.11E-16	1.11E-16	0.0714286		
0.0350877	0.5384615	0	0	1.11E-16	1.11E-16	0.0714286		
0.0350877	0.4615385	0	0	1.11E-16	1.11E-16	0.0714286		
0.0175439	0.3846154	0	0	1.11E-16	1.11E-16	0.0714286		
0.0175439	0.3846154	0	0	1.11E-16	1.11E-16	0.2142857		
0.0175439	0.3846154	0	0	1.11E-16	1.11E-16	0.2142857		
0.0175439	0.3846154	0	0	1.11E-16	1.11E-16	0.3571429		
0.0175439	0.3846154	0	0	1.11E-16	1.11E-16	0.5		
0.0175439	0.3846154	0	0	1.11E-16	1.11E-16	0.5		
0.0175439	0.3846154	0	0	1.11E-16	1.11E-16	0.5		
0.0175439	0.2307692	0	0	1.11E-16	1.11E-16	0.5		
0.0175439	0.2307692	0	0	1.11E-16	1.11E-16	0.5		
0.0175439	0.2307692	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.2307692	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.1538462	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.3333333		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.1666667		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.1666667		
0.0175439	0.0769231	0	0	1.11E-16	1.11E-16	0.1666667		
0.0175439	0	0	0	1.11E-16	1.11E-16	0.1666667		
0.0175439	0	0	0	1.11E-16	1.11E-16	0.1666667		
3.331E-16	0	0	0	1.11E-16	1.11E-16	0.1666667		
3.331E-16	0	0	0	1.11E-16	1.11E-16	0.1666667		
3.331E-16	0	0	0	1.11E-16	1.11E-16	0.1666667		
3.331E-16	0	0	0	1.11E-16	1.11E-16	0.1666667		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		

	w (%)	wL (%)	wP (%)	IP (%)	% Gravel	% Sand	% Fines	Bulk Density	Dry Density
Test Statistic, $\alpha = 0.05$	0.2333842	0.4194115	0.4194115	0.4194115	0.7566342	0.7566342	0.7566342	0.537587202	0.537587202
Test Statistic, $\alpha = 0.01$	0.2797178	0.502677	0.502677	0.502677	0.9068483	0.9068483	0.9068483	0.644314073	0.644314073

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0.083333333
0	0	0	0	0	0	0	0	0.052083333
0	0	0	0	0	0	0	0	0.135416667
0	0	0	0	0	0	0	0	0.21875
0	0	0	0	0	0	0	0	0.302083333
0.0238095	0	0	0.0588235	0	0	0	0	0.302083333
0.047619	0	0	0.0588235	0	0	0	0.03125	0.302083333
0.1428571	0	0	0.0588235	0	0	0	0.052083333	0.552083333
0.3609524	0	0	0.0588235	0	0	0	0.135416667	0.802083333
0.4680952	0	0	0.0994652	0	0	0	0.21875	0.708333333
0.5033333	0	0.0181818	0.0812834	0	0	0	0.21875	0.614583333
0.6261905	0	0.2727273	0.1219251	0	0	0	0.302083333	0.604166667
0.5619048	0	0.8181818	0.2213904	0.0666667	0	0	0.302083333	0.40625
0.537619	0	0.8684492	0.1893048	0.0666667	0	0	0.46875	0.0625
0.4690476	0	0.7101604	0.2566845	0.0666667	0	0	0.59375	0
0.3728571	0	0.6513369	0.0245989	0.0666667	0	0.1333333	0.614583333	0
0.352381	0	0.5925134	0.1754011	0.0666667	0	0.2	0.416666667	0
0.3361905	0	0.4748663	0.1625668	0.0666667	0	0.2	0.03125	0
0.3161905	0	0.4342246	0.0994652	0.0666667	0	0.3333333	0	0
0.3161905	0	0.4342246	0.0994652	0.0666667	0.0666667	0.3333333	0	0
0.32	0	0.3754011	0.0994652	0.0666667	0.0666667	0.4	0	0
0.3	0	0.2352941	0.0994652	0.2	0.0666667	0.5333333	0	0
0.28	0	0.1176471	0.0588235	0.2	0.0761905	0.5333333	0	0
0.26	0	0	0.0588235	0.0571429	0.0095238	0.6		
0.24	0.0406417	0	0.0588235	0.2285714	0.0571429	0.6		
0.2	0.0994652	0	0.0588235	0.2285714	0.0571429	0.6666667		
0.2	0.0449198	0	0.0588235	0.2285714	0.3047619	0.6666667		
0.18	0.0085561	0	0.0588235	0.5142857	0.3047619	0.6666667		
0.12	0.055615	0	0	0.447619	0.2380952	0.6666667		
0.08	0.2470588	0	0	0.447619	0.2380952	0.6666667		
0.08	0.3743316	0	0	0.3142857	0.2380952	0.5238095		
0.06	0.4834225	0	0	0.3904762	0.0380952	0.5904762		
0.02	0.5336898	0	0	0.3904762	0.0380952	0.5904762		
0.02	0.5518717	0	0	0.5333333	0.2571429	0.5904762		
0.02	0.5700535	0	0	0.5333333	0.3333333	0.447619		
0.02	0.5700535	0	0	0.5333333	0.2666667	0.5142857		
0.02	0.5112299	0	0	0.5333333	0.2	0.5142857		
0.02	0.3935829	0	0	0.5333333	0.1333333	0.5142857		
0.02	0.3529412	0	0	0.5333333	0.1333333	0.4380952		
0.02	0.2941176	0	0	0.4	0.1333333	0.4380952		
0.02	0.2941176	0	0	0.4	0.1333333	0.2952381		
0.02	0.1764706	0	0	0.3333333	0.1333333	0.2952381		
0.02	0.0588235	0	0	0.2666667	0.1333333	0.2190476		
0.02	0.0588235	0	0	0.2666667	0.0666667	0.2190476		
0.02	0.0588235	0	0	0.2666667	0.0666667	0.0761905		
0.02	0.0588235	0	0	0.2666667	0.0666667	0.0666667		
3.331E-16	0.0588235	0	0	0.2666667	0.0666667	0.0666667		
3.331E-16	0.0588235	0	0	0.2666667	0.0666667	0.0666667		
3.331E-16	0.0588235	0	0	0.2	1.11E-16	0.0666667		
3.331E-16	0.0588235	0	0	0.2	1.11E-16	0.0666667		
3.331E-16	0.0588235	0	0	0.2	1.11E-16	0.0666667		
3.331E-16	0.0588235	0	0	0.2	1.11E-16	1.11E-16		
3.331E-16	0.0588235	0	0	0.0666667	1.11E-16	1.11E-16		
3.331E-16	0	0	0	0.0666667	1.11E-16	1.11E-16		
3.331E-16	0	0	0	0.0666667	1.11E-16	1.11E-16		
3.331E-16	0	0	0	0.0666667	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		

Test Statistic, $\alpha = 0.05$	0.2429219	0.3773978	0.3773978	0.3773978	0.6225233	0.6225233	0.6225233	0.460362176	0.460362176
Test Statistic, $\alpha = 0.01$	0.291149	0.4523223	0.4523223	0.4523223	0.7461125	0.7461125	0.7461125	0.551757608	0.551757608

Appendix D.3: Spreadsheet for Domain (12 v 43)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.03125
	0	0	0	0	0	0	0	0	0.03125
	0	0	0	0	0	0	0	0	0.03125
	0.1	0	0	0	0	0	0	0	0.03125
	0.1761905	0	0	0.1538462	0	0	0	0	0.03125
	0.252381	0	0	0.1538462	0	0	0	0.03125	0.03125
	0.2571429	0	0	0.3846154	0	0	0	0.03125	0.03125
	0.1190476	0	0	0.6153846	0	0.1	0	0.03125	0.03125
	0.0119048	0	0	0.751049	0	0.1	0	0.03125	0.125
	0.0833333	0	0.0181818	0.8867133	0	0.2	0	0.03125	0.21875
	0.2261905	0	0.2727273	0.9454545	0	0.4	0	0.03125	0.3125
	0.0619048	0	0.8181818	0.9272727	0	0.4	0	0.03125	0.59375
	0.097619	0	0.7734266	0.8363636	0	0.4	0	0.03125	0.270833333
	0.1690476	0	0.4839161	0.7272727	0	0.6	0	0.15625	0
	0.0928571	0	0.2531469	0.4363636	0.1	0.7	0	0.21875	0
	0.152381	0	0.1762238	0.2363636	0.1	0.9	0	0.166666667	0
	0.1761905	0	0.0993007	0.0727273	0.1	0.9	0	0.302083333	0
	0.1761905	0	0.0363636	0.0181818	0.1	0.9	0	0	0
	0.1761905	0	0.0363636	0.0181818	0.1	0.9	0.1	0	0
	0.2	0.0769231	0.0363636	0.0181818	0.1	0.9	0.1	0	0
	0.2	0.0769231	1.11E-16	0.0181818	0.1	0.9	0.1	0	0
	0.2	0.1538462	1.11E-16	0	0.1	0.7571429	0.1	0	0
	0.2	0.3846154	1.11E-16	0	0.0428571	0.7571429	0.1		
	0.2	0.3664336	1.11E-16	0	0.3285714	0.7571429	0.1		
	0.1	0.5972028	1.11E-16	0	0.3285714	0.8571429	0.1		
	0.1	0.6195804	1.11E-16	0	0.3285714	0.4285714	0.1		
	0.1	0.6601399	1.11E-16	0	0.6142857	0.4285714	0.1		
	0.1	0.5552448	1.11E-16	0	0.5142857	0.4285714	0.2		
	0.1	0.3230769	1.11E-16	0	0.5142857	0.4285714	0.3		
	0	0.2727273	1.11E-16	0	0.4142857	0.4285714	0.2571429		
	0	0.1636364	1.11E-16	0	0.5571429	0.4285714	0.2571429		
	0	0.0545455	1.11E-16	0	0.5571429	0.4285714	0.2571429		
	0	0.0363636	1.11E-16	0	0.7	0.1428571	0.2571429		
	0	0.0181818	1.11E-16	0	0.7	2.22E-16	0.1142857		
	0	0.0181818	1.11E-16	0	0.7	2.22E-16	0.2142857		
	0	0.0181818	1.11E-16	0	0.5	2.22E-16	0.4142857		
	0	0.0181818	1.11E-16	0	0.5	2.22E-16	0.5142857		
	0	2.22E-16	1.11E-16	0	0.5	2.22E-16	0.3714286		
	0	2.22E-16	1.11E-16	0	0.4	2.22E-16	0.3714286		
	0	2.22E-16	1.11E-16	0	0.4	2.22E-16	0.2285714		
	0	2.22E-16	1.11E-16	0	0.4	2.22E-16	0.2285714		
	0	2.22E-16	1.11E-16	0	0.3	2.22E-16	0.0857143		
	0	2.22E-16	1.11E-16	0	0.3	2.22E-16	0.0857143		
	0	2.22E-16	1.11E-16	0	0.2	2.22E-16	0.0571429		
	0	2.22E-16	1.11E-16	0	0.1	2.22E-16	0.2		
	0	2.22E-16	1.11E-16	0	0.1	2.22E-16	0.2		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.2		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.2		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.2		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.2		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
Test Statistic, α = 0.05	0.4549495	0.4194115	0.4194115	0.4194115	0.6702153	0.6702153	0.6702153	0.821178016	0.821178016
Test Statistic, α = 0.01	0.5452704	0.502677	0.502677	0.502677	0.8032728	0.8032728	0.8032728	0.984206004	0.984206004

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.03125**
	0.0833333	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.03125**
	0.1666667	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.03125**
	0.25	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0.03125**
	0.3928571	**0**	**0**	**0.2083333**	**0**	**0.0666667**	**0**	**0**	**0.03125**
	0.452381	**0**	**0**	**0.4583333**	**0**	**0.0666667**	**0**	**0.03125**	**0.03125**
	0.4821429	**0**	**0**	**0.6666667**	**0.0666667**	**0.0666667**	**0**	**0.03125**	**0.03125**
	0.3690476	**0**	**0**	**0.7083333**	**0.0666667**	**0.0666667**	**0**	**0.03125**	**0.03125**
	0.3035714	**0**	**0**	**0.8568182**	**0.0666667**	**0.1333333**	**0.0666667**	**0.03125**	**0.017857143**
	0.375	**0**	**0.0181818**	**0.880303**	**0.0666667**	**0.2**	**0.0666667**	**0.03125**	**0.075892857**
	0.2738095	**0**	**0.2310606**	**0.9037879**	**0.0666667**	**0.2666667**	**0.0666667**	**0.03125**	**0.169642857**
	0.2380952	**0**	**0.7348485**	**0.9272727**	**0.0666667**	**0.2666667**	**0.0666667**	**0.03125**	**0.308035714**
	0.202381	**0**	**0.5939394**	**0.8363636**	**0.0666667**	**0.3333333**	**0.0666667**	**0.111607143**	**0.651785714**
	0.1309524	**0**	**0.2371212**	**0.7272727**	**0.0666667**	**0.3333333**	**0.0666667**	**0.013392857**	**0.428571429**
	0.1071429	**0**	**0.1954545**	**0.4363636**	**0.0666667**	**0.3333333**	**0.0666667**	**0.075892857**	**0.285714286**
	0.047619	**0**	**0.0287879**	**0.2363636**	**0.0666667**	**0.4**	**0.0666667**	**0.214285714**	**0.285714286**
	0.0238095	**0**	**0.0128788**	**0.0727273**	**0.0666667**	**0.5333333**	**0.0666667**	**0.540178571**	**0.142857143**
	0.0238095	**0.0416667**	**0.0363636**	**0.0181818**	**0.0666667**	**0.6666667**	**0.1333333**	**0.571428571**	**2.22045E-16**
	0.0238095	**0.0833333**	**0.0363636**	**0.0181818**	**0.0666667**	**0.7333333**	**0.2**	**0.142857143**	**2.22045E-16**
	0	**0.1666667**	**0.0363636**	**0.0181818**	**0.0666667**	**0.8**	**0.2**	**0.142857143**	**2.22045E-16**
	0	**0.25**	**2.22E-16**	**0.0181818**	**0.0666667**	**0.8666667**	**0.2**	**0**	**2.22045E-16**
	0	**0.375**	**2.22E-16**	**2.22E-16**	**0.0666667**	**0.7238095**	**0.2**	**0**	**2.22045E-16**
	0	**0.5**	**2.22E-16**	**2.22E-16**	**0.0761905**	**0.7238095**	**0.2666667**		
	0	**0.6068182**	**2.22E-16**	**2.22E-16**	**0.3619048**	**0.7238095**	**0.2666667**		
	0	**0.8568182**	**2.22E-16**	**2.22E-16**	**0.2285714**	**0.7904762**	**0.2666667**		
	0	**0.8022727**	**2.22E-16**	**2.22E-16**	**0.2285714**	**0.3619048**	**0.3333333**		
	0	**0.8075758**	**2.22E-16**	**2.22E-16**	**0.5142857**	**0.3619048**	**0.4**		
	0	**0.6674242**	**2.22E-16**	**2.22E-16**	**0.3142857**	**0.4285714**	**0.4**		
	0	**0.4**	**2.22E-16**	**2.22E-16**	**0.3142857**	**0.4285714**	**0.4**		
	0	**0.2727273**	**2.22E-16**	**2.22E-16**	**0.247619**	**0.4285714**	**0.2571429**		
	0	**0.1636364**	**2.22E-16**	**2.22E-16**	**0.3904762**	**0.4285714**	**0.2571429**		
	0	**0.0545455**	**2.22E-16**	**2.22E-16**	**0.3904762**	**0.4285714**	**0.2571429**		
	0	**0.0363636**	**2.22E-16**	**2.22E-16**	**0.5333333**	**0.1428571**	**0.2571429**		
	0	**0.0181818**	**2.22E-16**	**2.22E-16**	**0.4666667**	**1.11E-16**	**0.1809524**		
	0	**0.0181818**	**2.22E-16**	**2.22E-16**	**0.4666667**	**1.11E-16**	**0.1809524**		
	0	**0.0181818**	**2.22E-16**	**2.22E-16**	**0.4**	**1.11E-16**	**0.247619**		
	0	**0.0181818**	**2.22E-16**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.247619**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.2380952**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.3047619**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.1619048**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.1619048**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.0190476**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.0190476**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.0571429**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.2**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.2**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.1333333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.1333333**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.1333333**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.1333333**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.0666667**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.0666667**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.0666667**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, $\alpha = 0.05$	0.3147788	0.3327097	0.3327097	0.3327097	0.6225233	0.6225233	0.6225233	0.567475613	0.567475613
Test Statistic, $\alpha = 0.01$	0.3772717	0.3987624	0.3987624	0.3987624	0.7461125	0.7461125	0.7461125	0.680136213	0.680136213

Appendix D.3: Spreadsheet for Domain (12 v 52)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No data from Domain 61**				**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0**	**0.190972222**
	0							**0**	**0.190972222**
	0							**0**	**0.190972222**
	0							**0**	**0.190972222**
	0.0238095							**0**	**0.190972222**
	0.047619							**0.079861111**	**0.524305556**
	0.1428571							**0.079861111**	**0.524305556**
	0.2698413							**0.079861111**	**0.524305556**
	0.3769841							**0.079861111**	**0.541666667**
	0.25							**0.190972222**	**0.447916667**
	0.3928571							**0.190972222**	**0.6875**
	0.3174603							**0.413194444**	**0.40625**
	0.3531746							**0.524305556**	**0.0625**
	0.3134921							**0.399305556**	**0**
	0.2261905							**0.559027778**	**0**
	0.2857143							**0.5**	**0**
	0.3095238							**0.03125**	**0**
	0.3095238							**0**	**0**
	0.1984127							**0**	**0**
	0.2222222							**0**	**0**
	0.2222222							**0**	**0**
	0.2222222							**0**	**0**
	0.2222222								
	0.1111111								
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Test Statistic, α = 0.05	0.4770012							0.513138491	0.513138491
Test Statistic, α = 0.01	0.5717							0.615011574	0.615011574

Appendix D.3: Spreadsheet for Domain (12 v 61)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0	0	0	0	0
0	0	0	0	0.0425532	0	0	0	0.034482759
0	0	0	0	0.0425532	0	0	0	0.068965517
0	0	0	0	0.0638298	0	0	0	0.072198276
0	0	0	0	0.0638298	0	0	0	0.21012931
0	0	0	0	0.0638298	0.0212766	0	0	0.21012931
0	0	0	0	0.0638298	0.0212766	0	0	0.244612069
0.0238095	0	0	0.0088496	0.0851064	0.0212766	0	0	0.382543103
0.0323519	0	0	0.0265487	0.0851064	0.0212766	0	0.03125	0.417025862
0.1199564	0	0	0.0619469	0.106383	0.0212766	0	0.03125	0.485991379
0.3198837	0	0	0.0619469	0.1276596	0.0212766	0	0.003232759	0.589439655
0.3735914	0	0	0.0614642	0.1914894	0.0212766	0	0.037715517	0.63362069
0.4153944	0	0.0181818	0.0963797	0.1914894	0.0212766	0	0.175646552	0.712284483
0.4895493	0	0.2284795	0.1224457	0.2553191	0.0212766	0.0212766	0.348060345	0.6875
0.4031261	0	0.7385358	0.1839099	0.2553191	0.0212766	0.0212766	0.382543103	0.40625
0.354871	0	0.741432	0.2434433	0.2765957	0.0212766	0.0212766	0.554956897	0.0625
0.3117957	0	0.5914722	0.2493966	0.2765957	0.0212766	0.0212766	0.60237069	0
0.2516358	0	0.4056315	0.0912309	0.3191489	0.0425532	0.0212766	0.78125	0
0.2424573	0	0.2551891	0.0151247	0.3404255	0.0425532	0.0638298	0.5	0
0.1899309	0	0.175543	0.0777152	0.3404255	0.0425532	0.106383	0.03125	0
0.1593966	0	0.0786806	0.0880129	0.3829787	0.0638298	0.106383	0	0
0.1364958	0	0.0432824	0.0880129	0.4042553	0.0851064	0.1276596	0	0
0.1221374	0	0.0167337	0.0349155	0.4255319	0.1276596	0.1276596	0	0
0.0992366	0.0176991	0.0353982	0.0172164	0.4468085	0.212766	0.1276596	0	0
0.0839695	0.0353982	0.0353982	0.0353982	0.5106383	0.1337386	0.1489362	0	0
0.0687023	0.0353982	0.0176991	0.0265487	0.3890578	0.218845	0.1489362		
0.0610687	0.026066	0.0176991	0.0265487	0.1671733	0.2401216	0.1702128		
0.0534351	0.0437651	0.0088496	0.0265487	0.1884498	0.325228	0.1702128		
0.0458015	0.0069187	0	0.0265487	0.1884498	0.0182371	0.1914894		
0.0458015	0.0059533	0	0.0265487	0.0334347	0.0243161	0.1914894		
0.0381679	0.1227675	0	0.0265487	0.0121581	0.0881459	0.2340426		
0.0229008	0.3345133	0	0.0265487	0.0303951	0.1094225	0.2340426		
0.0152672	0.3732904	0	0.0176991	0.0516717	0.1519757	0.0911854		
0.0076336	0.349638	0	0.0176991	0.0911854	0.1945289	0.112462		
0.0076336	0.317136	0	0.0088496	0.0911854	0.1945289	0.112462		
3.331E-16	0.1671762	0	0.0088496	0.212766	0.0699088	0.112462		
3.331E-16	0.1676589	0	0.0088496	0.1702128	0.1702128	0.0334347		
3.331E-16	0.1411102	0	0	0.1702128	0.1276596	0.0334347		
3.331E-16	0.1145615	0	0	0.1276596	0.0851064	0.0334347		
3.331E-16	0.0791633	0	0	0.106383	0.0851064	0.0334347		
3.331E-16	0.079646	0	0	0.106383	0.0851064	0.1094225		
3.331E-16	0.0707965	0	0	0.106383	0.0638298	0.0668693		
3.331E-16	0.0619469	0	0	0.106383	0.0212766	0.2097264		
3.331E-16	0.0530973	0	0	0.106383	3.331E-16	0.2097264		
3.331E-16	0.0530973	0	0	0.106383	3.331E-16	0.331307		
3.331E-16	0.0530973	0	0	0.106383	3.331E-16	0.2674772		
3.331E-16	0.0353982	0	0	0.106383	3.331E-16	0.3677812		
3.331E-16	0.0265487	0	0	0.106383	3.331E-16	0.4893617		
3.331E-16	0.0265487	0	0	0.0851064	3.331E-16	0.4680851		
3.331E-16	0.0265487	0	0	0.0638298	3.331E-16	0.4042553		
3.331E-16	0.0265487	0	0	0.0638298	3.331E-16	0.3617021		
3.331E-16	0.0265487	0	0	0.0425532	3.331E-16	0.3191489		
3.331E-16	0.0265487	0	0	0.0425532	3.331E-16	0.2553191		
3.331E-16	0.0265487	0	0	0.0425532	3.331E-16	0.2340426		
3.331E-16	0.0265487	0	0	0.0212766	3.331E-16	0.212766		
3.331E-16	0.0265487	0	0	0.0212766	3.331E-16	0.1702128		
3.331E-16	0.0265487	0	0	0.0212766	3.331E-16	0.1702128		
3.331E-16	0.0265487	0	0	2.22E-16	3.331E-16	0.1489362		
3.331E-16	0.0265487	0	0	2.22E-16	3.331E-16	0.1276596		
3.331E-16	0.0176991	0	0	2.22E-16	3.331E-16	0.1276596		
3.331E-16	0.0176991	0	0	2.22E-16	3.331E-16	0.1276596		
3.331E-16	0.0176991	0	0	2.22E-16	3.331E-16	0.106383		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0851064		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0638298		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0425532		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0425532		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0425532		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0425532		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0425532		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0425532		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0425532		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	0.0212766		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	2.22E-16		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	2.22E-16		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	2.22E-16		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	2.22E-16		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	2.22E-16		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	2.22E-16		
3.331E-16	2.22E-16	0	0	2.22E-16	3.331E-16	2.22E-16		

Test Statistic, α = 0.05	0.1901003	0.2236006	0.2236006	0.2236006	0.5509825	0.5509825	0.5509825	0.348682248	0.348682248
Test Statistic, α = 0.01	0.2278408	0.2679919	0.2679919	0.2679919	0.6603688	0.6603688	0.6603688	0.41790593	0.41790593

Appendix D.3: Spreadsheet for Domain (12 v 62)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.059659091
	0	0	0	0	0	0	0	0	0.059659091
	0	0	0	0	0	0	0	0	0.150568182
	0	0	0	0	0.0333333	0	0	0	0.241477273
	0.0238095	0	0	0	0.0666667	0	0	0	0.241477273
	0.047619	0	0	0	0.0666667	0	0	0.03125	0.241477273
	0.1246753	0	0	0	0.0666667	0.0333333	0	0.03125	0.605113636
	0.3445887	0	0	0	0.1	0.0333333	0	0.059659091	0.696022727
	0.415368	0	0	0.0163009	0.1	0.0333333	0	0.241477273	0.693181818
	0.4742424	0	0.0163009	0.0326019	0.1	0.0333333	0	0.241477273	0.78125
	0.5080087	0	0.2382445	0.0316614	0.1	0.0333333	0	0.241477273	0.6875
	0.4164502	0	0.7319749	0.1169279	0.1333333	0.0333333	0	0.514204545	0.40625
	0.2885281	0	0.6858934	0.1294671	0.1333333	0.0333333	0	0.696022727	0.0625
	0.2872294	0	0.600627	0.2445141	0.1333333	0.0333333	0	0.571022727	0
	0.2564935	0	0.5316614	0.0570533	0.2	0.0333333	0	0.78125	0
	0.2614719	0	0.3247649	0.0394984	0.2333333	0.0333333	0	0.5	0
	0.2489177	0	0.238558	0.0479624	0.2666667	0.0333333	0	0.03125	0
	0.2125541	0	0.1877743	0.0852665	0.2666667	0.0333333	0.0333333	0	0
	0.1943723	0	0.1015674	0.0507837	0.2666667	0.1333333	0.0333333	0	0
	0.2	0	0.0153605	0.0335423	0.3666667	0.1333333	0.0333333	0	0
	0.1818182	0	0.0344828	0.0009404	0.4333333	0.1666667	0.0666667	0	0
	0.1454545	0	0.0172414	0.0172414	0.5	0.0571429	0.1	0	0
	0.1272727	0	0	0.0172414	0.3571429	0.1238095	0.1		
	0.0909091	0.0181818	0	0.0172414	0.0714286	0.2904762	0.1		
	0.0909091	0.0009404	0	0.0172414	0.1380952	0.2904762	0.1		
	0.0727273	0.0554859	0	1.11E-16	0.2047619	0.1047619	0.1		
	0.0363636	0.0746082	0	1.11E-16	0.0809524	0.0380952	0.1		
	1.11E-16	0.1874608	0	1.11E-16	0.0809524	0.0047619	0.1333333		
	1.11E-16	0.4103448	0	1.11E-16	0.047619	0.0952381	0.1666667		
	1.11E-16	0.3996865	0	1.11E-16	0.0190476	0.1619048	0.0238095		
	1.11E-16	0.4053292	0	1.11E-16	0.1238095	0.1619048	0.0238095		
	1.11E-16	0.3420063	0	1.11E-16	0.0571429	0.2619048	0.0571429		
	1.11E-16	0.2912226	0	1.11E-16	0.2	0.0238095	0.0571429		
	1.11E-16	0.2404389	0	1.11E-16	0.2	0.1333333	0.052381		
	1.11E-16	0.2059561	0	1.11E-16	0.1666667	0.1	0.052381		
	1.11E-16	0.154232	0	1.11E-16	0.1333333	0.1	0.0142857		
	1.11E-16	0.154232	0	1.11E-16	0.1333333	0.1	0.0809524		
	1.11E-16	0.1034483	0	1.11E-16	0.1333333	0.1	0.0047619		
	1.11E-16	0.1034483	0	1.11E-16	0.1333333	0.1	0.0714286		
	1.11E-16	0.0689655	0	1.11E-16	0.1333333	0.1	0.0714286		
	1.11E-16	0.0517241	0	1.11E-16	0.1	0.0666667	0.0714286		
	1.11E-16	0.0172414	0	1.11E-16	0.1	0.0666667	0.1809524		
	1.11E-16	0.0172414	0	1.11E-16	0.1	0.0666667	0.147619		
	1.11E-16	0.0172414	0	1.11E-16	0.0666667	0.0666667	0.2904762		
	1.11E-16	0.0172414	0	1.11E-16	0.0666667	0.0333333	0.3666667		
	1.11E-16	0.0172414	0	1.11E-16	0.0333333	0.0333333	0.3333333		
	1.11E-16	0.0172414	0	1.11E-16	0.0333333	0.0333333	0.3333333		
	1.11E-16	0.0172414	0	1.11E-16	0.0333333	0.0333333	0.2666667		
	1.11E-16	0	0	1.11E-16	0.0333333	0.0333333	0.2666667		
	1.11E-16	0	0	1.11E-16	0.0333333	0.0333333	0.2666667		
	1.11E-16	0	0	1.11E-16	0.0333333	0.0333333	0.2		
	1.11E-16	0	0	1.11E-16	0.0333333	1.11E-16	0.2		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.1333333		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.1		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0333333		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0333333		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0333333		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0333333		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2358986	0.2559663	0.2559663	0.2559663	0.5708607	0.5708607	0.5708607	0.475337201	0.475337201
Test Statistic, $\alpha = 0.01$	0.2827314	0.3067831	0.3067831	0.3067831	0.6841933	0.6841933	0.6841933	0.569705616	0.569705616

Appendix D.3: Spreadsheet for Domain (12 v 63)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.03125**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.03125**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.03125**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.045673077**
	0.0238095	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.122596154**
	0.047619	**0**	**0**	**0**	**0**	**0**	**0**	**0.03125**	**0.199519231**
	0.1428571	**0**	**0**	**0**	**0**	**0**	**0**	**0.03125**	**0.353365385**
	0.3809524	**0**	**0**	**0.037037**	**0**	**0**	**0**	**0.03125**	**0.507211538**
	0.4464286	**0**	**0**	**0.0188552**	**0.5**	**0**	**0**	**0.03125**	**0.798076923**
	0.375	**0**	**0.0181818**	**0.0006734**	**0.5**	**0**	**0**	**0.045673077**	**0.78125**
	0.3928571	**0**	**0.2356902**	**0.0195286**	**0.5**	**0**	**0**	**0.199519231**	**0.6875**
	0.3452381	**0**	**0.7811448**	**0.0754209**	**0.5**	**0**	**0**	**0.276442308**	**0.40625**
	0.297619	**0**	**0.7791246**	**0.1326599**	**0.5**	**0**	**0**	**0.430288462**	**0.0625**
	0.2440476	**0**	**0.7232323**	**0.1346801**	**0.5**	**0**	**0**	**0.612980769**	**0**
	0.1011905	**0**	**0.4639731**	**0.1400673**	**0.5**	**0**	**0**	**0.704326923**	**0**
	0.077381	**0**	**0.2417508**	**0.0511785**	**0.5**	**0**	**0**	**0.5**	**0**
	0.0595238	**0**	**0.1676768**	**0.0754209**	**0.5**	**0**	**0**	**0.03125**	**0**
	0.0595238	**0**	**0.0747475**	**0.0188552**	**0.5**	**0**	**0**	**0**	**0**
	0.0238095	**0**	**0.0377104**	**0.0181818**	**0.5**	**0**	**0**	**0**	**0**
	1.11E-16	**0**	**0.0006734**	**0.0181818**	**0.5**	**0**	**0**	**0**	**0**
	1.11E-16	**0**	**2.22E-16**	**0.0181818**	**0.5**	**0**	**0**	**0**	**0**
	1.11E-16	**0**	**2.22E-16**	**0**	**0.5**	**0.1428571**	**0**	**0**	**0**
	1.11E-16	**0**	**2.22E-16**	**0**	**0.3571429**	**0.1428571**	**0**		
	1.11E-16	**0.0181818**	**2.22E-16**	**0**	**0.0714286**	**0.3571429**	**0**		
	1.11E-16	**0.0181818**	**2.22E-16**	**0**	**0.5714286**	**0.3571429**	**0**		
	1.11E-16	**0.0727273**	**2.22E-16**	**0**	**0.5714286**	**0.0714286**	**0**		
	1.11E-16	**0.1090909**	**2.22E-16**	**0**	**0.2857143**	**0.4285714**	**0**		
	1.11E-16	**0.2538721**	**2.22E-16**	**0**	**0.2857143**	**0.4285714**	**0**		
	1.11E-16	**0.4888889**	**2.22E-16**	**0**	**0.2857143**	**0.4285714**	**0**		
	1.11E-16	**0.5050505**	**2.22E-16**	**0**	**0.2857143**	**0.4285714**	**0.1428571**		
	1.11E-16	**0.5030303**	**2.22E-16**	**0**	**0.1428571**	**0.4285714**	**0.1428571**		
	1.11E-16	**0.389899**	**2.22E-16**	**0**	**0.1428571**	**0.4285714**	**0.1428571**		
	1.11E-16	**0.2599327**	**2.22E-16**	**0**	**2.22E-16**	**0.1428571**	**0.1428571**		
	1.11E-16	**0.2410774**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.2857143**		
	1.11E-16	**0.1299663**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.2857143**		
	1.11E-16	**0.0181818**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.2857143**		
	1.11E-16	**0.0181818**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.2857143**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.4285714**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.4285714**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5714286**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5714286**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.7142857**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.7142857**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.8571429**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**2.22E-16**	**0**	**2.22E-16**	**0**	**2.22E-16**		
Test Statistic, α = 0.05	0.3147788	0.3195822	0.3195822	0.3195822	1.0904259	1.0904259	1.0904259	0.44729959	0.44729959
Test Statistic, α = 0.01	0.3772717	0.3830287	0.3830287	0.3830287	1.3069075	1.3069075	1.3069075	0.536101714	0.536101714

Appendix D.3: Spreadsheet for Domain (11 v 64)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.03125**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.111607143**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.111607143**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.111607143**
	0.0238095	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.254464286**
	0.047619	**0**	**0**	**0.125**	**0**	**0**	**0**	**0.03125**	**0.397321429**
	0.1428571	**0**	**0**	**0.125**	**0**	**0**	**0**	**0.03125**	**0.825892857**
	0.3809524	**0**	**0**	**0.125**	**0**	**0**	**0**	**0.03125**	**0.825892857**
	0.4880952	**0**	**0**	**0.1068182**	**0**	**0**	**0**	**0.03125**	**0.875**
	0.5833333	**0**	**0.0181818**	**0.2136364**	**0.5**	**0**	**0**	**0.03125**	**0.78125**
	0.5833333	**0**	**0.2727273**	**0.1954545**	**0.5**	**0**	**0**	**0.254464286**	**0.6875**
	0.6190476	**0**	**0.8181818**	**0.1772727**	**0.5**	**0**	**0**	**0.540178571**	**0.40625**
	0.3690476	**0**	**0.9272727**	**0.2113636**	**0.5**	**0**	**0**	**0.825892857**	**0.0625**
	0.4404762	**0**	**0.8204545**	**0.1022727**	**0.5**	**0**	**0**	**0.84375**	**0**
	0.3214286	**0**	**0.8204545**	**0.1886364**	**0.5**	**0**	**0**	**0.78125**	**0**
	0.3809524	**0**	**0.6954545**	**0.2636364**	**0.5**	**0**	**0**	**0.5**	**0**
	0.1190476	**0**	**0.1954545**	**0.0522727**	**0.5**	**0**	**0**	**0.03125**	**0**
	0.1190476	**0**	**0.0886364**	**0.1068182**	**0.5**	**0**	**0**	**0**	**0**
	0.1190476	**0**	**0.0363636**	**0.0181818**	**0.5**	**0**	**0**	**0**	**0**
	0.1428571	**0**	**0.0363636**	**0.0181818**	**0.5**	**0**	**0**	**0**	**0**
	0.1428571	**0**	**0**	**0.0181818**	**0.5**	**0**	**0**	**0**	**0**
	0.1428571	**0.125**	**0**	**0**	**0.5**	**0.1428571**	**0**	**0**	**0**
	0.1428571	**0.125**	**0**	**0**	**0.3571429**	**0.1428571**	**0**		
	1.11E-16	**0.1068182**	**0**	**0**	**0.0714286**	**0.1428571**	**0**		
	1.11E-16	**0.1068182**	**0**	**0**	**0.0714286**	**0.1428571**	**0**		
	1.11E-16	**0.0522727**	**0**	**0**	**0.5714286**	**0.5714286**	**0**		
	1.11E-16	**0.0159091**	**0**	**0**	**0.2857143**	**0.5714286**	**0**		
	1.11E-16	**0.1659091**	**0**	**0**	**0.2857143**	**0.5714286**	**0**		
	1.11E-16	**0.35**	**0**	**0**	**0.2857143**	**0.5714286**	**0**		
	1.11E-16	**0.4772727**	**0**	**0**	**0.2857143**	**0.5714286**	**0.1428571**		
	1.11E-16	**0.4613636**	**0**	**0**	**0.1428571**	**0.0714286**	**0.1428571**		
	1.11E-16	**0.5704545**	**0**	**0**	**0.1428571**	**0.0714286**	**0.1428571**		
	1.11E-16	**0.5886364**	**0**	**0**	**2.22E-16**	**0.1428571**	**0.1428571**		
	1.11E-16	**0.6068182**	**0**	**0**	**2.22E-16**	**0**	**0.2857143**		
	1.11E-16	**0.4818182**	**0**	**0**	**2.22E-16**	**0**	**0.2142857**		
	1.11E-16	**0.3568182**	**0**	**0**	**2.22E-16**	**0**	**0.2142857**		
	1.11E-16	**0.2318182**	**0**	**0**	**2.22E-16**	**0**	**0.2142857**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.0714286**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.0714286**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.0714286**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.0714286**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.2142857**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.2142857**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.3571429**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**0.5**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
	1.11E-16	**0**	**0**	**0**	**2.22E-16**	**0**	**2.22E-16**		
Test Statistic, α = 0.05	0.5350211	0.5146155	0.5146155	0.5146155	1.0904259	1.0904259	1.0904259	0.567475613	0.567475613
Test Statistic, α = 0.01	0.6412386	0.6167818	0.6167818	0.6167818	1.3069075	1.3069075	1.3069075	0.680136213	0.680136213

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0.03125
0	0	0	0	0	0	0	0	0.03125
0	0	0	0	0	0	0	0	0.03125
0	0	0	0	0	0	0	0	0.03125
0.0238095	0	0	0	0	0	0	0	0.03125
0.047619	0	0	0	0	0	0	0.03125	0.03125
0.1428571	0	0	0	0	0	0	0.03125	0.059659091
0.2952381	0	0	0	0	0	0	0.03125	0.059659091
0.2880952	0	0.0909091	0.0181818	0	0	0	0.03125	0.034090909
0.3261905	0	0.0727273	0.0545455	0.0714286	0	0	0.03125	0.417613636
0.1547619	0	0.1818182	0.0363636	0.0714286	0	0	0.03125	0.505681818
0.1047619	0	0.5454545	0.0181818	0.0714286	0	0	0.03125	0.40625
0.0833333	0	0.3818182	0.0181818	0.1428571	0.0714286	0	0.059659091	0.0625
0.1261905	0	0.2181818	0.2727273	0.2857143	0.0714286	0	0.065340909	0
0.0928571	0	0.0545455	0.2545455	0.2857143	0.2857143	0	0.235795455	0
0.0380952	0	0.0545455	0.1454545	0.5	0.2857143	0	0.318181818	0
0.0619048	0	0.0545455	0.0181818	0.5	0.2857143	0	0.03125	0
0.0619048	0	0.0363636	0.0181818	0.5714286	0.3571429	0	0	0
0.0047619	0	0.0363636	0.0181818	0.7142857	0.5	0	0	0
0.0285714	0	0.0363636	0.0181818	0.7142857	0.5	0	0	0
0.0285714	0	0	0.0181818	0.7142857	0.5	0	0	0
0.0285714	0	0	0	0.7857143	0.3571429	0	0	0
0.0285714	0	0	0	0.7857143	0.3571429	0		
0.0285714	0.0181818	0	0	0.5	0.4285714	0		
0.0285714	0.0727273	0	0	0.5	0.4285714	0		
0.0285714	0.0181818	0	0	0.5	0	0		
0.0285714	0.0727273	0	0	0.2142857	0	0		
0.0285714	0.1636364	0	0	0.2142857	0.0714286	0		
0.0285714	0.1454545	0	0	0.2142857	0.2857143	0		
0.0285714	0	0	0	0.2142857	0.3571429	0.1428571		
0.0285714	0.1090909	0	0	0.0714286	0.3571429	0.1428571		
0.0285714	0.0363636	0	0	0.0714286	0.3571429	0.1428571		
0.0285714	0.0545455	0	0	0.0714286	0.0714286	0.1428571		
0.0285714	0.0727273	0	0	0.0714286	0.0714286	0.2857143		
0.0285714	0.0181818	0	0	0.0714286	0.0714286	0.2857143		
0.0285714	0.0181818	0	0	0.0714286	0.0714286	0.2857143		
0.0285714	0.0181818	0	0	0.0714286	1.11E-16	0.2857143		
0.0285714	0	0	0	0.0714286	1.11E-16	0.3571429		
0.0285714	0	0	0	0.0714286	1.11E-16	0.2857143		
0.0285714	0	0	0	0	1.11E-16	0.4285714		
0.0285714	0	0	0	0	1.11E-16	0.4285714		
0.0285714	0	0	0	0	1.11E-16	0.5		
0.0285714	0	0	0	0	1.11E-16	0.5		
0.0285714	0	0	0	0	1.11E-16	0.6428571		
1.11E-16	0	0	0	0	1.11E-16	0.7857143		
1.11E-16	0	0	0	0	1.11E-16	0.7857143		
1.11E-16	0	0	0	0	1.11E-16	0.7857143		
1.11E-16	0	0	0	0	1.11E-16	0.7142857		
1.11E-16	0	0	0	0	1.11E-16	0.6428571		
1.11E-16	0	0	0	0	1.11E-16	0.5714286		
1.11E-16	0	0	0	0	1.11E-16	0.5714286		
1.11E-16	0	0	0	0	1.11E-16	0.4285714		
1.11E-16	0	0	0	0	1.11E-16	0.4285714		
1.11E-16	0	0	0	0	1.11E-16	0.3571429		
1.11E-16	0	0	0	0	1.11E-16	0.3571429		
1.11E-16	0	0	0	0	1.11E-16	0.3571429		
1.11E-16	0	0	0	0	1.11E-16	0.2857143		
1.11E-16	0	0	0	0	1.11E-16	0.2857143		
1.11E-16	0	0	0	0	1.11E-16	0.2142857		
1.11E-16	0	0	0	0	1.11E-16	0.1428571		
1.11E-16	0	0	0	0	1.11E-16	0.1428571		
1.11E-16	0	0	0	0	1.11E-16	0.0714286		
1.11E-16	0	0	0	0	1.11E-16	0.0714286		
1.11E-16	0	0	0	0	1.11E-16	0.0714286		
1.11E-16	0	0	0	0	1.11E-16	0.0714286		
1.11E-16	0	0	0	0	1.11E-16	0.0714286		
1.11E-16	0	0	0	0	1.11E-16	0.0714286		
1.11E-16	0	0	0	0	1.11E-16	0.0714286		
1.11E-16	0	0	0	0	1.11E-16	0.0714286		
1.11E-16	0	0	0	0	1.11E-16	0.0714286		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		
1.11E-16	0	0	0	0	1.11E-16	0		

	w (%)	wL (%)	wP (%)	IP (%)	% Gravel	% Sand	% Fines	Bulk Density	Dry Density
Test Statistic, α = 0.05	0.2736143	0.4491932	0.4491932	0.4491932	0.6295577	0.6295577	0.6295577	0.475337201	0.475337201
Test Statistic, α = 0.01	0.3279347	0.5383713	0.5383713	0.5383713	0.7545434	0.7545434	0.7545434	0.569705616	0.569705616

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.03125
	0	0	0	0	0	0	0	0	0.111607143
	0	0	0	0	0	0	0	0	0.111607143
	0	0	0	0	0	0	0	0	0.111607143
	0.0238095	0	0	0	0	0	0	0	0.111607143
	0.0091575	0	0	0	0	0	0	0.03125	0.111607143
	0.1043956	0	0	0	0	0	0	0.03125	0.111607143
	0.3424908	0	0	0	0	0	0	0.03125	0.111607143
	0.3342491	0	0	0.0818182	0	0	0	0.03125	0.160714286
	0.275641	0	0.0181818	0.3636364	0	0	0	0.111607143	0.352678571
	0.1877289	0	0.0727273	0.3454545	0.1111111	0	0	0.111607143	0.544642857
	0.1849817	0	0.4181818	0.3272727	0.2222222	0	0	0.111607143	0.40625
	0.1822344	0	0.2272727	0.3363636	0.3333333	0	0	0.111607143	0.0625
	0.2152015	0	0.1454545	0.3272727	0.4444444	0	0	0.013392857	0
	0.1236264	0	0.1454545	0.2363636	0.5555556	0	0	0.495535714	0
	0.1831502	0	0.0454545	0.1363636	0.5555556	0	0	0.5	0
	0.2069597	0	0.0545455	0.0272727	0.5555556	0.1111111	0	0.03125	0
	0.1300366	0	0.0363636	0.0818182	0.5555556	0.1111111	0	1.11022E-16	0
	0.0915751	0	0.0363636	0.0818182	0.5555556	0.1111111	0	1.11022E-16	0
	0.0384615	0	0.0363636	0.0818182	0.6666667	0.2222222	0	1.11022E-16	0
	0.0384615	0	1.11E-16	0.0181818	0.6666667	0.3333333	0	1.11022E-16	0
	0.0384615	0.1	1.11E-16	0	0.6666667	0.1904762	0	1.11022E-16	0
	3.331E-16	0.1	1.11E-16	0	0.5238095	0.1904762	0		
	3.331E-16	0.0818182	1.11E-16	0	0.2380952	0.4126984	0		
	3.331E-16	0.2818182	1.11E-16	0	0.2380952	0.4126984	0		
	3.331E-16	0.2272727	1.11E-16	0	0.4603175	0.0952381	0		
	3.331E-16	0.2909091	1.11E-16	0	0.1746032	0.2063492	0		
	3.331E-16	0.3090909	1.11E-16	0	0.1746032	0.2063492	0		
	3.331E-16	0.1	1.11E-16	0	0.1746032	0.3174603	0		
	3.331E-16	0.0727273	1.11E-16	0	0.2857143	0.3174603	0.1428571		
	3.331E-16	0.0636364	1.11E-16	0	0.1428571	0.3174603	0.1428571		
	3.331E-16	0.0454545	1.11E-16	0	0.1428571	0.3174603	0.1428571		
	3.331E-16	0.0636364	1.11E-16	0	2.22E-16	0.031746	0.1428571		
	3.331E-16	0.0818182	1.11E-16	0	2.22E-16	0.1111111	0.2857143		
	3.331E-16	0.0818182	1.11E-16	0	2.22E-16	0.1111111	0.2857143		
	3.331E-16	0.0818182	1.11E-16	0	2.22E-16	0.1111111	0.2857143		
	3.331E-16	0.0818182	1.11E-16	0	2.22E-16	0.1111111	0.2857143		
	3.331E-16	0.1	1.11E-16	0	2.22E-16	0.1111111	0.4285714		
	3.331E-16	0.1	1.11E-16	0	2.22E-16	0.1111111	0.3174603		
	3.331E-16	0	1.11E-16	0	2.22E-16	0.1111111	0.3492063		
	3.331E-16	0	1.11E-16	0	2.22E-16	0.1111111	0.3492063		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.4920635		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.4920635		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.5238095		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.6666667		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.6666667		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.6666667		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.5555556		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.5555556		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.5555556		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.4444444		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.4444444		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.3333333		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.3333333		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.3333333		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.2222222		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.2222222		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	0.2222222		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
	3.331E-16	0	1.11E-16	0	2.22E-16	2.22E-16	2.22E-16		
Test Statistic, $\alpha = 0.05$	0.3052172	0.4675351	0.4675351	0.4675351	0.6853756	0.6853756	0.6853756	0.567475613	0.567475613
Test Statistic, $\alpha = 0.01$	0.3658117	0.5603546	0.5603546	0.5603546	0.8214428	0.8214428	0.8214428	0.680136213	0.680136213

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0.0128205	0	0	0	0	0	0	0	0.041666667
	0.0128205	0	0	0.0833333	0	0	0	0	0.0625
	0	0	0	0.1053922	0	0	0	0	0.076388889
	0.1410256	0	0	0.1887255	0	0	0	0	0.076388889
	0.4102564	0	0	0.1691176	0	0	0	0	0.041666667
	0.4487179	0	0.0220588	0.1323529	0	0	0	0.027777778	0.125
	0.4102564	0	0.1151961	0.1789216	0	0	0	0.013888889	0.173611111
	0.2179487	0	0.5245098	0.2303922	0	0.0909091	0	0.013888889	0.173611111
	0.0384615	0	0.6176471	0.2598039	0	0.0909091	0	0.041666667	0.111111111
	0	0	0.6348039	0.0637255	0	0.0909091	0	0	0.256944444
	0.025641	0	0.5906863	0.0269608	0.0833333	0.0909091	0	0.006944444	0.166666667
	1.11E-16	0	0.504902	0.0710784	0.0833333	0.0909091	0	0.006944444	0
	0.025641	0	0.3161765	0.0735294	0.125	0.0909091	0	0.0625	0.020833333
	0.0128205	0	0.2941176	0.0147059	0.125	0.2727273	0	0.055555556	0.020833333
	1.11E-16	0.0196078	0.2107843	0.0147059	0.2083333	0.2727273	0.0909091	0.041666667	0
	0.0128205	0.0196078	0.127451	0.0441176	0.3333333	0.3636364	0.0909091	0.1875	0
	1.11E-16	0.0392157	0.0441176	0.0220588	0.5	0.3636364	0.0909091	0.125	0
	1.11E-16	0.0955882	0.0637255	0.0220588	0.5416667	0.3636364	0.0909091	0.041666667	0
	0.025641	0.1127451	0.0637255	0.0220588	0.6666667	0.3636364	0.0909091	0	0
	0.0384615	0.1862745	0.0416667	0.0416667	0.6666667	0.6363636	0.0909091	0	0
	0.0384615	0.2843137	2.22E-16	1.11E-16	0.3939394	0.6363636	0.0492424		
	0.0384615	0.3382353	2.22E-16	1.11E-16	0.5189394	0.9090909	0.0492424		
	0.025641	0.2892157	2.22E-16	1.11E-16	0.5606061	0.9090909	0.0492424		
	0.025641	0.1838235	2.22E-16	1.11E-16	0.6022727	0.9090909	0.0075758		
	0.0128205	0.2401961	2.22E-16	1.11E-16	0.6439394	0.9090909	0.0340909		
	0.0128205	0.1348039	2.22E-16	1.11E-16	0.5530303	0.9090909	0.1174242		
	0.0128205	0.1936275	2.22E-16	1.11E-16	0.594697	1	0.2007576		
	0.0128205	0.1519608	2.22E-16	1.11E-16	0.594697	1	0.2424242		
	0.0128205	0.1102941	2.22E-16	1.11E-16	0.594697	0.9583333	0.2424242		
	0.0128205	0.0686275	2.22E-16	1.11E-16	0.6363636	0.8333333	0.3257576		
	0.0128205	0.0465686	2.22E-16	1.11E-16	0.3636364	0.8333333	0.3257576		
	0.0128205	0.004902	2.22E-16	1.11E-16	0.1818182	0.7916667	0.5340909		
	2.22E-16	0.004902	2.22E-16	1.11E-16	0.1818182	0.75	0.6174242		
	2.22E-16	0.004902	2.22E-16	1.11E-16	0.0909091	0.75	0.6590909		
	2.22E-16	0.0245098	2.22E-16	1.11E-16	0.0909091	0.6666667	0.7007576		
	2.22E-16	0.0245098	2.22E-16	1.11E-16	0.0909091	0.625	0.5606061		
	2.22E-16	0.002451	2.22E-16	1.11E-16	0.0909091	0.5416667	0.5606061		
	2.22E-16	0.0220588	2.22E-16	1.11E-16	0.0909091	0.5416667	0.5113636		
	2.22E-16	0.0220588	2.22E-16	1.11E-16	0.0909091	0.4166667	0.594697		
	2.22E-16	0.0416667	2.22E-16	1.11E-16	0.0909091	0.3333333	0.594697		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	0.0909091	0.2916667	0.6363636		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	0.0909091	0.2916667	0.5454545		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	0.0909091	0.2083333	0.3636364		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	0.0909091	0.1666667	0.3636364		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	0.0909091	0.125	0.0909091		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	0.0833333	0.0909091		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	0.0416667	0.0909091		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	0.0416667	0.0909091		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	0.0416667	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
	2.22E-16	5.551E-16	2.22E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2177743	0.3366502	0.3366502	0.3366502	0.495189	0.495189	0.495189	0.299851815	0.299851815
Test Statistic, $\alpha = 0.01$	0.2610089	0.4034851	0.4034851	0.4034851	0.5934986	0.5934986	0.5934986	0.35938122	0.35938122

Appendix D.3: Spreadsheet for Domain (14 v 21)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	**0**	**0**	**0**	**0.0571429**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0.2**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0.3714286**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0.4857143**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0.6**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0.6857143**	**0**	**0**	**0**	**0.023255814**
0	**0**	**0**	**0**	**0.7142857**	**0**	**0**	**0**	**0.046511628**
0.025641	**0**	**0**	**0.0196078**	**0.7142857**	**0**	**0**	**0**	**0.041989664**
0.1666667	**0**	**0**	**0.0105988**	**0.7714286**	**0**	**0**	**0**	**0.088501292**
0.4358974	**0**	**0**	**0.0302067**	**0.8285714**	**0**	**0**	**0**	**0.242248062**
0.5384615	**0**	**0.0196078**	**0.099629**	**0.8857143**	**0.0285714**	**0**	**0.027777778**	**0.428294574**
0.6282051	**0**	**0.1478537**	**0.1690514**	**0.8857143**	**0.0571429**	**0**	**0.027777778**	**0.698320413**
0.6538462	**0**	**0.5537891**	**0.2988871**	**0.8857143**	**0.0571429**	**0**	**0.055555556**	**0.777777778**
0.6298462	**0**	**0.6491786**	**0.427133**	**0.8857143**	**0.0571429**	**0**	**0.060077519**	**0.611111111**
0.6955897	**0**	**0.590885**	**0.5691574**	**0.8857143**	**0.0857143**	**0**	**0.013565891**	**0.527777778**
0.7068718	**0**	**0.4228935**	**0.5574987**	**0.802381**	**0.1142857**	**0**	**0.005167959**	**0.333333333**
0.6429744	**0**	**0.1828299**	**0.4976153**	**0.8309524**	**0.1428571**	**0**	**0.131136951**	**0.083333333**
0.5246154	**0**	**0.0492846**	**0.4377318**	**0.7892857**	**0.2**	**0**	**0.187984496**	**0**
0.4190769	**0**	**0.0508744**	**0.3434022**	**0.8464286**	**0.2571429**	**0**	**0.374677003**	**0**
0.2687179	**0.0196078**	**0.0148384**	**0.163222**	**0.7630952**	**0.3428571**	**0**	**0.25**	**0**
0.1167179	**0.0106793**	**0.0211977**	**0.0959194**	**0.6380952**	**0.3714286**	**0**	**0**	**0**
0.0495385	**0.0302871**	**0.0392157**	**0.0885003**	**0.4714286**	**0.3714286**	**0**	**0**	**0**
0.0175385	**0.1193978**	**0.0196078**	**0.0254372**	**0.4297619**	**0.4571429**	**0**	**0**	**0**
0.0271795	**0.1603641**	**0.0196078**	**0.0164282**	**0.3047619**	**0.5428571**	**0**	**0**	**0**
0.024	**0.3082983**	**2.22E-16**	**0.018018**	**0.3047619**	**0.6285714**	**0**	**0**	**0**
0.016	**0.397409**	**2.22E-16**	**0.018018**	**0.3333333**	**0.6571429**	**0.0416667**		
0	**0.4989496**	**2.22E-16**	**0.018018**	**0.2083333**	**0.7428571**	**0.0416667**		
0	**0.5987395**	**2.22E-16**	**0.018018**	**0.1666667**	**0.7428571**	**0.0416667**		
0	**0.5826331**	**2.22E-16**	**0.009009**	**0.125**	**0.7714286**	**0.0833333**		
0	**0.6181723**	**2.22E-16**	**0**	**0.0833333**	**0.8**	**0.125**		
0	**0.5842087**	**2.22E-16**	**0**	**0.0833333**	**0.8**	**0.2083333**		
0	**0.6073179**	**2.22E-16**	**0**	**0.0416667**	**0.8**	**0.2916667**		
0	**0.5537465**	**2.22E-16**	**0**	**0.0416667**	**0.8285714**	**0.3333333**		
0	**0.4287465**	**2.22E-16**	**0**	**0.0416667**	**0.7869048**	**0.3333333**		
0	**0.3216036**	**2.22E-16**	**0**	**2.22E-16**	**0.6904762**	**0.4166667**		
0	**0.2072829**	**2.22E-16**	**0**	**2.22E-16**	**0.6904762**	**0.4166667**		
0	**0.1269258**	**2.22E-16**	**0**	**2.22E-16**	**0.677381**	**0.625**		
0	**0.0644258**	**2.22E-16**	**0**	**2.22E-16**	**0.6357143**	**0.7083333**		
0	**0.0376401**	**2.22E-16**	**0**	**2.22E-16**	**0.6642857**	**0.75**		
0	**0.0215336**	**2.22E-16**	**0**	**2.22E-16**	**0.5809524**	**0.7630952**		
0	**0.0215336**	**2.22E-16**	**0**	**2.22E-16**	**0.5678571**	**0.8047619**		
0	**0.0143557**	**2.22E-16**	**0**	**2.22E-16**	**0.4845238**	**0.8047619**		
0	**0.025035**	**2.22E-16**	**0**	**2.22E-16**	**0.5130952**	**0.8464286**		
0	**0.0161064**	**2.22E-16**	**0**	**2.22E-16**	**0.3880952**	**0.9297619**		
0	**0.0089286**	**2.22E-16**	**0**	**2.22E-16**	**0.3047619**	**0.9297619**		
0	**0.0089286**	**2.22E-16**	**0**	**2.22E-16**	**0.2630952**	**0.9714286**		
0	**0.0089286**	**2.22E-16**	**0**	**2.22E-16**	**0.2630952**	**0.9714286**		
0	**0.0089286**	**2.22E-16**	**0**	**2.22E-16**	**0.1797619**	**0.9714286**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**0.1666667**	**0.9714286**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**0.125**	**0.9428571**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**0.0833333**	**0.9428571**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**0.0416667**	**0.9428571**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**0.0416667**	**0.9142857**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**0.0416667**	**0.9142857**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.9142857**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.8857143**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.8571429**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.8571429**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.8**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.8**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.7714286**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.7714286**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.7428571**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.7142857**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.7142857**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.6857143**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.6857143**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.6857143**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.6857143**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.5714286**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.5428571**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.5142857**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.4857143**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.4857143**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.4571429**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.4**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.3142857**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.2571429**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.2285714**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.2285714**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.1714286**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.1142857**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.0857143**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.0571429**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.0571429**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.0571429**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.0571429**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.0285714**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**0.0285714**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		
0	**3.331E-16**	**2.22E-16**	**0**	**2.22E-16**	**4.441E-16**	**1.11E-16**		

Test Statistic, $\alpha = 0.05$	0.1962387	0.2297411	0.2300646	0.2300646	0.3604336	0.3604336	0.3604336	0.307232373	0.307232373
Test Statistic, $\alpha = 0.01$	0.2351978	0.2753514	0.2757392	0.2757392	0.4319903	0.4319903	0.4319903	0.368227036	0.368227036

Appendix D.3: Spreadsheet for Domain (14 v 31)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0.1666667	0	0	0	0
	0.025641	0	0	0.0196078	0.1666667	0	0	0	0.097222222
	0.1666667	0	0	0.0196078	0.1666667	0	0	0	0.097222222
	0.4358974	0	0	0.0392157	0.3333333	0	0	0	0.041666667
	0.5384615	0	0.0196078	0.1176471	0.3333333	0	0	0.027777778	0.291666667
	0.6282051	0	0.1568627	0.1960784	0.3333333	0	0	0.027777778	0.736111111
	0.6187584	0	0.6078431	0.2760181	0.3333333	0	0	0.055555556	0.777777778
	0.6187584	0	0.7843137	0.413273	0.3333333	0	0	0.041666667	0.611111111
	0.6383266	0	0.8431373	0.5324284	0.3333333	0	0	0.041666667	0.527777778
	0.5843455	0	0.8823529	0.5339367	0.25	0	0	0.013888889	0.333333333
	0.4730094	0	0.9215686	0.5731523	0.25	0	0	0.180555556	0.083333333
	0.3407557	0	0.7873303	0.5354449	0.375	0.1666667	0	0.458333333	0
	0.2739541	0	0.8069382	0.5942685	0.375	0.1666667	0	0.444444444	0
	0.2645074	0.0196078	0.5761689	0.5942685	0.2916667	0.1666667	0	0.25	0
	0.194332	0.0196078	0.4992459	0.653092	0.1666667	0.1666667	0	0	0
	0.1369771	0.0392157	0.4223228	0.6726998	0	0.1666667	0	0	0
	0.0843455	0.1372549	0.3650075	0.4419306	0.0416667	0.3333333	0	0	0
	0.1099865	0.1960784	0.2111614	0.3650075	0.1666667	0.3333333	0	0	0
	0.1052632	0.3529412	0.2307692	0.3846154	0.1666667	0.3333333	0	0	0
	0.1052632	0.4509804	0.1538462	0.3846154	0.1666667	0.3333333	0.0416667		
	0.0877193	0.5882353	0.0769231	0.3846154	0.2916667	0.5	0.0416667		
	0.0877193	0.7058824	0.0769231	0.2307692	0.3333333	0.5	0.0416667		
	0.0877193	0.7254902	0.0769231	0.2307692	0.375	0.5	0.0833333		
	0.0877193	0.8235294	0.0769231	0.0769231	0.4166667	0.6666667	0.125		
	0.0701754	0.8431373	0.0769231	0.0769231	0.25	0.6666667	0.2083333		
	0.0701754	0.8250377	0.0769231	0.0769231	0.2916667	0.8333333	0.2916667		
	0.0526316	0.7481146	0.0769231	0.0769231	0.2916667	0.8333333	0.3333333		
	0.0526316	0.7481146	2.22E-16	0.0769231	0.2916667	0.7916667	0.1666667		
	0.0350877	0.6711916	2.22E-16	0.0769231	0.1666667	0.6666667	0.25		
	0.0350877	0.6907994	2.22E-16	0	0.1666667	0.6666667	0.25		
	0.0350877	0.6907994	2.22E-16	0	0.1666667	0.625	0.4583333		
	0.0350877	0.6138763	2.22E-16	0	0.1666667	0.75	0.5416667		
	0.0350877	0.6138763	2.22E-16	0	1.11E-16	0.75	0.5833333		
	0.0350877	0.6334842	2.22E-16	0	1.11E-16	0.6666667	0.625		
	0.0350877	0.6334842	2.22E-16	0	1.11E-16	0.625	0.3333333		
	0.0350877	0.4992459	2.22E-16	0	1.11E-16	0.5416667	0.3333333		
	0.0350877	0.4419306	2.22E-16	0	1.11E-16	0.5416667	0.375		
	0.0175439	0.3650075	2.22E-16	0	1.11E-16	0.4166667	0.4583333		
	0.0175439	0.3846154	2.22E-16	0	1.11E-16	0.3333333	0.4583333		
	0.0175439	0.3846154	2.22E-16	0	1.11E-16	0.2916667	0.5		
	0.0175439	0.3846154	2.22E-16	0	1.11E-16	0.2916667	0.5		
	0.0175439	0.3846154	2.22E-16	0	1.11E-16	0.2083333	0.5		
	0.0175439	0.3846154	2.22E-16	0	1.11E-16	0.1666667	0.5		
	0.0175439	0.3846154	2.22E-16	0	1.11E-16	0.125	0.5		
	0.0175439	0.2307692	2.22E-16	0	1.11E-16	0.0833333	0.5		
	0.0175439	0.2307692	2.22E-16	0	1.11E-16	0.0416667	0.5		
	0.0175439	0.2307692	2.22E-16	0	1.11E-16	0.0416667	0.3333333		
	0.0175439	0.2307692	2.22E-16	0	1.11E-16	0.0416667	0.3333333		
	0.0175439	0.1538462	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.1666667		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.1666667		
	0.0175439	0.0769231	2.22E-16	0	1.11E-16	1.11E-16	0.1666667		
	0.0175439	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0.1666667		
	0.0175439	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0.1666667		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0.1666667		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0.1666667		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0.1666667		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0.1666667		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
Test Statistic, $\alpha = 0.05$	0.2369851	0.4225442	0.4225442	0.4225442	0.6207522	0.6207522	0.6207522	0.531580453	0.531580453
Test Statistic, $\alpha = 0.01$	0.2840336	0.5064316	0.5064316	0.5064316	0.7439898	0.7439898	0.7439898	0.637114807	0.637114807

Appendix D.3: Spreadsheet for Domain (14 v 41)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.166666667
	0	0	0	0	0	0	0	0	0.25
	0	0	0	0	0	0	0	0	0.333333333
	0.025641	0	0	0.0392157	0	0	0	0	0.305555556
	0.1666667	0	0	0.0392157	0	0	0	0	0.305555556
	0.4358974	0	0	0.0196078	0	0	0	0.083333333	0.5
	0.5184615	0	0.0196078	0.0588235	0	0	0	0.138888889	0.75
	0.6082051	0	0.1568627	0.0784314	0	0	0	0.222222222	0.694444444
	0.5738462	0	0.6078431	0.2352941	0	0	0	0.194444444	0.611111111
	0.5538462	0	0.7843137	0.3137255	0	0	0	0.25	0.527777778
	0.5435897	0	0.8431373	0.3921569	0.0666667	0	0	0.25	0.527777778
	0.5348718	0	0.8235294	0.4117647	0.0166667	0	0	0.388888889	0.333333333
	0.4589744	0	0.6862745	0.2745098	0.0166667	0	0	0.555555556	0.083333333
	0.3646154	0	0.6470588	0.254902	0.0583333	0	0.1333333	0.416666667	0
	0.3230769	0	0.6078431	0.3137255	0.0583333	0	0.2	0.361111111	0
	0.3087179	0.0196078	0.4901961	0.1372549	0.1416667	0	0.2	0.25	0
	0.2887179	0.0196078	0.4313725	0.0784314	0.2666667	0	0.3333333	0	0
	0.3015385	0.0392157	0.4313725	0.0980392	0.4333333	0.0666667	0.3333333	0	0
	0.2815385	0.1372549	0.3921569	0.0980392	0.475	0.0666667	0.4	0	0
	0.2871795	0.1960784	0.2156863	0.0980392	0.4666667	0.0666667	0.5333333	0	0
	0.28	0.3529412	0.1176471	0.0588235	0.4666667	0.0666667	0.5333333	0	0
	0.26	0.4509804	2.22E-16	0.0588235	0.4666667	0.1333333	0.5583333		
	0.24	0.5294118	2.22E-16	0.0588235	0.5916667	0.2	0.5583333		
	0.2	0.5882353	2.22E-16	0.0588235	0.6333333	0.2	0.625		
	0.2	0.6078431	2.22E-16	0.0588235	0.675	0.2666667	0.5833333		
	0.18	0.7058824	2.22E-16	0.0588235	0.7166667	0.2666667	0.5416667		
	0.12	0.6078431	2.22E-16	0	0.65	0.3333333	0.4583333		
	0.08	0.5490196	2.22E-16	0	0.6916667	0.3333333	0.375		
	0.08	0.5490196	2.22E-16	0	0.5583333	0.3333333	0.3333333		
	0.06	0.5490196	2.22E-16	0	0.4916667	0.4916667	0.4		
	0.02	0.4901961	2.22E-16	0	0.5333333	0.3666667	0.3166667		
	0.02	0.5098039	2.22E-16	0	0.5333333	0.4333333	0.3166667		
	0.02	0.5098039	2.22E-16	0	0.5333333	0.4583333	0.1083333		
	0.02	0.5098039	2.22E-16	0	0.5333333	0.4833333	0.0916667		
	0.02	0.4509804	2.22E-16	0	0.5333333	0.55	0.05		
	0.02	0.3529412	2.22E-16	0	0.5333333	0.5333333	0.0083333		
	0.02	0.2941176	2.22E-16	0	0.5333333	0.4916667	0.0333333		
	0.02	0.254902	2.22E-16	0	0.4	0.4083333	0.0333333		
	0.02	0.2745098	2.22E-16	0	0.4	0.4083333	0.0083333		
	0.02	0.1568627	2.22E-16	0	0.3333333	0.2833333	0.0916667		
	0.02	0.0588235	2.22E-16	0	0.2666667	0.2	0.025		
	0.02	0.0588235	2.22E-16	0	0.2666667	0.225	0.0666667		
	0.02	0.0588235	2.22E-16	0	0.2666667	0.225	0.0666667		
	0.02	0.0588235	2.22E-16	0	0.2666667	0.1416667	0.0666667		
	2.22E-16	0.0588235	2.22E-16	0	0.2666667	0.1	0.0666667		
	2.22E-16	0.0588235	2.22E-16	0	0.2666667	0.0583333	0.0666667		
	2.22E-16	0.0588235	2.22E-16	0	0.2	0.0833333	0.0666667		
	2.22E-16	0.0588235	2.22E-16	0	0.2	0.0416667	0.0666667		
	2.22E-16	0.0588235	2.22E-16	0	0.2	0.0416667	0.0666667		
	2.22E-16	0.0588235	2.22E-16	0	0.2	0.0416667	0		
	2.22E-16	0.0588235	2.22E-16	0	0.0666667	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	0.0666667	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	0.0666667	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	0.0666667	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
	2.22E-16	2.22E-16	2.22E-16	0	1.11E-16	1.11E-16	0		
Test Statistic, α = 0.05	0.2463835	0.3808762	0.3808762	0.3808762	0.4476308	0.4476308	0.4476308	0.453333333	0.453333333
Test Statistic, α = 0.01	0.2952979	0.4564913	0.4564913	0.4564913	0.5364987	0.5364987	0.5364987	0.543333333	0.543333333

Appendix D.3: Spreadsheet for Domain (14 v 43)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0.1	0	0	0	0	0	0	0	0
	0.174359	0	0	0.1342383	0	0	0	0	0.027777778
	0.1333333	0	0	0.1342383	0	0	0	0	0.027777778
	0.0358974	0	0	0.3453997	0	0	0	0	0.083333333
	0.0384615	0	0.0196078	0.4977376	0	0.1	0	0.027777778	0.083333333
	0.1282051	0	0.1568627	0.5731523	0	0.1	0	0.027777778	0.138888889
	0.1538462	0	0.6078431	0.5701357	0	0.2	0	0.055555556	0.222222222
	0.1538462	0	0.7843137	0.5098039	0	0.4	0	0.083333333	0.388888889
	0.0435897	0	0.8431373	0.3137255	0	0.4	0	0.083333333	0.472222222
	0.0948718	0	0.7285068	0.2352941	0.0833333	0.4	0	0.111111111	0
	0.1589744	0	0.4600302	0.1960784	0.0833333	0.6	0	0.194444444	0.083333333
	0.0846154	0	0.2488688	0.1568627	0.025	0.7	0	0.416666667	0
	0.1230769	0	0.1915535	0.0980392	0.025	0.9	0	0.222222222	0
	0.1487179	0.0196078	0.1146305	0.0980392	0.1083333	0.9	0	0.083333333	0
	0.1487179	0.0196078	0.0392157	0.0392157	0.2333333	0.9	0	0	0
	0.1615385	0.0392157	0.0392157	0.0196078	0.4	0.9	0.1	0	0
	0.1615385	0.0603318	0.0196078	0.0196078	0.4416667	0.9	0.1	0	0
	0.1871795	0.1191554	0.0196078	0.0196078	0.5666667	0.9	0.1	0	0
	0.2	0.199095	3.331E-16	0	0.5666667	0.9	0.1	0	0
	0.2	0.066365	3.331E-16	0	0.5666667	0.9	0.0583333		
	0.2	0.2036199	3.331E-16	0	0.6916667	0.9	0.0583333		
	0.1	0.0904977	3.331E-16	0	0.7333333	1	0.0583333		
	0.1	0.0331825	3.331E-16	0	0.775	1	0.0166667		
	0.1	0.0542986	3.331E-16	0	0.8166667	1	0.025		
	0.1	0.0030166	3.331E-16	0	0.7166667	1	0.0083333		
	0.1	0.0211161	3.331E-16	0	0.7583333	1	0.0083333		
	1.11E-16	0.0980392	3.331E-16	0	0.6583333	1	0.0666667		
	1.11E-16	0.0980392	3.331E-16	0	0.6583333	0.9583333	0.0666667		
	1.11E-16	0.0980392	3.331E-16	0	0.7	0.8333333	0.0166667		
	1.11E-16	0.0784314	3.331E-16	0	0.7	0.8333333	0.0166667		
	1.11E-16	0.0784314	3.331E-16	0	0.7	0.7916667	0.225		
	1.11E-16	0.0784314	3.331E-16	0	0.7	0.75	0.2083333		
	1.11E-16	0.0784314	3.331E-16	0	0.5	0.75	0.05		
	1.11E-16	0.0588235	3.331E-16	0	0.5	0.6666667	0.0083333		
	1.11E-16	0.0588235	3.331E-16	0	0.5	0.625	0.0333333		
	1.11E-16	0.0392157	3.331E-16	0	0.4	0.5416667	0.0333333		
	1.11E-16	0.0196078	3.331E-16	0	0.4	0.5416667	0.075		
	1.11E-16	0.0196078	3.331E-16	0	0.4	0.4166667	0.1583333		
	1.11E-16	4.441E-16	3.331E-16	0	0.3	0.3333333	0.1583333		
	1.11E-16	4.441E-16	3.331E-16	0	0.3	0.2916667	0.2		
	1.11E-16	4.441E-16	3.331E-16	0	0.2	0.2916667	0.2		
	1.11E-16	4.441E-16	3.331E-16	0	0.1	0.2083333	0.2		
	1.11E-16	4.441E-16	3.331E-16	0	0.1	0.1666667	0.2		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	0.125	0.2		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	0.0833333	0.2		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	0.0416667	0.2		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	0.0416667	0.2		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	0.0416667	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0.1		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
	1.11E-16	4.441E-16	3.331E-16	0	1.11E-16	4.441E-16	0		
Test Statistic, $\alpha = 0.05$	0.4568072	0.4225442	0.4225442	0.4225442	0.5118854	0.5118854	0.5118854	0.817258289	0.817258289
Test Statistic, $\alpha = 0.01$	0.5474969	0.5064316	0.5064316	0.5064316	0.6135097	0.6135097	0.6135097	0.979508097	0.979508097

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0.0833333	0	0	0	0	0	0	0	0
0.1666667	0	0	0	0	0	0	0	0
0.25	0	0	0.0833333	0	0	0	0	0
0.3910256	0	0	0.1887255	0	0.0666667	0	0	0.027777778
0.3333333	0	0	0.4387255	0	0.0666667	0	0	0.027777778
0.1891026	0	0	0.627451	0.0666667	0.0666667	0	0	0.083333333
0.2115385	0	0.0196078	0.5906863	0.0666667	0.0666667	0	0.027777778	0.083333333
0.1634615	0	0.1568627	0.6789216	0.0666667	0.1333333	0.0666667	0.027777778	0.003968254
0.3044872	0	0.6078431	0.5637255	0.0666667	0.2	0.0666667	0.055555556	0.079365079
0.3461538	0	0.7426471	0.4681373	0.0666667	0.2666667	0.0666667	0.083333333	0.246031746
0.2564103	0	0.7598039	0.3137255	0.0666667	0.2666667	0.0666667	0.083333333	0.186507937
0.2051282	0	0.5490196	0.2352941	0.0166667	0.3333333	0.0666667	0.031746032	0.380952381
0.1410256	0	0.2132353	0.1960784	0.0166667	0.3333333	0.0666667	0.051587302	0.345238095
0.1153846	0	0.1911765	0.1568627	0.0583333	0.3333333	0.0666667	0.273809524	0.285714286
0.0769231	0	0.0441176	0.0980392	0.0583333	0.4	0.0666667	0.26984127	0.285714286
0.0512821	0.0196078	0.002451	0.0980392	0.1416667	0.5333333	0.0666667	0.321428571	0.142857143
0.0512821	0.0220588	0.0392157	0.0392157	0.2666667	0.6666667	0.1333333	0.571428571	2.22045E-16
0.0384615	0.0441176	0.0392157	0.0196078	0.4333333	0.7333333	0.2	0.142857143	2.22045E-16
0.0384615	0.0294118	0.0196078	0.0196078	0.475	0.8	0.2	0.142857143	2.22045E-16
0.0128205	0.0539216	0.0196078	0.0196078	0.6	0.8666667	0.2	0	2.22045E-16
1.11E-16	0.0220588	4.441E-16	2.22E-16	0.6	0.8666667	0.2	0	2.22045E-16
1.11E-16	0.0490196	4.441E-16	2.22E-16	0.6	0.8666667	0.225		
1.11E-16	0.0367647	4.441E-16	2.22E-16	0.725	0.8666667	0.225		
1.11E-16	0.1691176	4.441E-16	2.22E-16	0.6333333	0.9333333	0.225		
1.11E-16	0.1495098	4.441E-16	2.22E-16	0.675	0.9333333	0.25		
1.11E-16	0.0931373	4.441E-16	2.22E-16	0.7166667	0.9333333	0.275		
1.11E-16	0.1151961	4.441E-16	2.22E-16	0.5166667	1	0.1916667		
1.11E-16	0.0980392	4.441E-16	2.22E-16	0.5583333	1	0.1083333		
1.11E-16	0.0980392	4.441E-16	2.22E-16	0.4916667	1	0.0666667		
1.11E-16	0.0980392	4.441E-16	2.22E-16	0.4916667	0.9583333	0.0666667		
1.11E-16	0.0980392	4.441E-16	2.22E-16	0.5333333	0.8333333	0.0166667		
1.11E-16	0.0784314	4.441E-16	2.22E-16	0.5333333	0.8333333	0.0166667		
1.11E-16	0.0784314	4.441E-16	2.22E-16	0.4666667	0.7916667	0.1583333		
1.11E-16	0.0784314	4.441E-16	2.22E-16	0.4666667	0.75	0.2416667		
1.11E-16	0.0784314	4.441E-16	2.22E-16	0.4	0.75	0.2166667		
1.11E-16	0.0588235	4.441E-16	2.22E-16	0.3333333	0.6666667	0.2583333		
1.11E-16	0.0588235	4.441E-16	2.22E-16	0.3333333	0.625	0.1666667		
1.11E-16	0.0392157	4.441E-16	2.22E-16	0.3333333	0.5416667	0.1		
1.11E-16	0.0196078	4.441E-16	2.22E-16	0.3333333	0.5416667	0.1416667		
1.11E-16	0.0196078	4.441E-16	2.22E-16	0.3333333	0.4166667	0.225		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.2666667	0.3333333	0.225		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.2666667	0.2916667	0.2666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.2666667	0.2916667	0.2		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.2666667	0.2083333	0.2		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.2666667	0.1666667	0.2		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.2666667	0.125	0.1333333		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.2666667	0.0833333	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.2666667	0.0416667	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.2	0.0416667	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.1333333	0.0416667	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.1333333	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.1333333	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.0666667	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.0666667	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	0.0666667	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		
1.11E-16	3.331E-16	4.441E-16	2.22E-16	1.11E-16	1.11E-16	0		

Test Statistic, $\alpha = 0.05$	0.3174579	0.3366502	0.3366502	0.3366502	0.4476308	0.4476308	0.4476308	0.561788527	0.561788527
Test Statistic, $\alpha = 0.01$	0.3804826	0.4034851	0.4034851	0.4034851	0.5364987	0.5364987	0.5364987	0.673320073	0.673320073

Appendix D.3: Spreadsheet for Domain (14 v 52)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No data from Domain 61**				**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0.025641							**0**	**0.194444444**
	0.1666667							**0.111111111**	**0.527777778**
	0.4358974							**0.111111111**	**0.472222222**
	0.4273504							**0.083333333**	**0.472222222**
	0.517094							**0.083333333**	**0.527777778**
	0.3205128							**0.166666667**	**0.444444444**
	0.3205128							**0.138888889**	**0.611111111**
	0.2991453							**0.361111111**	**0.527777778**
	0.3504274							**0.444444444**	**0.333333333**
	0.3034188							**0.361111111**	**0.083333333**
	0.2179487							**0.361111111**	**0**
	0.2564103							**0.444444444**	**0**
	0.2820513							**0.25**	**0**
	0.2820513							**0**	**0**
	0.1837607							**0**	**0**
	0.1837607							**0**	**0**
	0.2094017							**0**	**0**
	0.2222222							**0**	**0**
	0.2222222								
	0.1111111								
	0.1111111								
	0.1111111								
	0.1111111								
	2.22E-16								
	2.22E-16								
	2.22E-16								
	2.22E-16								
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	2.22E-16								
	2.22E-16								
Test Statistic, α = 0.05	0.4787734							0.506842075	0.506842075
Test Statistic, α = 0.01	0.573824							0.607465134	0.607465134

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0	0	0	0	0
0	0	0	0	0.0425532	0	0	0	0.034482759
0	0	0	0	0.0425532	0	0	0	0.068965517
0	0	0	0	0.0638298	0	0	0	0.103448276
0	0	0	0	0.0638298	0	0	0	0.24137931
0	0	0	0	0.0638298	0.0212766	0	0	0.24137931
0	0	0	0	0.0638298	0.0212766	0	0	0.275862069
0.025641	0	0	0.0107583	0.0851064	0.0212766	0	0	0.386015326
0.1513995	0	0	0.0069408	0.0851064	0.0212766	0	0	0.420498084
0.4129967	0	0	0.0227312	0.106383	0.0212766	0	0	0.433908046
0.4773928	0	0.0196078	0.0557002	0.1276596	0.0212766	0	0.006704981	0.537356322
0.5137013	0	0.1568627	0.1164324	0.1914894	0.0212766	0	0.041187739	0.619731801
0.4859072	0	0.6078431	0.2201978	0.1914894	0.0212766	0	0.151340996	0.708812261
0.4172049	0	0.7400659	0.3132049	0.2553191	0.0212766	0.0212766	0.295977011	0.611111111
0.3848111	0	0.7634912	0.4296373	0.2553191	0.0212766	0.0212766	0.33045977	0.527777778
0.3521237	0	0.6965122	0.3576262	0.1932624	0.0212766	0.0212766	0.475095785	0.333333333
0.3017225	0	0.5675863	0.2817977	0.1932624	0.0212766	0.0212766	0.564176245	0.083333333
0.243394	0	0.4013535	0.18827	0.1941489	0.0425532	0.0212766	0.583333333	0
0.2131533	0	0.2705188	0.1231997	0.2154255	0.0425532	0.0638298	0.444444444	0
0.1624584	0.0196078	0.1908728	0.0524033	0.1320922	0.0425532	0.106383	0.25	0
0.1319241	0.0196078	0.0758286	0.066979	0.0496454	0.0638298	0.106383	0	0
0.1218438	0.0392157	0.0404303	0.0865868	0.0957447	0.0851064	0.1276596	0	0
0.0836759	0.1372549	0.0334895	0.0334895	0.1161348	0.1276596	0.1276596	0	0
0.0864161	0.1783793	0.0157904	0.0157904	0.2198582	0.212766	0.1276596	0	0
0.0839695	0.3175429	0.0353982	0.0353982	0.1560284	0.2765957	0.1489362	0	0
0.0687023	0.4155822	0.0176991	0.0265487	0.1347518	0.3617021	0.1072695		
0.0610687	0.5439875	0.0176991	0.0265487	0.195922	0.3829787	0.1285461		
0.0534351	0.6439355	0.0088496	0.0265487	0.2163121	0.4680851	0.1285461		
0.0458015	0.6458442	2.22E-16	0.0265487	0.2579787	0.5531915	0.108156		
0.0458015	0.7084852	2.22E-16	0.0265487	0.2358156	0.5957447	0.0664894		
0.0381679	0.6749957	2.22E-16	0.0265487	0.214539	0.6595745	0.0257092		
0.0229008	0.6364741	2.22E-16	0.0265487	0.2136525	0.6808511	0.0576241		
0.0152672	0.5479785	2.22E-16	0.0176991	0.1923759	0.7234043	0.0992908		
0.0076336	0.4152351	2.22E-16	0.0176991	0.1923759	0.7242908	0.0780142		
0.0076336	0.2736422	2.22E-16	0.0088496	0.2340426	0.5992908	0.1613475		
2.22E-16	0.1251085	2.22E-16	0.0088496	0.212766	0.6205674	0.1613475		
2.22E-16	0.1074093	2.22E-16	0.0088496	0.1702128	0.6214539	0.3058511		
2.22E-16	0.0808607	2.22E-16	0	0.1702128	0.6223404	0.3891844		
2.22E-16	0.054312	2.22E-16	0	0.1276596	0.6648936	0.4308511		
2.22E-16	0.0385216	2.22E-16	0	0.106383	0.5815603	0.4725177		
2.22E-16	0.0208225	2.22E-16	0	0.106383	0.5398936	0.5141844		
2.22E-16	0.0315808	2.22E-16	0	0.106383	0.4778369	0.4716312		
2.22E-16	0.0423391	2.22E-16	0	0.106383	0.5203901	0.5132979		
2.22E-16	0.0334895	2.22E-16	0	0.106383	0.4166667	0.5966312		
2.22E-16	0.0530973	2.22E-16	0	0.106383	0.3333333	0.5753546		
2.22E-16	0.0530973	2.22E-16	0	0.106383	0.2916667	0.5531915		
2.22E-16	0.0353982	2.22E-16	0	0.106383	0.2916667	0.5106383		
2.22E-16	0.0265487	2.22E-16	0	0.106383	0.2083333	0.4893617		
2.22E-16	0.0265487	2.22E-16	0	0.0851064	0.1666667	0.4680851		
2.22E-16	0.0265487	2.22E-16	0	0.0638298	0.125	0.4042553		
2.22E-16	0.0265487	2.22E-16	0	0.0638298	0.0833333	0.3617021		
2.22E-16	0.0265487	2.22E-16	0	0.0425532	0.0416667	0.3191489		
2.22E-16	0.0265487	2.22E-16	0	0.0425532	0.0416667	0.2553191		
2.22E-16	0.0265487	2.22E-16	0	0.0425532	0.0416667	0.2340426		
2.22E-16	0.0265487	2.22E-16	0	0.0212766	1.11E-16	0.212766		
2.22E-16	0.0265487	2.22E-16	0	0.0212766	1.11E-16	0.1702128		
2.22E-16	0.0265487	2.22E-16	0	0.0212766	1.11E-16	0.1702128		
2.22E-16	0.0265487	2.22E-16	0	2.22E-16	1.11E-16	0.1489362		
2.22E-16	0.0265487	2.22E-16	0	2.22E-16	1.11E-16	0.1276596		
2.22E-16	0.0176991	2.22E-16	0	2.22E-16	1.11E-16	0.1276596		
2.22E-16	0.0176991	2.22E-16	0	2.22E-16	1.11E-16	0.1276596		
2.22E-16	0.0176991	2.22E-16	0	2.22E-16	1.11E-16	0.106383		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0851064		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0638298		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0425532		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0425532		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0425532		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0425532		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0425532		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0425532		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0425532		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	0.0212766		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	1.11E-16		
2.22E-16	0	2.22E-16	0	2.22E-16	1.11E-16	1.11E-16		

	w (%)	wL (%)	wP (%)	IP (%)	% Gravel	% Sand	% Fines	Bulk Density	Dry Density
Test Statistic, $\alpha = 0.05$	0.1945043	0.2294228	0.2294228	0.2294228	0.3412035	0.3412035	0.3412035	0.339348034	0.339348034
Test Statistic, $\alpha = 0.01$	0.2331191	0.2749699	0.2749699	0.2749699	0.4089425	0.4089425	0.4089425	0.406718599	0.406718599

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.181818182
	0	0	0	0	0.0333333	0	0	0	0.272727273
	0.025641	0	0	0.0196078	0.0666667	0	0	0	0.244949495
	0.1666667	0	0	0.0196078	0.0666667	0	0	0	0.244949495
	0.4177156	0	0	0.0392157	0.0666667	0.0333333	0	0	0.553030303
	0.5020979	0	0.0196078	0.1176471	0.1	0.0333333	0	0.063131313	0.643939394
	0.5554779	0	0.1568627	0.1615957	0.1	0.0333333	0	0.244949495	0.679292929
	0.5447552	0	0.5733604	0.2839757	0.1	0.0333333	0	0.217171717	0.777777778
	0.4356643	0	0.749831	0.4039892	0.1	0.0333333	0	0.189393939	0.611111111
	0.3981352	0	0.7569304	0.4966193	0.1333333	0.0333333	0	0.462121212	0.527777778
	0.2857809	0	0.6409736	0.4716024	0.05	0.0333333	0	0.616161616	0.333333333
	0.2771562	0	0.576741	0.2866802	0.05	0.0333333	0	0.532828283	0.083333333
	0.2482517	0	0.5273834	0.2224476	0.075	0.0333333	0	0.583333333	0
	0.2321678	0	0.3400947	0.1778229	0.1083333	0.0333333	0	0.444444444	0
	0.2214452	0.0196078	0.2538878	0.0226504	0.0583333	0.0333333	0	0.25	0
	0.1850816	0.0196078	0.1849222	0.0642326	0.0666667	0.0333333	0.0333333	0	0
	0.1797203	0.0392157	0.0987153	0.0493577	0.2333333	0.1333333	0.0333333	0	0
	0.1615385	0.1372549	0.0321163	0.0321163	0.175	0.1333333	0.0333333	0	0
	0.1689977	0.1960784	0.0148749	0.0023665	0.2333333	0.1666667	0.0666667	0	0
	0.1454545	0.3529412	0.0172414	0.0172414	0.1666667	0.2	0.1	0	0
	0.1272727	0.4509804	2.22E-16	0.0172414	0.1666667	0.2666667	0.0583333		
	0.0909091	0.5882353	2.22E-16	0.0172414	0.2916667	0.4333333	0.0583333		
	0.0909091	0.688641	2.22E-16	0.0172414	0.2666667	0.4333333	0.0583333		
	0.0727273	0.7082488	2.22E-16	1.11E-16	0.2416667	0.4666667	0.0166667		
	0.0363636	0.7890467	2.22E-16	1.11E-16	0.2833333	0.5333333	0.025		
	0	0.739689	2.22E-16	1.11E-16	0.2833333	0.5666667	0.075		
	0	0.7123056	2.22E-16	1.11E-16	0.2916667	0.6666667	0.125		
	0	0.5743746	2.22E-16	1.11E-16	0.225	0.7333333	0.1666667		
	0	0.4709263	2.22E-16	1.11E-16	0.225	0.6916667	0.1666667		
	0	0.2985125	2.22E-16	1.11E-16	0.2	0.6666667	0.2166667		
	0	0.2491548	2.22E-16	1.11E-16	0.2	0.6666667	0.2166667		
	0	0.1801893	2.22E-16	1.11E-16	0.2	0.6583333	0.3916667		
	0	0.1457066	2.22E-16	1.11E-16	0.1666667	0.65	0.475		
	0	0.0939824	2.22E-16	1.11E-16	0.1333333	0.65	0.45		
	0	0.1135903	2.22E-16	1.11E-16	0.1333333	0.5666667	0.425		
	0	0.0446247	2.22E-16	1.11E-16	0.1333333	0.525	0.4		
	0	0.0642326	2.22E-16	1.11E-16	0.1333333	0.4416667	0.3333333		
	0	0.0493577	2.22E-16	1.11E-16	0.1333333	0.4416667	0.375		
	0	0.0321163	2.22E-16	1.11E-16	0.1	0.35	0.4583333		
	0	0.0172414	2.22E-16	1.11E-16	0.1	0.2666667	0.425		
	0	0.0172414	2.22E-16	1.11E-16	0.1	0.225	0.4333333		
	0	0.0172414	2.22E-16	1.11E-16	0.0666667	0.225	0.4333333		
	0	0.0172414	2.22E-16	1.11E-16	0.0666667	0.175	0.3666667		
	0	0.0172414	2.22E-16	1.11E-16	0.0333333	0.1333333	0.3333333		
	0	0.0172414	2.22E-16	1.11E-16	0.0333333	0.0916667	0.3333333		
	0	0.0172414	2.22E-16	1.11E-16	0.0333333	0.05	0.2666667		
	0	2.22E-16	2.22E-16	1.11E-16	0.0333333	0.0083333	0.2666667		
	0	2.22E-16	2.22E-16	1.11E-16	0.0333333	0.0083333	0.2666667		
	0	2.22E-16	2.22E-16	1.11E-16	0.0333333	0.0083333	0.2		
	0	2.22E-16	2.22E-16	1.11E-16	0.0333333	1.11E-16	0.2		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0.1333333		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0.1		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0.0666667		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0.0666667		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0.0333333		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0.0333333		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0.0333333		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0.0333333		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
	0	2.22E-16	2.22E-16	1.11E-16	1.11E-16	1.11E-16	0		
Test Statistic, $\alpha = 0.05$	0.2394617	0.2610677	0.2610677	0.2610677	0.3724513	0.3724513	0.3724513	0.468533064	0.468533064
Test Statistic, $\alpha = 0.01$	0.2870019	0.3128973	0.3128973	0.3128973	0.4463939	0.4463939	0.4463939	0.561550658	0.561550658

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.076923077
	0.025641	0	0	0.0196078	0	0	0	0	0.126068376
	0.1666667	0	0	0.0196078	0	0	0	0	0.202991453
	0.4358974	0	0	0.0392157	0	0	0	0	0.301282051
	0.5384615	0	0.0196078	0.08061	0	0	0	0.027777778	0.455128205
	0.5865385	0	0.1568627	0.1590414	0.5	0	0	0.027777778	0.784188034
	0.4455128	0	0.6078431	0.3159041	0.5	0	0	0.021367521	0.777777778
	0.3205128	0	0.7472767	0.416122	0.5	0	0	0.147435897	0.611111111
	0.3269231	0	0.8061002	0.5381264	0.5	0	0	0.224358974	0.527777778
	0.2948718	0	0.7342048	0.4684096	0.4166667	0	0	0.35042735	0.333333333
	0.2339744	0	0.6993464	0.3965142	0.4166667	0	0	0.574786325	0.083333333
	0.0929487	0	0.459695	0.1394336	0.375	0	0	0.506410256	0
	0.0480769	0	0.2570806	0.087146	0.375	0	0	0.444444444	0
	0.0320513	0.0196078	0.1830065	0.0501089	0.2916667	0	0	0.25	0
	0.0320513	0.0196078	0.0718954	0.0021786	0.1666667	0	0	0	0
	0.0384615	0.0392157	0.0348584	0.0196078	0	0	0	0	0
	0.0384615	0.1372549	0.0174292	0.0196078	0.0416667	0	0	0	0
	0.0128205	0.1960784	0.0196078	0.0196078	0.1666667	0	0	0	0
	0	0.3529412	4.441E-16	0	0.1666667	0	0	0	0
	0	0.4509804	4.441E-16	0	0.1666667	0	0.0416667		
	0	0.5882353	4.441E-16	0	0.2916667	0.5	0.0416667		
	0	0.7058824	4.441E-16	0	0.1666667	0.5	0.0416667		
	0	0.7254902	4.441E-16	0	0.125	0.5	0.0833333		
	0	0.8235294	4.441E-16	0	0.0833333	1	0.125		
	0	0.8061002	4.441E-16	0	0.0833333	1	0.2083333		
	0	0.7908497	4.441E-16	0	0.0416667	1	0.2916667		
	0	0.6797386	4.441E-16	0	0.0416667	1	0.3333333		
	0	0.5686275	4.441E-16	0	0.0416667	0.9583333	0.3333333		
	0	0.3464052	4.441E-16	0	2.22E-16	0.8333333	0.4166667		
	0	0.2178649	4.441E-16	0	2.22E-16	0.8333333	0.4166667		
	0	0.1808279	4.441E-16	0	2.22E-16	0.7916667	0.625		
	0	0.0697168	4.441E-16	0	2.22E-16	0.75	0.7083333		
	0	0.0784314	4.441E-16	0	2.22E-16	0.75	0.75		
	0	0.0588235	4.441E-16	0	2.22E-16	0.6666667	0.7916667		
	0	0.0588235	4.441E-16	0	2.22E-16	0.625	0.8333333		
	0	0.0392157	4.441E-16	0	2.22E-16	0.5416667	0.8333333		
	0	0.0196078	4.441E-16	0	2.22E-16	0.5416667	0.875		
	0	0.0196078	4.441E-16	0	2.22E-16	0.4166667	0.9583333		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.3333333	0.9583333		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.2916667	1		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.2916667	1		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.2083333	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.1666667	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.125	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.0833333	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.0416667	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.0416667	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	0.0416667	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	0.5		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	4.441E-16	0	2.22E-16	2.22E-16	1.11E-16		
Test Statistic, α = 0.05	0.3174579	0.3236825	0.3236825	0.3236825	1.0009329	1.0009329	1.0009329	0.440062156	0.440062156
Test Statistic, α = 0.01	0.3804826	0.387943	0.387943	0.387943	1.1996475	1.1996475	1.1996475	0.527427437	0.527427437

Appendix D.3: Spreadsheet for Domain (14 v 64)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.142857143
	0.025641	0	0	0.0196078	0	0	0	0	0.257936508
	0.1666667	0	0	0.1053922	0	0	0	0	0.400793651
	0.4358974	0	0	0.0857843	0	0	0	0	0.773809524
	0.5384615	0	0.0196078	0.0073529	0	0	0	0.027777778	0.773809524
	0.6282051	0	0.1568627	0.0710784	0	0	0	0.027777778	0.861111111
	0.6538462	0	0.6078431	0.1029412	0.5	0	0	0.055555556	0.777777778
	0.510989	0	0.7843137	0.2401961	0.5	0	0	0.202380952	0.611111111
	0.6007326	0	0.8431373	0.4362745	0.5	0	0	0.488095238	0.527777778
	0.3663004	0	0.8823529	0.3897059	0.4166667	0	0	0.746031746	0.333333333
	0.4304029	0	0.7965686	0.4289216	0.4166667	0	0	0.805555556	0.083333333
	0.3131868	0	0.8161765	0.4681373	0.375	0	0	0.583333333	0
	0.3516484	0	0.7107843	0.4019608	0.375	0	0	0.444444444	0
	0.0915751	0.0196078	0.2107843	0.0269608	0.2916667	0	0	0.25	0
	0.0915751	0.0196078	0.0857843	0.0857843	0.1666667	0	0	0	0
	0.1043956	0.0392157	0.0392157	0.0196078	0	0	0	0	0
	0.1043956	0.1372549	0.0196078	0.0196078	0.0416667	0	0	0	0
	0.1300366	0.1960784	0.0196078	0.0196078	0.1666667	0	0	0	0
	0.1428571	0.2279412	2.22E-16	0	0.1666667	0	0	0	0
	0.1428571	0.3259804	2.22E-16	0	0.1666667	0	0.0416667		
	0	0.4632353	2.22E-16	0	0.2916667	0	0.0416667		
	0	0.5808824	2.22E-16	0	0.3333333	0	0.0416667		
	0	0.6004902	2.22E-16	0	0.125	0	0.0833333		
	0	0.6985294	2.22E-16	0	0.0833333	0	0.125		
	0	0.7181373	2.22E-16	0	0.0833333	0	0.2083333		
	0	0.6519608	2.22E-16	0	0.0416667	0	0.2916667		
	0	0.6519608	2.22E-16	0	0.0416667	0	0.3333333		
	0	0.5269608	2.22E-16	0	0.0416667	0.4583333	0.3333333		
	0	0.5269608	2.22E-16	0	2.22E-16	0.3333333	0.4166667		
	0	0.5465686	2.22E-16	0	2.22E-16	0.8333333	0.4166667		
	0	0.5465686	2.22E-16	0	2.22E-16	0.7916667	0.625		
	0	0.4215686	2.22E-16	0	2.22E-16	0.75	0.2083333		
	0	0.2965686	2.22E-16	0	2.22E-16	0.75	0.25		
	0	0.1911765	2.22E-16	0	2.22E-16	0.6666667	0.2916667		
	0	0.0588235	2.22E-16	0	2.22E-16	0.625	0.3333333		
	0	0.0392157	2.22E-16	0	2.22E-16	0.5416667	0.3333333		
	0	0.0196078	2.22E-16	0	2.22E-16	0.5416667	0.375		
	0	0.0196078	2.22E-16	0	2.22E-16	0.4166667	0.4583333		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.3333333	0.4583333		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.2916667	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.2916667	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.2083333	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.1666667	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.125	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.0833333	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.0416667	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.0416667	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	0.0416667	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	0.5		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	2.22E-16	2.22E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.5366017	0.5171718	0.5171718	0.5171718	1.0009329	1.0009329	1.0009329	0.561788527	0.561788527
Test Statistic, $\alpha = 0.01$	0.6431329	0.6198456	0.6198456	0.6198456	1.1996475	1.1996475	1.1996475	0.673320073	0.673320073

Appendix D.3: Spreadsheet for Domain (14 v 65)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0.025641	0	0	0.0196078	0	0	0	0	0.027777778
	0.1666667	0	0	0.0196078	0	0	0	0	0.027777778
	0.4358974	0	0	0.0392157	0	0	0	0	0.007575758
	0.4527473	0	0.0196078	0.1176471	0	0	0	0.027777778	0.007575758
	0.4282051	0	0.0659537	0.1960784	0	0	0	0.027777778	0.047979798
	0.3967033	0	0.516934	0.2620321	0.0714286	0	0	0.055555556	0.414141414
	0.0824176	0	0.6934046	0.399287	0.0714286	0	0	0.083333333	0.429292929
	0.0864469	0	0.57041	0.5953654	0.0714286	0	0	0.083333333	0.527777778
	0.0805861	0	0.3368984	0.5828877	0.0595238	0.0714286	0	0.02020202	0.333333333
	0.1161172	0	0.1942959	0.258467	0.202381	0.0714286	0	0.103535354	0.083333333
	0.0846154	0	0.0588235	0.0249554	0.1607143	0.2857143	0	0.037878788	0
	0.0087912	0	0.0392157	0.0071301	0.375	0.2857143	0	0.262626263	0
	0.0344322	0.0196078	0.0392157	0.0071301	0.2916667	0.2857143	0	0.25	0
	0.0344322	0.0196078	0.0392157	0.0392157	0.2380952	0.3571429	0	0	0
	0.0098901	0.0392157	0.0392157	0.0196078	0.2142857	0.5	0	0	0
	0.0098901	0.1372549	0.0196078	0.0196078	0.172619	0.5	0	0	0
	0.0157509	0.1960784	0.0196078	0.0196078	0.047619	0.5	0	0	0
	0.0285714	0.3529412	2.22E-16	0	0.1190476	0.5	0	0	0
	0.0285714	0.4509804	2.22E-16	0	0.2619048	0.5	0.0416667		
	0.0285714	0.5882353	2.22E-16	0	0.1369048	0.5714286	0.0416667		
	0.0285714	0.6149733	2.22E-16	0	0.0952381	0.5714286	0.0416667		
	0.0285714	0.6345811	2.22E-16	0	0.0535714	0.5714286	0.0833333		
	0.0285714	0.6417112	2.22E-16	0	0.0119048	0.5714286	0.125		
	0.0285714	0.3885918	2.22E-16	0	0.0119048	0.6428571	0.2083333		
	0.0285714	0.4474153	2.22E-16	0	0.0297619	0.8571429	0.2916667		
	0.0285714	0.1746881	2.22E-16	0	0.0297619	0.9285714	0.3333333		
	0.0285714	0.1746881	2.22E-16	0	0.0297619	0.8869048	0.3333333		
	0.0285714	0.0071301	2.22E-16	0	0.0714286	0.7619048	0.4166667		
	0.0285714	0.0124777	2.22E-16	0	0.0714286	0.7619048	0.4166667		
	0.0285714	0.0124777	2.22E-16	0	0.0714286	0.7202381	0.625		
	0.0285714	0.0784314	2.22E-16	0	0.0714286	0.6785714	0.7083333		
	0.0285714	0.0784314	2.22E-16	0	0.0714286	0.6785714	0.75		
	0.0285714	0.0588235	2.22E-16	0	0.0714286	0.6666667	0.7916667		
	0.0285714	0.0588235	2.22E-16	0	0.0714286	0.625	0.7619048		
	0.0285714	0.0392157	2.22E-16	0	0.0714286	0.5416667	0.6904762		
	0.0285714	0.0196078	2.22E-16	0	0	0.5416667	0.7321429		
	0.0285714	0.0196078	2.22E-16	0	0	0.4166667	0.8154762		
	0.0285714	2.22E-16	2.22E-16	0	0	0.3333333	0.7440476		
	0.0285714	2.22E-16	2.22E-16	0	0	0.2916667	0.7857143		
	0.0285714	2.22E-16	2.22E-16	0	0	0.2916667	0.7857143		
	0	2.22E-16	2.22E-16	0	0	0.2083333	0.7857143		
	0	2.22E-16	2.22E-16	0	0	0.1666667	0.7857143		
	0	2.22E-16	2.22E-16	0	0	0.125	0.7857143		
	0	2.22E-16	2.22E-16	0	0	0.0833333	0.7142857		
	0	2.22E-16	2.22E-16	0	0	0.0416667	0.6428571		
	0	2.22E-16	2.22E-16	0	0	0.0416667	0.5714286		
	0	2.22E-16	2.22E-16	0	0	0.0416667	0.5714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.4285714		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.4285714		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.3571429		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.3571429		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.3571429		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.2857143		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.2857143		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.2142857		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.1428571		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.1428571		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.0714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.0714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.0714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.0714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.0714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.0714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.0714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.0714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	0.0714286		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
	0	2.22E-16	2.22E-16	0	0	1.11E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2766921	0.4521196	0.4521196	0.4521196	0.457363	0.457363	0.457363	0.468533064	0.468533064
Test Statistic, $\alpha = 0.01$	0.3316237	0.5418786	0.5418786	0.5418786	0.5481631	0.5481631	0.5481631	0.561550658	0.561550658

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.142857143
	0.025641	0	0	0.0196078	0	0	0	0	0.115079365
	0.1282051	0	0	0.0196078	0	0	0	0	0.115079365
	0.3974359	0	0	0.0392157	0	0	0	0	0.05952381
	0.5	0	0.0196078	0.1176471	0	0	0	0.027777778	0.05952381
	0.474359	0	0.1568627	0.0960784	0	0	0	0.027777778	0.146825397
	0.3461538	0	0.6078431	0.0470588	0	0	0	0.087301587	0.349206349
	0.1153846	0	0.5843137	0.0901961	0.1111111	0	0	0.05952381	0.468253968
	0.1666667	0	0.4431373	0.2862745	0.2222222	0	0	0.05952381	0.527777778
	0.1794872	0	0.1823529	0.2647059	0.25	0	0	0.031746032	0.333333333
	0.2051282	0	0.1215686	0.2039216	0.3611111	0	0	0.051587302	0.083333333
	0.1153846	0	0.1411765	0.0431373	0.4305556	0	0	0.297619048	0
	0.1538462	0	0.0607843	0.0019608	0.4305556	0	0	0.444444444	0
	0.1794872	0.0196078	0.0392157	0.0019608	0.3472222	0.1111111	0	0.25	0
	0.1025641	0.0196078	0.0392157	0.0607843	0.2222222	0.1111111	0	1.11022E-16	0
	0.0769231	0.0392157	0.0392157	0.0803922	0.0555556	0.1111111	0	1.11022E-16	0
	1.11E-16	0.1372549	0.0196078	0.0803922	0.125	0.2222222	0	1.11022E-16	0
	0.025641	0.1960784	0.0196078	0.0196078	1.11E-16	0.3333333	0	1.11022E-16	0
	0.0384615	0.2529412	3.331E-16	0	1.11E-16	0.3333333	0	1.11022E-16	0
	2.22E-16	0.3509804	3.331E-16	0	1.11E-16	0.3333333	0.0416667		
	2.22E-16	0.4882353	3.331E-16	0	0.125	0.5555556	0.0416667		
	2.22E-16	0.4058824	3.331E-16	0	0.1666667	0.5555556	0.0416667		
	2.22E-16	0.4254902	3.331E-16	0	0.0138889	0.6666667	0.0833333		
	2.22E-16	0.4235294	3.331E-16	0	0.0277778	0.7777778	0.125		
	2.22E-16	0.2431373	3.331E-16	0	0.0277778	0.7777778	0.2083333		
	2.22E-16	0.2019608	3.331E-16	0	0.0694444	0.8888889	0.2916667		
	2.22E-16	0.1019608	3.331E-16	0	0.0416667	0.8888889	0.3333333		
	2.22E-16	0.0019608	3.331E-16	0	0.0416667	0.8472222	0.3333333		
	2.22E-16	0.0019608	3.331E-16	0	2.22E-16	0.7222222	0.4166667		
	2.22E-16	0.0215686	3.331E-16	0	2.22E-16	0.7222222	0.4166667		
	2.22E-16	0.0215686	3.331E-16	0	2.22E-16	0.6805556	0.625		
	2.22E-16	0.0215686	3.331E-16	0	2.22E-16	0.6388889	0.7083333		
	2.22E-16	0.0215686	3.331E-16	0	2.22E-16	0.6388889	0.75		
	2.22E-16	0.0411765	3.331E-16	0	2.22E-16	0.5555556	0.7916667		
	2.22E-16	0.0411765	3.331E-16	0	2.22E-16	0.5138889	0.8333333		
	2.22E-16	0.0607843	3.331E-16	0	2.22E-16	0.4305556	0.7222222		
	2.22E-16	0.0196078	3.331E-16	0	2.22E-16	0.4305556	0.6527778		
	2.22E-16	0.0196078	3.331E-16	0	2.22E-16	0.3055556	0.7361111		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.3333333	0.7361111		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.2916667	0.7777778		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.2916667	0.6666667		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.2083333	0.6666667		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.1666667	0.6666667		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.125	0.6666667		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.0833333	0.5555556		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.0416667	0.5555556		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.0416667	0.5555556		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	0.0416667	0.4444444		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	0.4444444		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	0.3333333		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	0.3333333		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	0.3333333		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	0.2222222		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	0.2222222		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	0.2222222		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
	2.22E-16	2.22E-16	3.331E-16	0	2.22E-16	4.441E-16	1.11E-16		
Test Statistic, α = 0.05	0.3079794	0.4703474	0.4703474	0.4703474	0.5315805	0.5315805	0.5315805	0.561788527	0.561788527
Test Statistic, α = 0.01	0.3691223	0.5637252	0.5637252	0.5637252	0.6371148	0.6371148	0.6371148	0.673320073	0.673320073

Appendix D.3: Spreadsheet for Domain (14 v 72)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	**0**	**0**	**0**	**0.0571429**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0.2**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0.3714286**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0.4857143**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0.6**	**0**	**0**	**0**	**0**
0.0128205	**0**	**0**	**0**	**0.6857143**	**0**	**0**	**0**	**0.018410853**
0.0128205	**0**	**0**	**0.0833333**	**0.7142857**	**0**	**0**	**0**	**0.015988372**
0.025641	**0**	**0**	**0.125**	**0.7142857**	**0**	**0**	**0**	**0.034399225**
0.025641	**0**	**0**	**0.1993243**	**0.7714286**	**0**	**0**	**0**	**0.012112403**
0.025641	**0**	**0**	**0.1993243**	**0.8285714**	**0**	**0**	**0**	**0.200581395**
0.0897436	**0**	**0.0416667**	**0.231982**	**0.8857143**	**0.0285714**	**0**	**0**	**0.303294574**
0.2179487	**0**	**0.0326577**	**0.347973**	**0.8857143**	**0.0571429**	**0**	**0.041666667**	**0.524709302**
0.4358974	**0**	**0.0292793**	**0.5292793**	**0.8857143**	**0.0337662**	**0**	**0.041666667**	**0.604166667**
0.5913846	**0**	**0.0315315**	**0.6869369**	**0.8857143**	**0.0337662**	**0**	**0.018410853**	**0.5**
0.6955897	**0**	**0.0439189**	**0.6328829**	**0.8857143**	**0.0051948**	**0**	**0.013565891**	**0.270833333**
0.7325128	**0**	**0.1677928**	**0.5844595**	**0.8857143**	**0.0233766**	**0**	**0.012112403**	**0.166666667**
0.6429744	**0**	**0.3220721**	**0.5686937**	**0.9142857**	**0.0519481**	**0**	**0.138081395**	**0.083333333**
0.5502564	**0**	**0.2668919**	**0.5112613**	**0.9142857**	**0.1090909**	**0**	**0.250484496**	**0.020833333**
0.4318974	**0**	**0.2432432**	**0.3581081**	**0.9714286**	**0.0155844**	**0**	**0.430232558**	**0.020833333**
0.2687179	**0**	**0.1959459**	**0.1779279**	**0.9714286**	**0.0701299**	**0.0909091**	**0.291666667**	**0**
0.1295385	**0.0089286**	**0.1486486**	**0.0518018**	**0.9714286**	**0.0077922**	**0.0909091**	**0.1875**	**0**
0.0495385	**0.0089286**	**0.0833333**	**0.0664414**	**0.9714286**	**0.0077922**	**0.0909091**	**0.125**	**0**
0.0175385	**0.0238095**	**0.0833333**	**0.0033784**	**0.9714286**	**0.0935065**	**0.0909091**	**0.041666667**	**0**
0.0015385	**0.047619**	**0.0833333**	**0.0056306**	**0.9714286**	**0.1792208**	**0.0909091**	**0**	**0**
0.0144615	**0.1220238**	**0.0416667**	**0.0236486**	**0.9714286**	**0.0077922**	**0.0909091**	**0**	**0**
0.0224615	**0.1130952**	**0**	**0.018018**	**0.7272727**	**0.0207792**	**0.0909091**		
0.0384615	**0.1607143**	**0**	**0.018018**	**0.7272727**	**0.1662338**	**0.0909091**		
0.025641	**0.3095238**	**0**	**0.018018**	**0.7272727**	**0.1662338**	**0.0909091**		
0.025641	**0.3988095**	**0**	**0.009009**	**0.7272727**	**0.1376623**	**0.0909091**		
0.0128205	**0.3779762**	**0**	**1.11E-16**	**0.7272727**	**0.1090909**	**0.0909091**		
0.0128205	**0.4494048**	**0**	**1.11E-16**	**0.6363636**	**0.1090909**	**0.0909091**		
0.0128205	**0.4136905**	**0**	**1.11E-16**	**0.6363636**	**0.2**	**0.0909091**		
0.0128205	**0.4017857**	**0**	**1.11E-16**	**0.6363636**	**0.1714286**	**0.0909091**		
0.0128205	**0.3184524**	**0**	**1.11E-16**	**0.6363636**	**0.1714286**	**0.0909091**		
0.0128205	**0.2529762**	**0**	**1.11E-16**	**0.6363636**	**0.1428571**	**0.0909091**		
0.0128205	**0.1607143**	**0**	**1.11E-16**	**0.3636364**	**0.1428571**	**0.0909091**		
0.0128205	**0.1220238**	**0**	**1.11E-16**	**0.1818182**	**0.1142857**	**0.0909091**		
2.22E-16	**0.0595238**	**0**	**1.11E-16**	**0.1818182**	**0.1142857**	**0.0909091**		
2.22E-16	**0.0327381**	**0**	**1.11E-16**	**0.0909091**	**0.0857143**	**0.0909091**		
2.22E-16	**0.0029762**	**0**	**1.11E-16**	**0.0909091**	**0.0857143**	**0.0623377**		
2.22E-16	**0.0029762**	**0**	**1.11E-16**	**0.0909091**	**0.0571429**	**0.2441558**		
2.22E-16	**0.0119048**	**0**	**1.11E-16**	**0.0909091**	**0.0571429**	**0.2441558**		
2.22E-16	**0.0029762**	**0**	**1.11E-16**	**0.0909091**	**0.0285714**	**0.3350649**		
2.22E-16	**0.0059524**	**0**	**1.11E-16**	**0.0909091**	**0.0285714**	**0.3350649**		
2.22E-16	**0.0327381**	**0**	**1.11E-16**	**0.0909091**	**0.0285714**	**0.3350649**		
2.22E-16	**0.0089286**	**0**	**1.11E-16**	**0.0909091**	**0.0285714**	**0.3350649**		
2.22E-16	**0.0089286**	**0**	**1.11E-16**	**0.0909091**	**0.0285714**	**0.425974**		
2.22E-16	**0.0089286**	**0**	**1.11E-16**	**0.0909091**	**0.0285714**	**0.6077922**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0.0909091**	**2.22E-16**	**0.6077922**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0.0909091**	**2.22E-16**	**0.8519481**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.8519481**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.8519481**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.8233766**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.9142857**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.9142857**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.8857143**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.8571429**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.8571429**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.8**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.8**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.7714286**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.7714286**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.7428571**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.7142857**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.7142857**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.6857143**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.6857143**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.6857143**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.6857143**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.5714286**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.5428571**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.5142857**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.4857143**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.4857143**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.4571429**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.4**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.3142857**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.2571429**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.2285714**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.2285714**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.1714286**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.1142857**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.0857143**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.0571429**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.0571429**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.0571429**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.0571429**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.0285714**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0.0285714**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		
2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**0**	**2.22E-16**	**0**		

	w (%)	wL (%)	wP (%)	IP (%)	% Gravel	% Sand	% Fines	Bulk Density	Dry Density
Test Statistic, $\alpha = 0.05$	0.1962387	0.30591	0.3061531	0.3061531	0.470097	0.470097	0.470097	0.285564856	0.285564856
Test Statistic, $\alpha = 0.01$	0.2351978	0.3666422	0.3669335	0.3669335	0.5634251	0.5634251	0.5634251	0.342257879	0.342257879

Appendix D.3: Spreadsheet for Domain (21 v 31)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0.0128205	0	0	0	0	0	0	0	0.041666667
	0.0128205	0	0	0.0833333	0.1666667	0	0	0	0.0625
	0.025641	0	0	0.125	0.1666667	0	0	0	0.020833333
	0.025641	0	0	0.2083333	0.1666667	0	0	0	0.020833333
	0.025641	0	0	0.2083333	0.3333333	0	0	0	1.38778E-17
	0.0897436	0	0.0416667	0.25	0.3333333	0	0	0	0.166666667
	0.2179487	0	0.0416667	0.375	0.3333333	0	0	0.041666667	0.5625
	0.4008097	0	0.0833333	0.5064103	0.3333333	0.0909091	0	0.041666667	0.604166667
	0.5802969	0	0.1666667	0.6730769	0.3333333	0.0909091	0	0.083333333	0.5
	0.6383266	0	0.2083333	0.5961538	0.3333333	0.0909091	0	0.041666667	0.270833333
	0.6099865	0	0.2916667	0.5608974	0.3333333	0.0909091	0	0.020833333	0.166666667
	0.4730094	0	0.4166667	0.6442308	0.3333333	0.0909091	0	0.1875	0.083333333
	0.3663968	0	0.4711538	0.6089744	0.5	0.0757576	0	0.520833333	0.020833333
	0.2867746	0	0.5128205	0.6089744	0.5	0.1060606	0	0.5	0.020833333
	0.2645074	0	0.3653846	0.6089744	0.5	0.1060606	0.0909091	0.291666667	0
	0.2071525	0	0.3717949	0.6089744	0.5	0.1969697	0.0909091	0.1875	0
	0.1369771	0	0.3782051	0.650641	0.5	0.1969697	0.0909091	0.125	0
	0.0843455	0.0416667	0.3012821	0.4198718	0.5	0.030303	0.0909091	0.041666667	0
	0.0843455	0.0833333	0.1474359	0.3429487	0.5	0.030303	0.0909091	0	0
	0.0668016	0.1666667	0.1891026	0.3429487	0.5	0.3030303	0.0909091	0	0
	0.0668016	0.1666667	0.1538462	0.3846154	0.2272727	0.3030303	0.0909091		
	0.0492578	0.25	0.0769231	0.3846154	0.2272727	0.4090909	0.0909091		
	0.0620783	0.4166667	0.0769231	0.2307692	0.2272727	0.4090909	0.0909091		
	0.0620783	0.5416667	0.0769231	0.2307692	0.2272727	0.4090909	0.0909091		
	0.0748988	0.5833333	0.0769231	0.0769231	0.2272727	0.2424242	0.0909091		
	0.0573549	0.7083333	0.0769231	0.0769231	0.3030303	0.2424242	0.0909091		
	0.0573549	0.6314103	0.0769231	0.0769231	0.3030303	0.1666667	0.0909091		
	0.0398111	0.5961538	0.0769231	0.0769231	0.3030303	0.1666667	0.0909091		
	0.0398111	0.6378205	0	0.0769231	0.3030303	0.1666667	0.0757576		
	0.0222672	0.6025641	0	0.0769231	0.469697	0.1666667	0.0757576		
	0.0222672	0.6442308	0	1.11E-16	0.1969697	0.1666667	0.0757576		
	0.0222672	0.6858974	0	1.11E-16	0.0151515	0.1666667	0.0757576		
	0.0350877	0.6089744	0	1.11E-16	0.0151515	1.11E-16	0.0757576		
	0.0350877	0.6089744	0	1.11E-16	0.0909091	1.11E-16	0.0757576		
	0.0350877	0.6089744	0	1.11E-16	0.0909091	1.11E-16	0.0757576		
	0.0350877	0.6089744	0	1.11E-16	0.0909091	1.11E-16	0.2272727		
	0.0350877	0.4967949	0	1.11E-16	0.0909091	1.11E-16	0.2272727		
	0.0350877	0.4198718	0	1.11E-16	0.0909091	1.11E-16	0.1363636		
	0.0175439	0.3429487	0	1.11E-16	0.0909091	1.11E-16	0.1363636		
	0.0175439	0.3429487	0	1.11E-16	0.0909091	1.11E-16	0.1363636		
	0.0175439	0.3846154	0	1.11E-16	0.0909091	1.11E-16	0.1363636		
	0.0175439	0.3846154	0	1.11E-16	0.0909091	1.11E-16	0.0454545		
	0.0175439	0.3846154	0	1.11E-16	0.0909091	1.11E-16	0.1363636		
	0.0175439	0.3846154	0	1.11E-16	0.0909091	1.11E-16	0.1363636		
	0.0175439	0.3846154	0	1.11E-16	0.0909091	1.11E-16	0.4090909		
	0.0175439	0.2307692	0	1.11E-16	1.11E-16	1.11E-16	0.4090909		
	0.0175439	0.2307692	0	1.11E-16	1.11E-16	1.11E-16	0.4090909		
	0.0175439	0.2307692	0	1.11E-16	1.11E-16	1.11E-16	0.2424242		
	0.0175439	0.2307692	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.1538462	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	0.0175439	0.0769231	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	0.0175439	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	0.0175439	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	0.1666667		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2369851	0.4683413	0.4683413	0.4683413	0.6902261	0.6902261	0.6902261	0.519358579	0.519358579
Test Statistic, $\alpha = 0.01$	0.2840336	0.5613208	0.5613208	0.5613208	0.8272563	0.8272563	0.8272563	0.622466532	0.622466532

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.166666667
	0.0128205	0	0	0	0	0	0	0	0.208333333
	0.0128205	0	0	0.0833333	0	0	0	0	0.270833333
	0.025641	0	0	0.0661765	0	0	0	0	0.229166667
	0.025641	0	0	0.1495098	0	0	0	0	0.229166667
	0.025641	0	0	0.1495098	0	0	0	0.083333333	0.458333333
	0.0697436	0	0.0416667	0.1911765	0	0	0	0.166666667	0.625
	0.1979487	0	0.0416667	0.2573529	0	0	0	0.208333333	0.520833333
	0.3558974	0	0.0833333	0.4656863	0	0.0909091	0	0.208333333	0.4375
	0.5153846	0	0.1666667	0.5735294	0	0.0909091	0	0.291666667	0.416666667
	0.5435897	0	0.2083333	0.4558824	0.0666667	0.0909091	0	0.25	0.270833333
	0.5605128	0	0.2328431	0.4387255	0.0666667	0.0909091	0	0.395833333	0.166666667
	0.4589744	0	0.1813725	0.3455882	0.0666667	0.0909091	0	0.5625	0.083333333
	0.3902564	0	0.3308824	0.3284314	0.0666667	0.0909091	0.1333333	0.479166667	0.020833333
	0.3358974	0	0.3137255	0.3284314	0.0666667	0.2727273	0.2	0.416666667	0.020833333
	0.3087179	0	0.2794118	0.1519608	0.0666667	0.2727273	0.1090909	0.291666667	0
	0.3015385	0	0.3039216	0.0343137	0.0666667	0.3636364	0.2424242	0.1875	0
	0.3015385	0	0.3872549	0.0759804	0.0666667	0.2969697	0.2424242	0.125	0
	0.2815385	0.0416667	0.3284314	0.0759804	0.0666667	0.2969697	0.3090909	0.041666667	0
	0.2615385	0.0833333	0.1519608	0.0759804	0.2	0.2969697	0.4424242	0	0
	0.2415385	0.1666667	0.0759804	0.0171569	0.2	0.569697	0.4424242	0	0
	0.2215385	0.1666667	0	0.0588235	0.0727273	0.5030303	0.5090909		
	0.2015385	0.1911765	0	0.0588235	0.0727273	0.7090909	0.5090909		
	0.174359	0.2990196	0	0.0588235	0.0727273	0.7090909	0.5757576		
	0.174359	0.4240196	0	0.0588235	0.0727273	0.6424242	0.5757576		
	0.1671795	0.4656863	0	0.0588235	0.0727273	0.6424242	0.5757576		
	0.1071795	0.4730392	0	1.11E-16	0.0969697	0.5757576	0.5757576		
	0.0671795	0.3553922	0	1.11E-16	0.0969697	0.6666667	0.5757576		
	0.0671795	0.3970588	0	1.11E-16	0.0363636	0.6666667	0.5757576		
	0.0471795	0.4387255	0	1.11E-16	0.1030303	0.4666667	0.6424242		
	0.0071795	0.4215686	0	1.11E-16	0.1030303	0.4666667	0.6424242		
	0.0071795	0.4632353	0	1.11E-16	0.169697	0.4	0.6424242		
	0.0071795	0.504902	0	1.11E-16	0.3515152	0.3333333	0.6424242		
	0.02	0.504902	0	1.11E-16	0.3515152	0.2666667	0.7090909		
	0.02	0.4460784	0	1.11E-16	0.4424242	0.2	0.7090909		
	0.02	0.3284314	0	1.11E-16	0.4424242	0.1333333	0.7090909		
	0.02	0.2696078	0	1.11E-16	0.4424242	0.1333333	0.5939394		
	0.02	0.252451	0	1.11E-16	0.3090909	0.1333333	0.5939394		
	0.02	0.252451	0	1.11E-16	0.3090909	0.1333333	0.5030303		
	0.02	0.1348039	0	1.11E-16	0.2424242	0.1333333	0.5030303		
	0.02	0.0171569	0	1.11E-16	0.1757576	0.1333333	0.569697		
	0.02	0.0588235	0	1.11E-16	0.1757576	0.0666667	0.569697		
	0.02	0.0588235	0	1.11E-16	0.1757576	0.0666667	0.4787879		
	0.02	0.0588235	0	1.11E-16	0.1757576	0.0666667	0.2969697		
	4.441E-16	0.0588235	0	1.11E-16	0.1757576	0.0666667	0.2969697		
	4.441E-16	0.0588235	0	1.11E-16	0.1757576	0.0666667	0.0242424		
	4.441E-16	0.0588235	0	1.11E-16	0.2	1.11E-16	0.0242424		
	4.441E-16	0.0588235	0	1.11E-16	0.2	1.11E-16	0.0242424		
	4.441E-16	0.0588235	0	1.11E-16	0.2	1.11E-16	0.0242424		
	4.441E-16	0.0588235	0	1.11E-16	0.2	1.11E-16	1.11E-16		
	4.441E-16	0.0588235	0	1.11E-16	0.0666667	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	0.0666667	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	0.0666667	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	0.0666667	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
	4.441E-16	3.331E-16	0	1.11E-16	1.11E-16	1.11E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2463835	0.4311226	0.4311226	0.4311226	0.5398631	0.5398631	0.5398631	0.438938113	0.438938113
Test Statistic, $\alpha = 0.01$	0.2952979	0.5167131	0.5167131	0.5167131	0.6470418	0.6470418	0.6470418	0.526080238	0.526080238

Appendix D.3: Spreadsheet for Domain (21 v 43)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0.0128205	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.041666667**
0.0871795	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0.0625**
0.174359	**0**	**0**	**0.0288462**	**0**	**0**	**0**	**0**	**0.104166667**
0.274359	**0**	**0**	**0.0544872**	**0**	**0**	**0**	**0**	**0.104166667**
0.374359	**0**	**0**	**0.1762821**	**0**	**0**	**0**	**0**	**0.125**
0.4102564	**0**	**0.0416667**	**0.3653846**	**0**	**0.1**	**0**	**0**	**0.208333333**
0.2820513	**0**	**0.0416667**	**0.3942308**	**0**	**0.1**	**0**	**0.041666667**	**0.3125**
0.0641026	**0**	**0.0833333**	**0.3397436**	**0**	**0.1090909**	**0**	**0.041666667**	**0.395833333**
0.1153846	**0**	**0.1666667**	**0.25**	**0**	**0.3090909**	**0**	**0.041666667**	**0.5**
0.0435897	**0**	**0.2083333**	**0.25**	**0**	**0.3090909**	**0**	**0.083333333**	**0.729166667**
0.1205128	**0**	**0.1378205**	**0.2083333**	**0**	**0.3090909**	**0**	**0.104166667**	**0.166666667**
0.1589744	**0**	**0.0448718**	**0.125**	**0**	**0.5090909**	**0**	**0.1875**	**0.083333333**
0.1102564	**0**	**0.0673077**	**0.0833333**	**0.1**	**0.6090909**	**0**	**0.354166667**	**0.020833333**
0.1358974	**0**	**0.1025641**	**0.0833333**	**0.1**	**0.6272727**	**0**	**0.166666667**	**0.020833333**
0.1487179	**0**	**0.0961538**	**0.0833333**	**0.1**	**0.6272727**	**0.0909091**	**0.041666667**	**0**
0.1615385	**0**	**0.1666667**	**0.0833333**	**0.1**	**0.5363636**	**0.0909091**	**0.1875**	**0**
0.1615385	**0**	**0.0833333**	**0.0416667**	**0.1**	**0.5363636**	**0.0090909**	**0.125**	**0**
0.1615385	**0.0352564**	**0.0833333**	**0.0416667**	**0.1**	**0.5363636**	**0.0090909**	**0.041666667**	**0**
0.1615385	**0.0064103**	**0.0833333**	**0.0416667**	**0.1**	**0.5363636**	**0.0090909**	**0**	**0**
0.1615385	**0.0128205**	**0.0416667**	**0.0416667**	**0.1**	**0.2636364**	**0.0090909**	**0**	**0**
0.1615385	**0.2179487**	**1.11E-16**	**1.11E-16**	**0.1727273**	**0.2636364**	**0.0090909**		
0.1615385	**0.1346154**	**1.11E-16**	**1.11E-16**	**0.1727273**	**0.0090909**	**0.0090909**		
0.074359	**0.1987179**	**1.11E-16**	**1.11E-16**	**0.1727273**	**0.0909091**	**0.0090909**		
0.074359	**0.150641**	**1.11E-16**	**1.11E-16**	**0.1727273**	**0.0909091**	**0.0090909**		
0.0871795	**0.1858974**	**1.11E-16**	**1.11E-16**	**0.1727273**	**0.0909091**	**0.0090909**		
0.0871795	**0.1378205**	**1.11E-16**	**1.11E-16**	**0.1636364**	**0.0909091**	**0.1090909**		
0.0871795	**0.2147436**	**1.11E-16**	**1.11E-16**	**0.1636364**	**2.22E-16**	**0.2090909**		
0.0128205	**0.25**	**1.11E-16**	**1.11E-16**	**0.0636364**	**2.22E-16**	**0.3090909**		
0.0128205	**0.2083333**	**1.11E-16**	**1.11E-16**	**0.0636364**	**2.22E-16**	**0.3090909**		
0.0128205	**0.1666667**	**1.11E-16**	**1.11E-16**	**0.0636364**	**2.22E-16**	**0.3090909**		
0.0128205	**0.125**	**1.11E-16**	**1.11E-16**	**0.3363636**	**2.22E-16**	**0.3090909**		
0.0128205	**0.0833333**	**1.11E-16**	**1.11E-16**	**0.5181818**	**2.22E-16**	**0.3090909**		
1.11E-16	**0.0833333**	**1.11E-16**	**1.11E-16**	**0.5181818**	**2.22E-16**	**0.4090909**		
1.11E-16	**0.0833333**	**1.11E-16**	**1.11E-16**	**0.4090909**	**2.22E-16**	**0.6090909**		
1.11E-16	**0.0833333**	**1.11E-16**	**1.11E-16**	**0.4090909**	**2.22E-16**	**0.7090909**		
1.11E-16	**0.0833333**	**1.11E-16**	**1.11E-16**	**0.4090909**	**2.22E-16**	**0.5272727**		
1.11E-16	**0.0416667**	**1.11E-16**	**1.11E-16**	**0.3090909**	**2.22E-16**	**0.5272727**		
1.11E-16	**0.0416667**	**1.11E-16**	**1.11E-16**	**0.3090909**	**2.22E-16**	**0.4363636**		
1.11E-16	**0.0416667**	**1.11E-16**	**1.11E-16**	**0.3090909**	**2.22E-16**	**0.4363636**		
1.11E-16	**0.0416667**	**1.11E-16**	**1.11E-16**	**0.2090909**	**2.22E-16**	**0.4363636**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.2090909**	**2.22E-16**	**0.4363636**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.1090909**	**2.22E-16**	**0.3454545**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0090909**	**2.22E-16**	**0.1636364**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0090909**	**2.22E-16**	**0.1636364**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0909091**	**2.22E-16**	**0.1090909**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1090909**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1090909**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1090909**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
1.11E-16	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**		

Test Statistic, $\alpha = 0.05$	0.4568072	0.4683413	0.4683413	0.4683413	0.5942268	0.5942268	0.5942268	0.809361889	0.809361889
Test Statistic, $\alpha = 0.01$	0.5474969	0.5613208	0.5613208	0.5613208	0.7121983	0.7121983	0.7121983	0.970044028	0.970044028

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0833333	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1538462	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.041666667**
	0.2371795	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0625**
	0.3910256	**0**	**0**	**0.0833333**	**0**	**0.0666667**	**0**	**0**	**0.104166667**
	0.474359	**0**	**0**	**0.25**	**0**	**0.0666667**	**0**	**0**	**0.104166667**
	0.599359	**0**	**0**	**0.4583333**	**0.0666667**	**0.0666667**	**0**	**0**	**0.125**
	0.6602564	**0**	**0.0416667**	**0.4583333**	**0.0666667**	**0.0666667**	**0**	**0**	**0.208333333**
	0.5737179	**0**	**0.0416667**	**0.5**	**0.0666667**	**0.1333333**	**0.0666667**	**0.041666667**	**0.169642857**
	0.5224359	**0**	**0.0833333**	**0.3333333**	**0.0666667**	**0.1090909**	**0.0666667**	**0.041666667**	**0.25297619**
	0.3846154	**0**	**0.125**	**0.2083333**	**0.0666667**	**0.1757576**	**0.0666667**	**0.041666667**	**0.357142857**
	0.2564103	**0**	**0.125**	**0.25**	**0.0666667**	**0.1757576**	**0.0666667**	**0.083333333**	**0.443452381**
	0.1794872	**0**	**0.0416667**	**0.2083333**	**0.0666667**	**0.2424242**	**0.0666667**	**0.038690476**	**0.547619048**
	0.1410256	**0**	**0.2916667**	**0.125**	**0.0666667**	**0.2424242**	**0.0666667**	**0.044642857**	**0.345238095**
	0.0897436	**0**	**0.125**	**0.0833333**	**0.0666667**	**0.2424242**	**0.0666667**	**0.211309524**	**0.264880952**
	0.0641026	**0**	**0.25**	**0.0833333**	**0.0666667**	**0.1272727**	**0.0666667**	**0.214285714**	**0.264880952**
	0.0512821	**0**	**0.2083333**	**0.0833333**	**0.0666667**	**0.2606061**	**0.0242424**	**0.279761905**	**0.142857143**
	0.0384615	**0.0416667**	**0.1666667**	**0.0833333**	**0.0666667**	**0.3030303**	**0.0424242**	**0.383928571**	**2.22045E-16**
	0.0384615	**0.0833333**	**0.0833333**	**0.0416667**	**0.0666667**	**0.369697**	**0.1090909**	**0.017857143**	**2.22045E-16**
	0.0384615	**0.125**	**0.0833333**	**0.0416667**	**0.0666667**	**0.4363636**	**0.1090909**	**0.101190476**	**2.22045E-16**
	0.0384615	**0.1666667**	**0.0833333**	**0.0416667**	**0.0666667**	**0.5030303**	**0.1090909**	**0**	**2.22045E-16**
	0.0384615	**0.2083333**	**0.0416667**	**0.0416667**	**0.0666667**	**0.230303**	**0.1090909**	**0**	**2.22045E-16**
	0.0384615	**0.3333333**	**2.22E-16**	**1.11E-16**	**0.2060606**	**0.230303**	**0.1757576**		
	0.0384615	**0.375**	**2.22E-16**	**1.11E-16**	**0.2060606**	**0.0424242**	**0.1757576**		
	0.025641	**0.4583333**	**2.22E-16**	**1.11E-16**	**0.0727273**	**0.0242424**	**0.1757576**		
	0.025641	**0.3333333**	**2.22E-16**	**1.11E-16**	**0.0727273**	**0.0242424**	**0.2424242**		
	0.0128205	**0.3333333**	**2.22E-16**	**1.11E-16**	**0.0727273**	**0.0242424**	**0.3090909**		
	0.0128205	**0.25**	**2.22E-16**	**1.11E-16**	**0.0363636**	**0.0909091**	**0.3090909**		
	0.0128205	**0.2916667**	**2.22E-16**	**1.11E-16**	**0.0363636**	**1.11E-16**	**0.3090909**		
	0.0128205	**0.25**	**2.22E-16**	**1.11E-16**	**0.1030303**	**1.11E-16**	**0.3090909**		
	0.0128205	**0.2083333**	**2.22E-16**	**1.11E-16**	**0.1030303**	**1.11E-16**	**0.3090909**		
	0.0128205	**0.1666667**	**2.22E-16**	**1.11E-16**	**0.1030303**	**1.11E-16**	**0.3090909**		
	0.0128205	**0.125**	**2.22E-16**	**1.11E-16**	**0.169697**	**1.11E-16**	**0.3090909**		
	0.0128205	**0.0833333**	**2.22E-16**	**1.11E-16**	**0.2848485**	**1.11E-16**	**0.3757576**		
	1.11E-16	**0.0833333**	**2.22E-16**	**1.11E-16**	**0.2848485**	**1.11E-16**	**0.3757576**		
	1.11E-16	**0.0833333**	**2.22E-16**	**1.11E-16**	**0.3090909**	**1.11E-16**	**0.4424242**		
	1.11E-16	**0.0833333**	**2.22E-16**	**1.11E-16**	**0.2424242**	**1.11E-16**	**0.4424242**		
	1.11E-16	**0.0833333**	**2.22E-16**	**1.11E-16**	**0.2424242**	**1.11E-16**	**0.3939394**		
	1.11E-16	**0.0416667**	**2.22E-16**	**1.11E-16**	**0.2424242**	**1.11E-16**	**0.4606061**		
	1.11E-16	**0.0416667**	**2.22E-16**	**1.11E-16**	**0.2424242**	**1.11E-16**	**0.369697**		
	1.11E-16	**0.0416667**	**2.22E-16**	**1.11E-16**	**0.2424242**	**1.11E-16**	**0.369697**		
	1.11E-16	**0.0416667**	**2.22E-16**	**1.11E-16**	**0.1757576**	**1.11E-16**	**0.369697**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1757576**	**1.11E-16**	**0.369697**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1757576**	**1.11E-16**	**0.3454545**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1757576**	**1.11E-16**	**0.1636364**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1757576**	**1.11E-16**	**0.1636364**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1757576**	**1.11E-16**	**0.0424242**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.2666667**	**1.11E-16**	**0.0242424**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.2666667**	**1.11E-16**	**0.0242424**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.2**	**1.11E-16**	**0.0242424**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1333333**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1333333**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.1333333**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0666667**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0666667**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**0.0666667**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, $\alpha = 0.05$	0.3174579	0.3925982	0.3925982	0.3925982	0.5398631	0.5398631	0.5398631	0.550238044	0.550238044
Test Statistic, $\alpha = 0.01$	0.3804826	0.4705405	0.4705405	0.4705405	0.6470418	0.6470418	0.6470418	0.659476479	0.659476479

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							0	0
	0			No data from Domain 61				0	0.111111111
	0							0	0.111111111
	0							0	0.222222222
	0							0	0.222222222
	0.0128205							0	0.180555556
	0.0128205							0	0.159722222
	0.025641							0	0.118055556
	0.025641							0.111111111	0.451388889
	0.025641							0.111111111	0.430555556
	0.0213675							0.111111111	0.347222222
	0.1068376							0.069444444	0.354166667
	0.1025641							0.180555556	0.270833333
	0.2820513							0.180555556	0.5
	0.2991453							0.361111111	0.270833333
	0.3760684							0.451388889	0.166666667
	0.3034188							0.368055556	0.083333333
	0.2435897							0.423611111	0.020833333
	0.2692308							0.5	0.020833333
	0.2820513							0.291666667	0
	0.2948718							0.1875	0
	0.1837607							0.125	0
	0.1837607							0.041666667	0
	0.1837607							0	0
	0.1837607							0	0
	0.1837607								
	0.0726496								
	0.0854701								
	0.0854701								
	0.0982906								
	0.0128205								
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Test Statistic, $\alpha = 0.05$	0.4787734							0.494008547	0.494008547
Test Statistic, $\alpha = 0.01$	0.573824							0.592083773	0.592083773

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.034482759**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.068965517**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.103448276**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.24137931**
	0.0128205	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.199712644**
	0.0128205	**0**	**0**	**0.0833333**	**0.0638298**	**0.0212766**	**0**	**0**	**0.213362069**
	0.025641	**0**	**0**	**0.1161504**	**0.0851064**	**0.0212766**	**0**	**0**	**0.309626437**
	0.0103739	**0**	**0**	**0.1817847**	**0.0851064**	**0.0212766**	**0**	**0**	**0.344109195**
	0.0027403	**0**	**0**	**0.1463864**	**0.106383**	**0.0212766**	**0**	**0**	**0.392241379**
	0.0286749	**0**	**0.0416667**	**0.1880531**	**0.1276596**	**0.0212766**	**0**	**0.034482759**	**0.412356322**
	0.1034449	**0**	**0.0416667**	**0.295354**	**0.1914894**	**0.0212766**	**0**	**0.027298851**	**0.44612069**
	0.2679585	**0**	**0.0833333**	**0.45059**	**0.1914894**	**0.0696325**	**0**	**0.165229885**	**0.535201149**
	0.3787434	**0**	**0.1224189**	**0.5730088**	**0.2553191**	**0.0696325**	**0.0212766**	**0.337643678**	**0.5**
	0.3848111	**0**	**0.1286873**	**0.4933628**	**0.2553191**	**0.0696325**	**0.0212766**	**0.33045977**	**0.270833333**
	0.3777647	**0**	**0.105826**	**0.384587**	**0.2765957**	**0.0696325**	**0.0212766**	**0.48204023**	**0.166666667**
	0.3017225	**0**	**0.0626844**	**0.3528761**	**0.2765957**	**0.0696325**	**0.0212766**	**0.57112069**	**0.083333333**
	0.269035	**0**	**0.085177**	**0.2617994**	**0.3191489**	**0.0483559**	**0.0212766**	**0.645833333**	**0.020833333**
	0.2259738	**0**	**0.0235988**	**0.1379056**	**0.3404255**	**0.2301741**	**0.0638298**	**0.5**	**0.020833333**
	0.1624584	**0**	**0.0199115**	**0.0671091**	**0.3404255**	**0.2301741**	**0.0154739**	**0.291666667**	**0**
	0.1447446	**0**	**0.0516224**	**0.0228614**	**0.3829787**	**0.2998066**	**0.0154739**	**0.1875**	**0**
	0.1218438	**0**	**0.0036873**	**0.064528**	**0.4042553**	**0.27853**	**0.0367505**	**0.125**	**0**
	0.0836759	**0.0416667**	**0.030236**	**0.0114307**	**0.4255319**	**0.2359768**	**0.0367505**	**0.041666667**	**0**
	0.0607751	**0.0656342**	**0.0479351**	**0.0062684**	**0.4468085**	**0.1508704**	**0.0367505**	**0**	**0**
	0.0455079	**0.1312684**	**0.0062684**	**0.0062684**	**0.5106383**	**0.3597679**	**0.0580271**	**0**	**0**
	0.0302408	**0.1312684**	**0.0176991**	**0.0265487**	**0.2591876**	**0.2746615**	**0.0580271**		
	0.0226072	**0.2057522**	**0.0176991**	**0.0265487**	**0.3230174**	**0.5261122**	**0.0793037**		
	0.0277941	**0.3547198**	**0.0088496**	**0.0265487**	**0.344294**	**0.4410058**	**0.0793037**		
	0.0201605	**0.4620206**	**0**	**0.0265487**	**0.344294**	**0.3558994**	**0.1005803**		
	0.032981	**0.4682891**	**0**	**0.0265487**	**0.4081238**	**0.3133462**	**0.1005803**		
	0.0253474	**0.5401917**	**0**	**0.0265487**	**0.3384913**	**0.2495164**	**0.1431335**		
	0.0100803	**0.4428466**	**0**	**0.0265487**	**0.3810445**	**0.3191489**	**0.1431335**		
	0.0024467	**0.3960177**	**0**	**0.0176991**	**0.4023211**	**0.2765957**	**0.1431335**		
	0.0051869	**0.304941**	**0**	**0.0176991**	**0.4023211**	**0.2340426**	**0.1644101**		
	0.0051869	**0.2050147**	**0**	**0.0088496**	**0.4023211**	**0.2340426**	**0.1644101**		
	0.0128205	**0.0785398**	**0**	**0.0088496**	**0.1508704**	**0.212766**	**0.1644101**		
	0.0128205	**0.1025074**	**0**	**0.0088496**	**0.0116054**	**0.1702128**	**0.2282398**		
	4.441E-16	**0.0759587**	**0**	**1.11E-16**	**0.0116054**	**0.1276596**	**0.2282398**		
	4.441E-16	**0.04941**	**0**	**1.11E-16**	**0.0367505**	**0.0851064**	**0.2282398**		
	4.441E-16	**0.0140118**	**0**	**1.11E-16**	**0.0154739**	**0.0851064**	**0.2282398**		
	4.441E-16	**0.0036873**	**0**	**1.11E-16**	**0.0154739**	**0.0851064**	**0.0464217**		
	4.441E-16	**0.0291298**	**0**	**1.11E-16**	**0.0154739**	**0.0638298**	**0.0889749**		
	4.441E-16	**0.0202802**	**0**	**1.11E-16**	**0.0154739**	**0.0212766**	**0.0019342**		
	4.441E-16	**0.0114307**	**0**	**1.11E-16**	**0.0154739**	**3.331E-16**	**0.0019342**		
	4.441E-16	**0.0114307**	**0**	**1.11E-16**	**0.0154739**	**3.331E-16**	**0.0193424**		
	4.441E-16	**0.0530973**	**0**	**1.11E-16**	**0.0154739**	**3.331E-16**	**0.0831721**		
	4.441E-16	**0.0353982**	**0**	**1.11E-16**	**0.0154739**	**3.331E-16**	**0.0348162**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0154739**	**3.331E-16**	**0.1257253**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0058027**	**3.331E-16**	**0.1044487**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0270793**	**3.331E-16**	**0.3133462**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0638298**	**3.331E-16**	**0.270793**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0425532**	**3.331E-16**	**0.2282398**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0425532**	**3.331E-16**	**0.1644101**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0425532**	**3.331E-16**	**0.2340426**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0212766**	**3.331E-16**	**0.212766**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0212766**	**3.331E-16**	**0.1702128**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0.0212766**	**3.331E-16**	**0.1702128**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.1489362**		
	4.441E-16	**0.0265487**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.1276596**		
	4.441E-16	**0.0176991**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.1276596**		
	4.441E-16	**0.0176991**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.1276596**		
	4.441E-16	**0.0176991**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.106383**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0851064**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0638298**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0425532**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0425532**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0425532**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0425532**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0425532**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0425532**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0425532**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0.0212766**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	4.441E-16	**5.551E-16**	**0**	**1.11E-16**	**0**	**3.331E-16**	**0**		
Test Statistic, α = 0.05	0.1945043	0.3056711	0.3056711	0.3056711	0.4555202	0.4555202	0.4555202	0.319863477	0.319863477
Test Statistic, α = 0.01	0.2331191	0.3663558	0.3663558	0.3663558	0.5459543	0.5459543	0.5459543	0.383365784	0.383365784

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.090909091
	0.0128205	0	0	0	0	0	0	0	0.140151515
	0.0128205	0	0	0.0833333	0.0333333	0	0	0	0.210227273
	0.025641	0	0	0.125	0.0666667	0	0	0	0.168560606
	0.025641	0	0	0.2083333	0.0666667	0	0	0	0.168560606
	0.0074592	0	0	0.2083333	0.0666667	0.0333333	0	0	0.511363636
	0.05338	0	0.0416667	0.25	0.1	0.0333333	0	0.090909091	0.518939394
	0.1452214	0	0.0416667	0.3405172	0.1	0.0333333	0	0.231060606	0.505681818
	0.3268065	0	0.0488506	0.5143678	0.1	0.0575758	0	0.231060606	0.604166667
	0.3972028	0	0.1321839	0.6637931	0.1	0.0575758	0	0.231060606	0.5
	0.3981352	0	0.1221264	0.5603448	0.1333333	0.0575758	0	0.462121212	0.270833333
	0.3114219	0	0.0502874	0.4985632	0.1333333	0.0575758	0	0.623106061	0.166666667
	0.2771562	0	0.0718391	0.3577586	0.1333333	0.0575758	0	0.539772727	0.083333333
	0.2738928	0	0.2112069	0.295977	0.2	0.0575758	0	0.645833333	0.020833333
	0.2449883	0	0.045977	0.1925287	0.2333333	0.2393939	0	0.5	0.020833333
	0.2214452	0	0.0431034	0.0373563	0.2666667	0.2393939	0.0909091	0.291666667	0
	0.1979021	0	0.0574713	0.0201149	0.2666667	0.330303	0.0575758	0.1875	0
	0.1797203	0	0.0545977	0.0272989	0.2666667	0.230303	0.0575758	0.125	0
	0.1615385	0.0416667	0.0316092	0.0100575	0.3666667	0.230303	0.0575758	0.041666667	0
	0.1433566	0.0833333	0.0488506	0.0244253	0.4333333	0.1969697	0.0242424	0	0
	0.106993	0.1666667	0.0244253	0.0244253	0.5	0.4363636	0.0090909	0	0
	0.0888112	0.1666667	0	0.0172414	0.2272727	0.369697	0.0090909		
	0.0524476	0.25	0	0.0172414	0.2272727	0.4757576	0.0090909		
	0.0652681	0.3994253	0	0.0172414	0.2939394	0.4757576	0.0090909		
	0.0470862	0.5244253	0	0	0.3606061	0.4424242	0.0090909		
	0.0235431	0.5488506	0	0	0.3606061	0.3757576	0.0090909		
	0.0128205	0.6048851	0	0	0.269697	0.3424242	0.0424242		
	0.0128205	0.5186782	0	0	0.3030303	0.3333333	0.0757576		
	0.0128205	0.4224138	0	0	0.369697	0.2666667	0.0757576		
	0.0128205	0.3606322	0	0	0.369697	0.2666667	0.0757576		
	0.0128205	0.2298851	0	0	0.4363636	0.1666667	0.1090909		
	0.0128205	0.2025862	0	0	0.1636364	0.1666667	0.1090909		
	0.0128205	0.1752874	0	0	0.0181818	0.1333333	0.1424242		
	2.22E-16	0.1408046	0	0	0.0151515	0.1	0.1424242		
	2.22E-16	0.0890805	0	0	0.0424242	0.1	0.2090909		
	2.22E-16	0.0890805	0	0	0.0424242	0.1	0.2757576		
	2.22E-16	0.0201149	0	0	0.0424242	0.1	0.1606061		
	2.22E-16	0.0617816	0	0	0.0424242	0.1	0.2272727		
	2.22E-16	0.0272989	0	0	0.0424242	0.1	0.1363636		
	2.22E-16	0.0100575	0	0	0.0090909	0.0666667	0.1363636		
	2.22E-16	0.0244253	0	0	0.0090909	0.0666667	0.169697		
	2.22E-16	0.0172414	0	0	0.0090909	0.0666667	0.2030303		
	2.22E-16	0.0172414	0	0	0.0242424	0.0666667	0.1121212		
	2.22E-16	0.0172414	0	0	0.0242424	0.0333333	0.0030303		
	2.22E-16	0.0172414	0	0	0.0575758	0.0333333	0.030303		
	2.22E-16	0.0172414	0	0	0.0575758	0.0333333	0.2424242		
	2.22E-16	0.0172414	0	0	0.0333333	0.0333333	0.1757576		
	2.22E-16	3.331E-16	0	0	0.0333333	0.0333333	0.1757576		
	2.22E-16	3.331E-16	0	0	0.0333333	0.0333333	0.1757576		
	2.22E-16	3.331E-16	0	0	0.0333333	0.0333333	0.2		
	2.22E-16	3.331E-16	0	0	0.0333333	1.11E-16	0.2		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	0.1666667		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	0.1333333		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	0.1		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	0.0666667		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	0.0666667		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	0.0333333		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	0.0333333		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	0.0333333		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	0.0333333		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	3.331E-16	0	0	1.11E-16	1.11E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2394617	0.3300853	0.3300853	0.3300853	0.4793733	0.4793733	0.4793733	0.454619388	0.454619388
Test Statistic, $\alpha = 0.01$	0.2870019	0.395617	0.395617	0.395617	0.574543	0.574543	0.574543	0.544874708	0.544874708

Appendix D.3: Spreadsheet for Domain (21 v 63)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0.0128205	0	0	0	0	0	0	0	0.041666667
	0.0128205	0	0	0.0833333	0	0	0	0	0.014423077
	0.025641	0	0	0.125	0	0	0	0	0.049679487
	0.025641	0	0	0.2083333	0	0	0	0	0.126602564
	0.025641	0	0	0.2083333	0	0	0	0	0.259615385
	0.0897436	0	0.0416667	0.212963	0	0	0	0	0.330128205
	0.1762821	0	0.0416667	0.337963	0.5	0	0	0.041666667	0.610576923
	0.2275641	0	0.0833333	0.5462963	0.5	0.0909091	0	0.03525641	0.604166667
	0.2820513	0	0.1296296	0.6759259	0.5	0.0909091	0	0.189102564	0.5
	0.3269231	0	0.1712963	0.6018519	0.5	0.0909091	0	0.224358974	0.270833333
	0.3205128	0	0.1435185	0.4953704	0.5	0.0909091	0	0.357371795	0.166666667
	0.2339744	0	0.1944444	0.4675926	0.5	0.0909091	0	0.581730769	0.083333333
	0.1185897	0	0.1435185	0.212963	0.5	0.0909091	0	0.568910256	0.020833333
	0.0608974	0	0.037037	0.1018519	0.5	0.2727273	0	0.5	0.020833333
	0.0320513	0	0.0277778	0.0648148	0.5	0.2727273	0.0909091	0.291666667	0
	0.0448718	0	0.0555556	0.0462963	0.5	0.3636364	0.0909091	0.1875	0
	0.0384615	0	0.0092593	0.0416667	0.5	0.3636364	0.0909091	0.125	0
	0.0384615	0.0416667	0.0462963	0.0416667	0.5	0.3636364	0.0909091	0.041666667	0
	0.0384615	0.0833333	0.0833333	0.0416667	0.5	0.3636364	0.0909091	0	0
	0.0384615	0.1666667	0.0416667	0.0416667	0.5	0.6363636	0.0909091	0	0
	0.0384615	0.1666667	2.22E-16	1.11E-16	0.2272727	0.6363636	0.0909091		
	0.0384615	0.25	2.22E-16	1.11E-16	0.2272727	0.4090909	0.0909091		
	0.025641	0.4166667	2.22E-16	1.11E-16	0.7272727	0.4090909	0.0909091		
	0.025641	0.5416667	2.22E-16	1.11E-16	0.7272727	0.4090909	0.0909091		
	0.0128205	0.5833333	2.22E-16	1.11E-16	0.7272727	0.0909091	0.0909091		
	0.0128205	0.6712963	2.22E-16	1.11E-16	0.6363636	0.0909091	0.0909091		
	0.0128205	0.5972222	2.22E-16	1.11E-16	0.6363636	0	0.0909091		
	0.0128205	0.5277778	2.22E-16	1.11E-16	0.6363636	0	0.0909091		
	0.0128205	0.4583333	2.22E-16	1.11E-16	0.6363636	0	0.0909091		
	0.0128205	0.2777778	2.22E-16	1.11E-16	0.6363636	0	0.0909091		
	0.0128205	0.1712963	2.22E-16	1.11E-16	0.3636364	0	0.0909091		
	0.0128205	0.1759259	2.22E-16	1.11E-16	0.1818182	0	0.0909091		
	2.22E-16	0.0648148	2.22E-16	1.11E-16	0.1818182	0	0.0909091		
	2.22E-16	0.0833333	2.22E-16	1.11E-16	0.0909091	0	0.0909091		
	2.22E-16	0.0833333	2.22E-16	1.11E-16	0.0909091	0	0.0909091		
	2.22E-16	0.0833333	2.22E-16	1.11E-16	0.0909091	0	0.2727273		
	2.22E-16	0.0416667	2.22E-16	1.11E-16	0.0909091	0	0.2727273		
	2.22E-16	0.0416667	2.22E-16	1.11E-16	0.0909091	0	0.3636364		
	2.22E-16	0.0416667	2.22E-16	1.11E-16	0.0909091	0	0.3636364		
	2.22E-16	0.0416667	2.22E-16	1.11E-16	0.0909091	0	0.3636364		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0.0909091	0	0.3636364		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0.0909091	0	0.4545455		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0.0909091	0	0.1363636		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0.0909091	0	0.1363636		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0.0909091	0	0.4090909		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.4090909		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.4090909		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.4090909		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.5		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.5		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.5		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.5		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.5		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.5		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0.5		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
	2.22E-16	3.331E-16	2.22E-16	1.11E-16	0	0	0		
Test Statistic, α = 0.05	0.3174579	0.3815369	0.3815369	0.3815369	1.0454403	1.0454403	1.0454403	0.425217893	0.425217893
Test Statistic, α = 0.01	0.3804826	0.4572831	0.4572831	0.4572831	1.252991	1.252991	1.252991	0.509636151	0.509636151

Appendix D.3: Spreadsheet for Domain (21 v 64)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
0.0128205	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.101190476**
0.0128205	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0.080357143**
0.025641	**0**	**0**	**0.125**	**0**	**0**	**0**	**0**	**0.181547619**
0.025641	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0.324404762**
0.025641	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0.732142857**
0.0897436	**0**	**0.0416667**	**0.125**	**0**	**0**	**0**	**0**	**0.648809524**
0.2179487	**0**	**0.0416667**	**0.25**	**0**	**0**	**0**	**0.041666667**	**0.6875**
0.4358974	**0**	**0.0833333**	**0.3333333**	**0.5**	**0.0909091**	**0**	**0.041666667**	**0.604166667**
0.4725275	**0**	**0.1666667**	**0.5**	**0.5**	**0.0909091**	**0**	**0.244047619**	**0.5**
0.6007326	**0**	**0.2083333**	**0.5**	**0.5**	**0.0909091**	**0**	**0.488095238**	**0.270833333**
0.3919414	**0**	**0.2916667**	**0.4166667**	**0.5**	**0.0909091**	**0**	**0.75297619**	**0.166666667**
0.4304029	**0**	**0.2916667**	**0.5**	**0.5**	**0.0909091**	**0**	**0.8125**	**0.083333333**
0.3388278	**0**	**0.5**	**0.5416667**	**0.5**	**0.0909091**	**0**	**0.645833333**	**0.020833333**
0.3644689	**0**	**0.4166667**	**0.4166667**	**0.5**	**0.2727273**	**0**	**0.5**	**0.020833333**
0.0915751	**0**	**0**	**0.0416667**	**0.5**	**0.2727273**	**0.0909091**	**0.291666667**	**0**
0.1043956	**0**	**0.0416667**	**0.0416667**	**0.5**	**0.3636364**	**0.0909091**	**0.1875**	**0**
0.1043956	**0**	**0.0833333**	**0.0416667**	**0.5**	**0.3636364**	**0.0909091**	**0.125**	**0**
0.1043956	**0.0416667**	**0.0833333**	**0.0416667**	**0.5**	**0.3636364**	**0.0909091**	**0.041666667**	**0**
0.1043956	**0.0833333**	**0.0833333**	**0.0416667**	**0.5**	**0.3636364**	**0.0909091**	**0**	**0**
0.1043956	**0.0416667**	**0.0416667**	**0.0416667**	**0.5**	**0.6363636**	**0.0909091**	**0**	**0**
0.1043956	**0.0416667**	**0**	**1.11E-16**	**0.2272727**	**0.6363636**	**0.0909091**		
0.0384615	**0.125**	**0**	**1.11E-16**	**0.2272727**	**0.9090909**	**0.0909091**		
0.025641	**0.2916667**	**0**	**1.11E-16**	**0.2272727**	**0.9090909**	**0.0909091**		
0.025641	**0.4166667**	**0**	**1.11E-16**	**0.7272727**	**0.9090909**	**0.0909091**		
0.0128205	**0.4583333**	**0**	**1.11E-16**	**0.7272727**	**0.9090909**	**0.0909091**		
0.0128205	**0.5833333**	**0**	**1.11E-16**	**0.6363636**	**0.9090909**	**0.0909091**		
0.0128205	**0.4583333**	**0**	**1.11E-16**	**0.6363636**	**1**	**0.0909091**		
0.0128205	**0.5**	**0**	**1.11E-16**	**0.6363636**	**1**	**0.0909091**		
0.0128205	**0.4166667**	**0**	**1.11E-16**	**0.6363636**	**0.5**	**0.0909091**		
0.0128205	**0.4583333**	**0**	**1.11E-16**	**0.6363636**	**0.5**	**0.0909091**		
0.0128205	**0.5**	**0**	**1.11E-16**	**0.3636364**	**0**	**0.0909091**		
0.0128205	**0.5416667**	**0**	**1.11E-16**	**0.1818182**	**0**	**0.0909091**		
2.22E-16	**0.4166667**	**0**	**1.11E-16**	**0.1818182**	**0**	**0.4090909**		
2.22E-16	**0.2916667**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.4090909**		
2.22E-16	**0.1666667**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.4090909**		
2.22E-16	**0.0833333**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.2272727**		
2.22E-16	**0.0416667**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.2272727**		
2.22E-16	**0.0416667**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.1363636**		
2.22E-16	**0.0416667**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.1363636**		
2.22E-16	**0.0416667**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.1363636**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.1363636**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.0454545**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.1363636**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.1363636**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0.0909091**	**0**	**0.4090909**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0.4090909**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0.4090909**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0.4090909**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0.5**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0.5**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		
2.22E-16	**3.331E-16**	**0**	**1.11E-16**	**0**	**0**	**0**		

	w (%)	wL (%)	wP (%)	IP (%)	% Gravel	% Sand	% Fines	Bulk Density	Dry Density
Test Statistic, α = 0.05	0.5366017	0.5552177	0.5552177	0.5552177	1.0454403	1.0454403	1.0454403	0.550238044	0.550238044
Test Statistic, α = 0.01	0.6431329	0.6654447	0.6654447	0.6654447	1.252991	1.252991	1.252991	0.659476479	0.659476479

Appendix D.3: Spreadsheet for Domain (21 v 65)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0.0128205	0	0	0	0	0	0	0	0.041666667
	0.0128205	0	0	0.0833333	0	0	0	0	0.0625
	0.0029138	0	0	0.125	0	0	0	0	0.104166667
	0.0029138	0	0	0.2083333	0	0	0	0	0.104166667
	0.0198135	0	0	0.2083333	0	0	0	0	0.041666667
	0.0238928	0	0.0416667	0.25	0	0	0	0	0.125
	0.0134033	0	0.0171569	0.375	0	0	0	0.041666667	0.229166667
	0.1631702	0	0.0245098	0.5245098	0.0625	0.0909091	0	0.041666667	0.270833333
	0.0926573	0	0.0490196	0.6323529	0.0625	0.0284091	0	0.041666667	0.333333333
	0.0617716	0	0.0857843	0.5147059	0.0625	0.0284091	0	0.083333333	0.270833333
	0.0705128	0	0.1789216	0.4387255	0.125	0.0340909	0	0.020833333	0.166666667
	0.0862471	0	0.2303922	0.2279412	0.25	0.0340909	0	0.104166667	0.083333333
	0.0693473	0	0.375	0.0931373	0.3125	0.2215909	0	0.0625	0.020833333
	0.0040793	0	0.3333333	0.0245098	0.5	0.0397727	0	0.333333333	0.020833333
	0.0168998	0	0.25	0.0245098	0.5	0.0397727	0.0909091	0.291666667	0
	0.0297203	0	0.1666667	0.0833333	0.5625	0.0113636	0.0909091	0.1875	0
	0.0157343	0	0.0833333	0.0416667	0.6875	0.1363636	0.0909091	0.125	0
	0.0157343	0.0416667	0.0833333	0.0416667	0.6875	0.1363636	0.0909091	0.041666667	0
	0.0157343	0.0833333	0.0833333	0.0416667	0.75	0.1363636	0.0909091	1.11022E-16	0
	0.0157343	0.1666667	0.0416667	0.0416667	0.8125	0.1363636	0.0909091	1.11022E-16	0
	0.0157343	0.1666667	0	1.11E-16	0.6647727	0.1363636	0.0284091		
	0.0157343	0.25	0	1.11E-16	0.6647727	0.3465909	0.0284091		
	0.0029138	0.2990196	0	1.11E-16	0.6647727	0.3465909	0.0284091		
	0.0029138	0.4240196	0	1.11E-16	0.6647727	0.3465909	0.0284091		
	0.0099068	0.3480392	0	1.11E-16	0.6647727	0.2840909	0.0284091		
	0.0099068	0.2965686	0	1.11E-16	0.5738636	0.2215909	0.0284091		
	0.0099068	0.1789216	0	1.11E-16	0.5738636	0.125	0.0284091		
	0.0099068	0.0147059	0	1.11E-16	0.5738636	0.0625	0.0284091		
	0.0099068	0.0269608	0	1.11E-16	0.5738636	0.0625	0.0284091		
	0.0099068	0.1078431	0	1.11E-16	0.5738636	0.0625	0.0284091		
	0.0099068	0.0661765	0	1.11E-16	0.3011364	0.0625	0.0284091		
	0.0099068	0.0245098	0	1.11E-16	0.1193182	0.0625	0.0284091		
	0.0227273	0.0833333	0	1.11E-16	0.1193182	0.0625	0.0284091		
	0.0227273	0.0833333	0	1.11E-16	0.0284091	0.0625	0.0284091		
	0.0227273	0.0833333	0	1.11E-16	0.0284091	0	0.0284091		
	0.0227273	0.0833333	0	1.11E-16	0.0284091	0	0.1477273		
	0.0227273	0.0416667	0	1.11E-16	0.0284091	0	0.0852273		
	0.0227273	0.0416667	0	1.11E-16	0.0909091	0	0.1761364		
	0.0227273	0.0416667	0	1.11E-16	0.0909091	0	0.1761364		
	0.0227273	0.0416667	0	1.11E-16	0.0909091	0	0.1136364		
	0.0227273	3.331E-16	0	1.11E-16	0.0909091	0	0.1136364		
	0.0227273	3.331E-16	0	1.11E-16	0.0909091	0	0.2045455		
	1.11E-16	3.331E-16	0	1.11E-16	0.0909091	0	0.3863636		
	1.11E-16	3.331E-16	0	1.11E-16	0.0909091	0	0.3238636		
	1.11E-16	3.331E-16	0	1.11E-16	0.0909091	0	0.5965909		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.5340909		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.4715909		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.4090909		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.5		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.375		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.375		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.3125		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.3125		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.3125		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.25		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.25		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.1875		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.125		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.125		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.0625		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.0625		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.0625		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.0625		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.0625		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.0625		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.0625		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.0625		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0.0625		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
	1.11E-16	3.331E-16	0	1.11E-16	0	0	0		
Test Statistic, α = 0.05	0.256416	0.4311226	0.4311226	0.4311226	0.5326776	0.5326776	0.5326776	0.438938113	0.438938113
Test Statistic, α = 0.01	0.3073222	0.5167131	0.5167131	0.5167131	0.6384298	0.6384298	0.6384298	0.526080238	0.526080238

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0.0128205	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.101190476**
	0.0128205	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0.080357143**
	0.025641	**0**	**0**	**0.125**	**0**	**0**	**0**	**0**	**0.038690476**
	0.0128205	**0**	**0**	**0.2083333**	**0**	**0**	**0**	**0**	**0.038690476**
	0.0128205	**0**	**0**	**0.2083333**	**0**	**0**	**0**	**0**	**0.017857143**
	0.0512821	**0**	**0.0416667**	**0.25**	**0**	**0**	**0**	**0**	**0.06547619**
	0.0641026	**0**	**0.0416667**	**0.275**	**0**	**0**	**0**	**0.041666667**	**0.026785714**
	0.1282051	**0**	**0.0833333**	**0.1833333**	**0**	**0.0909091**	**0**	**0.101190476**	**0.175595238**
	0.0769231	**0**	**0.0333333**	**0.35**	**0.1111111**	**0.0909091**	**0**	**0.101190476**	**0.357142857**
	0.1666667	**0**	**0.1916667**	**0.35**	**0.2222222**	**0.0909091**	**0**	**0.05952381**	**0.270833333**
	0.2051282	**0**	**0.4083333**	**0.2916667**	**0.3333333**	**0.0909091**	**0**	**0.038690476**	**0.166666667**
	0.2051282	**0**	**0.3833333**	**0.275**	**0.4444444**	**0.0909091**	**0**	**0.044642857**	**0.083333333**
	0.1410256	**0**	**0.175**	**0.1166667**	**0.5555556**	**0.0909091**	**0**	**0.360119048**	**0.020833333**
	0.1666667	**0**	**0.2333333**	**0.0166667**	**0.5555556**	**0.2727273**	**0**	**0.5**	**0.020833333**
	0.1794872	**0**	**0.25**	**0.0166667**	**0.5555556**	**0.1616162**	**0.0909091**	**0.291666667**	**0**
	0.1153846	**0**	**0.1666667**	**0.0166667**	**0.5555556**	**0.2525253**	**0.0909091**	**0.1875**	**0**
	0.0769231	**0**	**0.0833333**	**0.0583333**	**0.5555556**	**0.2525253**	**0.0909091**	**0.125**	**0**
	2.22E-16	**0.0416667**	**0.0833333**	**0.0583333**	**0.6666667**	**0.1414141**	**0.0909091**	**0.041666667**	**0**
	2.22E-16	**0.0833333**	**0.0833333**	**0.0416667**	**0.6666667**	**0.030303**	**0.0909091**	**1.11022E-16**	**0**
	2.22E-16	**0.0666667**	**0.0416667**	**0.0416667**	**0.6666667**	**0.3030303**	**0.0909091**	**1.11022E-16**	**0**
	0.0384615	**0.0666667**	**1.11E-16**	**1.11E-16**	**0.3939394**	**0.3030303**	**0.0909091**		
	0.0384615	**0.15**	**1.11E-16**	**1.11E-16**	**0.3939394**	**0.3535354**	**0.0909091**		
	0.025641	**0.1166667**	**1.11E-16**	**1.11E-16**	**0.3939394**	**0.3535354**	**0.0909091**		
	0.025641	**0.2416667**	**1.11E-16**	**1.11E-16**	**0.6161616**	**0.2424242**	**0.0909091**		
	0.0128205	**0.1833333**	**1.11E-16**	**1.11E-16**	**0.6161616**	**0.1313131**	**0.0909091**		
	0.0128205	**0.1083333**	**1.11E-16**	**1.11E-16**	**0.5252525**	**0.1313131**	**0.0909091**		
	0.0128205	**0.0083333**	**1.11E-16**	**1.11E-16**	**0.5252525**	**0.1111111**	**0.0909091**		
	0.0128205	**0.05**	**1.11E-16**	**1.11E-16**	**0.6363636**	**0.1111111**	**0.0909091**		
	0.0128205	**0.1083333**	**1.11E-16**	**1.11E-16**	**0.6363636**	**0.1111111**	**0.0909091**		
	0.0128205	**0.0666667**	**1.11E-16**	**1.11E-16**	**0.6363636**	**0.1111111**	**0.0909091**		
	0.0128205	**0.025**	**1.11E-16**	**1.11E-16**	**0.3636364**	**0.1111111**	**0.0909091**		
	0.0128205	**0.0166667**	**1.11E-16**	**1.11E-16**	**0.1818182**	**0.1111111**	**0.0909091**		
	4.441E-16	**0.0166667**	**1.11E-16**	**1.11E-16**	**0.1818182**	**0.1111111**	**0.0909091**		
	4.441E-16	**0.0166667**	**1.11E-16**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.0909091**		
	4.441E-16	**0.0166667**	**1.11E-16**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.0909091**		
	4.441E-16	**0.0166667**	**1.11E-16**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.2727273**		
	4.441E-16	**0.0583333**	**1.11E-16**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.1616162**		
	4.441E-16	**0.0416667**	**1.11E-16**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.1414141**		
	4.441E-16	**0.0416667**	**1.11E-16**	**1.11E-16**	**0.0909091**	**0.1111111**	**0.1414141**		
	4.441E-16	**0.0416667**	**1.11E-16**	**1.11E-16**	**0.0909091**	**2.22E-16**	**0.1414141**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0.0909091**	**2.22E-16**	**0.1414141**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0.0909091**	**2.22E-16**	**0.1212121**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0.0909091**	**2.22E-16**	**0.3030303**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0.0909091**	**2.22E-16**	**0.3030303**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0.0909091**	**2.22E-16**	**0.5757576**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.4646465**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.4646465**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.4646465**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.4444444**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.4444444**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.3333333**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.3333333**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.3333333**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.2222222**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.2222222**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0.2222222**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
	4.441E-16	**3.331E-16**	**1.11E-16**	**1.11E-16**	**0**	**2.22E-16**	**0**		
Test Statistic, $\alpha = 0.05$	0.3079794	0.5118854	0.5118854	0.5118854	0.6112745	0.6112745	0.6112745	0.550238044	0.550238044
Test Statistic, $\alpha = 0.01$	0.3691223	0.6135097	0.6135097	0.6135097	0.7326305	0.7326305	0.7326305	0.659476479	0.659476479

Appendix D.3: Spreadsheet for Domain (21 v 72)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0.0571429**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.2**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.3714286**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.4857143**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.6**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.6857143**	**0**	**0**	**0**	**0.023255814**
	0	**0**	**0**	**0**	**0.547619**	**0**	**0**	**0**	**0.046511628**
	0	**0**	**0**	**0**	**0.547619**	**0**	**0**	**0**	**0.055232558**
	0	**0**	**0**	**0.009009**	**0.6047619**	**0**	**0**	**0**	**0.00872093**
	0	**0**	**0**	**0.009009**	**0.4952381**	**0**	**0**	**0**	**0.200581395**
	0	**0**	**0**	**0.018018**	**0.552381**	**0.0285714**	**0**	**0**	**0.136627907**
	0	**0**	**0.009009**	**0.027027**	**0.552381**	**0.0571429**	**0**	**0**	**0.037790698**
	0.0350877	**0**	**0.0540541**	**0.022869**	**0.552381**	**0.0571429**	**0**	**0**	**0**
	0.0110877	**0**	**0.1351351**	**0.01386**	**0.552381**	**0.0571429**	**0**	**0.101744186**	**0**
	0.0572632	**0**	**0.2522523**	**0.036729**	**0.552381**	**0.0857143**	**0**	**0.055232558**	**0**
	0.1225263	**0**	**0.4594595**	**0.023562**	**0.552381**	**0.1142857**	**0**	**0.00872093**	**0**
	0.1699649	**0**	**0.7387387**	**0.0755371**	**0.5809524**	**0.1428571**	**0**	**0.049418605**	**0**
	0.1838596	**0**	**0.7380457**	**0.0977131**	**0.4142857**	**0.0333333**	**0**	**0.270348837**	**0**
	0.1451228	**0**	**0.7560638**	**0.2508663**	**0.4714286**	**0.0904762**	**0**	**0.069767442**	**0**
	0.0042105	**0**	**0.5613306**	**0.4310464**	**0.4714286**	**0.1761905**	**0**	**0**	**0**
	0.077614	**0.0089286**	**0.5204435**	**0.5571726**	**0.4714286**	**0.2047619**	**0**	**0**	**0**
	0.0874386	**0.0089286**	**0.4615385**	**0.5841996**	**0.4714286**	**0.2047619**	**0**	**0**	**0**
	0.066807	**0.0178571**	**0.3846154**	**0.4164934**	**0.4714286**	**0.1238095**	**0**	**0**	**0**
	0.082807	**0.0357143**	**0.2307692**	**0.3485793**	**0.4714286**	**0.2095238**	**0**	**0**	**0**
	0.0812632	**0.0446429**	**0.2307692**	**0.3665974**	**0.4714286**	**0.2952381**	**0**	**0**	**0**
	0.0892632	**0.0535714**	**0.1538462**	**0.3665974**	**0.5**	**0.3238095**	**0**		
	0.0877193	**0.0892857**	**0.0769231**	**0.3665974**	**0.5**	**0.2428571**	**0**		
	0.0877193	**0.1071429**	**0.0769231**	**0.2127512**	**0.5**	**0.2428571**	**0**		
	0.0877193	**0.1428571**	**0.0769231**	**0.2217602**	**0.5**	**0.2714286**	**0**		
	0.0877193	**0.2053571**	**0.0769231**	**0.0769231**	**0.5**	**0.1333333**	**0**		
	0.0701754	**0.2589286**	**0.0769231**	**0.0769231**	**0.3333333**	**0.1333333**	**0**		
	0.0701754	**0.2177198**	**0.0769231**	**0.0769231**	**0.3333333**	**0.0333333**	**0**		
	0.0526316	**0.1943681**	**0.0769231**	**0.0769231**	**0.3333333**	**0.0047619**	**0**		
	0.0526316	**0.3193681**	**0**	**0.0769231**	**0.3333333**	**0.0047619**	**0.1666667**		
	0.0350877	**0.3495879**	**0**	**0.0769231**	**0.1666667**	**0.0238095**	**0.1666667**		
	0.0350877	**0.4835165**	**0**	**0**	**0.1666667**	**0.0238095**	**0.1666667**		
	0.0350877	**0.5638736**	**0**	**0**	**0.1666667**	**0.052381**	**0.1666667**		
	0.0350877	**0.5494505**	**0**	**0**	**0.1666667**	**0.1142857**	**0.1666667**		
	0.0350877	**0.5762363**	**0**	**0**	**1.11E-16**	**0.0857143**	**0.1666667**		
	0.0350877	**0.6119505**	**0**	**0**	**1.11E-16**	**0.0857143**	**0.1380952**		
	0.0350877	**0.6119505**	**0**	**0**	**1.11E-16**	**0.0571429**	**0.4714286**		
	0.0350877	**0.4848901**	**0**	**0**	**1.11E-16**	**0.0571429**	**0.4714286**		
	0.0350877	**0.4168956**	**0**	**0**	**1.11E-16**	**0.0285714**	**0.4714286**		
	0.0175439	**0.3489011**	**0**	**0**	**1.11E-16**	**0.0285714**	**0.4714286**		
	0.0175439	**0.3756868**	**0**	**0**	**1.11E-16**	**0.0285714**	**0.4714286**		
	0.0175439	**0.3756868**	**0**	**0**	**1.11E-16**	**0.0285714**	**0.4714286**		
	0.0175439	**0.3756868**	**0**	**0**	**1.11E-16**	**0.0285714**	**0.4714286**		
	0.0175439	**0.3756868**	**0**	**0**	**1.11E-16**	**0.0285714**	**0.4714286**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4714286**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4428571**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4428571**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4428571**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.5809524**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.5809524**		
	0.0175439	**0.1538462**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.5809524**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.552381**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.5238095**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.5238095**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4666667**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4666667**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4380952**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4380952**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4095238**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.3809524**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.3809524**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.5190476**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.5190476**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.5190476**		
	0.0175439	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.5190476**		
	0.0175439	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4047619**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.3761905**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.347619**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.3190476**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.3190476**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4571429**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.4**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.3142857**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.2571429**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.2285714**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.2285714**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1714286**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.1142857**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.0857143**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.0571429**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.0571429**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.0571429**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.0571429**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.0285714**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**0.0285714**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	2.22E-16	**1.11E-16**	**0**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
Test Statistic, $\alpha = 0.05$	0.2173613	0.3984861	0.3986728	0.3986728	0.6009263	0.6009263	0.6009263	0.523654422	0.523654422
Test Statistic, $\alpha = 0.01$	0.2605139	0.4775974	0.4778211	0.4778211	0.7202278	0.7202278	0.7202278	0.627615226	0.627615226

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0.0571429	0	0	0	0
	0	0	0	0	0.2	0	0	0	0
	0	0	0	0	0.3714286	0	0	0	0.083333333
	0	0	0	0	0.4857143	0	0	0	0.083333333
	0	0	0	0	0.6	0	0	0	0.166666667
	0	0	0	0	0.6857143	0	0	0	0.226744186
	0	0	0	0	0.7142857	0	0	0	0.286821705
	0	0	0	0.0588235	0.7142857	0	0	0	0.263565891
	0	0	0	0.0498145	0.7714286	0	0	0	0.217054264
	0	0	0	0.0498145	0.8285714	0	0	0.083333333	0.257751938
	0.02	0	0	0.0408055	0.8857143	0.0285714	0	0.166666667	0.321705426
	0.02	0	0.009009	0.09062	0.8857143	0.0571429	0	0.25	0.003875969
	0.08	0	0.0540541	0.063593	0.8857143	0.0571429	0	0.25	0.166666667
	0.076	0	0.1351351	0.1134075	0.8857143	0.0571429	0	0.310077519	0.083333333
	0.152	0	0.2522523	0.1770005	0.8190476	0.0857143	0	0.263565891	0
	0.172	0	0.4006359	0.145734	0.8190476	0.1142857	0	0.38372093	0
	0.184	0	0.5034446	0.2231055	0.847619	0.1428571	0	0.424418605	0
	0.16	0	0.5977742	0.1828299	0.847619	0.2	0.1333333	0.228682171	0
	0.096	0	0.5569687	0.0296767	0.9047619	0.2571429	0.2	0.013565891	0
	0.04	0	0.4753577	0.0259671	0.9047619	0.3428571	0.2	0	0
	0.172	0.0089286	0.4525702	0.0174881	0.9047619	0.3714286	0.3333333	0	0
	0.252	0.0089286	0.4705882	0.009539	0.9047619	0.3047619	0.3333333	0	0
	0.264	0.0178571	0.4117647	0.072602	0.9047619	0.3904762	0.4	0	0
	0.26	0.0357143	0.2352941	0.081611	0.7714286	0.4761905	0.5333333	0	0
	0.256	0.0446429	0.1176471	0.0408055	0.7714286	0.5619048	0.5333333	0	0
	0.244	0.0535714	0	0.0408055	0.8	0.5238095	0.6		
	0.24	0.0304622	0	0.0408055	0.8	0.5428571	0.6		
	0.2	0.0105042	0	0.0408055	0.8	0.5428571	0.6666667		
	0.2	0.0252101	0	0.0498145	0.8	0.5047619	0.6666667		
	0.18	0.0877101	0	0.0588235	0.8	0.5333333	0.6666667		
	0.12	0.0236345	0	0	0.7333333	0.4666667	0.6666667		
	0.08	0.0582983	0	0	0.7333333	0.4666667	0.6666667		
	0.08	0.0047269	0	0	0.6	0.4952381	0.6666667		
	0.06	0.1202731	0	0	0.5333333	0.2952381	0.7333333		
	0.02	0.1685924	0	0	0.5333333	0.3238095	0.7333333		
	0.02	0.302521	0	0	0.5333333	0.2571429	0.7333333		
	0.02	0.3828782	0	0	0.5333333	0.2190476	0.7333333		
	0.02	0.4453782	0	0	0.5333333	0.152381	0.8		
	0.02	0.4133403	0	0	0.5333333	0.1142857	0.8		
	0.02	0.3314076	0	0	0.5333333	0.047619	0.7714286		
	0.02	0.272584	0	0	0.5333333	0.0761905	0.8380952		
	0.02	0.2405462	0	0	0.4	0.0761905	0.8380952		
	0.02	0.2494748	0	0	0.4	0.1047619	0.8380952		
	0.02	0.1407563	0	0	0.3333333	0.1047619	0.8380952		
	0.02	0.049895	0	0	0.2666667	0.1047619	0.9047619		
	0.02	0.049895	0	0	0.2666667	0.0380952	0.9047619		
	0.02	0.049895	0	0	0.2666667	0.0380952	0.9047619		
	0.02	0.049895	0	0	0.2666667	0.0380952	0.9047619		
	2.22E-16	0.0588235	0	0	0.2666667	0.0666667	0.9047619		
	2.22E-16	0.0588235	0	0	0.2666667	0.0666667	0.8761905		
	2.22E-16	0.0588235	0	0	0.2	3.331E-16	0.8761905		
	2.22E-16	0.0588235	0	0	0.2	3.331E-16	0.8761905		
	2.22E-16	0.0588235	0	0	0.2	3.331E-16	0.847619		
	2.22E-16	0.0588235	0	0	0.2	3.331E-16	0.9142857		
	2.22E-16	0.0588235	0	0	0.0666667	3.331E-16	0.9142857		
	2.22E-16	1.11E-16	0	0	0.0666667	3.331E-16	0.8857143		
	2.22E-16	1.11E-16	0	0	0.0666667	3.331E-16	0.8571429		
	2.22E-16	1.11E-16	0	0	0.0666667	3.331E-16	0.8571429		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.8		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.8		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.7714286		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.7714286		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.7428571		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.7142857		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.7142857		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.6857143		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.6857143		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.6857143		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.6857143		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.5714286		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.5428571		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.5142857		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.4857143		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.4857143		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.4571429		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.4		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.3142857		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.2571429		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.2285714		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.2285714		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.1714286		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.1142857		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.0857143		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.0571429		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.0571429		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.0571429		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.0571429		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.0285714		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	0.0285714		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
	2.22E-16	1.11E-16	0	0	1.11E-16	3.331E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2275715	0.3539976	0.3542077	0.3542077	0.4197051	0.4197051	0.4197051	0.44401271	0.44401271
Test Statistic, $\alpha = 0.01$	0.2727512	0.4242765	0.4245283	0.4245283	0.5030289	0.5030289	0.5030289	0.532162292	0.532162292

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0.0571429	0	0	0	0
0	0	0	0	0.2	0	0	0	0
0	0	0	0	0.3714286	0	0	0	0
0	0	0	0	0.4857143	0	0	0	0
0	0	0	0	0.6	0	0	0	0
0	0	0	0	0.6857143	0	0	0	0.023255814
0.1	0	0	0	0.7142857	0	0	0	0.046511628
0.2	0	0	0.1538462	0.7142857	0	0	0	0.069767442
0.3	0	0	0.1448371	0.7714286	0	0	0	0.11627907
0.4	0	0	0.3756064	0.8285714	0	0	0	0.325581395
0.5	0	0	0.5973666	0.8857143	0.0714286	0	0	0.511627907
0.5	0	0.009009	0.7422037	0.8857143	0.0428571	0	0	0.837209302
0.5	0	0.0540541	0.8690229	0.8857143	0.1428571	0	0	1
0.476	0	0.1351351	0.9369369	0.8857143	0.3428571	0	0.023255814	1
0.652	0	0.2522523	0.8828829	0.8857143	0.3142857	0	0.069767442	1
0.612	0	0.3056133	0.7927928	0.8857143	0.2857143	0	0.11627907	0.333333333
0.484	0	0.2772003	0.6936937	0.9142857	0.4571429	0	0.325581395	0
0.44	0	0.1995842	0.5945946	0.8142857	0.5	0	0.604651163	0
0.296	0	0.1406791	0.4414414	0.8714286	0.6428571	0	0.596899225	0
0.12	0	0.0997921	0.2612613	0.8714286	0.5571429	0	0.333333333	0
0.032	0.0089286	0.018018	0.1351351	0.8714286	0.5285714	0	0	0
0.112	0.0089286	1.11E-16	0.1081081	0.8714286	0.5285714	0.1	0	0
0.144	0.0590659	1.11E-16	0.045045	0.8714286	0.4428571	0.1	0	0
0.16	0.0412088	1.11E-16	0.036036	0.8714286	0.3571429	0.1	0	0
0.176	0.1092033	1.11E-16	0.018018	0.8714286	0.2714286	0.1	0	0
0.184	0.331044	1.11E-16	0.018018	0.9	0.2428571	0.1		
0.2	0.2953297	1.11E-16	0.018018	0.9	0.1571429	0.1		
0.1	0.5082418	1.11E-16	0.018018	0.9	0.2571429	0.1		
0.1	0.5494505	1.11E-16	0.009009	0.9	0.2285714	0.1		
0.1	0.5638736	1.11E-16	0	0.9	0.2	0.1		
0.1	0.5872253	1.11E-16	0	0.8	0.2	0.2		
0.1	0.6284341	1.11E-16	0	0.8	0.2	0.3		
1.11E-16	0.6517857	1.11E-16	0	0.7	0.1714286	0.4		
1.11E-16	0.5267857	1.11E-16	0	0.7	0.1714286	0.4		
1.11E-16	0.4196429	1.11E-16	0	0.7	0.1428571	0.4		
1.11E-16	0.2857143	1.11E-16	0	0.7	0.1428571	0.4		
1.11E-16	0.2053571	1.11E-16	0	0.7	0.1142857	0.4		
1.11E-16	0.1428571	1.11E-16	0	0.7	0.1142857	0.5		
1.11E-16	0.1160714	1.11E-16	0	0.5	0.0857143	0.7		
1.11E-16	0.0803571	1.11E-16	0	0.5	0.0857143	0.7714286		
1.11E-16	0.0803571	1.11E-16	0	0.5	0.0571429	0.7714286		
1.11E-16	0.0535714	1.11E-16	0	0.4	0.0571429	0.7714286		
1.11E-16	0.0446429	1.11E-16	0	0.4	0.0285714	0.7714286		
1.11E-16	0.0357143	1.11E-16	0	0.4	0.0285714	0.7714286		
1.11E-16	0.0089286	1.11E-16	0	0.3	0.0285714	0.7714286		
1.11E-16	0.0089286	1.11E-16	0	0.3	0.0285714	0.7714286		
1.11E-16	0.0089286	1.11E-16	0	0.2	0.0285714	0.7714286		
1.11E-16	0.0089286	1.11E-16	0	0.1	0.0285714	0.7714286		
1.11E-16	1.11E-16	1.11E-16	0	0.1	0	0.7714286		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.7428571		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.7428571		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.7428571		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.7142857		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.8142857		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.8142857		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.7857143		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.7571429		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.7571429		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.7		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.7		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.6714286		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.6714286		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.6428571		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.6142857		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.6142857		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.5857143		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.6857143		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.6857143		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.6857143		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.5714286		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.5428571		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.5142857		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.4857143		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.4857143		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.4571429		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.4		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.3142857		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.2571429		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.2285714		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.2285714		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.1714286		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.1142857		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.0857143		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.0571429		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.0571429		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.0571429		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.0571429		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.0285714		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	0.0285714		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		
1.11E-16	1.11E-16	1.11E-16	0	1.11E-16	0	1.11E-16		

Test Statistic, $\alpha = 0.05$	0.4469416	0.3984861	0.3986728	0.3986728	0.4876533	0.4876533	0.4876533	0.812125167	0.812125167
Test Statistic, $\alpha = 0.01$	0.5356727	0.4775974	0.4778211	0.4778211	0.5844668	0.5844668	0.5844668	0.973355899	0.973355899

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0.0571429**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.2**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.3714286**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.4857143**	**0**	**0**	**0**	**0**
	0.0833333	**0**	**0**	**0**	**0.6**	**0**	**0**	**0**	**0**
	0.1666667	**0**	**0**	**0**	**0.6857143**	**0**	**0**	**0**	**0.023255814**
	0.25	**0**	**0**	**0.0833333**	**0.7142857**	**0**	**0**	**0**	**0.046511628**
	0.4166667	**0**	**0**	**0.2083333**	**0.7142857**	**0.0666667**	**0**	**0**	**0.069767442**
	0.5	**0**	**0**	**0.4493243**	**0.7714286**	**0.0666667**	**0**	**0**	**0.11627907**
	0.625	**0**	**0**	**0.6576577**	**0.7619048**	**0.0666667**	**0**	**0**	**0.325581395**
	0.75	**0**	**0**	**0.6903153**	**0.8190476**	**0.0380952**	**0**	**0**	**0.511627907**
	0.7916667	**0**	**0.009009**	**0.847973**	**0.8190476**	**0.0761905**	**0.0666667**	**0**	**0.694352159**
	0.9583333	**0**	**0.0540541**	**0.8626126**	**0.8190476**	**0.1428571**	**0.0666667**	**0**	**0.857142857**
	0.976	**0**	**0.0934685**	**0.8952703**	**0.8190476**	**0.2095238**	**0.0666667**	**0.023255814**	**0.857142857**
	0.952	**0**	**0.1689189**	**0.8828829**	**0.8190476**	**0.1809524**	**0.0666667**	**0.069767442**	**0.714285714**
	0.912	**0**	**0.1261261**	**0.7927928**	**0.8190476**	**0.2190476**	**0.0666667**	**0.026578073**	**0.714285714**
	0.784	**0**	**0.0304054**	**0.6936937**	**0.847619**	**0.1904762**	**0.0666667**	**0.182724252**	**0.428571429**
	0.64	**0**	**0.1418919**	**0.5945946**	**0.847619**	**0.1333333**	**0.0666667**	**0.46179402**	**0.285714286**
	0.496	**0**	**0.0067568**	**0.4414414**	**0.9047619**	**0.1428571**	**0.0666667**	**0.644518272**	**0.285714286**
	0.32	**0**	**0.0123874**	**0.2612613**	**0.9047619**	**0.1904762**	**0.0666667**	**0.571428571**	**0.142857143**
	0.168	**0.0327381**	**0.018018**	**0.1351351**	**0.9047619**	**0.2952381**	**0.1333333**	**0.571428571**	**2.22045E-16**
	0.088	**0.0744048**	**2.22E-16**	**0.1081081**	**0.9047619**	**0.3619048**	**0.2**	**0.142857143**	**2.22045E-16**
	0.056	**0.1488095**	**2.22E-16**	**0.045045**	**0.9047619**	**0.3428571**	**0.2**	**0.142857143**	**2.22045E-16**
	0.04	**0.2142857**	**2.22E-16**	**0.036036**	**0.9047619**	**0.3238095**	**0.2**	**0**	**2.22045E-16**
	0.024	**0.3303571**	**2.22E-16**	**0.018018**	**0.9047619**	**0.2380952**	**0.2**	**0**	**2.22045E-16**
	0.016	**0.4464286**	**2.22E-16**	**0.018018**	**0.9333333**	**0.2095238**	**0.2666667**		
	1.11E-16	**0.5357143**	**2.22E-16**	**0.018018**	**0.9333333**	**0.1238095**	**0.2666667**		
	1.11E-16	**0.7678571**	**2.22E-16**	**0.018018**	**0.8**	**0.1904762**	**0.2666667**		
	1.11E-16	**0.7321429**	**2.22E-16**	**0.009009**	**0.8**	**0.1619048**	**0.3333333**		
	1.11E-16	**0.7113095**	**2.22E-16**	**2.22E-16**	**0.8**	**0.1333333**	**0.4**		
	1.11E-16	**0.6994048**	**2.22E-16**	**2.22E-16**	**0.6**	**0.2**	**0.4**		
	1.11E-16	**0.7053571**	**2.22E-16**	**2.22E-16**	**0.6**	**0.2**	**0.4**		
	1.11E-16	**0.6517857**	**2.22E-16**	**2.22E-16**	**0.5333333**	**0.1714286**	**0.4**		
	1.11E-16	**0.5267857**	**2.22E-16**	**2.22E-16**	**0.5333333**	**0.1714286**	**0.4**		
	1.11E-16	**0.4196429**	**2.22E-16**	**2.22E-16**	**0.5333333**	**0.1428571**	**0.4**		
	1.11E-16	**0.2857143**	**2.22E-16**	**2.22E-16**	**0.5333333**	**0.1428571**	**0.4**		
	1.11E-16	**0.2053571**	**2.22E-16**	**2.22E-16**	**0.4666667**	**0.1142857**	**0.4666667**		
	1.11E-16	**0.1428571**	**2.22E-16**	**2.22E-16**	**0.4666667**	**0.1142857**	**0.4666667**		
	1.11E-16	**0.1160714**	**2.22E-16**	**2.22E-16**	**0.4**	**0.0857143**	**0.5333333**		
	1.11E-16	**0.0803571**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0.0857143**	**0.5047619**		
	1.11E-16	**0.0803571**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0.0571429**	**0.6380952**		
	1.11E-16	**0.0535714**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0.0571429**	**0.7047619**		
	1.11E-16	**0.0446429**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0.0285714**	**0.7047619**		
	1.11E-16	**0.0357143**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0.0285714**	**0.7047619**		
	1.11E-16	**0.0089286**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0.0285714**	**0.7047619**		
	1.11E-16	**0.0089286**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0.0285714**	**0.7047619**		
	1.11E-16	**0.0089286**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0.0285714**	**0.7714286**		
	1.11E-16	**0.0089286**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0.0285714**	**0.7714286**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.7714286**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.8095238**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.8761905**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.8761905**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.2**	**3.331E-16**	**0.847619**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.1333333**	**3.331E-16**	**0.847619**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.1333333**	**3.331E-16**	**0.847619**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.1333333**	**3.331E-16**	**0.8190476**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.7904762**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.7904762**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.7333333**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.7333333**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.7047619**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.7047619**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.6761905**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.647619**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.647619**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.6190476**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.6190476**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.6190476**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.6190476**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.5047619**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.4761905**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.447619**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.4190476**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.4190476**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.3904762**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.3333333**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.3142857**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.2571429**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.2285714**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.2285714**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.1714286**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.1142857**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0857143**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0571429**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0571429**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0571429**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0571429**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0285714**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0285714**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	1.11E-16	**0**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
Test Statistic, α = 0.05	0.3030899	0.30591	0.3061531	0.3061531	0.4197051	0.4197051	0.4197051	0.554294619	0.554294619
Test Statistic, α = 0.01	0.3632621	0.3666422	0.3669335	0.3669335	0.5030289	0.5030289	0.5030289	0.664338404	0.664338404

Appendix D.3: Spreadsheet for Domain (31 v 52)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No data from Domain 61**				**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0							**0**	**0.198966408**
	0							**0**	**0.175710594**
	0							**0**	**0.15245478**
	0							**0.111111111**	**0.439276486**
	0							**0.111111111**	**0.22997416**
	0.1111111							**0.111111111**	**0.043927649**
	0.1111111							**0.111111111**	**0.170542636**
	0.3333333							**0.222222222**	**0.333333333**
	0.3093333							**0.198966408**	**0**
	0.3964444							**0.374677003**	**0**
	0.3564444							**0.439276486**	**0**
	0.3395556							**0.22997416**	**0**
	0.3066667							**0.173126615**	**0**
	0.1626667							**0.069767442**	**0**
	0.0133333							**0**	**0**
	0.1653333							**0**	**0**
	0.1342222							**0**	**0**
	0.1662222							**0**	**0**
	0.1822222							**0**	**0**
	0.1982222							**0**	**0**
	0.2062222								
	0.1111111								
	0.1111111								
	0.1111111								
	0.1111111								
	2.22E-16								
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Test Statistic, $\alpha = 0.05$	0.4693697							0.498522883	0.498522883
Test Statistic, $\alpha = 0.01$	0.5625534							0.597494337	0.597494337

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0.0571429	0	0	0	0
	0	0	0	0	0.1574468	0	0	0	0.034482759
	0	0	0	0	0.3288754	0	0	0	0.068965517
	0	0	0	0	0.4218845	0	0	0	0.103448276
	0	0	0	0	0.5361702	0	0	0	0.24137931
	0	0	0	0	0.6218845	0.0212766	0	0	0.218123496
	0	0	0	0	0.6504559	0.0212766	0	0	0.229350441
	0	0	0	0.0088496	0.6291793	0.0212766	0	0	0.344025662
	0.0152672	0	0	0.0175397	0.6863222	0.0212766	0	0	0.331996792
	0.0229008	0	0	0.0529379	0.7221884	0.0212766	0	0	0.191659984
	0.0610687	0	0	0.0439289	0.7580547	0.0072948	0	0.034482759	0.109061748
	0.1145038	0	0.009009	0.052619	0.6942249	0.0358663	0	0.068965517	0.078588613
	0.1679389	0	0.0540541	0.0786893	0.6942249	0.0358663	0	0.206896552	0.068965517
	0.2126412	0	0.0908873	0.1139281	0.6303951	0.0358663	0.0212766	0.356054531	0
	0.3107786	0	0.1726062	0.1395201	0.6303951	0.0644377	0.0212766	0.344025662	0
	0.3547481	0	0.2736188	0.1998724	0.6091185	0.0930091	0.0212766	0.469927827	0
	0.3412519	0	0.3847564	0.2158176	0.63769	0.1215805	0.0212766	0.433039294	0
	0.2812214	0	0.3520689	0.2494619	0.5951368	0.1574468	0.0212766	0.395348837	0
	0.2059237	0	0.2196444	0.2202025	0.631003	0.2145897	0.0638298	0.069767442	0
	0.1062595	0	0.1760344	0.1108188	0.631003	0.300304	0.106383	0	0
	0.0152061	0.0089286	0.0970262	0.0289404	0.5884498	0.3075988	0.106383	0	0
	0.0723053	0.0089286	0.079646	0.0019134	0.5671733	0.2863222	0.1276596	0	0
	0.0661374	0.0178571	0.0530973	0.0080523	0.5458967	0.3294833	0.1276596	0	0
	0.0592366	0.0180152	0.0353982	0.0006378	0.5246201	0.3300912	0.1276596	0	0
	0.0599695	0.0092446	0.0353982	0.0173802	0.4607903	0.3519757	0.1489362	0	0
	0.0527023	0.0181732	0.0176991	0.0085307	0.4680851	0.2954407	0.1489362		
	0.0610687	0.0450379	0.0176991	0.0085307	0.4042553	0.3598784	0.1702128		
	0.0534351	0.045196	0.0088496	0.0085307	0.3829787	0.274772	0.1702128		
	0.0458015	0.0632111	0	0.0175397	0.3829787	0.2182371	0.1914894		
	0.0458015	0.0903129	0	0.0265487	0.3191489	0.2042553	0.1914894		
	0.0381679	0.090787	0	0.0265487	0.2978723	0.1404255	0.2340426		
	0.0229008	0.0291561	0	0.0265487	0.2553191	0.1191489	0.2340426		
	0.0152672	0.005768	0	0.0176991	0.2340426	0.1051672	0.2340426		
	0.0076336	0.0135114	0	0.0176991	0.2340426	0.062614	0.2553191		
	0.0076336	0.0479614	0	0.0088496	0.2340426	0.0911854	0.2553191		
	2.22E-16	0.0821745	0	0.0088496	0.212766	0.0699088	0.2553191		
	2.22E-16	0.0195164	0	0.0088496	0.1702128	0.0559271	0.3191489		
	2.22E-16	0.0164349	0	0	0.1702128	0.0133739	0.3191489		
	2.22E-16	0.0166719	0	0	0.1276596	0.0006079	0.3191489		
	2.22E-16	0.016988	0	0	0.106383	0.0006079	0.2905775		
	2.22E-16	0.0007111	0	0	0.106383	0.0279635	0.2905775		
	2.22E-16	0.017225	0	0	0.106383	0.0066869	0.3331307		
	2.22E-16	0.017304	0	0	0.106383	0.0072948	0.3331307		
	2.22E-16	0.0173831	0	0	0.106383	0.0285714	0.3331307		
	2.22E-16	0.0441688	0	0	0.106383	0.0285714	0.3544073		
	2.22E-16	0.0441688	0	0	0.106383	0.0285714	0.4182371		
	2.22E-16	0.0264697	0	0	0.106383	0.0285714	0.4607903		
	2.22E-16	0.0176201	0	0	0.106383	0.0285714	0.4820669		
	2.22E-16	0.0265487	0	0	0.0851064	5.551E-16	0.5033435		
	2.22E-16	0.0265487	0	0	0.0638298	5.551E-16	0.5386018		
	2.22E-16	0.0265487	0	0	0.0638298	5.551E-16	0.581155		
	2.22E-16	0.0265487	0	0	0.0425532	5.551E-16	0.6237082		
	2.22E-16	0.0265487	0	0	0.0425532	5.551E-16	0.6589666		
	2.22E-16	0.0265487	0	0	0.0425532	5.551E-16	0.6802432		
	2.22E-16	0.0265487	0	0	0.0212766	5.551E-16	0.7015198		
	2.22E-16	0.0265487	0	0	0.0212766	5.551E-16	0.7155015		
	2.22E-16	0.0265487	0	0	0.0212766	5.551E-16	0.6869301		
	2.22E-16	0.0265487	0	0	0	5.551E-16	0.7082067		
	2.22E-16	0.0265487	0	0	0	5.551E-16	0.6723404		
	2.22E-16	0.0176991	0	0	0	5.551E-16	0.6723404		
	2.22E-16	0.0176991	0	0	0	5.551E-16	0.643769		
	2.22E-16	0.0176991	0	0	0	5.551E-16	0.6650456		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.6577508		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.6291793		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.6291793		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.6006079		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.6006079		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.6006079		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.6006079		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.4863222		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.4577508		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.4291793		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.4218845		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.4431611		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.4145897		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.3574468		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.2717325		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.2145897		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.1860182		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.1860182		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.150152		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0930091		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0644377		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0358663		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0358663		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0358663		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0358663		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0072948		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0072948		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0212766		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0212766		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0212766		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0212766		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0.0212766		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0		
	2.22E-16	3.331E-16	0	0	0	5.551E-16	0		
Test Statistic, α = 0.05	0.1700467	0.1813351	0.1817449	0.1817449	0.3036427	0.3036427	0.3036427	0.326792386	0.326792386
Test Statistic, α = 0.01	0.203806	0.2173355	0.2178266	0.2178266	0.3639247	0.3639247	0.3639247	0.391670287	0.391670287

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0.0571429	0	0	0	0
	0	0	0	0	0.2	0	0	0	0
	0	0	0	0	0.3714286	0	0	0	0.090909091
	0	0	0	0	0.4857143	0	0	0	0.090909091
	0	0	0	0	0.6	0	0	0	0.090909091
	0	0	0	0	0.6857143	0	0	0	0.158562368
	0	0	0	0	0.6809524	0	0	0	0.226215645
	0	0	0	0	0.647619	0	0	0	0.202959831
	0	0	0	0.009009	0.7047619	0	0	0	0.156448203
	0.0181818	0	0	0.009009	0.7619048	0.0333333	0	0	0.310782241
	0.0363636	0	0	0.018018	0.7857143	0.0047619	0	0.090909091	0.21564482
	0.0727273	0	0.009009	0.0074557	0.7857143	0.0238095	0	0.272727273	0.019027484
	0.1090909	0	0.0195713	0.0149115	0.7857143	0.0238095	0	0.272727273	0
	0.1941818	0	0.1006524	0.0231438	0.7857143	0.0238095	0	0.249471459	0
	0.2974545	0	0.1660454	0.0725381	0.752381	0.052381	0	0.475687104	0
	0.4210909	0	0.2180801	0.0858962	0.752381	0.0809524	0	0.610993658	0
	0.3658182	0	0.3939112	0.2109351	0.7809524	0.1095238	0	0.401691332	0
	0.2763636	0	0.4780988	0.2152842	0.7142857	0.1666667	0	0.395348837	0
	0.1869091	0	0.2892203	0.1655794	0.7380952	0.2238095	0	0.069767442	0
	0.0472727	0	0.2390494	0.1405716	0.7047619	0.3095238	0	0	0
	0.0683636	0.0089286	0.2061199	0.0316869	0.7047619	0.3380952	0.0333333	0	0
	0.1301818	0.0089286	0.137931	0.0391426	0.7047619	0.2380952	0.0333333	0	0
	0.144	0.0178571	0.0517241	0.0066791	0.6047619	0.3238095	0.0333333	0	0
	0.1418182	0.0357143	0.0344828	0.0187947	0.5380952	0.3761905	0.0666667	0	0
	0.1214545	0.0446429	0.0172414	0.0007766	0.4714286	0.4285714	0.1	0	0
	0.1112727	0.0535714	0	0.0007766	0.5	0.3904762	0.1		
	0.0909091	0.0892857	0	0.0007766	0.5	0.3095238	0.1		
	0.0909091	0.0899015	0	0.0007766	0.4333333	0.3095238	0.1		
	0.0727273	0.1256158	0	0.009009	0.3666667	0.3047619	0.1		
	0.0363636	0.1708744	0	1.11E-16	0.3666667	0.2666667	0.1		
	0	0.1554803	0	1.11E-16	0.3666667	0.2333333	0.1333333		
	0	0.1049877	0	1.11E-16	0.3333333	0.1333333	0.1666667		
	0	0.0206281	0	1.11E-16	0.2666667	0.0952381	0.1666667		
	0	0.0421798	0	1.11E-16	0.2666667	0.0952381	0.1666667		
	0	0.0230911	0	1.11E-16	0.2	0.0238095	0.2		
	0	0.0418719	0	1.11E-16	0.2	0.0238095	0.2		
	0	0.0532635	0	1.11E-16	0.2	0.0190476	0.2333333		
	0	0.0812808	0	1.11E-16	0.1666667	0.0142857	0.2333333		
	0	0.0563424	0	1.11E-16	0.1333333	0.0142857	0.3		
	0	0.0920567	0	1.11E-16	0.1333333	0.0142857	0.3380952		
	0	0.0230911	0	1.11E-16	0.1333333	0.0428571	0.4047619		
	0	0.0498768	0	1.11E-16	0.1333333	0.0428571	0.4714286		
	0	0.0243227	0	1.11E-16	0.1333333	0.0714286	0.4714286		
	0	0.0160099	0	1.11E-16	0.1	0.0380952	0.4714286		
	0	0.0083128	0	1.11E-16	0.1	0.0380952	0.5047619		
	0	0.0083128	0	1.11E-16	0.1	0.0380952	0.5380952		
	0	0.0083128	0	1.11E-16	0.0666667	0.0380952	0.5380952		
	0	0.0083128	0	1.11E-16	0.0666667	0.0047619	0.6047619		
	0	0.0172414	0	1.11E-16	0.0333333	0.0333333	0.6380952		
	0	0.0172414	0	1.11E-16	0.0333333	0.0333333	0.6095238		
	0	0.0172414	0	1.11E-16	0.0333333	0.0333333	0.6761905		
	0	1.11E-16	0	1.11E-16	0.0333333	0.0333333	0.6761905		
	0	1.11E-16	0	1.11E-16	0.0333333	0.0333333	0.647619		
	0	1.11E-16	0	1.11E-16	0.0333333	0.0333333	0.7142857		
	0	1.11E-16	0	1.11E-16	0.0333333	3.331E-16	0.7142857		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.7190476		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.7238095		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.7571429		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.7333333		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.7333333		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.7380952		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.7380952		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.7095238		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.6809524		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.7142857		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.6857143		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.6857143		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.6857143		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.6857143		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.5714286		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.5428571		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.5142857		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.4857143		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.4857143		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.4571429		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.4		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.3142857		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.2571429		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.2285714		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.2285714		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.1714286		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.1142857		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.0857143		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.0571429		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.0571429		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.0571429		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.0571429		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.0285714		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	0.0285714		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
	0	1.11E-16	0	1.11E-16	1.11E-16	3.331E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2200588	0.220009	0.2203468	0.2203468	0.3383771	0.3383771	0.3383771	0.459520846	0.459520846
Test Statistic, $\alpha = 0.01$	0.263747	0.2636872	0.2640921	0.2640921	0.4055549	0.4055549	0.4055549	0.550749249	0.550749249

Appendix D.3: Spreadsheet for Domain (31 v 63)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0.0571429**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.2**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.3714286**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.4857143**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.6**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.6857143**	**0**	**0**	**0**	**0.023255814**
	0	**0**	**0**	**0**	**0.7142857**	**0**	**0**	**0**	**0.030411449**
	0	**0**	**0**	**0**	**0.7142857**	**0**	**0**	**0**	**0.084078712**
	0	**0**	**0**	**0.009009**	**0.7714286**	**0**	**0**	**0**	**0.114490161**
	0	**0**	**0**	**0.009009**	**0.8285714**	**0**	**0**	**0**	**0.059033989**
	0	**0**	**0**	**0.019019**	**0.8857143**	**0.0285714**	**0**	**0**	**0.026833631**
	0.0416667	**0**	**0.009009**	**0.01001**	**0.3857143**	**0.0571429**	**0**	**0**	**0.085867621**
	0.2083333	**0**	**0.0540541**	**0.017017**	**0.3857143**	**0.0571429**	**0**	**0.076923077**	**0**
	0.3093333	**0**	**0.0980981**	**0.011011**	**0.3857143**	**0.0571429**	**0**	**0.207513417**	**0**
	0.3686667	**0**	**0.2152152**	**0.031031**	**0.3857143**	**0.0857143**	**0**	**0.237924866**	**0**
	0.412	**0**	**0.3113113**	**0.0890891**	**0.3857143**	**0.1142857**	**0**	**0.345259392**	**0**
	0.409	**0**	**0.5165165**	**0.1011011**	**0.4142857**	**0.1428571**	**0**	**0.443649374**	**0**
	0.4316667	**0**	**0.4104104**	**0.2982983**	**0.4142857**	**0.2**	**0**	**0.31842576**	**0**
	0.371	**0**	**0.2062062**	**0.2562563**	**0.4714286**	**0.2571429**	**0**	**0.069767442**	**0**
	0.2366667	**0**	**0.1681682**	**0.1131131**	**0.4714286**	**0.3428571**	**0**	**0**	**0**
	0.0846667	**0.0089286**	**0.0930931**	**0.0980981**	**0.4714286**	**0.3714286**	**0**	**0**	**0**
	0.088	**0.0089286**	**0.0740741**	**0.1081081**	**0.4714286**	**0.3714286**	**0**	**0**	**0**
	0.056	**0.0178571**	**0.037037**	**0.045045**	**0.4714286**	**0.4571429**	**0**	**0**	**0**
	0.04	**0.0357143**	**2.22E-16**	**0.036036**	**0.4714286**	**0.5428571**	**0**	**0**	**0**
	0.024	**0.0446429**	**2.22E-16**	**0.018018**	**0.4714286**	**0.6285714**	**0**	**0**	**0**
	0.016	**0.0535714**	**2.22E-16**	**0.018018**	**0.5**	**0.6571429**	**0**		
	0	**0.0892857**	**2.22E-16**	**0.018018**	**0.5**	**0.2428571**	**0**		
	0	**0.1071429**	**2.22E-16**	**0.018018**	**0**	**0.2428571**	**0**		
	0	**0.1428571**	**2.22E-16**	**0.009009**	**0**	**0.2714286**	**0**		
	0	**0.2053571**	**2.22E-16**	**0**	**0**	**0.2**	**0**		
	0	**0.2218915**	**2.22E-16**	**0**	**0**	**0.2**	**0**		
	0	**0.1835317**	**2.22E-16**	**0**	**0**	**0.2**	**0**		
	0	**0.1259921**	**2.22E-16**	**0**	**0**	**0.1714286**	**0**		
	0	**0.139881**	**2.22E-16**	**0**	**0**	**0.1714286**	**0**		
	0	**0.0248016**	**2.22E-16**	**0**	**0**	**0.1428571**	**0**		
	0	**0.010582**	**2.22E-16**	**0**	**0**	**0.1428571**	**0**		
	0	**0.0539021**	**2.22E-16**	**0**	**0**	**0.1142857**	**0**		
	0	**0.005291**	**2.22E-16**	**0**	**0**	**0.1142857**	**0**		
	0	**0.1160714**	**2.22E-16**	**0**	**0**	**0.0857143**	**0**		
	0	**0.0803571**	**2.22E-16**	**0**	**0**	**0.0857143**	**0.0285714**		
	0	**0.0803571**	**2.22E-16**	**0**	**0**	**0.0571429**	**0.0285714**		
	0	**0.0535714**	**2.22E-16**	**0**	**0**	**0.0571429**	**0.0285714**		
	0	**0.0446429**	**2.22E-16**	**0**	**0**	**0.0285714**	**0.0285714**		
	0	**0.0357143**	**2.22E-16**	**0**	**0**	**0.0285714**	**0.0285714**		
	0	**0.0089286**	**2.22E-16**	**0**	**0**	**0.0285714**	**0.0285714**		
	0	**0.0089286**	**2.22E-16**	**0**	**0**	**0.0285714**	**0.0285714**		
	0	**0.0089286**	**2.22E-16**	**0**	**0**	**0.0285714**	**0.0285714**		
	0	**0.0089286**	**2.22E-16**	**0**	**0**	**0.0285714**	**0.4714286**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4714286**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4428571**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4428571**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4428571**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4142857**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4142857**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4142857**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.3857143**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.3571429**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.3571429**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.3**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.3**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.7714286**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.7714286**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.7428571**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.7142857**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.7142857**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.6857143**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.6857143**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.6857143**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.6857143**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.5714286**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.5428571**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.5142857**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4857143**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4857143**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4571429**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.4**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.3142857**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.2571429**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.2285714**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.2285714**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.1714286**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.1142857**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.0857143**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.0571429**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.0571429**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.0571429**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.0571429**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.0285714**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0.0285714**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**2.22E-16**	**0**	**0**	**2.22E-16**	**0**		
Test Statistic, $\alpha = 0.05$	0.3030899	0.2915784	0.2918335	0.2918335	0.9887597	0.9887597	0.9887597	0.430454268	0.430454268
Test Statistic, $\alpha = 0.01$	0.3632621	0.3494653	0.349771	0.349771	1.1850576	1.1850576	1.1850576	0.5159121	0.5159121

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0.0571429**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.2**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.3714286**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.4857143**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.6**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0.6857143**	**0**	**0**	**0**	**0.119601329**
	0	**0**	**0**	**0**	**0.7142857**	**0**	**0**	**0**	**0.096345515**
	0	**0**	**0**	**0**	**0.7142857**	**0**	**0**	**0**	**0.215946844**
	0	**0**	**0**	**0.115991**	**0.7714286**	**0**	**0**	**0**	**0.312292359**
	0	**0**	**0**	**0.115991**	**0.8285714**	**0**	**0**	**0**	**0.531561462**
	0	**0**	**0**	**0.106982**	**0.8857143**	**0.0285714**	**0**	**0**	**0.34551495**
	0	**0**	**0.009009**	**0.097973**	**0.8857143**	**0.0571429**	**0**	**0**	**0.162790698**
	0	**0**	**0.0540541**	**0.1959459**	**0.3857143**	**0.0571429**	**0**	**0**	**0**
	0.1188571	**0**	**0.1351351**	**0.1869369**	**0.3857143**	**0.0571429**	**0**	**0.262458472**	**0**
	0.0948571	**0**	**0.2522523**	**0.1328829**	**0.3857143**	**0.0857143**	**0**	**0.50166113**	**0**
	0.3405714	**0**	**0.4594595**	**0.1677928**	**0.3857143**	**0.1142857**	**0**	**0.740863787**	**0**
	0.2125714	**0**	**0.6137387**	**0.0686937**	**0.4142857**	**0.1428571**	**0**	**0.674418605**	**0**
	0.2114286	**0**	**0.7668919**	**0.0304054**	**0.4142857**	**0.2**	**0**	**0.395348837**	**0**
	0.0674286	**0**	**0.6599099**	**0.0585586**	**0.4714286**	**0.2571429**	**0**	**0.069767442**	**0**
	0.1771429	**0**	**0.1959459**	**0.1362613**	**0.4714286**	**0.3428571**	**0**	**0**	**0**
	0.0251429	**0.0089286**	**0.106982**	**0.0101351**	**0.4714286**	**0.3714286**	**0**	**0**	**0**
	0.0548571	**0.0089286**	**0**	**0.1081081**	**0.4714286**	**0.3714286**	**0**	**0**	**0**
	0.0868571	**0.0178571**	**0**	**0.045045**	**0.4714286**	**0.4571429**	**0**	**0**	**0**
	0.1028571	**0.0357143**	**0**	**0.036036**	**0.4714286**	**0.5428571**	**0**	**0**	**0**
	0.1188571	**0.0803571**	**0**	**0.018018**	**0.4714286**	**0.6285714**	**0**	**0**	**0**
	0.1268571	**0.0714286**	**0**	**0.018018**	**0.5**	**0.6571429**	**0**		
	0	**0.0357143**	**0**	**0.018018**	**0.5**	**0.7428571**	**0**		
	0	**0.0178571**	**0**	**0.018018**	**0.5**	**0.7428571**	**0**		
	0	**0.0178571**	**0**	**0.009009**	**0**	**0.7714286**	**0**		
	0	**0.0803571**	**0**	**0**	**0**	**0.8**	**0**		
	0	**0.1339286**	**0**	**0**	**0**	**0.8**	**0**		
	0	**0.0446429**	**0**	**0**	**0**	**0.8**	**0**		
	0	**0.0982143**	**0**	**0**	**0**	**0.8285714**	**0**		
	0	**0.0982143**	**0**	**0**	**0**	**0.3285714**	**0**		
	0	**0.2053571**	**0**	**0**	**0**	**0.3571429**	**0**		
	0	**0.3392857**	**0**	**0**	**0**	**0.1428571**	**0**		
	0	**0.4196429**	**0**	**0**	**0**	**0.1142857**	**0**		
	0	**0.3571429**	**0**	**0**	**0**	**0.1142857**	**0.5**		
	0	**0.2589286**	**0**	**0**	**0**	**0.0857143**	**0.5**		
	0	**0.1696429**	**0**	**0**	**0**	**0.0857143**	**0.4714286**		
	0	**0.0803571**	**0**	**0**	**0**	**0.0571429**	**0.4714286**		
	0	**0.0535714**	**0**	**0**	**0**	**0.0571429**	**0.4714286**		
	0	**0.0446429**	**0**	**0**	**0**	**0.0285714**	**0.4714286**		
	0	**0.0357143**	**0**	**0**	**0**	**0.0285714**	**0.4714286**		
	0	**0.0089286**	**0**	**0**	**0**	**0.0285714**	**0.4714286**		
	0	**0.0089286**	**0**	**0**	**0**	**0.0285714**	**0.4714286**		
	0	**0.0089286**	**0**	**0**	**0**	**0.0285714**	**0.4714286**		
	0	**0.0089286**	**0**	**0**	**0**	**0.0285714**	**0.4714286**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4714286**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4428571**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4428571**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4428571**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4142857**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4142857**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4142857**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.8857143**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.8571429**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.8571429**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.8**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.8**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.7714286**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.7714286**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.7428571**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.7142857**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.7142857**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.6857143**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.6857143**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.6857143**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.6857143**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.5714286**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.5428571**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.5142857**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4857143**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4857143**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4571429**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.4**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.3142857**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.2571429**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.2285714**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.2285714**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.1714286**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.1142857**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.0857143**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.0571429**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.0571429**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.0571429**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.0571429**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.0285714**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0.0285714**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
	0	**1.11E-16**	**0**	**0**	**0**	**2.22E-16**	**0**		
Test Statistic, α = 0.05	0.5282285	0.497709	0.4978585	0.4978585	0.9887597	0.9887597	0.9887597	0.554294619	0.554294619
Test Statistic, α = 0.01	0.6330974	0.5965189	0.596698	0.596698	1.1850576	1.1850576	1.1850576	0.664338404	0.664338404

Appendix D.3: Spreadsheet for Domain (31 v 65)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0.0571429	0	0	0	0
	0	0	0	0	0.2	0	0	0	0
	0	0	0	0	0.3714286	0	0	0	0
	0	0	0	0	0.4857143	0	0	0	0
	0	0	0	0	0.6	0	0	0	0
	0	0	0	0	0.6857143	0	0	0	0.023255814
	0	0	0	0	0.7142857	0	0	0	0.046511628
	0.0227273	0	0	0	0.7142857	0	0	0	0.069767442
	0.0227273	0	0	0.009009	0.7714286	0	0	0	0.11627907
	0.0454545	0	0	0.009009	0.8285714	0	0	0	0.242248062
	0.1136364	0	0	0.018018	0.8857143	0.0285714	0	0	0.428294574
	0.2045455	0	0.0498145	0.027027	0.8857143	0.0571429	0	0	0.753875969
	0.2727273	0	0.0047695	0.0047695	0.8232143	0.0571429	0	0	0.333333333
	0.4987273	0	0.0174881	0.054584	0.8232143	0.0053571	0	0.023255814	0.166666667
	0.6338182	0	0.0418654	0.118177	0.8232143	0.0232143	0	0.069767442	0
	0.662	0	0.0111288	0.145734	0.7607143	0.0107143	0	0.032945736	0
	0.5567273	0	0.0916799	0.3407525	0.6642857	0.0178571	0	0.242248062	0
	0.4809091	0	0.1081081	0.418124	0.6017857	0.1125	0	0.187984496	0
	0.4278182	0	0.0900901	0.3826179	0.4714286	0.0553571	0	0.096899225	0
	0.2518182	0	0.0540541	0.2024377	0.4714286	0.0303571	0	1.11022E-16	0
	0.0998182	0.0089286	0.018018	0.1351351	0.4089286	0.0035714	0	1.11022E-16	0
	0.0652727	0.0089286	0	0.1081081	0.2839286	0.1285714	0	1.11022E-16	0
	0.0332727	0.0178571	0	0.045045	0.2839286	0.0428571	0	1.11022E-16	0
	0.0172727	0.0357143	0	0.036036	0.2214286	0.0428571	0	1.11022E-16	0
	0.0012727	0.0446429	0	0.018018	0.1589286	0.1285714	0	1.11022E-16	0
	0.0067273	0.0535714	0	0.018018	0.0625	0.1571429	0.0625		
	0.0227273	0.0892857	0	0.018018	0.0625	0.1803571	0.0625		
	0.0227273	0.0105042	0	0.018018	0.0625	0.1803571	0.0625		
	0.0227273	0.0252101	0	0.009009	0.0625	0.2089286	0.0625		
	0.0227273	0.029937	0	0	0.0625	0.175	0.0625		
	0.0227273	0.1528361	0	0	0.0625	0.1125	0.0625		
	0.0227273	0.2347689	0	0	0.0625	0.075	0.0625		
	0.0227273	0.4164916	0	0	0.0625	0.1089286	0.0625		
	0.0227273	0.2914916	0	0	0.0625	0.1089286	0.0625		
	0.0227273	0.3608193	0	0	0.0625	0.0803571	0.0625		
	0.0227273	0.2268908	0	0	0.0625	0.0803571	0.0625		
	0.0227273	0.1465336	0	0	0.0625	0.0517857	0.0625		
	0.0227273	0.1428571	0	0	0.0625	0.0517857	0.0625		
	0.0227273	0.1160714	0	0	0.0625	0.0232143	0.0625		
	0.0227273	0.0803571	0	0	0.0625	0.0857143	0.0339286		
	0.0227273	0.0803571	0	0	0.0625	0.0571429	0.0964286		
	0.0227273	0.0535714	0	0	0.0625	0.0571429	0.1589286		
	0.0227273	0.0446429	0	0	0	0.0285714	0.1589286		
	0.0227273	0.0357143	0	0	0	0.0285714	0.1589286		
	0.0227273	0.0089286	0	0	0	0.0285714	0.2214286		
	0.0227273	0.0089286	0	0	0	0.0285714	0.2214286		
	0.0227273	0.0089286	0	0	0	0.0285714	0.2214286		
	1.11E-16	0.0089286	0	0	0	0.0285714	0.2214286		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.2839286		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.2553571		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.3178571		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.3803571		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.4142857		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.4142857		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.5392857		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.5107143		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.5446429		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.5446429		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.4875		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.55		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.5214286		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.5839286		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.6178571		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.5892857		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.6517857		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.6232143		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.6232143		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.6232143		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.6232143		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.5089286		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.4803571		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.4517857		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.4232143		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.4857143		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.4571429		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.4		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.3142857		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.2571429		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.2285714		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.2285714		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.1714286		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.1142857		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.0857143		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.0571429		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.0571429		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.0571429		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.0571429		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.0285714		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0.0285714		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
	1.11E-16	1.11E-16	0	0	0	2.22E-16	0		
Test Statistic, $\alpha = 0.05$	0.2383971	0.3539976	0.3542077	0.3542077	0.4104214	0.4104214	0.4104214	0.44401271	0.44401271
Test Statistic, $\alpha = 0.01$	0.2857259	0.4242765	0.4245283	0.4245283	0.4919021	0.4919021	0.4919021	0.532162292	0.532162292

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0.0571429**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.2**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.3714286**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.4857143**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.6**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0.6857143**	**0**	**0**	**0**	**0.119601329**
	0	**0**	**0**	**0**	**0.7142857**	**0**	**0**	**0**	**0.096345515**
	0	**0**	**0**	**0**	**0.7142857**	**0**	**0**	**0**	**0.073089701**
	0.0384615	**0**	**0**	**0.009009**	**0.7714286**	**0**	**0**	**0**	**0.026578073**
	0.0384615	**0**	**0**	**0.009009**	**0.8285714**	**0**	**0**	**0**	**0.182724252**
	0.0384615	**0**	**0**	**0.018018**	**0.8857143**	**0.0285714**	**0**	**0**	**0.368770764**
	0.1538462	**0**	**0.009009**	**0.072973**	**0.8857143**	**0.0571429**	**0**	**0**	**0.551495017**
	0.3076923	**0**	**0.0540541**	**0.3459459**	**0.8857143**	**0.0571429**	**0**	**0.142857143**	**0.428571429**
	0.5144615	**0**	**0.0648649**	**0.3369369**	**0.7746032**	**0.0571429**	**0**	**0.119601329**	**0.142857143**
	0.5289231	**0**	**0.1477477**	**0.2828829**	**0.6634921**	**0.0857143**	**0**	**0.073089701**	**0**
	0.5273846	**0**	**0.2405405**	**0.2927928**	**0.552381**	**0.1142857**	**0**	**0.026578073**	**0**
	0.4378462	**0**	**0.0612613**	**0.2936937**	**0.4698413**	**0.1428571**	**0**	**0.182724252**	**0**
	0.4092308	**0**	**0.0918919**	**0.3945946**	**0.3587302**	**0.2**	**0**	**0.109634551**	**0**
	0.2652308	**0**	**0.0099099**	**0.3414414**	**0.415873**	**0.2571429**	**0**	**0.069767442**	**0**
	0.0892308	**0**	**0.0540541**	**0.1612613**	**0.415873**	**0.231746**	**0**	**1.11022E-16**	**0**
	0.0141538	**0.0089286**	**0.018018**	**0.0351351**	**0.415873**	**0.2603175**	**0**	**1.11022E-16**	**0**
	0.0273846	**0.0089286**	**1.11E-16**	**0.0081081**	**0.415873**	**0.2603175**	**0**	**1.11022E-16**	**0**
	0.0175385	**0.0178571**	**1.11E-16**	**0.054955**	**0.3047619**	**0.2349206**	**0**	**1.11022E-16**	**0**
	0.0015385	**0.0357143**	**1.11E-16**	**0.036036**	**0.3047619**	**0.2095238**	**0**	**1.11022E-16**	**0**
	0.0144615	**0.0553571**	**1.11E-16**	**0.018018**	**0.3047619**	**0.2952381**	**0**	**1.11022E-16**	**0**
	0.016	**0.0464286**	**1.11E-16**	**0.018018**	**0.3333333**	**0.3238095**	**0**		
	2.22E-16	**0.0107143**	**1.11E-16**	**0.018018**	**0.3333333**	**0.1873016**	**0**		
	2.22E-16	**0.1928571**	**1.11E-16**	**0.018018**	**0.3333333**	**0.1873016**	**0**		
	2.22E-16	**0.1571429**	**1.11E-16**	**0.009009**	**0.1111111**	**0.1047619**	**0**		
	2.22E-16	**0.1946429**	**1.11E-16**	**0**	**0.1111111**	**0.0222222**	**0**		
	2.22E-16	**0.3410714**	**1.11E-16**	**0**	**0.1111111**	**0.0222222**	**0**		
	2.22E-16	**0.4053571**	**1.11E-16**	**0**	**0.1111111**	**0.0888889**	**0**		
	2.22E-16	**0.4517857**	**1.11E-16**	**0**	**0**	**0.0603175**	**0**		
	2.22E-16	**0.4267857**	**1.11E-16**	**0**	**0**	**0.0603175**	**0**		
	2.22E-16	**0.3196429**	**1.11E-16**	**0**	**0**	**0.031746**	**0**		
	2.22E-16	**0.1857143**	**1.11E-16**	**0**	**0**	**0.031746**	**0**		
	2.22E-16	**0.1053571**	**1.11E-16**	**0**	**0**	**0.0031746**	**0**		
	2.22E-16	**0.0428571**	**1.11E-16**	**0**	**0**	**0.0031746**	**0**		
	2.22E-16	**0.0160714**	**1.11E-16**	**0**	**0**	**0.0253968**	**0**		
	2.22E-16	**0.0196429**	**1.11E-16**	**0**	**0**	**0.0253968**	**0.0285714**		
	2.22E-16	**0.0196429**	**1.11E-16**	**0**	**0**	**0.0539683**	**0.0285714**		
	2.22E-16	**0.0464286**	**1.11E-16**	**0**	**0**	**0.0539683**	**0.0825397**		
	2.22E-16	**0.0446429**	**1.11E-16**	**0**	**0**	**0.0825397**	**0.1936508**		
	2.22E-16	**0.0357143**	**1.11E-16**	**0**	**0**	**0.0825397**	**0.1936508**		
	2.22E-16	**0.0089286**	**1.11E-16**	**0**	**0**	**0.0285714**	**0.1936508**		
	2.22E-16	**0.0089286**	**1.11E-16**	**0**	**0**	**0.0285714**	**0.1936508**		
	2.22E-16	**0.0089286**	**1.11E-16**	**0**	**0**	**0.0285714**	**0.3047619**		
	2.22E-16	**0.0089286**	**1.11E-16**	**0**	**0**	**0.0285714**	**0.3047619**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.3047619**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.2761905**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.3873016**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.3873016**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.3587302**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.4698413**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.4698413**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.552381**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.5238095**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.5238095**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.5777778**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.5777778**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.5492063**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.7714286**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.7428571**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.7142857**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.7142857**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.6857143**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.6857143**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.6857143**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.6857143**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.5714286**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.5428571**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.5142857**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.4857143**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.4857143**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.4571429**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.4**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.3142857**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.2571429**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.2285714**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.2285714**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.1714286**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.1142857**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.0857143**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.0571429**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.0571429**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.0571429**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.0571429**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.0285714**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0.0285714**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
	2.22E-16	**1.11E-16**	**1.11E-16**	**0**	**0**	**0**	**0**		
Test Statistic, $\alpha = 0.05$	0.2931472	0.4488589	0.4490246	0.4490246	0.5082881	0.5082881	0.5082881	0.554294619	0.554294619
Test Statistic, $\alpha = 0.01$	0.3513455	0.5379706	0.5381692	0.5381692	0.6091983	0.6091983	0.6091983	0.664338404	0.664338404

Appendix D.3: Spreadsheet for Domain (31 v 72)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.083333333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.083333333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.166666667**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.25**
	0	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0.333333333**
	0	**0**	**0**	**0.0588235**	**0.1666667**	**0**	**0**	**0**	**0.208333333**
	0	**0**	**0**	**0.0588235**	**0.1666667**	**0**	**0**	**0**	**0.208333333**
	0	**0**	**0**	**0.0588235**	**0.3333333**	**0**	**0**	**0.083333333**	**0.458333333**
	0.02	**0**	**0**	**0.0588235**	**0.3333333**	**0**	**0**	**0.166666667**	**0.458333333**
	0.02	**0**	**0**	**0.1176471**	**0.3333333**	**0**	**0**	**0.25**	**0.041666667**
	0.0449123	**0**	**0**	**0.040724**	**0.3333333**	**0**	**0**	**0.25**	**0.166666667**
	0.0649123	**0**	**0**	**0.0995475**	**0.3333333**	**0**	**0**	**0.208333333**	**0.083333333**
	0.0947368	**0**	**0**	**0.1402715**	**0.2666667**	**0**	**0**	**0.208333333**	**0**
	0.0494737	**0**	**0.0588235**	**0.1221719**	**0.2666667**	**0**	**0**	**0.375**	**0**
	0.0140351	**0**	**0.2352941**	**0.2986425**	**0.2666667**	**0**	**0**	**0.375**	**0**
	0.0238596	**0**	**0.1402715**	**0.280543**	**0.4333333**	**0.1666667**	**0.1333333**	**0.041666667**	**0**
	0.0491228	**0**	**0.199095**	**0.280543**	**0.4333333**	**0.1666667**	**0.2**	**0.083333333**	**0**
	0.0442105	**0**	**0.0859729**	**0.4570136**	**0.4333333**	**0.1666667**	**0.2**	**0**	**0**
	0.094386	**0**	**0.0678733**	**0.5746606**	**0.4333333**	**0.1666667**	**0.3333333**	**0**	**0**
	0.1645614	**0**	**0.0090498**	**0.5746606**	**0.4333333**	**0.1**	**0.3333333**	**0**	**0**
	0.197193	**0**	**0.0271493**	**0.3438914**	**0.4333333**	**0.2666667**	**0.4**	**0**	**0**
	0.177193	**0**	**0.0045249**	**0.2669683**	**0.3**	**0.2666667**	**0.5333333**	**0**	**0**
	0.1747368	**0**	**0.1131222**	**0.3257919**	**0.3**	**0.2666667**	**0.5333333**	**0**	**0**
	0.1547368	**0**	**0.1538462**	**0.3257919**	**0.3**	**0.2**	**0.6**		
	0.1522807	**0.0588235**	**0.0769231**	**0.3257919**	**0.3**	**0.3**	**0.6**		
	0.1122807	**0.1176471**	**0.0769231**	**0.1719457**	**0.3**	**0.3**	**0.6666667**		
	0.1122807	**0.1176471**	**0.0769231**	**0.1719457**	**0.3**	**0.2333333**	**0.6666667**		
	0.0922807	**0.1176471**	**0.0769231**	**0.0180995**	**0.3**	**0.4**	**0.6666667**		
	0.0498246	**0.2352941**	**0.0769231**	**0.0769231**	**0.4**	**0.3333333**	**0.6666667**		
	0.0098246	**0.2760181**	**0.0769231**	**0.0769231**	**0.4**	**0.5**	**0.6666667**		
	0.0273684	**0.199095**	**0.0769231**	**0.0769231**	**0.2666667**	**0.5**	**0.6666667**		
	0.0073684	**0.199095**	**0**	**0.0769231**	**0.2**	**0.3**	**0.5666667**		
	0.0150877	**0.1809955**	**0**	**0.0769231**	**0.3666667**	**0.3**	**0.5666667**		
	0.0150877	**0.1809955**	**0**	**0**	**0.3666667**	**0.2333333**	**0.5666667**		
	0.0150877	**0.1809955**	**0**	**0**	**0.3666667**	**0.1666667**	**0.5666667**		
	0.0150877	**0.1040724**	**0**	**0**	**0.3666667**	**0.2666667**	**0.6333333**		
	0.0150877	**0.1628959**	**0**	**0**	**0.5333333**	**0.2**	**0.6333333**		
	0.0150877	**0.280543**	**0**	**0**	**0.5333333**	**0.1333333**	**0.6333333**		
	0.0150877	**0.3393665**	**0**	**0**	**0.5333333**	**0.1333333**	**0.3666667**		
	0.0150877	**0.2443439**	**0**	**0**	**0.4**	**0.1333333**	**0.3666667**		
	0.0150877	**0.1674208**	**0**	**0**	**0.4**	**0.1333333**	**0.3666667**		
	0.0024561	**0.2081448**	**0**	**0**	**0.3333333**	**0.1333333**	**0.3666667**		
	0.0024561	**0.3257919**	**0**	**0**	**0.2666667**	**0.1333333**	**0.4333333**		
	0.0024561	**0.3257919**	**0**	**0**	**0.2666667**	**0.0666667**	**0.4333333**		
	0.0024561	**0.3257919**	**0**	**0**	**0.2666667**	**0.0666667**	**0.4333333**		
	0.0024561	**0.3257919**	**0**	**0**	**0.2666667**	**0.0666667**	**0.4333333**		
	0.0175439	**0.3257919**	**0**	**0**	**0.2666667**	**0.0666667**	**0.4333333**		
	0.0175439	**0.3257919**	**0**	**0**	**0.2666667**	**0.0666667**	**0.4333333**		
	0.0175439	**0.1719457**	**0**	**0**	**0.2**	**0**	**0.4333333**		
	0.0175439	**0.1719457**	**0**	**0**	**0.2**	**0**	**0.4333333**		
	0.0175439	**0.1719457**	**0**	**0**	**0.2**	**0**	**0.2666667**		
	0.0175439	**0.1719457**	**0**	**0**	**0.2**	**0**	**0.3333333**		
	0.0175439	**0.0950226**	**0**	**0**	**0.0666667**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0.0666667**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0.0666667**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0.0666667**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.1666667**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.1666667**		
	0.0175439	**0.0769231**	**0**	**0**	**0**	**0**	**0.1666667**		
	0.0175439	**0**	**0**	**0**	**0**	**0**	**0.1666667**		
	0.0175439	**0**	**0**	**0**	**0**	**0**	**0.1666667**		
Test Statistic, α = 0.05	0.2635168	0.5010758	0.5010758	0.5010758	0.6569424	0.6569424	0.6569424	0.620752232	0.620752232
Test Statistic, α = 0.01	0.3158327	0.600554	0.600554	0.600554	0.7873648	0.7873648	0.7873648	0.743989807	0.743989807

Appendix D.3: Spreadsheet for Domains (41v43)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0**
	0.2	**0**	**0**	**0.1538462**	**0.1666667**	**0**	**0**	**0**	**0.125**
	0.3	**0**	**0**	**0.1538462**	**0.1666667**	**0**	**0**	**0**	**0.125**
	0.4	**0**	**0**	**0.3846154**	**0.3333333**	**0**	**0**	**0**	**0.125**
	0.5	**0**	**0**	**0.6153846**	**0.3333333**	**0.1**	**0**	**0**	**0.375**
	0.5	**0**	**0**	**0.7692308**	**0.3333333**	**0.1**	**0**	**0**	**0.875**
	0.4649123	**0**	**0**	**0.8461538**	**0.3333333**	**0.2**	**0**	**0**	**1**
	0.4649123	**0**	**0**	**0.9230769**	**0.3333333**	**0.4**	**0**	**0.125**	**1**
	0.5947368	**0**	**0**	**0.8461538**	**0.3333333**	**0.4**	**0**	**0.125**	**1**
	0.4894737	**0**	**0.1538462**	**0.7692308**	**0.3333333**	**0.4**	**0**	**0.125**	**0.333333333**
	0.3140351	**0**	**0.4615385**	**0.7692308**	**0.3333333**	**0.6**	**0**	**0.375**	**0**
	0.2561404	**0**	**0.5384615**	**0.6923077**	**0.4**	**0.5333333**	**0**	**0.875**	**0**
	0.1508772	**0**	**0.6153846**	**0.6923077**	**0.4**	**0.7333333**	**0**	**0.666666667**	**0**
	0.1157895	**0**	**0.4615385**	**0.6923077**	**0.4**	**0.7333333**	**0**	**0.333333333**	**0**
	0.045614	**0**	**0.5384615**	**0.6923077**	**0.4**	**0.7333333**	**0**	**0**	**0**
	0.0245614	**0**	**0.4615385**	**0.6923077**	**0.4**	**0.7333333**	**0.1**	**0**	**0**
	0.077193	**0.0769231**	**0.3846154**	**0.4615385**	**0.4**	**0.5666667**	**0.1**	**0**	**0**
	0.077193	**0.0769231**	**0.2307692**	**0.3846154**	**0.4**	**0.5666667**	**0.1**	**0**	**0**
	0.0947368	**0.1538462**	**0.2307692**	**0.3846154**	**0.4**	**0.5666667**	**0.1**	**0**	**0**
	0.0947368	**0.3846154**	**0.1538462**	**0.3846154**	**0.4**	**0.5666667**	**0.1**		
	0.1122807	**0.3846154**	**0.0769231**	**0.3846154**	**0.4**	**0.4**	**0.1**		
	0.0122807	**0.6153846**	**0.0769231**	**0.2307692**	**0.4**	**0.5**	**0.1**		
	0.0122807	**0.6923077**	**0.0769231**	**0.2307692**	**0.4**	**0.5**	**0.1**		
	0.0122807	**0.7692308**	**0.0769231**	**0.0769231**	**0.4**	**0.3333333**	**0.1**		
	0.0298246	**0.8461538**	**0.0769231**	**0.0769231**	**0.4666667**	**0.3333333**	**0.2**		
	0.0298246	**0.8461538**	**0.0769231**	**0.0769231**	**0.4666667**	**0.1666667**	**0.3**		
	0.0526316	**0.8461538**	**0.0769231**	**0.0769231**	**0.3666667**	**0.1666667**	**0.4**		
	0.0526316	**0.8461538**	**1.11E-16**	**0.0769231**	**0.3666667**	**0.1666667**	**0.2333333**		
	0.0350877	**0.7692308**	**1.11E-16**	**0.0769231**	**0.5333333**	**0.1666667**	**0.2333333**		
	0.0350877	**0.7692308**	**1.11E-16**	**0**	**0.5333333**	**0.1666667**	**0.2333333**		
	0.0350877	**0.7692308**	**1.11E-16**	**0**	**0.5333333**	**0.1666667**	**0.2333333**		
	0.0350877	**0.6923077**	**1.11E-16**	**0**	**0.5333333**	**3.331E-16**	**0.3333333**		
	0.0350877	**0.6923077**	**1.11E-16**	**0**	**0.5**	**3.331E-16**	**0.5333333**		
	0.0350877	**0.6923077**	**1.11E-16**	**0**	**0.5**	**3.331E-16**	**0.6333333**		
	0.0350877	**0.6923077**	**1.11E-16**	**0**	**0.5**	**3.331E-16**	**0.3**		
	0.0350877	**0.5384615**	**1.11E-16**	**0**	**0.4**	**3.331E-16**	**0.3**		
	0.0350877	**0.4615385**	**1.11E-16**	**0**	**0.4**	**3.331E-16**	**0.3**		
	0.0175439	**0.3846154**	**1.11E-16**	**0**	**0.4**	**3.331E-16**	**0.3**		
	0.0175439	**0.3846154**	**1.11E-16**	**0**	**0.3**	**3.331E-16**	**0.3**		
	0.0175439	**0.3846154**	**1.11E-16**	**0**	**0.3**	**3.331E-16**	**0.3**		
	0.0175439	**0.3846154**	**1.11E-16**	**0**	**0.2**	**3.331E-16**	**0.3**		
	0.0175439	**0.3846154**	**1.11E-16**	**0**	**0.1**	**3.331E-16**	**0.3**		
	0.0175439	**0.3846154**	**1.11E-16**	**0**	**0.1**	**3.331E-16**	**0.3**		
	0.0175439	**0.3846154**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.3**		
	0.0175439	**0.2307692**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.3**		
	0.0175439	**0.2307692**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.3**		
	0.0175439	**0.2307692**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.1333333**		
	0.0175439	**0.2307692**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.1538462**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.2333333**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.0666667**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.1666667**		
	0.0175439	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.1666667**		
	0.0175439	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.1666667**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.1666667**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.1666667**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.1666667**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0.1666667**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
	3.331E-16	**2.22E-16**	**1.11E-16**	**0**	**0**	**3.331E-16**	**0**		
Test Statistic, $\alpha = 0.05$	0.4662715	0.5334359	0.5334359	0.5334359	0.702301	0.702301	0.702301	0.920724353	0.920724353
Test Statistic, $\alpha = 0.01$	0.5588401	0.6393386	0.6393386	0.6393386	0.8417284	0.8417284	0.8417284	1.103515217	1.103515217

Appendix D.3: Spreadsheet for Domain (41 v 51)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0833333	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1666667	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.25	**0**	**0**	**0.0833333**	**0.1666667**	**0**	**0**	**0**	**0**
	0.4166667	**0**	**0**	**0.2083333**	**0.1666667**	**0.0666667**	**0**	**0**	**0.125**
	0.5	**0**	**0**	**0.4583333**	**0.1666667**	**0.0666667**	**0**	**0**	**0.125**
	0.625	**0**	**0**	**0.6666667**	**0.2666667**	**0.0666667**	**0**	**0**	**0.125**
	0.75	**0**	**0**	**0.7083333**	**0.2666667**	**0.0666667**	**0**	**0**	**0.375**
	0.7916667	**0**	**0**	**0.875**	**0.2666667**	**0.1333333**	**0.0666667**	**0**	**0.732142857**
	0.9232456	**0**	**0**	**0.8397436**	**0.2666667**	**0.2**	**0.0666667**	**0**	**0.857142857**
	0.9649123	**0**	**0.0416667**	**0.8814103**	**0.2666667**	**0.2666667**	**0.0666667**	**0.125**	**0.857142857**
	0.8947368	**0**	**0.0833333**	**0.8461538**	**0.2666667**	**0.2666667**	**0.0666667**	**0.125**	**0.714285714**
	0.7894737	**0**	**0.3333333**	**0.7692308**	**0.2666667**	**0.3333333**	**0.0666667**	**0.017857143**	**0.714285714**
	0.6140351	**0**	**0.7083333**	**0.7692308**	**0.2666667**	**0.3333333**	**0.0666667**	**0.232142857**	**0.428571429**
	0.4561404	**0**	**0.5961538**	**0.6923077**	**0.4333333**	**0.1666667**	**0.0666667**	**0.732142857**	**0.285714286**
	0.3508772	**0**	**0.7628205**	**0.6923077**	**0.4333333**	**0.2333333**	**0.0666667**	**0.714285714**	**0.285714286**
	0.3157895	**0**	**0.5737179**	**0.6923077**	**0.4333333**	**0.3666667**	**0.0666667**	**0.571428571**	**0.142857143**
	0.245614	**0.0416667**	**0.5384615**	**0.6923077**	**0.4333333**	**0.5**	**0.1333333**	**0.571428571**	**2.22045E-16**
	0.1754386	**0.0833333**	**0.4615385**	**0.6923077**	**0.4333333**	**0.5666667**	**0.2**	**0.142857143**	**2.22045E-16**
	0.122807	**0.1666667**	**0.3846154**	**0.4615385**	**0.4333333**	**0.4666667**	**0.2**	**0.142857143**	**2.22045E-16**
	0.122807	**0.25**	**0.2307692**	**0.3846154**	**0.4333333**	**0.5333333**	**0.2**	**0**	**2.22045E-16**
	0.1052632	**0.375**	**0.2307692**	**0.3846154**	**0.4333333**	**0.5333333**	**0.2**	**0**	**2.22045E-16**
	0.1052632	**0.5**	**0.1538462**	**0.3846154**	**0.4333333**	**0.5333333**	**0.2666667**		
	0.0877193	**0.625**	**0.0769231**	**0.3846154**	**0.4333333**	**0.3666667**	**0.2666667**		
	0.0877193	**0.875**	**0.0769231**	**0.2307692**	**0.3**	**0.4333333**	**0.2666667**		
	0.0877193	**0.875**	**0.0769231**	**0.2307692**	**0.3**	**0.4333333**	**0.3333333**		
	0.0877193	**0.9166667**	**0.0769231**	**0.0769231**	**0.3**	**0.2666667**	**0.4**		
	0.0701754	**0.9583333**	**0.0769231**	**0.0769231**	**0.2666667**	**0.3333333**	**0.4**		
	0.0701754	**0.9230769**	**0.0769231**	**0.0769231**	**0.2666667**	**0.1666667**	**0.4**		
	0.0526316	**0.8461538**	**0.0769231**	**0.0769231**	**0.2**	**0.1666667**	**0.4**		
	0.0526316	**0.8461538**	**2.22E-16**	**0.0769231**	**0.2**	**0.1666667**	**0.2333333**		
	0.0350877	**0.7692308**	**2.22E-16**	**0.0769231**	**0.3666667**	**0.1666667**	**0.2333333**		
	0.0350877	**0.7692308**	**2.22E-16**	**2.22E-16**	**0.3666667**	**0.1666667**	**0.2333333**		
	0.0350877	**0.7692308**	**2.22E-16**	**2.22E-16**	**0.3**	**0.1666667**	**0.3**		
	0.0350877	**0.6923077**	**2.22E-16**	**2.22E-16**	**0.3**	**0**	**0.3**		
	0.0350877	**0.6923077**	**2.22E-16**	**2.22E-16**	**0.4**	**0**	**0.3666667**		
	0.0350877	**0.6923077**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0**	**0.3666667**		
	0.0350877	**0.6923077**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0**	**0.1666667**		
	0.0350877	**0.5384615**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0**	**0.2333333**		
	0.0350877	**0.4615385**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0**	**0.2333333**		
	0.0175439	**0.3846154**	**2.22E-16**	**2.22E-16**	**0.3333333**	**0**	**0.2333333**		
	0.0175439	**0.3846154**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0**	**0.2333333**		
	0.0175439	**0.3846154**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0**	**0.2333333**		
	0.0175439	**0.3846154**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0**	**0.3**		
	0.0175439	**0.3846154**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0**	**0.3**		
	0.0175439	**0.3846154**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0**	**0.3**		
	0.0175439	**0.3846154**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0**	**0.3666667**		
	0.0175439	**0.2307692**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0**	**0.4333333**		
	0.0175439	**0.2307692**	**2.22E-16**	**2.22E-16**	**0.2666667**	**0**	**0.4333333**		
	0.0175439	**0.2307692**	**2.22E-16**	**2.22E-16**	**0.2**	**0**	**0.2666667**		
	0.0175439	**0.2307692**	**2.22E-16**	**2.22E-16**	**0.1333333**	**0**	**0.2666667**		
	0.0175439	**0.1538462**	**2.22E-16**	**2.22E-16**	**0.1333333**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0.1333333**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0.0666667**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0.0666667**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0.0666667**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.2666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.1**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.1**		
	0.0175439	**0.0769231**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.1**		
	0.0175439	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.1**		
	0.0175439	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.1**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.1**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.1**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.1**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.1**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.0666667**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0.0666667**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
	3.331E-16	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0**	**0**	**0**		
Test Statistic, α = 0.05	0.3309317	0.4683413	0.4683413	0.4683413	0.6569424	0.6569424	0.6569424	0.703866871	0.703866871
Test Statistic, α = 0.01	0.3966314	0.5613208	0.5613208	0.5613208	0.7873648	0.7873648	0.7873648	0.843605146	0.843605146

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No data from Domain 61**				**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0							**0**	**0.097222222**
	0							**0.111111111**	**0.430555556**
	0							**0.111111111**	**0.430555556**
	0.1111111							**0.111111111**	**0.180555556**
	0.1111111							**0.111111111**	**0.208333333**
	0.2982456							**0.222222222**	**0.333333333**
	0.2982456							**0.097222222**	**0**
	0.3391813							**0.319444444**	**0**
	0.2339181							**0.430555556**	**0**
	0.1695906							**0.180555556**	**0**
	0.122807							**0.097222222**	**0**
	0.0175439							**0**	**0**
	0.0175439							**0**	**0**
	0.0877193							**0**	**0**
	0.0467836							**0**	**0**
	0.0994152							**0**	**0**
	0.0994152							**0**	**0**
	0.1169591							**0**	**0**
	0.1169591								
	0.0233918								
	0.0233918								
	0.0233918								
	0.0233918								
	0.0701754								
	0.0701754								
	0.0526316								
	0.0526316								
	0.0350877								
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Test Statistic, $\alpha = 0.05$	0.4878117							0.660841215	0.660841215
Test Statistic, $\alpha = 0.01$	0.5846566							0.792037632	0.792037632

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0.0425532	0	0	0	0.034482759
	0	0	0	0	0.0425532	0	0	0	0.068965517
	0	0	0	0	0.0638298	0	0	0	0.103448276
	0	0	0	0	0.0638298	0	0	0	0.24137931
	0	0	0	0	0.0638298	0.0212766	0	0	0.24137931
	0	0	0	0	0.1028369	0.0212766	0	0	0.275862069
	0	0	0	0.0088496	0.0815603	0.0212766	0	0	0.288793103
	0.0152672	0	0	0.0265487	0.0815603	0.0212766	0	0	0.323275862
	0.0229008	0	0	0.0619469	0.2269504	0.0212766	0	0	0.392241379
	0.0610687	0	0	0.0619469	0.2056738	0.0212766	0	0.034482759	0.245689655
	0.1145038	0	0	0.079646	0.141844	0.0212766	0	0.068965517	0.11637931
	0.1328512	0	0	0.0558203	0.141844	0.0212766	0	0.206896552	0.068965517
	0.2015535	0	0.0442478	0.1000681	0.0780142	0.0212766	0.0212766	0.254310345	0
	0.2535155	0	0.079646	0.102791	0.0780142	0.0212766	0.0212766	0.288793103	0
	0.2322218	0	0.1858407	0.1763104	0.0567376	0.0212766	0.0212766	0.461206897	0
	0.171287	0	0.3539823	0.2913547	0.0567376	0.0212766	0.0212766	0.38362069	0
	0.0973617	0	0.3859769	0.3471749	0.1808511	0.1241135	0.0212766	0.125	0
	0.0608009	0	0.5364193	0.4710688	0.1595745	0.1241135	0.0638298	0	0
	0.102049	0	0.3852961	0.5418652	0.1595745	0.1241135	0.106383	0	0
	0.0624079	0	0.4234173	0.586113	0.1170213	0.1028369	0.106383	0	0
	0.0151333	0	0.3818924	0.586113	0.0957447	0.0815603	0.1276596	0	0
	0.0006696	0	0.331518	0.4084411	0.0744681	0.2056738	0.1276596	0	0
	0.0235704	0.0176991	0.195371	0.3492172	0.0531915	0.1205674	0.1276596	0	0
	0.0212937	0.0353982	0.195371	0.3492172	0.0106383	0.0567376	0.1489362	0	0
	0.0365609	0.0353982	0.136147	0.3580667	0.0319149	0.0283688	0.1489362		
	0.0266506	0.0442478	0.059224	0.3580667	0.0957447	0.1170213	0.1702128		
	0.0342842	0.0619469	0.0680735	0.2042206	0.1170213	0.0319149	0.1702128		
	0.0419178	0.079646	0.0769231	0.2042206	0.1170213	0.0531915	0.1914894		
	0.0419178	0.1150442	0.0769231	0.0503744	0.1808511	0.070922	0.1914894		
	0.0320075	0.1681416	0.0769231	0.0503744	0.035461	0.0070922	0.2340426		
	0.0472747	0.1885636	0.0769231	0.0503744	0.0780142	0.1524823	0.2340426		
	0.0373644	0.2001361	0.0769231	0.059224	0.0992908	0.1099291	0.2340426		
	0.044998	0.3328795	0	0.059224	0.0992908	0.0673759	0.0886525		
	0.0274541	0.3975494	0	0.0680735	0.0673759	0.0673759	0.0886525		
	0.0350877	0.5656909	0	0.0088496	0.0460993	0.0460993	0.0886525		
	0.0350877	0.5833901	0	0.0088496	0.0035461	0.0035461	0.1524823		
	0.0350877	0.5330157	0	0	0.0035461	0.1276596	0.1524823		
	0.0350877	0.5595643	0	0	0.1276596	0.0851064	0.1524823		
	0.0350877	0.5949626	0	0	0.106383	0.0851064	0.1524823		
	0.0350877	0.6126617	0	0	0.106383	0.0851064	0.1808511		
	0.0350877	0.4676651	0	0	0.106383	0.0638298	0.1382979		
	0.0350877	0.3995916	0	0	0.106383	0.0212766	0.1382979		
	0.0175439	0.331518	0	0	0.106383	2.22E-16	0.1382979		
	0.0175439	0.331518	0	0	0.106383	2.22E-16	0.1170213		
	0.0175439	0.331518	0	0	0.106383	2.22E-16	0.0531915		
	0.0175439	0.3492172	0	0	0.106383	2.22E-16	0.0106383		
	0.0175439	0.3580667	0	0	0.106383	2.22E-16	0.0106383		
	0.0175439	0.3580667	0	0	0.0851064	2.22E-16	0.0319149		
	0.0175439	0.3580667	0	0	0.0638298	2.22E-16	0.0957447		
	0.0175439	0.2042206	0	0	0.0638298	2.22E-16	0.1382979		
	0.0175439	0.2042206	0	0	0.0425532	2.22E-16	0.1808511		
	0.0175439	0.2042206	0	0	0.0425532	2.22E-16	0.0780142		
	0.0175439	0.2042206	0	0	0.0425532	2.22E-16	0.0992908		
	0.0175439	0.1272975	0	0	0.0212766	2.22E-16	0.1205674		
	0.0175439	0.0503744	0	0	0.0212766	2.22E-16	0.1631206		
	0.0175439	0.0503744	0	0	0.0212766	2.22E-16	0.1631206		
	0.0175439	0.0503744	0	0	1.11E-16	2.22E-16	0.1843972		
	0.0175439	0.0503744	0	0	1.11E-16	2.22E-16	0.2056738		
	0.0175439	0.059224	0	0	1.11E-16	2.22E-16	0.2056738		
	0.0175439	0.059224	0	0	1.11E-16	2.22E-16	0.2056738		
	0.0175439	0.059224	0	0	1.11E-16	2.22E-16	0.2269504		
	0.0175439	0.0769231	0	0	1.11E-16	2.22E-16	0.248227		
	0.0175439	0.0769231	0	0	1.11E-16	2.22E-16	0.248227		
	0.0175439	0.0769231	0	0	1.11E-16	2.22E-16	0.248227		
	0.0175439	0.0769231	0	0	1.11E-16	2.22E-16	0.0815603		
	0.0175439	0.0769231	0	0	1.11E-16	2.22E-16	0.0815603		
	0.0175439	0.0769231	0	0	1.11E-16	2.22E-16	0.0815603		
	0.0175439	2.22E-16	0	0	1.11E-16	2.22E-16	0.0815603		
	0.0175439	2.22E-16	0	0	1.11E-16	2.22E-16	0.0815603		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0815603		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0815603		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.1028369		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.1241135		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0425532		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0425532		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0425532		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0425532		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0425532		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0425532		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	0.0212766		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	1.11E-16		
	0	2.22E-16	0	0	1.11E-16	2.22E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.2157967	0.3983027	0.3983027	0.3983027	0.589593	0.589593	0.589593	0.543119978	0.543119978
Test Statistic, $\alpha = 0.01$	0.2586387	0.4773775	0.4773775	0.4773775	0.7066445	0.7066445	0.7066445	0.650945268	0.650945268

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.181818182
	0	0	0	0	0.1333333	0	0	0	0.272727273
	0	0	0	0	0.1	0	0	0	0.147727273
	0	0	0	0	0.1	0	0	0	0.147727273
	0.0181818	0	0	0	0.2666667	0.0333333	0	0	0.511363636
	0.0363636	0	0	0	0.2333333	0.0333333	0	0.090909091	0.352272727
	0.0727273	0	0	0.0344828	0.2333333	0.0333333	0	0.272727273	0.056818182
	0.0740032	0	0.0344828	0.0079576	0.2333333	0.0333333	0	0.272727273	0
	0.1830941	0	0.0344828	0.0092838	0.2333333	0.0333333	0	0.147727273	0
	0.2401914	0	0.0862069	0.035809	0.2	0.0333333	0	0.420454545	0
	0.2985646	0	0.2413793	0.0623342	0.2	0.0333333	0	0.602272727	0
	0.1958533	0	0.3448276	0.2864721	0.2	0.0333333	0	0.352272727	0
	0.092504	0	0.2599469	0.3129973	0.3	0.1333333	0	0.125	0
	0.0417863	0	0.4668435	0.4164456	0.2666667	0.1333333	0	0	0
	0.0430622	0	0.3222812	0.571618	0.2333333	0.1333333	0	0	0
	0.0092504	0	0.3143236	0.5888594	0.2333333	0.1333333	0.0333333	0	0
	0.0427432	0	0.3236074	0.6233422	0.2333333	0.0333333	0.0333333	0	0
	0.077193	0	0.3328912	0.4098143	0.1333333	0.2	0.0333333	0	0
	0.0590112	0	0.1962865	0.367374	0.0666667	0.1666667	0.0666667	0	0
	0.0401914	0	0.2135279	0.367374	0	0.1333333	0.1	0	0
	0.0220096	0	0.1538462	0.367374	0	0.0666667	0.1		
	0.0031898	0	0.0769231	0.367374	0	0.0666667	0.1		
	0.0031898	0.0172414	0.0769231	0.2135279	0.0666667	0.0666667	0.1		
	0.014992	0.0172414	0.0769231	0.2307692	0.1333333	0.0333333	0.1		
	0.0513557	0.0344828	0.0769231	0.0769231	0.1333333	0.1333333	0.1		
	0.0701754	0.1034483	0.0769231	0.0769231	0.0333333	0.1	0.1333333		
	0.0701754	0.1127321	0.0769231	0.0769231	0	0.1666667	0.1666667		
	0.0526316	0.1737401	0.0769231	0.0769231	0.0666667	0.1	0.1666667		
	0.0526316	0.2771883	0	0.0769231	0.0666667	0.1	0		
	0.0350877	0.372679	0	0.0769231	0.0333333	0	0.0333333		
	0.0350877	0.4416446	0	1.11E-16	0.0333333	0	0.0333333		
	0.0350877	0.5106101	0	1.11E-16	0.0333333	0.0333333	0.0666667		
	0.0350877	0.4681698	0	1.11E-16	0	0.1	0.0666667		
	0.0350877	0.5198939	0	1.11E-16	0.1333333	0.1	0.1333333		
	0.0350877	0.5198939	0	1.11E-16	0.1333333	0.1	0.2		
	0.0350877	0.5888594	0	1.11E-16	0.1333333	0.1	0.0666667		
	0.0350877	0.4350133	0	1.11E-16	0.1333333	0.1	5.551E-17		
	0.0350877	0.3925729	0	1.11E-16	0.1333333	0.1	5.551E-17		
	0.0175439	0.3328912	0	1.11E-16	0.1	0.0666667	5.551E-17		
	0.0175439	0.367374	0	1.11E-16	0.1	0.0666667	0.0333333		
	0.0175439	0.367374	0	1.11E-16	0.1	0.0666667	0.0666667		
	0.0175439	0.367374	0	1.11E-16	0.0666667	0.0666667	0.0666667		
	0.0175439	0.367374	0	1.11E-16	0.0666667	0.0333333	0.1333333		
	0.0175439	0.367374	0	1.11E-16	0.0333333	0.0333333	0.1666667		
	0.0175439	0.367374	0	1.11E-16	0.0333333	0.0333333	0.1666667		
	0.0175439	0.2135279	0	1.11E-16	0.0333333	0.0333333	0.2333333		
	0.0175439	0.2307692	0	1.11E-16	0.0333333	0.0333333	0.2333333		
	0.0175439	0.2307692	0	1.11E-16	0.0333333	0.0333333	0.0666667		
	0.0175439	0.2307692	0	1.11E-16	0.0333333	0.0333333	0.1333333		
	0.0175439	0.1538462	0	1.11E-16	0.0333333	0	0.1333333		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.1666667		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.2		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.2333333		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.2666667		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.2666667		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.3		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.3		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.3		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.3		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.3333333		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.1666667		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.1666667		
	0.0175439	0.0769231	0	1.11E-16	0	0	0.1666667		
	0.0175439	0	0	1.11E-16	0	0	0.1666667		
	0.0175439	0	0	1.11E-16	0	0	0.1666667		
	2.22E-16	0	0	1.11E-16	0	0	0.1666667		
	2.22E-16	0	0	1.11E-16	0	0	0.1666667		
	2.22E-16	0	0	1.11E-16	0	0	0.1666667		
	2.22E-16	0	0	1.11E-16	0	0	0.1666667		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
	2.22E-16	0	0	1.11E-16	0	0	0		
Test Statistic, $\alpha = 0.05$	0.2570568	0.4173327	0.4173327	0.4173327	0.6082105	0.6082105	0.6082105	0.631937857	0.631937857
Test Statistic, $\alpha = 0.01$	0.3080902	0.5001855	0.5001855	0.5001855	0.7289582	0.7289582	0.7289582	0.757396107	0.757396107

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0.076923077**
	0	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0.028846154**
	0	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0.105769231**
	0	**0**	**0**	**0**	**0.3333333**	**0**	**0**	**0**	**0.259615385**
	0	**0**	**0**	**0.037037**	**0.3333333**	**0**	**0**	**0**	**0.163461538**
	0.0416667	**0**	**0**	**0.037037**	**0.1666667**	**0**	**0**	**0**	**0.048076923**
	0.1732456	**0**	**0**	**0.039886**	**0.1666667**	**0**	**0**	**0.076923077**	**0**
	0.2982456	**0**	**0.037037**	**0.002849**	**0.1666667**	**0**	**0**	**0.105769231**	**0**
	0.3114035	**0**	**0.037037**	**0.005698**	**0.1666667**	**0**	**0**	**0.182692308**	**0**
	0.2894737	**0**	**0.1481481**	**0.0655271**	**0.1666667**	**0**	**0**	**0.336538462**	**0**
	0.2390351	**0**	**0.2222222**	**0.1766382**	**0.1666667**	**0**	**0**	**0.394230769**	**0**
	0.247807	**0**	**0.3276353**	**0.3960114**	**0**	**0.1666667**	**0**	**0.048076923**	**0**
	0.2258772	**0**	**0.5498575**	**0.5071225**	**0**	**0.1666667**	**0**	**0**	**0**
	0.2324561	**0**	**0.3931624**	**0.5441595**	**0**	**0.1666667**	**0**	**0**	**0**
	0.1622807	**0**	**0.4273504**	**0.6552707**	**0**	**0.1666667**	**0**	**0**	**0**
	0.1754386	**0**	**0.3874644**	**0.6923077**	**0**	**0.1666667**	**0**	**0**	**0**
	0.122807	**0**	**0.3475783**	**0.4615385**	**0**	**0.3333333**	**0**	**0**	**0**
	0.122807	**0**	**0.2307692**	**0.3846154**	**0**	**0.3333333**	**0**	**0**	**0**
	0.1052632	**0**	**0.2307692**	**0.3846154**	**0**	**0.3333333**	**0**	**0**	**0**
	0.1052632	**0**	**0.1538462**	**0.3846154**	**0**	**0.3333333**	**0**		
	0.0877193	**0**	**0.0769231**	**0.3846154**	**0**	**0**	**0**		
	0.0877193	**0**	**0.0769231**	**0.2307692**	**0.5**	**0**	**0**		
	0.0877193	**0**	**0.0769231**	**0.2307692**	**0.5**	**0**	**0**		
	0.0877193	**0**	**0.0769231**	**0.0769231**	**0.5**	**0.3333333**	**0**		
	0.0701754	**0.037037**	**0.0769231**	**0.0769231**	**0.3333333**	**0.3333333**	**0**		
	0.0701754	**0.034188**	**0.0769231**	**0.0769231**	**0.3333333**	**0.1666667**	**0**		
	0.0526316	**0.0683761**	**0.0769231**	**0.0769231**	**0.3333333**	**0.1666667**	**0**		
	0.0526316	**0.1794872**	**2.22E-16**	**0.0769231**	**0.3333333**	**0.1666667**	**0.1666667**		
	0.0350877	**0.3247863**	**2.22E-16**	**0.0769231**	**0.1666667**	**0.1666667**	**0.1666667**		
	0.0350877	**0.4729345**	**2.22E-16**	**0**	**0.1666667**	**0.1666667**	**0.1666667**		
	0.0350877	**0.5099715**	**2.22E-16**	**0**	**0.1666667**	**0.1666667**	**0.1666667**		
	0.0350877	**0.5441595**	**2.22E-16**	**0**	**0.1666667**	**1.11E-16**	**0.1666667**		
	0.0350877	**0.6923077**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0350877	**0.6923077**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0350877	**0.6923077**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
	0.0350877	**0.5384615**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
	0.0350877	**0.4615385**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
	0.0175439	**0.3846154**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
	0.0175439	**0.3846154**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
	0.0175439	**0.3846154**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
	0.0175439	**0.3846154**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
	0.0175439	**0.3846154**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.3846154**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.3846154**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.2307692**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.2307692**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.2307692**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.2307692**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.1538462**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, $\alpha = 0.05$	0.3309317	0.4591085	0.4591085	0.4591085	1.1104354	1.1104354	1.1104354	0.611127583	0.611127583
Test Statistic, $\alpha = 0.01$	0.3966314	0.5502551	0.5502551	0.5502551	1.3308894	1.3308894	1.3308894	0.732454383	0.732454383

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0.160714286**
	0	**0**	**0**	**0.125**	**0.1666667**	**0**	**0**	**0**	**0.303571429**
	0	**0**	**0**	**0.125**	**0.3333333**	**0**	**0**	**0**	**0.732142857**
	0	**0**	**0**	**0.125**	**0.3333333**	**0**	**0**	**0**	**0.482142857**
	0	**0**	**0**	**0.125**	**0.3333333**	**0**	**0**	**0**	**0.125**
	0.0350877	**0**	**0**	**0.1730769**	**0.1666667**	**0**	**0**	**0**	**0**
	0.1077694	**0**	**0**	**0.1730769**	**0.1666667**	**0**	**0**	**0.160714286**	**0**
	0.037594	**0**	**0**	**0.0961538**	**0.1666667**	**0**	**0**	**0.446428571**	**0**
	0.2180451	**0**	**0**	**0.1442308**	**0.1666667**	**0**	**0**	**0.732142857**	**0**
	0.0426065	**0**	**0.125**	**0.1442308**	**0.1666667**	**0**	**0**	**0.625**	**0**
	0.0275689	**0**	**0.0288462**	**0.0673077**	**0**	**0.1666667**	**0**	**0.125**	**0**
	0.0776942	**0**	**0.0961538**	**0.1923077**	**0**	**0.1666667**	**0**	**0**	**0**
	0.1729323	**0**	**0.3653846**	**0.5673077**	**0**	**0.1666667**	**0**	**0**	**0**
	0.1027569	**0**	**0.4134615**	**0.5673077**	**0**	**0.1666667**	**0**	**0**	**0**
	0.0325815	**0**	**0.4615385**	**0.6923077**	**0**	**0.1666667**	**0**	**0**	**0**
	0.0200501	**0**	**0.3846154**	**0.4615385**	**0**	**0.3333333**	**0**	**0**	**0**
	0.0200501	**0**	**0.2307692**	**0.3846154**	**0**	**0.3333333**	**0**	**0**	**0**
	0.037594	**0.125**	**0.2307692**	**0.3846154**	**0**	**0.3333333**	**0**	**0**	**0**
	0.037594	**0.125**	**0.1538462**	**0.3846154**	**0**	**0.3333333**	**0**		
	0.0877193	**0.125**	**0.0769231**	**0.3846154**	**0**	**0.5**	**0**		
	0.0877193	**0.125**	**0.0769231**	**0.2307692**	**0**	**0.5**	**0**		
	0.0877193	**0.125**	**0.0769231**	**0.2307692**	**0.5**	**0.5**	**0**		
	0.0877193	**0.125**	**0.0769231**	**0.0769231**	**0.5**	**0.6666667**	**0**		
	0.0701754	**0.125**	**0.0769231**	**0.0769231**	**0.3333333**	**0.6666667**	**0**		
	0.0701754	**0.1730769**	**0.0769231**	**0.0769231**	**0.3333333**	**0.8333333**	**0**		
	0.0526316	**0.0961538**	**0.0769231**	**0.0769231**	**0.3333333**	**0.8333333**	**0**		
	0.0526316	**0.2211538**	**0**	**0.0769231**	**0.3333333**	**0.3333333**	**0.1666667**		
	0.0350877	**0.1442308**	**0**	**0.0769231**	**0.1666667**	**0.3333333**	**0.1666667**		
	0.0350877	**0.1442308**	**0**	**0**	**0.1666667**	**0.1666667**	**0.1666667**		
	0.0350877	**0.1442308**	**0**	**0**	**0.1666667**	**0.1666667**	**0.1666667**		
	0.0350877	**0.1923077**	**0**	**0**	**0.1666667**	**1.11E-16**	**0.3333333**		
	0.0350877	**0.3173077**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0350877	**0.4423077**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0350877	**0.6923077**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0350877	**0.5384615**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0350877	**0.4615385**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.1538462**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, $\alpha = 0.05$	0.5446813	0.6111276	0.6111276	0.6111276	1.1104354	1.1104354	1.1104354	0.703866871	0.703866871
Test Statistic, $\alpha = 0.01$	0.6528165	0.7324544	0.7324544	0.7324544	1.3308894	1.3308894	1.3308894	0.843605146	0.843605146

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0**
	0.0227273	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0.125**
	0.0227273	**0**	**0**	**0**	**0.1666667**	**0**	**0**	**0**	**0.125**
	0.0454545	**0**	**0**	**0**	**0.3333333**	**0**	**0**	**0**	**0.041666667**
	0.1136364	**0**	**0**	**0**	**0.3333333**	**0**	**0**	**0**	**0.291666667**
	0.2045455	**0**	**0.0588235**	**0**	**0.3333333**	**0**	**0**	**0**	**0.791666667**
	0.2376396	**0**	**0.0588235**	**0.0180995**	**0.2708333**	**0**	**0**	**0**	**0.333333333**
	0.4876396	**0**	**0.1176471**	**0.040724**	**0.2708333**	**0.0625**	**0**	**0.125**	**0.166666667**
	0.576555	**0**	**0.2941176**	**0.081448**	**0.2708333**	**0.0625**	**0**	**0.125**	**0**
	0.5394737	**0**	**0.4705882**	**0.1221719**	**0.2083333**	**0.125**	**0**	**0.041666667**	**0**
	0.3867624	**0**	**0.6470588**	**0.4162896**	**0.0833333**	**0.125**	**0**	**0.291666667**	**0**
	0.2970494	**0**	**0.8461538**	**0.5158371**	**0.1875**	**0.1458333**	**0**	**0.458333333**	**0**
	0.2826954	**0**	**0.8461538**	**0.6334842**	**0**	**0.1458333**	**0**	**0.166666667**	**0**
	0.2476077	**0**	**0.6153846**	**0.6334842**	**0**	**0.1458333**	**0**	**1.11022E-16**	**0**
	0.1774322	**0**	**0.5384615**	**0.6923077**	**0.0625**	**0.2083333**	**0**	**1.11022E-16**	**0**
	0.1527113	**0**	**0.4615385**	**0.6923077**	**0.1875**	**0.3333333**	**0**	**1.11022E-16**	**0**
	0.1000797	**0**	**0.3846154**	**0.4615385**	**0.1875**	**0.1666667**	**0**	**1.11022E-16**	**0**
	0.1000797	**0**	**0.2307692**	**0.3846154**	**0.25**	**0.1666667**	**0**	**1.11022E-16**	**0**
	0.0825359	**0**	**0.2307692**	**0.3846154**	**0.3125**	**0.1666667**	**0**	**1.11022E-16**	**0**
	0.0825359	**0**	**0.1538462**	**0.3846154**	**0.4375**	**0.1666667**	**0.0625**		
	0.064992	**0**	**0.0769231**	**0.3846154**	**0.4375**	**0.0625**	**0.0625**		
	0.064992	**0.1176471**	**0.0769231**	**0.2307692**	**0.4375**	**0.0625**	**0.0625**		
	0.064992	**0.1176471**	**0.0769231**	**0.2307692**	**0.4375**	**0.0625**	**0.0625**		
	0.064992	**0.2352941**	**0.0769231**	**0.0769231**	**0.4375**	**0.0416667**	**0.0625**		
	0.0474482	**0.4117647**	**0.0769231**	**0.0769231**	**0.2708333**	**0.0208333**	**0.0625**		
	0.0474482	**0.4524887**	**0.0769231**	**0.0769231**	**0.2708333**	**0.0416667**	**0.0625**		
	0.0299043	**0.6108597**	**0.0769231**	**0.0769231**	**0.2708333**	**0.1041667**	**0.0625**		
	0.0299043	**0.6108597**	**0**	**0.0769231**	**0.2708333**	**0.1041667**	**0.1041667**		
	0.0123604	**0.7104072**	**0**	**0.0769231**	**0.1041667**	**0.1041667**	**0.1041667**		
	0.0123604	**0.7104072**	**0**	**0**	**0.1041667**	**0.1041667**	**0.1041667**		
	0.0123604	**0.7104072**	**0**	**0**	**0.1041667**	**0.1041667**	**0.1041667**		
	0.0123604	**0.6923077**	**0**	**0**	**0.1041667**	**0.0625**	**0.1041667**		
	0.0123604	**0.6923077**	**0**	**0**	**0.0625**	**0.0625**	**0.1041667**		
	0.0123604	**0.6923077**	**0**	**0**	**0.0625**	**1.11E-16**	**0.1041667**		
	0.0123604	**0.6923077**	**0**	**0**	**0.0625**	**1.11E-16**	**0.375**		
	0.0123604	**0.5384615**	**0**	**0**	**0.0625**	**1.11E-16**	**0.3125**		
	0.0123604	**0.4615385**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3125**		
	0.0051834	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.3125**		
	0.0051834	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.25**		
	0.0051834	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.25**		
	0.0051834	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.25**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.25**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1875**		
	0.0175439	**0.3846154**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1875**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.125**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.0625**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.2307692**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	0.0175439	**0.1538462**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.0416667**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.0416667**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.0208333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.0208333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.0208333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.0833333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.0833333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1458333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.2083333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.2083333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.2708333**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1041667**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1041667**		
	0.0175439	**0.0769231**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1041667**		
	0.0175439	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1041667**		
	0.0175439	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1041667**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1041667**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1041667**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1041667**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**0.1666667**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	3.331E-16	**0**	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, α = 0.05	0.2729203	0.5010758	0.5010758	0.5010758	0.6510504	0.6510504	0.6510504	0.620752232	0.620752232
Test Statistic, α = 0.01	0.327103	0.600554	0.600554	0.600554	0.7803031	0.7803031	0.7803031	0.743989807	0.743989807

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0.1666667	0	0	0	0.142857143
	0	0	0	0	0.1666667	0	0	0	0.017857143
	0.0384615	0	0	0	0.1666667	0	0	0	0.017857143
	0.0384615	0	0	0	0.3333333	0	0	0	0.017857143
	0.0384615	0	0	0	0.3333333	0	0	0	0.232142857
	0.1538462	0	0	0.1	0.3333333	0	0	0	0.589285714
	0.2726046	0	0	0.3230769	0.3333333	0	0	0.142857143	0.428571429
	0.5033738	0	0.2	0.3230769	0.2222222	0	0	0.017857143	0.142857143
	0.4716599	0	0.4	0.2461538	0.1111111	0	0	0.017857143	0
	0.4048583	0	0.7	0.2692308	0	0	0	0.017857143	0
	0.2678812	0	0.8	0.3692308	0.1111111	0	0	0.232142857	0
	0.2253711	0	0.6461538	0.4923077	0.0555556	0.1666667	0	0.160714286	0
	0.120108	0	0.7461538	0.5923077	0.0555556	0.1666667	0	1.11022E-16	0
	0.0850202	0	0.6153846	0.5923077	0.0555556	0.0555556	0	1.11022E-16	0
	0.0917679	0	0.5384615	0.5923077	0.0555556	0.0555556	0	1.11022E-16	0
	0.060054	0	0.4615385	0.5923077	0.0555556	0.0555556	0	1.11022E-16	0
	0.0843455	0	0.3846154	0.3615385	0.1666667	0.1111111	0	1.11022E-16	0
	0.0843455	0	0.2307692	0.3846154	0.1666667	0	0	1.11022E-16	0
	0.0668016	0.1	0.2307692	0.3846154	0.1666667	0	0	1.11022E-16	0
	0.1052632	0.1	0.1538462	0.3846154	0.1666667	0	0		
	0.0877193	0.1	0.0769231	0.3846154	0.1666667	0.0555556	0		
	0.0877193	0.3	0.0769231	0.2307692	0.1666667	0.0555556	0		
	0.0877193	0.3	0.0769231	0.2307692	0.3888889	0.1666667	0		
	0.0877193	0.4	0.0769231	0.0769231	0.3888889	0.1111111	0		
	0.0701754	0.6	0.0769231	0.0769231	0.2222222	0.1111111	0		
	0.0701754	0.6230769	0.0769231	0.0769231	0.2222222	0.0555556	0		
	0.0526316	0.6461538	0.0769231	0.0769231	0.3333333	0.0555556	0		
	0.0526316	0.7461538	1.11E-16	0.0769231	0.3333333	0.0555556	0.1666667		
	0.0350877	0.6692308	1.11E-16	0.0769231	0.1666667	0.0555556	0.1666667		
	0.0350877	0.6692308	1.11E-16	0	0.1666667	0.0555556	0.1666667		
	0.0350877	0.6692308	1.11E-16	0	0.1666667	0.0555556	0.1666667		
	0.0350877	0.5923077	1.11E-16	0	0.1666667	0.1111111	0.1666667		
	0.0350877	0.5923077	1.11E-16	0	1.11E-16	0.1111111	0.1666667		
	0.0350877	0.5923077	1.11E-16	0	1.11E-16	0.1111111	0.1666667		
	0.0350877	0.5923077	1.11E-16	0	1.11E-16	0.1111111	0.5		
	0.0350877	0.4384615	1.11E-16	0	1.11E-16	0.1111111	0.3888889		
	0.0350877	0.4615385	1.11E-16	0	1.11E-16	0.1111111	0.2777778		
	0.0175439	0.3846154	1.11E-16	0	1.11E-16	0.1111111	0.2777778		
	0.0175439	0.3846154	1.11E-16	0	1.11E-16	3.331E-16	0.2777778		
	0.0175439	0.3846154	1.11E-16	0	1.11E-16	3.331E-16	0.2777778		
	0.0175439	0.3846154	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0.0175439	0.3846154	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0.0175439	0.3846154	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0.0175439	0.3846154	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0.0175439	0.2307692	1.11E-16	0	1.11E-16	3.331E-16	0.0555556		
	0.0175439	0.2307692	1.11E-16	0	1.11E-16	3.331E-16	0.0555556		
	0.0175439	0.2307692	1.11E-16	0	1.11E-16	3.331E-16	0.2222222		
	0.0175439	0.2307692	1.11E-16	0	1.11E-16	3.331E-16	0.1111111		
	0.0175439	0.1538462	1.11E-16	0	1.11E-16	3.331E-16	0.1111111		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.1111111		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.1111111		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.1111111		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.3333333		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.3333333		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.3333333		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.3333333		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0.0175439	0.0769231	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0.0175439	0	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0.0175439	0	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	0.1666667		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
	0	0	1.11E-16	0	1.11E-16	3.331E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.3218503	0.5720463	0.5720463	0.5720463	0.7167829	0.7167829	0.7167829	0.703866871	0.703866871
Test Statistic, $\alpha = 0.01$	0.385747	0.6856143	0.6856143	0.6856143	0.8590854	0.8590854	0.8590854	0.843605146	0.843605146

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.166666667
	0	0	0	0	0	0	0	0	0.25
	0.1	0	0	0	0	0	0	0	0.333333333
	0.2	0	0	0.0950226	0	0	0	0	0.333333333
	0.3	0	0	0.0950226	0	0	0	0	0.333333333
	0.4	0	0	0.3257919	0	0	0	0.083333333	0.583333333
	0.48	0	0	0.5565611	0	0.1	0	0.166666667	0.833333333
	0.48	0	0	0.6515837	0	0.1	0	0.25	0.833333333
	0.42	0	0	0.8054299	0	0.2	0	0.25	0.833333333
	0.4	0	0	0.8235294	0	0.4	0	0.333333333	0.916666667
	0.5	0	0	0.7058824	0.0666667	0.4	0	0.333333333	1
	0.44	0	0.0950226	0.6470588	0.0666667	0.4	0	0.5	0.333333333
	0.3	0	0.2262443	0.4705882	0.0666667	0.6	0	0.75	0
	0.28	0	0.39819	0.4117647	0.0333333	0.7	0.1333333	0.833333333	0
	0.2	0	0.4162896	0.4117647	0.0333333	0.9	0.2	0.583333333	0
	0.16	0	0.3755656	0.2352941	0.0333333	0.9	0.2	0.333333333	0
	0.14	0	0.4705882	0.1176471	0.0333333	0.9	0.3333333	0	0
	0.14	0	0.4705882	0.1176471	0.0333333	0.8333333	0.2333333	0	0
	0.12	0.0769231	0.4117647	0.1176471	0.0333333	0.8333333	0.3	0	0
	0.1	0.0769231	0.2352941	0.1176471	0.1	0.8333333	0.4333333	0	0
	0.08	0.1538462	0.1176471	0.0588235	0.1	0.8333333	0.4333333	0	0
	0.06	0.3846154	1.11E-16	0.0588235	0.1	0.7666667	0.5		
	0.04	0.3257919	1.11E-16	0.0588235	0.1	0.7	0.5		
	0.1	0.4977376	1.11E-16	0.0588235	0.1	0.8	0.5666667		
	0.1	0.5746606	1.11E-16	0.0588235	0.1	0.7333333	0.5666667		
	0.08	0.6515837	1.11E-16	0.0588235	0.1	0.7333333	0.5666667		
	0.02	0.6108597	1.11E-16	0	0.0666667	0.6666667	0.4666667		
	0.02	0.5701357	1.11E-16	0	0.0666667	0.6666667	0.3666667		
	0.08	0.6470588	1.11E-16	0	0.1	0.6666667	0.2666667		
	0.06	0.6470588	1.11E-16	0	0.1666667	0.4666667	0.3333333		
	0.02	0.5882353	1.11E-16	0	0.1666667	0.4666667	0.3333333		
	0.02	0.5882353	1.11E-16	0	0.1666667	0.4	0.3333333		
	0.02	0.5882353	1.11E-16	0	0.1666667	0.3333333	0.3333333		
	0.02	0.5882353	1.11E-16	0	0.1666667	0.2666667	0.3		
	0.02	0.5294118	1.11E-16	0	0.0333333	0.2	0.1		
	0.02	0.4117647	1.11E-16	0	0.0333333	0.1333333	0		
	0.02	0.3529412	1.11E-16	0	0.0333333	0.1333333	0.0666667		
	0.02	0.2941176	1.11E-16	0	0	0.1333333	0.0666667		
	0.02	0.2941176	1.11E-16	0	0	0.1333333	0.0666667		
	0.02	0.1764706	1.11E-16	0	0.0666667	0.1333333	0.0666667		
	0.02	0.0588235	1.11E-16	0	0.0333333	0.1333333	0.1333333		
	0.02	0.0588235	1.11E-16	0	0.0333333	0.0666667	0.1333333		
	0.02	0.0588235	1.11E-16	0	0.0666667	0.0666667	0.1333333		
	0.02	0.0588235	1.11E-16	0	0.1666667	0.0666667	0.1333333		
	3.331E-16	0.0588235	1.11E-16	0	0.1666667	0.0666667	0.1333333		
	3.331E-16	0.0588235	1.11E-16	0	0.2666667	0.0666667	0.1333333		
	3.331E-16	0.0588235	1.11E-16	0	0.2	3.331E-16	0.1333333		
	3.331E-16	0.0588235	1.11E-16	0	0.2	3.331E-16	0.1333333		
	3.331E-16	0.0588235	1.11E-16	0	0.2	3.331E-16	0.1333333		
	3.331E-16	0.0588235	1.11E-16	0	0.2	3.331E-16	0.1		
	3.331E-16	0.0588235	1.11E-16	0	0.0666667	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0.0666667	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0.0666667	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0.0666667	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0.1		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
	3.331E-16	2.22E-16	1.11E-16	0	0	3.331E-16	0		
Test Statistic, α = 0.05	0.4711178	0.5010758	0.5010758	0.5010758	0.5552177	0.5552177	0.5552177	0.877876225	0.877876225
Test Statistic, α = 0.01	0.5646486	0.600554	0.600554	0.600554	0.6654447	0.6654447	0.6654447	1.052160476	1.052160476

Appendix D.3: Spreadsheet for Domain (43 v 51)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0.083333333
0	0	0	0	0	0	0	0	0.083333333
0.0833333	0	0	0	0	0	0	0	0.166666667
0.1666667	0	0	0	0	0	0	0	0.25
0.25	0	0	0.0833333	0	0	0	0	0.333333333
0.4166667	0	0	0.1495098	0	0.0666667	0	0	0.333333333
0.5	0	0	0.3995098	0	0.0666667	0	0	0.333333333
0.625	0	0	0.6078431	0.0666667	0.0666667	0	0.083333333	0.583333333
0.73	0	0	0.6495098	0.0666667	0.0666667	0	0.166666667	0.833333333
0.7716667	0	0	0.7573529	0.0666667	0.1333333	0.0666667	0.25	0.69047619
0.8783333	0	0	0.7990196	0.0666667	0.2	0.0666667	0.25	0.69047619
0.9	0	0.0416667	0.7818627	0.0666667	0.2666667	0.0666667	0.333333333	0.773809524
0.8	0	0.0833333	0.7058824	0	0.2666667	0.0666667	0.333333333	0.714285714
0.74	0	0.2745098	0.6470588	0	0.3333333	0.0666667	0.357142857	0.714285714
0.6	0	0.4730392	0.4705882	0	0.3333333	0.0666667	0.607142857	0.428571429
0.48	0	0.4558824	0.4117647	0	0.3333333	0.0666667	0.69047619	0.285714286
0.4	0	0.5637255	0.4117647	0	0.4	0.1333333	0.630952381	0.285714286
0.36	0	0.4877451	0.2352941	0	0.5333333	0.1333333	0.571428571	0.142857143
0.34	0.0416667	0.4705882	0.1176471	0	0.6666667	0.2	0.571428571	2.22045E-16
0.34	0.0833333	0.4705882	0.1176471	0	0.6666667	0.1333333	0.142857143	2.22045E-16
0.32	0.1666667	0.4117647	0.1176471	0	0.7333333	0.2	0.142857143	2.22045E-16
0.3	0.25	0.2352941	0.1176471	0.1333333	0.8	0.3333333	0	2.22045E-16
0.28	0.375	0.1176471	0.0588235	0.1333333	0.8	0.3333333	0	2.22045E-16
0.26	0.5	2.22E-16	0.0588235	0.1333333	0.7333333	0.3333333		
0.24	0.5661765	2.22E-16	0.0588235	0.1333333	0.6666667	0.3333333		
0.2	0.7573529	2.22E-16	0.0588235	0	0.7333333	0.4		
0.2	0.7573529	2.22E-16	0.0588235	0	0.6666667	0.3333333		
0.18	0.7990196	2.22E-16	0.0588235	0	0.6666667	0.2666667		
0.12	0.7230392	2.22E-16	2.22E-16	0.1333333	0.6666667	0.2666667		
0.08	0.6470588	2.22E-16	2.22E-16	0.1333333	0.6666667	0.2666667		
0.08	0.6470588	2.22E-16	2.22E-16	0.0666667	0.6666667	0.2666667		
0.06	0.6470588	2.22E-16	2.22E-16	0	0.4666667	0.3333333		
0.02	0.5882353	2.22E-16	2.22E-16	0	0.4666667	0.3333333		
0.02	0.5882353	2.22E-16	2.22E-16	0	0.4	0.3333333		
0.02	0.5882353	2.22E-16	2.22E-16	0.0666667	0.3333333	0.2666667		
0.02	0.5882353	2.22E-16	2.22E-16	0.0666667	0.2666667	0.3333333		
0.02	0.5294118	2.22E-16	2.22E-16	0.1333333	0.2	0.2666667		
0.02	0.4117647	2.22E-16	2.22E-16	0.2	0.1333333	0.2666667		
0.02	0.3529412	2.22E-16	2.22E-16	0.2	0.1333333	0.2		
0.02	0.2941176	2.22E-16	2.22E-16	0.0666667	0.1333333	0.1333333		
0.02	0.2941176	2.22E-16	2.22E-16	0.0666667	0.1333333	0.1333333		
0.02	0.1764706	2.22E-16	2.22E-16	0	0.1333333	0.1333333		
0.02	0.0588235	2.22E-16	2.22E-16	0	0.1333333	0.2		
0.02	0.0588235	2.22E-16	2.22E-16	0	0.0666667	0.2		
0.02	0.0588235	2.22E-16	2.22E-16	0	0.0666667	0.1333333		
0.02	0.0588235	2.22E-16	2.22E-16	0	0.0666667	0.1333333		
3.331E-16	0.0588235	2.22E-16	2.22E-16	0	0.0666667	0.1333333		
3.331E-16	0.0588235	2.22E-16	2.22E-16	0	0.0666667	0.0666667		
3.331E-16	0.0588235	2.22E-16	2.22E-16	0.0666667	0	0		
3.331E-16	0.0588235	2.22E-16	2.22E-16	0.0666667	0	0		
3.331E-16	0.0588235	2.22E-16	2.22E-16	0	0	0		
3.331E-16	0.0588235	2.22E-16	2.22E-16	0.0666667	0	0.0666667		
3.331E-16	0.0588235	2.22E-16	2.22E-16	0.0666667	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0.0666667	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0.0666667	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0.0666667		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		
3.331E-16	1.11E-16	2.22E-16	2.22E-16	0	0	0		

	w (%)	wL (%)	wP (%)	IP (%)	% Gravel	% Sand	% Fines	Bulk Density	Dry Density
Test Statistic, α = 0.05	0.3377257	0.4311226	0.4311226	0.4311226	0.4966018	0.4966018	0.4966018	0.646809017	0.646809017
Test Statistic, α = 0.01	0.4047742	0.5167131	0.5167131	0.5167131	0.5951918	0.5951918	0.5951918	0.775219631	0.775219631

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No data from Domain 61**				**0**	**0.111111111**
	0							**0**	**0.027777778**
	0							**0**	**0.138888889**
	0							**0**	**0.055555556**
	0							**0**	**0.027777778**
	0							**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0.111111111**	**0.222222222**
	0							**0.027777778**	**0.027777778**
	0.0911111							**0.055555556**	**0.277777778**
	0.0911111							**0.138888889**	**0.166666667**
	0.2533333							**0.027777778**	**0.166666667**
	0.2333333							**0.111111111**	**0.083333333**
	0.2444444							**0.111111111**	**0**
	0.1844444							**0.055555556**	**0**
	0.1555556							**0.194444444**	**0**
	0.1466667							**0.055555556**	**0**
	0.0666667							**0.083333333**	**0**
	0.0266667							**0**	**0**
	0.0066667							**0**	**0**
	0.1177778							**0**	**0**
	0.0977778							**0**	**0**
	0.0777778							**0**	**0**
	0.0577778							**0**	**0**
	0.0377778								
	0.1288889								
	0.0888889								
	0.0888889								
	0.0688889								
	0.12								
	0.08								
	0.08								
	0.06								
	0.02								
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Test Statistic, $\alpha = 0.05$	0.492446							0.599703631	0.599703631
Test Statistic, $\alpha = 0.01$	0.5902111							0.71876244	0.71876244

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.034482759**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.014367816**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.020114943**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.074712644**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.00862069**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.057471264**
	0	**0**	**0**	**0.049974**	**0.0851064**	**0.0212766**	**0**	**0**	**0.08045977**
	0.0152672	**0**	**0**	**0.0322749**	**0.0851064**	**0.0212766**	**0**	**0**	**0.114942529**
	0.0229008	**0**	**0**	**0.0031234**	**0.106383**	**0.0212766**	**0**	**0.083333333**	**0.066091954**
	0.0410687	**0**	**0**	**0.0031234**	**0.1276596**	**0.0212766**	**0**	**0.132183908**	**0.212643678**
	0.0945038	**0**	**0**	**0.038001**	**0.1914894**	**0.0212766**	**0**	**0.181034483**	**0.074712644**
	0.0879389	**0**	**0**	**0.0150963**	**0.1914894**	**0.0212766**	**0**	**0.043103448**	**0.097701149**
	0.1366412	**0**	**0.0442478**	**0.0005206**	**0.2553191**	**0.0212766**	**0.0212766**	**0.045977011**	**0.083333333**
	0.1587786	**0**	**0.079646**	**0.0374805**	**0.1886525**	**0.0212766**	**0.0212766**	**0.08045977**	**0**
	0.1827481	**0**	**0.1270172**	**0.0541385**	**0.2099291**	**0.0212766**	**0.0212766**	**0.086206897**	**0**
	0.1572519	**0**	**0.1186882**	**0.0072879**	**0.2099291**	**0.0212766**	**0.0212766**	**0.00862069**	**0**
	0.1212214	**0**	**0.2457054**	**0.066632**	**0.2524823**	**0.0425532**	**0.1120567**	**0.166666667**	**0**
	0.1099237	**0**	**0.3373243**	**0.1905258**	**0.2737589**	**0.0425532**	**0.1361702**	**0.083333333**	**0**
	0.1462595	**0**	**0.2993233**	**0.0848516**	**0.2737589**	**0.0425532**	**0.093617**	**0**	**0**
	0.1567939	**0**	**0.355544**	**0.0114524**	**0.3163121**	**0.0638298**	**0.2269504**	**0**	**0**
	0.1796947	**0**	**0.3909422**	**0.0114524**	**0.3375887**	**0.0184397**	**0.2056738**	**0**	**0**
	0.1978626	**0**	**0.3586674**	**0.0645497**	**0.3588652**	**0.0609929**	**0.2723404**	**0**	**0**
	0.2007634	**0.0176991**	**0.1998959**	**0.0822488**	**0.2468085**	**0.1460993**	**0.4056738**	**0**	**0**
	0.1960305	**0.0353982**	**0.0822488**	**0.0234253**	**0.3106383**	**0.2099291**	**0.3843972**	**0**	**0**
	0.1912977	**0.0353982**	**0.0176991**	**0.0322749**	**0.3319149**	**0.2283688**	**0.4510638**		
	0.1789313	**0.0145757**	**0.0176991**	**0.0322749**	**0.3957447**	**0.1829787**	**0.4297872**		
	0.1465649	**0.0557002**	**0.0088496**	**0.0322749**	**0.4170213**	**0.2680851**	**0.4964539**		
	0.1541985	**0.038001**	**0**	**0.0322749**	**0.4170213**	**0.2865248**	**0.4751773**		
	0.1341985	**0.0026028**	**0**	**0.0322749**	**0.4808511**	**0.329078**	**0.4751773**		
	0.0818321	**0.0671525**	**0**	**0.0265487**	**0.435461**	**0.3262411**	**0.4326241**		
	0.0570992	**0.0874545**	**0**	**0.0265487**	**0.4780142**	**0.3475177**	**0.4326241**		
	0.0647328	**0.0010411**	**0**	**0.0176991**	**0.3659574**	**0.3900709**	**0.4326241**		
	0.0523664	**0.1337845**	**0**	**0.0176991**	**0.2992908**	**0.2326241**	**0.4780142**		
	0.0123664	**0.2165539**	**0**	**0.0088496**	**0.2992908**	**0.2326241**	**0.4780142**		
	0.02	**0.3846955**	**0**	**0.0088496**	**0.3205674**	**0.187234**	**0.4780142**		
	0.02	**0.4023946**	**0**	**0.0088496**	**0.3631206**	**0.1631206**	**0.4141844**		
	0.02	**0.4289433**	**0**	**0**	**0.3631206**	**0.1390071**	**0.4808511**		
	0.02	**0.3966684**	**0**	**0**	**0.4056738**	**0.1148936**	**0.4808511**		
	0.02	**0.3144196**	**0**	**0**	**0.4269504**	**0.048227**	**0.4808511**		
	0.02	**0.2732952**	**0**	**0**	**0.4269504**	**0.048227**	**0.5475177**		
	0.02	**0.2233212**	**0**	**0**	**0.293617**	**0.0695035**	**0.5049645**		
	0.02	**0.2321707**	**0**	**0**	**0.293617**	**0.1120567**	**0.5049645**		
	0.02	**0.1233732**	**0**	**0**	**0.2269504**	**0.1333333**	**0.5049645**		
	0.02	**0.0057262**	**0**	**0**	**0.1602837**	**0.1333333**	**0.5503546**		
	0.02	**0.0057262**	**0**	**0**	**0.1602837**	**0.0666667**	**0.4865248**		
	0.02	**0.0234253**	**0**	**0**	**0.1602837**	**0.0666667**	**0.4439716**		
	0.02	**0.0322749**	**0**	**0**	**0.1602837**	**0.0666667**	**0.422695**		
	0	**0.0322749**	**0**	**0**	**0.1815603**	**0.0666667**	**0.4014184**		
	0	**0.0322749**	**0**	**0**	**0.2028369**	**0.0666667**	**0.3375887**		
	0	**0.0322749**	**0**	**0**	**0.1361702**	**2.22E-16**	**0.2950355**		
	0	**0.0322749**	**0**	**0**	**0.1574468**	**2.22E-16**	**0.2524823**		
	0	**0.0322749**	**0**	**0**	**0.1574468**	**2.22E-16**	**0.1886525**		
	0	**0.0322749**	**0**	**0**	**0.1574468**	**2.22E-16**	**0.2340426**		
	0	**0.0322749**	**0**	**0**	**0.0453901**	**2.22E-16**	**0.212766**		
	0	**0.0265487**	**0**	**0**	**0.0453901**	**2.22E-16**	**0.1702128**		
	0	**0.0265487**	**0**	**0**	**0.0453901**	**2.22E-16**	**0.1702128**		
	0	**0.0265487**	**0**	**0**	**0.0666667**	**2.22E-16**	**0.1489362**		
	0	**0.0265487**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.1276596**		
	0	**0.0176991**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.1276596**		
	0	**0.0176991**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.1276596**		
	0	**0.0176991**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.106383**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0638298**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0425532**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0425532**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0425532**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0425532**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0425532**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0425532**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0425532**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**0.0212766**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	0	**2.22E-16**	**0**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
Test Statistic, $\alpha = 0.05$	0.2260776	0.3537911	0.3537911	0.3537911	0.4033111	0.4033111	0.4033111	0.466811143	0.466811143
Test Statistic, $\alpha = 0.01$	0.2709607	0.424029	0.424029	0.424029	0.4833802	0.4833802	0.4833802	0.559486885	0.559486885

Appendix D.3: Spreadsheet for Domain (43 v 62)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.007575758**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.007575758**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.075757576**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.068181818**
	0	**0**	**0**	**0**	**0.0333333**	**0**	**0**	**0**	**0.060606061**
	0	**0**	**0**	**0.0588235**	**0.0666667**	**0**	**0**	**0**	**0.060606061**
	0	**0**	**0**	**0.0588235**	**0.0666667**	**0**	**0**	**0**	**0.060606061**
	0.0181818	**0**	**0**	**0.0588235**	**0.0666667**	**0.0333333**	**0**	**0.083333333**	**0.053030303**
	0.0163636	**0**	**0**	**0.0588235**	**0.1**	**0.0333333**	**0**	**0.075757576**	**0.106060606**
	0.0527273	**0**	**0**	**0.0831643**	**0.1**	**0.0333333**	**0**	**0.022727273**	**0.015151515**
	0.0290909	**0**	**0.0344828**	**0.0486815**	**0.1**	**0.0333333**	**0**	**0.022727273**	**0.166666667**
	0.1181818	**0**	**0.0344828**	**0.0902637**	**0.1**	**0.0333333**	**0**	**0.060606061**	**0.083333333**
	0.1454545	**0**	**0.0862069**	**0.1044625**	**0.0666667**	**0.0333333**	**0**	**0.212121212**	**0**
	0.2490909	**0**	**0.1825558**	**0.0598377**	**0.0666667**	**0.0333333**	**0**	**0.227272727**	**0**
	0.1818182	**0**	**0.1095335**	**0.0121704**	**0.0666667**	**0.0333333**	**0**	**0.022727273**	**0**
	0.1163636	**0**	**0.1196755**	**0.0324544**	**0.1333333**	**0.0333333**	**0.1333333**	**0.166666667**	**0**
	0.0909091	**0**	**0.2677485**	**0.1359026**	**0.1666667**	**0.0333333**	**0.2**	**0.083333333**	**0**
	0.0872727	**0**	**0.2363083**	**0.1146045**	**0.2**	**0.0333333**	**0.2**	**0**	**0**
	0.1036364	**0**	**0.2464503**	**0.0141988**	**0.2**	**0.0333333**	**0.3**	**0**	**0**
	0.1218182	**0**	**0.3326572**	**0.0486815**	**0.2**	**0.0666667**	**0.3**	**0**	**0**
	0.12	**0**	**0.3600406**	**0.0659229**	**0.3**	**0.0666667**	**0.3666667**	**0**	**0**
	0.1181818	**0**	**0.2008114**	**0.1004057**	**0.2333333**	**0.1**	**0.4666667**	**0**	**0**
	0.1345455	**0**	**0.1004057**	**0.0415822**	**0.3**	**0.1333333**	**0.4333333**	**0**	**0**
	0.1327273	**0**	**0**	**0.0415822**	**0.3**	**0.1333333**	**0.5**		
	0.1490909	**0.0588235**	**0**	**0.0415822**	**0.3**	**0.2333333**	**0.5**		
	0.1090909	**0.1004057**	**0**	**0.0415822**	**0.3666667**	**0.2333333**	**0.5666667**		
	0.1272727	**0.1004057**	**0**	**0.0588235**	**0.4333333**	**0.2**	**0.5666667**		
	0.1436364	**0.0831643**	**0**	**0.0588235**	**0.4333333**	**0.2666667**	**0.5666667**		
	0.12	**0.1318458**	**0**	**1.11E-16**	**0.3666667**	**0.2333333**	**0.5333333**		
	0.08	**0.163286**	**0**	**1.11E-16**	**0.4**	**0.3333333**	**0.5**		
	0.08	**0.025355**	**0**	**1.11E-16**	**0.3333333**	**0.4**	**0.5**		
	0.06	**0.0780933**	**0**	**1.11E-16**	**0.2666667**	**0.2**	**0.5666667**		
	0.02	**0.1916836**	**0**	**1.11E-16**	**0.3333333**	**0.3**	**0.5333333**		
	0.02	**0.2606491**	**0**	**1.11E-16**	**0.3333333**	**0.2333333**	**0.5333333**		
	0.02	**0.3296146**	**0**	**1.11E-16**	**0.3333333**	**0.2**	**0.5**		
	0.02	**0.3640974**	**0**	**1.11E-16**	**0.3666667**	**0.1666667**	**0.5666667**		
	0.02	**0.356998**	**0**	**1.11E-16**	**0.4**	**0.1**	**0.5**		
	0.02	**0.2393509**	**0**	**1.11E-16**	**0.4**	**0.0333333**	**0.4333333**		
	0.02	**0.2494929**	**0**	**1.11E-16**	**0.4**	**0.0333333**	**0.4333333**		
	0.02	**0.1906694**	**0**	**1.11E-16**	**0.2666667**	**0.0333333**	**0.3666667**		
	0.02	**0.2251521**	**0**	**1.11E-16**	**0.2666667**	**0.0333333**	**0.3666667**		
	0.02	**0.1247465**	**0**	**1.11E-16**	**0.2333333**	**0.0666667**	**0.3666667**		
	0.02	**0.0415822**	**0**	**1.11E-16**	**0.1666667**	**0.0666667**	**0.4**		
	0.02	**0.0415822**	**0**	**1.11E-16**	**0.1666667**	**0**	**0.3666667**		
	0.02	**0.0415822**	**0**	**1.11E-16**	**0.2**	**0**	**0.3666667**		
	0.02	**0.0415822**	**0**	**1.11E-16**	**0.2**	**0.0333333**	**0.3**		
	2.22E-16	**0.0415822**	**0**	**1.11E-16**	**0.2333333**	**0.0333333**	**0.2666667**		
	2.22E-16	**0.0415822**	**0**	**1.11E-16**	**0.2333333**	**0.0333333**	**0.2666667**		
	2.22E-16	**0.0415822**	**0**	**1.11E-16**	**0.1666667**	**0.0333333**	**0.2**		
	2.22E-16	**0.0588235**	**0**	**1.11E-16**	**0.1666667**	**0.0333333**	**0.2**		
	2.22E-16	**0.0588235**	**0**	**1.11E-16**	**0.1666667**	**0.0333333**	**0.2**		
	2.22E-16	**0.0588235**	**0**	**1.11E-16**	**0.1666667**	**0.0333333**	**0.2**		
	2.22E-16	**0.0588235**	**0**	**1.11E-16**	**0.0333333**	**0**	**0.2**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0.0666667**	**0**	**0.1666667**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0.0666667**	**0**	**0.1333333**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0.0666667**	**0**	**0.1**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0.0666667**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0.0666667**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0.0333333**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0.0333333**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0.0333333**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0.0333333**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
	2.22E-16	**0**	**0**	**1.11E-16**	**0**	**0**	**0**		
Test Statistic, α = 0.05	0.2657463	0.3750862	0.3750862	0.3750862	0.4300698	0.4300698	0.4300698	0.567696035	0.567696035
Test Statistic, α = 0.01	0.3185047	0.4495518	0.4495518	0.4495518	0.5154513	0.5154513	0.5154513	0.680400395	0.680400395

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.083333333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.083333333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.166666667**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.25**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.256410256**
	0	**0**	**0**	**0.0588235**	**0**	**0**	**0**	**0**	**0.179487179**
	0	**0**	**0**	**0.0588235**	**0**	**0**	**0**	**0**	**0.102564103**
	0	**0**	**0**	**0.0588235**	**0**	**0**	**0**	**0.083333333**	**0.198717949**
	0.02	**0**	**0**	**0.0217865**	**0**	**0**	**0**	**0.166666667**	**0.294871795**
	0.0216667	**0**	**0**	**0.08061**	**0.5**	**0**	**0**	**0.25**	**0.08974359**
	0.1283333	**0**	**0**	**0.08061**	**0.5**	**0**	**0**	**0.173076923**	**0.166666667**
	0.2333333	**0**	**0.037037**	**0.1023965**	**0.5**	**0**	**0**	**0.102564103**	**0.083333333**
	0.2166667	**0**	**0.037037**	**0.1459695**	**0.4333333**	**0**	**0**	**0.025641026**	**0**
	0.24	**0**	**0.0893246**	**0.0566449**	**0.4333333**	**0**	**0**	**0.038461538**	**0**
	0.225	**0**	**0.0130719**	**0.1220044**	**0.4333333**	**0**	**0**	**0.019230769**	**0**
	0.2716667	**0**	**0.1873638**	**0.1154684**	**0.4333333**	**0**	**0.1333333**	**0.08974359**	**0**
	0.275	**0**	**0.3507625**	**0.2265795**	**0.4333333**	**0**	**0.2**	**0.083333333**	**0**
	0.2766667	**0**	**0.3071895**	**0.087146**	**0.4333333**	**0**	**0.2**	**0**	**0**
	0.2566667	**0**	**0.3594771**	**0.08061**	**0.4333333**	**0**	**0.3333333**	**0**	**0**
	0.34	**0**	**0.3965142**	**0.1176471**	**0.4333333**	**0.0666667**	**0.3333333**	**0**	**0**
	0.32	**0**	**0.3747277**	**0.1176471**	**0.4333333**	**0.0666667**	**0.4**	**0**	**0**
	0.3	**0**	**0.2352941**	**0.1176471**	**0.3**	**0.0666667**	**0.5333333**	**0**	**0**
	0.28	**0**	**0.1176471**	**0.0588235**	**0.3**	**0.0666667**	**0.5333333**	**0**	**0**
	0.26	**0**	**2.22E-16**	**0.0588235**	**0.3**	**0.1333333**	**0.6**		
	0.24	**0.0588235**	**2.22E-16**	**0.0588235**	**0.3**	**0.3**	**0.6**		
	0.2	**0.1176471**	**2.22E-16**	**0.0588235**	**0.8**	**0.3**	**0.6666667**		
	0.2	**0.1176471**	**2.22E-16**	**0.0588235**	**0.8**	**0.2333333**	**0.6666667**		
	0.18	**0.1176471**	**2.22E-16**	**0.0588235**	**0.8**	**0.7333333**	**0.6666667**		
	0.12	**0.1982571**	**2.22E-16**	**0**	**0.7333333**	**0.6666667**	**0.6666667**		
	0.08	**0.2418301**	**2.22E-16**	**0**	**0.7333333**	**0.6666667**	**0.6666667**		
	0.08	**0.130719**	**2.22E-16**	**0**	**0.6**	**0.6666667**	**0.6666667**		
	0.06	**0.0196078**	**2.22E-16**	**0**	**0.5333333**	**0.4666667**	**0.7333333**		
	0.02	**0.1437908**	**2.22E-16**	**0**	**0.5333333**	**0.4666667**	**0.7333333**		
	0.02	**0.291939**	**2.22E-16**	**0**	**0.5333333**	**0.4**	**0.7333333**		
	0.02	**0.328976**	**2.22E-16**	**0**	**0.5333333**	**0.3333333**	**0.7333333**		
	0.02	**0.4400871**	**2.22E-16**	**0**	**0.5333333**	**0.2666667**	**0.8**		
	0.02	**0.5294118**	**2.22E-16**	**0**	**0.5333333**	**0.2**	**0.8**		
	0.02	**0.4117647**	**2.22E-16**	**0**	**0.5333333**	**0.1333333**	**0.8**		
	0.02	**0.3529412**	**2.22E-16**	**0**	**0.5333333**	**0.1333333**	**0.8666667**		
	0.02	**0.2941176**	**2.22E-16**	**0**	**0.4**	**0.1333333**	**0.8666667**		
	0.02	**0.2941176**	**2.22E-16**	**0**	**0.4**	**0.1333333**	**0.8666667**		
	0.02	**0.1764706**	**2.22E-16**	**0**	**0.3333333**	**0.1333333**	**0.8666667**		
	0.02	**0.0588235**	**2.22E-16**	**0**	**0.2666667**	**0.1333333**	**0.9333333**		
	0.02	**0.0588235**	**2.22E-16**	**0**	**0.2666667**	**0.0666667**	**0.9333333**		
	0.02	**0.0588235**	**2.22E-16**	**0**	**0.2666667**	**0.0666667**	**0.9333333**		
	0.02	**0.0588235**	**2.22E-16**	**0**	**0.2666667**	**0.0666667**	**0.4333333**		
	2.22E-16	**0.0588235**	**2.22E-16**	**0**	**0.2666667**	**0.0666667**	**0.4333333**		
	2.22E-16	**0.0588235**	**2.22E-16**	**0**	**0.2666667**	**0.0666667**	**0.4333333**		
	2.22E-16	**0.0588235**	**2.22E-16**	**0**	**0.2**	**1.11E-16**	**0.4333333**		
	2.22E-16	**0.0588235**	**2.22E-16**	**0**	**0.2**	**1.11E-16**	**0.4333333**		
	2.22E-16	**0.0588235**	**2.22E-16**	**0**	**0.2**	**1.11E-16**	**0.4333333**		
	2.22E-16	**0.0588235**	**2.22E-16**	**0**	**0.2**	**1.11E-16**	**0.5**		
	2.22E-16	**0.0588235**	**2.22E-16**	**0**	**0.0666667**	**1.11E-16**	**0.5**		
	2.22E-16	**0**	**2.22E-16**	**0**	**0.0666667**	**1.11E-16**	**0.5**		
	2.22E-16	**0**	**2.22E-16**	**0**	**0.0666667**	**1.11E-16**	**0.5**		
	2.22E-16	**0**	**2.22E-16**	**0**	**0.0666667**	**1.11E-16**	**0.5**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**0.5**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	2.22E-16	**0**	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, α = 0.05	0.3377257	0.4210745	0.4210745	0.4210745	1.0237708	1.0237708	1.0237708	0.544435723	0.544435723
Test Statistic, α = 0.01	0.4047742	0.5046701	0.5046701	0.5046701	1.2270194	1.2270194	1.2270194	0.652522227	0.652522227

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.023809524
	0	0	0	0	0	0	0	0	0.107142857
	0	0	0	0	0	0	0	0	0.19047619
	0	0	0	0.0588235	0	0	0	0	0.047619048
	0	0	0	0.0661765	0	0	0	0	0.095238095
	0	0	0	0.0661765	0	0	0	0.083333333	0.273809524
	0.02	0	0	0.0661765	0	0	0	0.166666667	0.023809524
	0.02	0	0	0.0073529	0	0	0	0.25	0.166666667
	0.08	0	0	0.1323529	0.5	0	0	0.25	0.166666667
	0.0428571	0	0	0.0735294	0.5	0	0	0.047619048	0.083333333
	0.0571429	0	0	0.0441176	0.4333333	0	0	0.238095238	0
	0.1685714	0	0.0588235	0.0220588	0.4333333	0	0	0.357142857	0
	0.0285714	0	0.1102941	0.1544118	0.4333333	0	0	0.25	0
	0.0514286	0	0.1691176	0.2132353	0.4333333	0	0.1333333	0.166666667	0
	0.0285714	0	0.1029412	0.0882353	0.4333333	0	0.2	0.083333333	0
	0.2171429	0	0.2794118	0.1102941	0.4333333	0	0.2	0	0
	0.1971429	0	0.3455882	0.0073529	0.4333333	0	0.3333333	0	0
	0.1971429	0	0.4705882	0.1176471	0.4333333	0.0666667	0.3333333	0	0
	0.1771429	0	0.4117647	0.1176471	0.4333333	0.0666667	0.4	0	0
	0.1571429	0	0.2352941	0.1176471	0.3	0.0666667	0.5333333	0	0
	0.1371429	0.125	0.1176471	0.0588235	0.3	0.0666667	0.5333333	0	0
	0.1171429	0.125	0	0.0588235	0.3	0.1333333	0.6		
	0.24	0.0661765	0	0.0588235	0.3	0.2	0.6		
	0.2	0.0073529	0	0.0588235	0.3	0.2	0.6666667		
	0.2	0.0073529	0	0.0588235	0.8	0.2666667	0.6666667		
	0.18	0.0073529	0	0.0588235	0.8	0.2666667	0.6666667		
	0.12	0.1102941	0	0	0.7333333	0.3333333	0.6666667		
	0.08	0.1029412	0	0	0.7333333	0.3333333	0.6666667		
	0.08	0.1029412	0	0	0.6	0.3333333	0.6666667		
	0.06	0.0220588	0	0	0.5333333	0.0333333	0.7333333		
	0.02	0.0367647	0	0	0.5333333	0.0333333	0.7333333		
	0.02	0.0367647	0	0	0.5333333	0.4	0.7333333		
	0.02	0.0367647	0	0	0.5333333	0.3333333	0.7333333		
	0.02	0.0882353	0	0	0.5333333	0.2666667	0.3		
	0.02	0.1544118	0	0	0.5333333	0.2	0.3		
	0.02	0.1617647	0	0	0.5333333	0.1333333	0.3		
	0.02	0.3529412	0	0	0.5333333	0.1333333	0.3666667		
	0.02	0.2941176	0	0	0.4	0.1333333	0.3666667		
	0.02	0.2941176	0	0	0.4	0.1333333	0.3666667		
	0.02	0.1764706	0	0	0.3333333	0.1333333	0.3666667		
	0.02	0.0588235	0	0	0.2666667	0.1333333	0.4333333		
	0.02	0.0588235	0	0	0.2666667	0.0666667	0.4333333		
	0.02	0.0588235	0	0	0.2666667	0.0666667	0.4333333		
	0.02	0.0588235	0	0	0.2666667	0.0666667	0.4333333		
	2.22E-16	0.0588235	0	0	0.2666667	0.0666667	0.4333333		
	2.22E-16	0.0588235	0	0	0.2666667	0.0666667	0.4333333		
	2.22E-16	0.0588235	0	0	0.2	1.11E-16	0.4333333		
	2.22E-16	0.0588235	0	0	0.2	1.11E-16	0.4333333		
	2.22E-16	0.0588235	0	0	0.2	1.11E-16	0.4333333		
	2.22E-16	0.0588235	0	0	0.2	1.11E-16	0.5		
	2.22E-16	0.0588235	0	0	0.0666667	1.11E-16	0.5		
	2.22E-16	0	0	0	0.0666667	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	0.0666667	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	0.0666667	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	2.22E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.5488357	0.5830952	0.5830952	0.5830952	1.0237708	1.0237708	1.0237708	0.646809017	0.646809017
Test Statistic, $\alpha = 0.01$	0.6577957	0.6988567	0.6988567	0.6988567	1.2270194	1.2270194	1.2270194	0.775219631	0.775219631

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.083333333
	0	0	0	0	0	0	0	0	0.166666667
	0	0	0	0	0	0	0	0	0.25
	0	0	0	0	0	0	0	0	0.333333333
	0.0227273	0	0	0.0588235	0	0	0	0	0.333333333
	0.0227273	0	0	0.0588235	0	0	0	0	0.333333333
	0.0454545	0	0	0.0588235	0	0	0	0.083333333	0.5
	0.0936364	0	0	0.0588235	0	0	0	0.166666667	0.75
	0.1845455	0	0.0588235	0.1176471	0	0	0	0.25	0.75
	0.1927273	0	0.0588235	0.0588235	0.0625	0	0	0.25	0.166666667
	0.4227273	0	0.1176471	0.0588235	0.0625	0.0625	0	0.333333333	0.083333333
	0.4818182	0	0.2941176	0.0588235	0.0041667	0.0625	0	0.333333333	0
	0.49	0	0.4117647	0	0.0583333	0.125	0	0.416666667	0
	0.3727273	0	0.4117647	0.1176471	0.1833333	0.125	0	0.666666667	0
	0.3209091	0	0.7058824	0.2352941	0.2458333	0.3125	0.1333333	0.416666667	0
	0.3318182	0	0.6470588	0.3529412	0.4333333	0.3125	0.2	0.083333333	0
	0.2918182	0	0.5294118	0.1764706	0.4333333	0.3125	0.2	1.11022E-16	0
	0.2718182	0	0.4705882	0.1176471	0.4958333	0.375	0.3333333	1.11022E-16	0
	0.3172727	0	0.4705882	0.1176471	0.6208333	0.4333333	0.3333333	1.11022E-16	0
	0.2972727	0	0.4117647	0.1176471	0.6208333	0.4333333	0.4	1.11022E-16	0
	0.2772727	0	0.2352941	0.1176471	0.55	0.4333333	0.5333333	1.11022E-16	0
	0.2572727	0	0.1176471	0.0588235	0.6125	0.4333333	0.5333333	1.11022E-16	0
	0.2372727	0	0	0.0588235	0.7375	0.3666667	0.5375		
	0.2172727	0.0588235	0	0.0588235	0.7375	0.3625	0.5375		
	0.1772727	0	0	0.0588235	0.7375	0.3625	0.6041667		
	0.1772727	0	0	0.0588235	0.7375	0.2958333	0.6041667		
	0.1572727	0.1176471	0	0.0588235	0.7375	0.3583333	0.6041667		
	0.0972727	0.1764706	0	0	0.6708333	0.3541667	0.6041667		
	0.0572727	0.1764706	0	0	0.6708333	0.5416667	0.6041667		
	0.0572727	0.4117647	0	0	0.5375	0.6041667	0.6041667		
	0.0372727	0.4117647	0	0	0.4708333	0.4041667	0.6708333		
	0.0027273	0.5294118	0	0	0.4708333	0.4041667	0.6708333		
	0.0027273	0.5294118	0	0	0.4708333	0.3375	0.6708333		
	0.0027273	0.5294118	0	0	0.4708333	0.2708333	0.6708333		
	0.0027273	0.5882353	0	0	0.4708333	0.2041667	0.7375		
	0.0027273	0.5294118	0	0	0.4708333	0.1375	0.7375		
	0.0027273	0.4117647	0	0	0.4708333	0.1333333	0.7375		
	0.0027273	0.3529412	0	0	0.4708333	0.1333333	0.7416667		
	0.0027273	0.2941176	0	0	0.3375	0.1333333	0.6791667		
	0.0027273	0.2941176	0	0	0.4	0.1333333	0.6791667		
	0.0027273	0.1764706	0	0	0.3333333	0.1333333	0.6791667		
	0.0027273	0.0588235	0	0	0.2666667	0.1333333	0.6833333		
	0.0027273	0.0588235	0	0	0.2666667	0.0666667	0.6833333		
	0.0027273	0.0588235	0	0	0.2666667	0.0666667	0.6833333		
	0.02	0.0588235	0	0	0.2666667	0.0666667	0.6833333		
	3.331E-16	0.0588235	0	0	0.2666667	0.0666667	0.6208333		
	3.331E-16	0.0588235	0	0	0.2666667	0.0666667	0.6208333		
	3.331E-16	0.0588235	0	0	0.2	1.11E-16	0.5583333		
	3.331E-16	0.0588235	0	0	0.2	1.11E-16	0.4958333		
	3.331E-16	0.0588235	0	0	0.2	1.11E-16	0.4333333		
	3.331E-16	0.0588235	0	0	0.2	1.11E-16	0.5		
	3.331E-16	0.0588235	0	0	0.0666667	1.11E-16	0.375		
	3.331E-16	0	0	0	0.0666667	1.11E-16	0.375		
	3.331E-16	0	0	0	0.0666667	1.11E-16	0.3125		
	3.331E-16	0	0	0	0.0666667	1.11E-16	0.3125		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.3125		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.25		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.25		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.1875		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.125		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.125		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.0625		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.0625		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.0625		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.0625		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.0625		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.0625		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.0625		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.0625		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	0.0625		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
	3.331E-16	0	0	0	1.11E-16	1.11E-16	1.11E-16		
Test Statistic, α = 0.05	0.2811198	0.4664762	0.4664762	0.4664762	0.4887808	0.4887808	0.4887808	0.555217675	0.555217675
Test Statistic, α = 0.01	0.3369304	0.5590854	0.5590854	0.5590854	0.5858182	0.5858182	0.5858182	0.665444713	0.665444713

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.083333333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.083333333**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.023809524**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.107142857**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.19047619**
	0	**0**	**0**	**0.0588235**	**0**	**0**	**0**	**0**	**0.19047619**
	0.0384615	**0**	**0**	**0.0588235**	**0**	**0**	**0**	**0**	**0.19047619**
	0.0384615	**0**	**0**	**0.0588235**	**0**	**0**	**0**	**0.083333333**	**0.44047619**
	0.0184615	**0**	**0**	**0.0588235**	**0**	**0**	**0**	**0.166666667**	**0.69047619**
	0.1338462	**0**	**0**	**0.0176471**	**0**	**0**	**0**	**0.25**	**0.547619048**
	0.2276923	**0**	**0**	**0.2823529**	**0**	**0**	**0**	**0.107142857**	**0.261904762**
	0.4384615	**0**	**0.2**	**0.2235294**	**0.1111111**	**0**	**0**	**0.19047619**	**0.05952381**
	0.3769231	**0**	**0.4**	**0.1058824**	**0.1555556**	**0**	**0**	**0.19047619**	**0**
	0.3553846	**0**	**0.6411765**	**0.1470588**	**0.2666667**	**0**	**0**	**0.357142857**	**0**
	0.2538462	**0**	**0.5647059**	**0.0705882**	**0.3777778**	**0**	**0**	**0.607142857**	**0**
	0.2492308	**0**	**0.5058824**	**0.2117647**	**0.4888889**	**0**	**0.1333333**	**0.119047619**	**0**
	0.1692308	**0**	**0.5470588**	**0.3117647**	**0.4888889**	**0**	**0.2**	**0.083333333**	**0**
	0.1292308	**0**	**0.5294118**	**0.1352941**	**0.4888889**	**0.1111111**	**0.2**	**1.11022E-16**	**0**
	0.1861538	**0**	**0.4705882**	**0.0176471**	**0.4888889**	**0.1111111**	**0.3333333**	**1.11022E-16**	**0**
	0.2246154	**0**	**0.4705882**	**0.0176471**	**0.4888889**	**0.0444444**	**0.3333333**	**1.11022E-16**	**0**
	0.2815385	**0**	**0.4117647**	**0.0176471**	**0.6**	**0.1555556**	**0.4**	**1.11022E-16**	**0**
	0.2615385	**0**	**0.2352941**	**0.1176471**	**0.4666667**	**0.2666667**	**0.5333333**	**1.11022E-16**	**0**
	0.2415385	**0.1**	**0.1176471**	**0.0588235**	**0.4666667**	**0.2666667**	**0.5333333**	**1.11022E-16**	**0**
	0.26	**0.1**	**1.11E-16**	**0.0588235**	**0.4666667**	**0.2**	**0.6**		
	0.24	**0.0411765**	**1.11E-16**	**0.0588235**	**0.4666667**	**0.3555556**	**0.6**		
	0.2	**0.1823529**	**1.11E-16**	**0.0588235**	**0.4666667**	**0.3555556**	**0.6666667**		
	0.2	**0.1823529**	**1.11E-16**	**0.0588235**	**0.6888889**	**0.4**	**0.6666667**		
	0.18	**0.2823529**	**1.11E-16**	**0.0588235**	**0.6888889**	**0.5111111**	**0.6666667**		
	0.12	**0.3647059**	**1.11E-16**	**0**	**0.6222222**	**0.4444444**	**0.6666667**		
	0.08	**0.3470588**	**1.11E-16**	**0**	**0.6222222**	**0.5555556**	**0.6666667**		
	0.08	**0.4470588**	**1.11E-16**	**0**	**0.6**	**0.5555556**	**0.6666667**		
	0.06	**0.5470588**	**1.11E-16**	**0**	**0.5333333**	**0.3555556**	**0.7333333**		
	0.02	**0.4882353**	**1.11E-16**	**0**	**0.5333333**	**0.3555556**	**0.7333333**		
	0.02	**0.4882353**	**1.11E-16**	**0**	**0.5333333**	**0.2888889**	**0.7333333**		
	0.02	**0.4882353**	**1.11E-16**	**0**	**0.5333333**	**0.2222222**	**0.7333333**		
	0.02	**0.4882353**	**1.11E-16**	**0**	**0.5333333**	**0.1555556**	**0.8**		
	0.02	**0.4294118**	**1.11E-16**	**0**	**0.5333333**	**0.0888889**	**0.8**		
	0.02	**0.3117647**	**1.11E-16**	**0**	**0.5333333**	**0.0222222**	**0.8**		
	0.02	**0.2529412**	**1.11E-16**	**0**	**0.5333333**	**0.0222222**	**0.8666667**		
	0.02	**0.1941176**	**1.11E-16**	**0**	**0.4**	**0.0222222**	**0.7555556**		
	0.02	**0.2941176**	**1.11E-16**	**0**	**0.4**	**0.0222222**	**0.6444444**		
	0.02	**0.1764706**	**1.11E-16**	**0**	**0.3333333**	**0.0222222**	**0.6444444**		
	0.02	**0.0588235**	**1.11E-16**	**0**	**0.2666667**	**0.1333333**	**0.7111111**		
	0.02	**0.0588235**	**1.11E-16**	**0**	**0.2666667**	**0.0666667**	**0.7111111**		
	0.02	**0.0588235**	**1.11E-16**	**0**	**0.2666667**	**0.0666667**	**0.6**		
	0.02	**0.0588235**	**1.11E-16**	**0**	**0.2666667**	**0.0666667**	**0.6**		
	0	**0.0588235**	**1.11E-16**	**0**	**0.2666667**	**0.0666667**	**0.6**		
	0	**0.0588235**	**1.11E-16**	**0**	**0.2666667**	**0.0666667**	**0.6**		
	0	**0.0588235**	**1.11E-16**	**0**	**0.2**	**3.331E-16**	**0.4888889**		
	0	**0.0588235**	**1.11E-16**	**0**	**0.2**	**3.331E-16**	**0.4888889**		
	0	**0.0588235**	**1.11E-16**	**0**	**0.2**	**3.331E-16**	**0.4888889**		
	0	**0.0588235**	**1.11E-16**	**0**	**0.2**	**3.331E-16**	**0.4444444**		
	0	**0.0588235**	**1.11E-16**	**0**	**0.0666667**	**3.331E-16**	**0.4444444**		
	0	**0**	**1.11E-16**	**0**	**0.0666667**	**3.331E-16**	**0.3333333**		
	0	**0**	**1.11E-16**	**0**	**0.0666667**	**3.331E-16**	**0.3333333**		
	0	**0**	**1.11E-16**	**0**	**0.0666667**	**3.331E-16**	**0.3333333**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**0.2222222**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**0.2222222**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**0.2222222**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
	0	**0**	**1.11E-16**	**0**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
Test Statistic, α = 0.05	0.328832	0.5419963	0.5419963	0.5419963	0.5734263	0.5734263	0.5734263	0.646809017	0.646809017
Test Statistic, α = 0.01	0.3941148	0.6495985	0.6495985	0.6495985	0.6872683	0.6872683	0.6872683	0.775219631	0.775219631

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0833333	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1666667	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.15	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0**
	0.2166667	**0**	**0**	**0.0544872**	**0**	**0.0666667**	**0**	**0**	**0**
	0.2	**0**	**0**	**0.3044872**	**0**	**0.0666667**	**0**	**0**	**0**
	0.225	**0**	**0**	**0.2820513**	**0.0666667**	**0.0666667**	**0**	**0**	**0**
	0.25	**0**	**0**	**0.0929487**	**0.0666667**	**0.0333333**	**0**	**0**	**0**
	0.2916667	**0**	**0**	**0.1057692**	**0.0666667**	**0.0333333**	**0.0666667**	**0**	**0.142857143**
	0.4583333	**0**	**0**	**0.0064103**	**0.0666667**	**0**	**0.0666667**	**0**	**0.142857143**
	0.5	**0**	**0.0416667**	**0.0416667**	**0.0666667**	**0.1333333**	**0.0666667**	**0**	**0.142857143**
	0.3	**0**	**0.0833333**	**2.22E-16**	**0.0666667**	**0.1333333**	**0.0666667**	**0**	**0.285714286**
	0.3	**0**	**0.1794872**	**2.22E-16**	**0.0666667**	**0.0666667**	**0.0666667**	**0.142857143**	**0.380952381**
	0.3	**0**	**0.2467949**	**2.22E-16**	**0.0666667**	**0.2666667**	**0.0666667**	**0.142857143**	**0.428571429**
	0.2	**0**	**0.0576923**	**2.22E-16**	**0.0333333**	**0.3666667**	**0.0666667**	**0.142857143**	**0.285714286**
	0.2	**0**	**0.1474359**	**2.22E-16**	**0.0333333**	**0.5**	**0.0666667**	**0.047619048**	**0.285714286**
	0.2	**0**	**0.1121795**	**2.22E-16**	**0.0333333**	**0.3666667**	**0.0666667**	**0.238095238**	**0.142857143**
	0.2	**0.0416667**	**1.11E-16**	**2.22E-16**	**0.0333333**	**0.2333333**	**0.1333333**	**0.571428571**	**2.22045E-16**
	0.2	**0.0833333**	**1.11E-16**	**2.22E-16**	**0.0333333**	**0.1666667**	**0.1**	**0.142857143**	**2.22045E-16**
	0.2	**0.0897436**	**1.11E-16**	**2.22E-16**	**0.0333333**	**0.1**	**0.1**	**0.142857143**	**2.22045E-16**
	0.2	**0.1730769**	**1.11E-16**	**2.22E-16**	**0.0333333**	**0.0333333**	**0.1**	**0**	**2.22045E-16**
	0.2	**0.2211538**	**1.11E-16**	**2.22E-16**	**0.0333333**	**0.0333333**	**0.1**	**0**	**2.22045E-16**
	0.2	**0.1153846**	**1.11E-16**	**2.22E-16**	**0.0333333**	**0.0333333**	**0.1666667**		
	0.2	**0.2403846**	**1.11E-16**	**2.22E-16**	**0.0333333**	**0.0333333**	**0.1666667**		
	0.1	**0.2596154**	**1.11E-16**	**2.22E-16**	**0.1**	**0.0666667**	**0.1666667**		
	0.1	**0.1826923**	**1.11E-16**	**2.22E-16**	**0.1**	**0.0666667**	**0.2333333**		
	0.1	**0.1474359**	**1.11E-16**	**2.22E-16**	**0.1**	**0.0666667**	**0.3**		
	0.1	**0.1121795**	**1.11E-16**	**2.22E-16**	**0.2**	**3.331E-16**	**0.2**		
	0.1	**0.0769231**	**1.11E-16**	**2.22E-16**	**0.2**	**3.331E-16**	**0.1**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1666667**	**3.331E-16**	**5.551E-17**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1666667**	**3.331E-16**	**5.551E-17**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1666667**	**3.331E-16**	**5.551E-17**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1666667**	**3.331E-16**	**5.551E-17**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2333333**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2333333**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1**	**3.331E-16**	**0.1666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1666667**	**3.331E-16**	**0.2666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1666667**	**3.331E-16**	**0.1333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0333333**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0333333**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1666667**	**3.331E-16**	**0**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1666667**	**3.331E-16**	**0**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.1333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.1333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2**	**3.331E-16**	**0.1333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1333333**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1333333**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1333333**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0333333**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0666667**		
	0	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0**	**3.331E-16**	**0.0666667**		
Test Statistic, α = 0.05	0.5118854	0.4683413	0.4683413	0.4683413	0.5552177	0.5552177	0.5552177	0.938489161	0.938489161
Test Statistic, α = 0.01	0.6135097	0.5613208	0.5613208	0.5613208	0.6654447	0.6654447	0.6654447	1.124806862	1.124806862

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0				**No data from Domain 61**			**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0.1							**0**	**0.222222222**
	0.2							**0**	**0.222222222**
	0.3							**0.111111111**	**0.555555556**
	0.4							**0.111111111**	**0.555555556**
	0.3888889							**0.111111111**	**0.555555556**
	0.3888889							**0.111111111**	**0.666666667**
	0.1666667							**0.222222222**	**0.666666667**
	0.1666667							**0.222222222**	**1**
	0.2555556							**0.444444444**	**1**
	0.2555556							**0.555555556**	**0.333333333**
	0.1444444							**0.555555556**	**0**
	0.1333333							**0.777777778**	**0**
	0.1333333							**0.666666667**	**0**
	0.1333333							**0.333333333**	**0**
	0.1333333							**0**	**0**
	0.0222222							**0**	**0**
	0.0222222							**0**	**0**
	0.0222222							**0**	**0**
	0.0222222							**0**	**0**
	0.0222222								
	0.0888889								
	0.0111111								
	0.0111111								
	0.0111111								
	0.1								
	0.1								
	3.331E-16								
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Test Statistic, α = 0.05	0.6248769							0.906666667	0.906666667
Test Statistic, α = 0.01	0.7489333							1.086666667	1.086666667

Appendix D.3: Spreadsheet for Domain (51 v 61)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.034482759**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.068965517**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.103448276**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.24137931**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.24137931**
	0.1	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.275862069**
	0.2	**0**	**0**	**0.1449966**	**0.0851064**	**0.0212766**	**0**	**0**	**0.413793103**
	0.2847328	**0**	**0**	**0.1272975**	**0.0851064**	**0.0212766**	**0**	**0**	**0.448275862**
	0.3770992	**0**	**0**	**0.3226685**	**0.106383**	**0.0212766**	**0**	**0**	**0.517241379**
	0.4389313	**0**	**0**	**0.5534377**	**0.1276596**	**0.0787234**	**0**	**0.034482759**	**0.620689655**
	0.3854962	**0**	**0**	**0.6895848**	**0.1914894**	**0.0787234**	**0**	**0.068965517**	**0.75862069**
	0.3320611	**0**	**0**	**0.7903336**	**0.1914894**	**0.1787234**	**0**	**0.206896552**	**0.931034483**
	0.2633588	**0**	**0.0442478**	**0.8230088**	**0.2553191**	**0.3787234**	**0.0212766**	**0.379310345**	**1**
	0.3412214	**0**	**0.079646**	**0.7433628**	**0.2553191**	**0.3787234**	**0.0212766**	**0.413793103**	**1**
	0.2572519	**0**	**0.0319946**	**0.5929204**	**0.2765957**	**0.3787234**	**0.0212766**	**0.586206897**	**0.333333333**
	0.1427481	**0**	**0.1075562**	**0.4778761**	**0.2765957**	**0.5787234**	**0.0212766**	**0.75862069**	**0**
	0.1587786	**0**	**0.1524847**	**0.3451327**	**0.2191489**	**0.6574468**	**0.0212766**	**1**	**0**
	0.0900763	**0**	**0.0789653**	**0.2212389**	**0.2404255**	**0.8574468**	**0.0638298**	**0.666666667**	**0**
	0.0137405	**0**	**0.0762423**	**0.1504425**	**0.2404255**	**0.8574468**	**0.106383**	**0.333333333**	**0**
	0.0167939	**0**	**0.1150442**	**0.1061947**	**0.2829787**	**0.8361702**	**0.106383**	**0**	**0**
	0.0396947	**0**	**0.079646**	**0.1061947**	**0.3042553**	**0.8148936**	**0.0276596**	**0**	**0**
	0.0778626	**0.0769231**	**0.0530973**	**0.0530973**	**0.3255319**	**0.7723404**	**0.0276596**	**0**	**0**
	0.1007634	**0.059224**	**0.0353982**	**0.0353982**	**0.3468085**	**0.687234**	**0.0276596**	**0**	**0**
	0.1160305	**0.1184479**	**0.0353982**	**0.0353982**	**0.4106383**	**0.6234043**	**0.0489362**	**0**	**0**
	0.1312977	**0.3492172**	**0.0176991**	**0.0265487**	**0.4319149**	**0.5382979**	**0.0489362**		
	0.1389313	**0.3403676**	**0.0176991**	**0.0265487**	**0.4957447**	**0.5170213**	**0.0702128**		
	0.0465649	**0.5534377**	**0.0088496**	**0.0265487**	**0.5170213**	**0.5319149**	**0.0702128**		
	0.0541985	**0.6126617**	**1.11E-16**	**0.0265487**	**0.5170213**	**0.4468085**	**0.0914894**		
	0.0541985	**0.6541865**	**1.11E-16**	**0.0265487**	**0.5808511**	**0.4042553**	**0.0914894**		
	0.0618321	**0.6780123**	**1.11E-16**	**0.0265487**	**0.5021277**	**0.3404255**	**0.0340426**		
	0.0770992	**0.6575902**	**1.11E-16**	**0.0265487**	**0.5446809**	**0.3191489**	**0.0659574**		
	0.0152672	**0.6460177**	**1.11E-16**	**0.0176991**	**0.4659574**	**0.2765957**	**0.1659574**		
	0.0076336	**0.5132743**	**1.11E-16**	**0.0176991**	**0.4659574**	**0.2340426**	**0.1446809**		
	0.0076336	**0.3716814**	**1.11E-16**	**0.0088496**	**0.4659574**	**0.2340426**	**0.1446809**		
	3.331E-16	**0.2035398**	**1.11E-16**	**0.0088496**	**0.487234**	**0.212766**	**0.1446809**		
	3.331E-16	**0.1858407**	**1.11E-16**	**0.0088496**	**0.5297872**	**0.1702128**	**0.0808511**		
	3.331E-16	**0.159292**	**1.11E-16**	**0**	**0.5297872**	**0.1276596**	**0.1808511**		
	3.331E-16	**0.1327434**	**1.11E-16**	**0**	**0.3723404**	**0.0851064**	**0.3808511**		
	3.331E-16	**0.0973451**	**1.11E-16**	**0**	**0.393617**	**0.0851064**	**0.4808511**		
	3.331E-16	**0.079646**	**1.11E-16**	**0**	**0.393617**	**0.0851064**	**0.4808511**		
	3.331E-16	**0.0707965**	**1.11E-16**	**0**	**0.293617**	**0.0638298**	**0.4382979**		
	3.331E-16	**0.0619469**	**1.11E-16**	**0**	**0.293617**	**0.0212766**	**0.4382979**		
	3.331E-16	**0.0530973**	**1.11E-16**	**0**	**0.293617**	**5.551E-16**	**0.4382979**		
	3.331E-16	**0.0530973**	**1.11E-16**	**0**	**0.193617**	**5.551E-16**	**0.4170213**		
	3.331E-16	**0.0530973**	**1.11E-16**	**0**	**0.193617**	**5.551E-16**	**0.3531915**		
	3.331E-16	**0.0353982**	**1.11E-16**	**0**	**0.093617**	**5.551E-16**	**0.3106383**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.006383**	**5.551E-16**	**0.2893617**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.0148936**	**5.551E-16**	**0.2680851**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.0638298**	**5.551E-16**	**0.2042553**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.0638298**	**5.551E-16**	**0.1617021**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.0425532**	**5.551E-16**	**0.1191489**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.0425532**	**5.551E-16**	**0.0553191**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.0425532**	**5.551E-16**	**0.1340426**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.0212766**	**5.551E-16**	**0.112766**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.0212766**	**5.551E-16**	**0.0702128**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**0.0212766**	**5.551E-16**	**0.0702128**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0489362**		
	3.331E-16	**0.0265487**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0276596**		
	3.331E-16	**0.0176991**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0276596**		
	3.331E-16	**0.0176991**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0276596**		
	3.331E-16	**0.0176991**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.006383**		
	3.331E-16	**4.441E-16**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0148936**		
	3.331E-16	**4.441E-16**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0148936**		
	3.331E-16	**4.441E-16**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0148936**		
	3.331E-16	**4.441E-16**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0148936**		
	3.331E-16	**4.441E-16**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0851064**		
	3.331E-16	**4.441E-16**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0851064**		
	3.331E-16	**4.441E-16**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0851064**		
	3.331E-16	**4.441E-16**	**1.11E-16**	**0**	**1.11E-16**	**5.551E-16**	**0.0851064**		
Test Statistic, $\alpha = 0.05$	0.4461828	0.3983027	0.3983027	0.3983027	0.4736171	0.4736171	0.4736171	0.824810671	0.824810671
Test Statistic, $\alpha = 0.01$	0.5347632	0.4773775	0.4773775	0.4773775	0.5676441	0.5676441	0.5676441	0.988559849	0.988559849

Appendix D.3: Spreadsheet for Domain (51 v 62)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.181818182**
	0.1	**0**	**0**	**0**	**0.0333333**	**0**	**0**	**0**	**0.272727273**
	0.2	**0**	**0**	**0.1538462**	**0.0666667**	**0**	**0**	**0**	**0.272727273**
	0.3	**0**	**0**	**0.1538462**	**0.0666667**	**0**	**0**	**0**	**0.272727273**
	0.3818182	**0**	**0**	**0.3846154**	**0.0666667**	**0.0333333**	**0**	**0**	**0.636363636**
	0.4636364	**0**	**0**	**0.6153846**	**0.1**	**0.0666667**	**0**	**0.090909091**	**0.727272727**
	0.4272727	**0**	**0**	**0.734748**	**0.1**	**0.0666667**	**0**	**0.272727273**	**0.818181818**
	0.3909091	**0**	**0.0344828**	**0.8541114**	**0.1**	**0.1666667**	**0**	**0.272727273**	**1**
	0.2818182	**0**	**0.0344828**	**0.9137931**	**0.1**	**0.3666667**	**0**	**0.272727273**	**1**
	0.3545455	**0**	**0.0862069**	**0.8103448**	**0.1333333**	**0.3666667**	**0**	**0.545454545**	**1**
	0.1909091	**0**	**0.0875332**	**0.7068966**	**0.1333333**	**0.3666667**	**0**	**0.727272727**	**0.333333333**
	0.1181818	**0**	**0.1167109**	**0.4827586**	**0.1333333**	**0.5666667**	**0**	**0.727272727**	**0**
	0.1636364	**0**	**0.2785146**	**0.3793103**	**0.1**	**0.6666667**	**0**	**1**	**0**
	0.1090909	**0**	**0.1485411**	**0.2758621**	**0.1333333**	**0.8666667**	**0**	**0.666666667**	**0**
	0.0727273	**0**	**0.1392573**	**0.1206897**	**0.1666667**	**0.8666667**	**0**	**0.333333333**	**0**
	0.0363636	**0**	**0.2241379**	**0.1034483**	**0.1666667**	**0.8666667**	**0.0333333**	**0**	**0**
	0.0181818	**0**	**0.137931**	**0.0689655**	**0.1666667**	**0.7666667**	**0.0666667**	**0**	**0**
	1.11E-16	**0.0769231**	**0.0517241**	**0.0517241**	**0.2666667**	**0.7666667**	**0.0666667**	**0**	**0**
	0.0181818	**0.0769231**	**0.0344828**	**0.0172414**	**0.3333333**	**0.7333333**	**0.0333333**	**0**	**0**
	0.0545455	**0.1538462**	**0.0172414**	**0.0172414**	**0.4**	**0.7**	**0**	**0**	**0**
	0.0727273	**0.3846154**	**1.11E-16**	**0.0172414**	**0.4**	**0.6333333**	**0**		
	0.1090909	**0.3846154**	**1.11E-16**	**0.0172414**	**0.4**	**0.4666667**	**0**		
	0.0090909	**0.5981432**	**1.11E-16**	**0.0172414**	**0.4666667**	**0.5666667**	**0**		
	0.0272727	**0.6750663**	**1.11E-16**	**1.11E-16**	**0.5333333**	**0.5333333**	**0**		
	0.0636364	**0.734748**	**1.11E-16**	**1.11E-16**	**0.5333333**	**0.4666667**	**0**		
	0.1	**0.7427056**	**1.11E-16**	**1.11E-16**	**0.4333333**	**0.4333333**	**0.0666667**		
	0.1	**0.7334218**	**1.11E-16**	**1.11E-16**	**0.4666667**	**0.3333333**	**0.1333333**		
	1.11E-16	**0.6724138**	**1.11E-16**	**1.11E-16**	**0.4333333**	**0.2666667**	**0.2333333**		
	1.11E-16	**0.5689655**	**1.11E-16**	**1.11E-16**	**0.4333333**	**0.2666667**	**0.2333333**		
	1.11E-16	**0.3965517**	**1.11E-16**	**1.11E-16**	**0.5**	**0.1666667**	**0.2**		
	1.11E-16	**0.3275862**	**1.11E-16**	**1.11E-16**	**0.5**	**0.1666667**	**0.2**		
	1.11E-16	**0.2586207**	**1.11E-16**	**1.11E-16**	**0.5**	**0.1333333**	**0.1666667**		
	1.11E-16	**0.2241379**	**1.11E-16**	**1.11E-16**	**0.5333333**	**0.1**	**0.2666667**		
	1.11E-16	**0.1724138**	**1.11E-16**	**1.11E-16**	**0.3666667**	**0.1**	**0.4**		
	1.11E-16	**0.1724138**	**1.11E-16**	**1.11E-16**	**0.3666667**	**0.1**	**0.4333333**		
	1.11E-16	**0.1034483**	**1.11E-16**	**1.11E-16**	**0.3666667**	**0.1**	**0.3666667**		
	1.11E-16	**0.1034483**	**1.11E-16**	**1.11E-16**	**0.2666667**	**0.1**	**0.3**		
	1.11E-16	**0.0689655**	**1.11E-16**	**1.11E-16**	**0.2666667**	**0.1**	**0.3**		
	1.11E-16	**0.0517241**	**1.11E-16**	**1.11E-16**	**0.3**	**0.0666667**	**0.3**		
	1.11E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.2**	**0.0666667**	**0.2666667**		
	1.11E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.2**	**0.0666667**	**0.2333333**		
	1.11E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.1333333**	**0.0666667**	**0.2333333**		
	1.11E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.1666667**		
	1.11E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.0666667**	**0.0333333**	**0.1333333**		
	1.11E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.1333333**		
	1.11E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.0666667**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.0666667**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.0666667**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**	**3.331E-16**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.0333333**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.0333333**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.0333333**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.0666667**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0**	**3.331E-16**	**0**		
Test Statistic, α = 0.05	0.4675351	0.4173327	0.4173327	0.4173327	0.4966018	0.4966018	0.4966018	0.885820968	0.885820968
Test Statistic, α = 0.01	0.5603546	0.5001855	0.5001855	0.5001855	0.5951918	0.5951918	0.5951918	1.061682484	1.061682484

Appendix D.3: Spreadsheet for Domain (51 v 63)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.076923077**
	0.2	**0**	**0**	**0.1538462**	**0**	**0**	**0**	**0**	**0.153846154**
	0.3	**0**	**0**	**0.1538462**	**0**	**0**	**0**	**0**	**0.230769231**
	0.4	**0**	**0**	**0.3846154**	**0**	**0**	**0**	**0**	**0.384615385**
	0.5	**0**	**0**	**0.5783476**	**0**	**0.1**	**0**	**0**	**0.538461538**
	0.4583333	**0**	**0**	**0.7321937**	**0.5**	**0.1**	**0**	**0**	**0.923076923**
	0.2916667	**0**	**0**	**0.8860399**	**0.5**	**0.2**	**0**	**0.076923077**	**1**
	0.1666667	**0**	**0.037037**	**0.9259259**	**0.5**	**0.4**	**0**	**0.230769231**	**1**
	0.2833333	**0**	**0.037037**	**0.8518519**	**0.5**	**0.4**	**0**	**0.307692308**	**1**
	0.2	**0**	**0.005698**	**0.7037037**	**0.5**	**0.4**	**0**	**0.461538462**	**0.333333333**
	0.075	**0**	**0.2393162**	**0.5925926**	**0.5**	**0.6**	**0**	**0.769230769**	**0**
	0.0083333	**0**	**0.2108262**	**0.2962963**	**0.4**	**0.7**	**0**	**0.923076923**	**0**
	0.075	**0**	**0.0655271**	**0.1851852**	**0.4**	**0.9**	**0**	**0.666666667**	**0**
	0.1166667	**0**	**0.0683761**	**0.1481481**	**0.4**	**0.9**	**0**	**0.333333333**	**0**
	0.1166667	**0**	**0.1111111**	**0.037037**	**0.4**	**0.9**	**0**	**0**	**0**
	0.2	**0**	**0.0740741**	**0**	**0.4**	**0.9**	**0.1**	**0**	**0**
	0.2	**0.0769231**	**0.037037**	**0**	**0.4**	**0.9**	**0.1**	**0**	**0**
	0.2	**0.0769231**	**1.11E-16**	**0**	**0.4**	**0.9**	**0.1**	**0**	**0**
	0.2	**0.1538462**	**1.11E-16**	**0**	**0.4**	**0.9**	**0.1**	**0**	**0**
	0.2	**0.3846154**	**1.11E-16**	**0**	**0.4**	**0.9**	**0.1**		
	0.2	**0.3846154**	**1.11E-16**	**0**	**0.4**	**0.4**	**0.1**		
	0.1	**0.6153846**	**1.11E-16**	**0**	**0.9**	**0.5**	**0.1**		
	0.1	**0.6923077**	**1.11E-16**	**0**	**0.9**	**0.5**	**0.1**		
	0.1	**0.7692308**	**1.11E-16**	**0**	**0.9**	**2.22E-16**	**0.1**		
	0.1	**0.8091168**	**1.11E-16**	**0**	**0.8**	**2.22E-16**	**0.2**		
	0.1	**0.8119658**	**1.11E-16**	**0**	**0.8**	**2.22E-16**	**0.3**		
	1.11E-16	**0.7777778**	**1.11E-16**	**0**	**0.7**	**2.22E-16**	**0.4**		
	1.11E-16	**0.6666667**	**1.11E-16**	**0**	**0.7**	**2.22E-16**	**0.4**		
	1.11E-16	**0.4444444**	**1.11E-16**	**0**	**0.7**	**2.22E-16**	**0.4**		
	1.11E-16	**0.2962963**	**1.11E-16**	**0**	**0.7**	**2.22E-16**	**0.4**		
	1.11E-16	**0.2592593**	**1.11E-16**	**0**	**0.7**	**2.22E-16**	**0.4**		
	1.11E-16	**0.1481481**	**1.11E-16**	**0**	**0.7**	**2.22E-16**	**0.5**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.5**	**2.22E-16**	**0.7**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.5**	**2.22E-16**	**0.8**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.5**	**2.22E-16**	**0.8**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.4**	**2.22E-16**	**0.8**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.4**	**2.22E-16**	**0.8**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.4**	**2.22E-16**	**0.8**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.3**	**2.22E-16**	**0.8**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.3**	**2.22E-16**	**0.8**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.2**	**2.22E-16**	**0.8**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.1**	**2.22E-16**	**0.3**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**0.1**	**2.22E-16**	**0.3**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.3**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.3**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.3**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.3**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.4**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.4**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.4**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.4**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.4**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.4**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.4**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.1**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
	1.11E-16	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**1.11E-16**		
Test Statistic, α = 0.05	0.5118854	0.4591085	0.4591085	0.4591085	1.0534515	1.0534515	1.0534515	0.871097157	0.871097157
Test Statistic, α = 0.01	0.6135097	0.5502551	0.5502551	0.5502551	1.2625926	1.2625926	1.2625926	1.044035563	1.044035563

Appendix D.3: Spreadsheet for Domain (51 v 64)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.142857143
	0.1	0	0	0	0	0	0	0	0.142857143
	0.2	0	0	0.1538462	0	0	0	0	0.285714286
	0.3	0	0	0.0288462	0	0	0	0	0.428571429
	0.4	0	0	0.2596154	0	0	0	0	0.857142857
	0.5	0	0	0.4903846	0	0.1	0	0	0.857142857
	0.5	0	0	0.6442308	0	0.1	0	0	1
	0.5	0	0	0.6730769	0.5	0.2	0	0	1
	0.3571429	0	0	0.75	0.5	0.4	0	0.285714286	1
	0.5571429	0	0	0.75	0.5	0.4	0	0.571428571	1
	0.2714286	0	0.1538462	0.625	0.5	0.4	0	0.857142857	0.333333333
	0.2714286	0	0.3365385	0.625	0.5	0.6	0	1	0
	0.2285714	0	0.5673077	0.625	0.4	0.7	0	1	0
	0.2285714	0	0.5192308	0.5	0.4	0.9	0	0.666666667	0
	0.0571429	0	0.0961538	0.125	0.4	0.9	0	0.333333333	0
	0.0571429	0	0.125	0.125	0.4	0.9	0	0	0
	0.0571429	0	1.11E-16	0	0.4	0.9	0.1	0	0
	0.0571429	0.0769231	1.11E-16	0	0.4	0.9	0.1	0	0
	0.0571429	0.0769231	1.11E-16	0	0.4	0.9	0.1	0	0
	0.0571429	0.0288462	1.11E-16	0	0.4	0.9	0.1	0	0
	0.0571429	0.2596154	1.11E-16	0	0.4	0.9	0.1		
	0.2	0.2596154	1.11E-16	0	0.4	0.9	0.1		
	0.1	0.4903846	1.11E-16	0	0.4	1	0.1		
	0.1	0.5673077	1.11E-16	0	0.9	1	0.1		
	0.1	0.6442308	1.11E-16	0	0.9	1	0.1		
	0.1	0.7211538	1.11E-16	0	0.8	1	0.2		
	0.1	0.6730769	1.11E-16	0	0.8	1	0.3		
	1.11E-16	0.75	1.11E-16	0	0.7	1	0.4		
	1.11E-16	0.625	1.11E-16	0	0.7	0.5	0.4		
	1.11E-16	0.625	1.11E-16	0	0.7	0.5	0.4		
	1.11E-16	0.625	1.11E-16	0	0.7	2.22E-16	0.4		
	1.11E-16	0.625	1.11E-16	0	0.7	2.22E-16	0.4		
	1.11E-16	0.5	1.11E-16	0	0.7	2.22E-16	0		
	1.11E-16	0.375	1.11E-16	0	0.5	2.22E-16	0.2		
	1.11E-16	0.25	1.11E-16	0	0.5	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	0.5	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	0.4	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	0.4	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	0.4	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	0.3	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	0.3	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	0.2	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	0.1	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	0.1	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.3		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.4		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.4		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	0.1		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
	1.11E-16	2.22E-16	1.11E-16	0	1.11E-16	2.22E-16	1.11E-16		
Test Statistic, $\alpha = 0.05$	0.6702153	0.6111276	0.6111276	0.6111276	1.0534515	1.0534515	1.0534515	0.938489161	0.938489161
Test Statistic, $\alpha = 0.01$	0.8032728	0.7324544	0.7324544	0.7324544	1.2625926	1.2625926	1.2625926	1.124806862	1.124806862

Appendix D.3: Spreadsheet for Domain (51 v 65)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1772727	**0**	**0**	**0.1538462**	**0**	**0**	**0**	**0**	**0**
	0.2772727	**0**	**0**	**0.1538462**	**0**	**0**	**0**	**0**	**0**
	0.3545455	**0**	**0**	**0.3846154**	**0**	**0**	**0**	**0**	**0.083333333**
	0.3863636	**0**	**0**	**0.6153846**	**0**	**0.1**	**0**	**0**	**0.083333333**
	0.2954545	**0**	**0.0588235**	**0.7692308**	**0**	**0.1**	**0**	**0**	**0.083333333**
	0.2272727	**0**	**0.0588235**	**0.8642534**	**0.0625**	**0.2**	**0**	**0**	**0.666666667**
	0.0227273	**0**	**0.1176471**	**0.8823529**	**0.0625**	**0.3375**	**0**	**0**	**0.833333333**
	0.0181818	**0**	**0.2941176**	**0.7647059**	**0.0625**	**0.3375**	**0**	**0**	**1**
	0.05	**0**	**0.3167421**	**0.6470588**	**0.125**	**0.275**	**0**	**0.083333333**	**0.333333333**
	0.0727273	**0**	**0.1855204**	**0.3529412**	**0.25**	**0.475**	**0**	**0.083333333**	**0**
	0.0409091	**0**	**0.3076923**	**0.1764706**	**0.2125**	**0.3875**	**0**	**0.416666667**	**0**
	0.1318182	**0**	**0.2307692**	**0.0588235**	**0.4**	**0.5875**	**0**	**0.5**	**0**
	0.1318182	**0**	**0.1538462**	**0.0588235**	**0.4**	**0.5875**	**0**	**0.333333333**	**0**
	0.1318182	**0**	**1.11E-16**	**0**	**0.4625**	**0.525**	**0**	**1.11022E-16**	**0**
	0.1772727	**0**	**1.11E-16**	**0**	**0.5875**	**0.4**	**0.1**	**1.11022E-16**	**0**
	0.1772727	**0.0769231**	**1.11E-16**	**0**	**0.5875**	**0.4**	**0.1**	**1.11022E-16**	**0**
	0.1772727	**0.0769231**	**1.11E-16**	**0**	**0.65**	**0.4**	**0.1**	**1.11022E-16**	**0**
	0.1772727	**0.1538462**	**1.11E-16**	**0**	**0.7125**	**0.4**	**0.1**	**1.11022E-16**	**0**
	0.1772727	**0.3846154**	**1.11E-16**	**0**	**0.8375**	**0.4**	**0.0375**		
	0.1772727	**0.3846154**	**1.11E-16**	**0**	**0.8375**	**0.3375**	**0.0375**		
	0.0772727	**0.4977376**	**1.11E-16**	**0**	**0.8375**	**0.4375**	**0.0375**		
	0.0772727	**0.5746606**	**1.11E-16**	**0**	**0.8375**	**0.4375**	**0.0375**		
	0.0772727	**0.5339367**	**1.11E-16**	**0**	**0.8375**	**0.375**	**0.0375**		
	0.0772727	**0.4343891**	**1.11E-16**	**0**	**0.7375**	**0.3125**	**0.1375**		
	0.0772727	**0.3936652**	**1.11E-16**	**0**	**0.7375**	**0.125**	**0.2375**		
	0.0227273	**0.2352941**	**1.11E-16**	**0**	**0.6375**	**0.0625**	**0.3375**		
	0.0227273	**0.2352941**	**1.11E-16**	**0**	**0.6375**	**0.0625**	**0.3375**		
	0.0227273	**0.0588235**	**1.11E-16**	**0**	**0.6375**	**0.0625**	**0.3375**		
	0.0227273	**0.0588235**	**1.11E-16**	**0**	**0.6375**	**0.0625**	**0.3375**		
	0.0227273	**0.0588235**	**1.11E-16**	**0**	**0.6375**	**0.0625**	**0.3375**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.6375**	**0.0625**	**0.4375**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.4375**	**0.0625**	**0.6375**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.4375**	**2.22E-16**	**0.7375**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.4375**	**2.22E-16**	**0.675**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.3375**	**2.22E-16**	**0.6125**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.4**	**2.22E-16**	**0.6125**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.4**	**2.22E-16**	**0.6125**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.3**	**2.22E-16**	**0.55**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.3**	**2.22E-16**	**0.55**		
	0.0227273	**2.22E-16**	**1.11E-16**	**0**	**0.2**	**2.22E-16**	**0.55**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0.1**	**2.22E-16**	**0.55**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0.1**	**2.22E-16**	**0.4875**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.4875**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.425**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.3625**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.3**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.4**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.275**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.275**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.2125**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.2125**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.2125**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.15**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.15**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.0875**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.025**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.025**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.0375**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.0375**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.0625**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.0625**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.0625**		
	0	**2.22E-16**	**1.11E-16**	**0**	**1.11E-16**	**2.22E-16**	**0.0625**		
Test Statistic, α = 0.05	0.4764414	0.5010758	0.5010758	0.5010758	0.5482335	0.5482335	0.5482335	0.877876225	0.877876225
Test Statistic, α = 0.01	0.571029	0.600554	0.600554	0.600554	0.657074	0.657074	0.657074	1.052160476	1.052160476

Appendix D.3: Spreadsheet for Domain (51 v 71)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
0.1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
0.2	**0**	**0**	**0.1538462**	**0**	**0**	**0**	**0**	**0.142857143**
0.2615385	**0**	**0**	**0.1538462**	**0**	**0**	**0**	**0**	**0.142857143**
0.3615385	**0**	**0**	**0.3846154**	**0**	**0**	**0**	**0**	**0.142857143**
0.4615385	**0**	**0**	**0.6153846**	**0**	**0.1**	**0**	**0**	**0.142857143**
0.3461538	**0**	**0**	**0.6692308**	**0**	**0.1**	**0**	**0**	**0.285714286**
0.1923077	**0**	**0**	**0.5230769**	**0**	**0.2**	**0**	**0.142857143**	**0.571428571**
0.0384615	**0**	**0.2**	**0.6**	**0.1111111**	**0.4**	**0**	**0.142857143**	**0.857142857**
0.1230769	**0**	**0.4**	**0.6**	**0.2222222**	**0.4**	**0**	**0.142857143**	**1**
0.0846154	**0**	**0.5461538**	**0.5**	**0.3333333**	**0.4**	**0**	**0.142857143**	**0.333333333**
0.0461538	**0**	**0.3384615**	**0.4**	**0.4444444**	**0.6**	**0**	**0.142857143**	**0**
0.0307692	**0**	**0.1076923**	**0.2**	**0.4555556**	**0.7**	**0**	**0.714285714**	**0**
0.0307692	**0**	**0.1307692**	**0.1**	**0.4555556**	**0.9**	**0**	**0.666666667**	**0**
0.0307692	**0**	**0.1538462**	**0.1**	**0.4555556**	**0.7888889**	**0**	**0.333333333**	**0**
0.0461538	**0**	**0**	**0.1**	**0.4555556**	**0.7888889**	**0**	**1.11022E-16**	**0**
0.0846154	**0**	**0**	**0.1**	**0.4555556**	**0.7888889**	**0.1**	**1.11022E-16**	**0**
0.1615385	**0.0769231**	**0**	**0.1**	**0.5666667**	**0.6777778**	**0.1**	**1.11022E-16**	**0**
0.1615385	**0.0769231**	**0**	**0**	**0.5666667**	**0.5666667**	**0.1**	**1.11022E-16**	**0**
0.1615385	**0.0538462**	**0**	**0**	**0.5666667**	**0.5666667**	**0.1**	**1.11022E-16**	**0**
0.2	**0.2846154**	**0**	**0**	**0.5666667**	**0.5666667**	**0.1**		
0.2	**0.2846154**	**0**	**0**	**0.5666667**	**0.3444444**	**0.1**		
0.1	**0.3153846**	**0**	**0**	**0.5666667**	**0.4444444**	**0.1**		
0.1	**0.3923077**	**0**	**0**	**0.7888889**	**0.3333333**	**0.1**		
0.1	**0.3692308**	**0**	**0**	**0.7888889**	**0.2222222**	**0.1**		
0.1	**0.2461538**	**0**	**0**	**0.6888889**	**0.2222222**	**0.2**		
0.1	**0.2230769**	**0**	**0**	**0.6888889**	**0.1111111**	**0.3**		
3.331E-16	**0.2**	**0**	**0**	**0.7**	**0.1111111**	**0.4**		
3.331E-16	**0.1**	**0**	**0**	**0.7**	**0.1111111**	**0.4**		
3.331E-16	**0.1**	**0**	**0**	**0.7**	**0.1111111**	**0.4**		
3.331E-16	**0.1**	**0**	**0**	**0.7**	**0.1111111**	**0.4**		
3.331E-16	**0.1**	**0**	**0**	**0.7**	**0.1111111**	**0.4**		
3.331E-16	**0.1**	**0**	**0**	**0.7**	**0.1111111**	**0.5**		
3.331E-16	**0.1**	**0**	**0**	**0.5**	**0.1111111**	**0.7**		
3.331E-16	**0.1**	**0**	**0**	**0.5**	**0.1111111**	**0.8**		
3.331E-16	**0.1**	**0**	**0**	**0.5**	**0.1111111**	**0.8**		
3.331E-16	**0.1**	**0**	**0**	**0.4**	**0.1111111**	**0.6888889**		
3.331E-16	**2.22E-16**	**0**	**0**	**0.4**	**0.1111111**	**0.5777778**		
3.331E-16	**2.22E-16**	**0**	**0**	**0.4**	**0.1111111**	**0.5777778**		
3.331E-16	**2.22E-16**	**0**	**0**	**0.3**	**0**	**0.5777778**		
3.331E-16	**2.22E-16**	**0**	**0**	**0.3**	**0**	**0.5777778**		
3.331E-16	**2.22E-16**	**0**	**0**	**0.2**	**0**	**0.4666667**		
3.331E-16	**2.22E-16**	**0**	**0**	**0.1**	**0**	**0.4666667**		
3.331E-16	**2.22E-16**	**0**	**0**	**0.1**	**0**	**0.4666667**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.4666667**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.3555556**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.3555556**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.3555556**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.3444444**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.3444444**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.2333333**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.2333333**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.2333333**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.1222222**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.1222222**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.1222222**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.1**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.1**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.1**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.1**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**0.1**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**1.11E-16**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**1.11E-16**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**1.11E-16**		
3.331E-16	**2.22E-16**	**0**	**0**	**1.11E-16**	**0**	**1.11E-16**		

Test Statistic, $\alpha = 0.05$	0.5060617	0.5720463	0.5720463	0.5720463	0.6248769	0.6248769	0.6248769	0.938489161	0.938489161
Test Statistic, $\alpha = 0.01$	0.6065299	0.6856143	0.6856143	0.6856143	0.7489333	0.7489333	0.7489333	1.124806862	1.124806862

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No data from Domain 61**				**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0**	**0.222222222**
	0.0833333							**0**	**0.222222222**
	0.1666667							**0**	**0.222222222**
	0.25							**0**	**0.222222222**
	0.4166667							**0**	**0.222222222**
	0.5							**0.111111111**	**0.555555556**
	0.625							**0.111111111**	**0.555555556**
	0.6388889							**0.111111111**	**0.555555556**
	0.6805556							**0.111111111**	**0.523809524**
	0.625							**0.222222222**	**0.523809524**
	0.6666667							**0.222222222**	**0.857142857**
	0.5555556							**0.444444444**	**0.714285714**
	0.5555556							**0.412698413**	**0.714285714**
	0.4444444							**0.412698413**	**0.428571429**
	0.3333333							**0.634920635**	**0.285714286**
	0.3333333							**0.714285714**	**0.285714286**
	0.3333333							**0.571428571**	**0.142857143**
	0.3333333							**0.571428571**	**2.22045E-16**
	0.2222222							**0.142857143**	**2.22045E-16**
	0.2222222							**0.142857143**	**2.22045E-16**
	0.2222222							**0**	**2.22045E-16**
	0.2222222							**0**	**2.22045E-16**
	0.2222222								
	0.1111111								
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Test Statistic, $\alpha = 0.05$	0.5315805							0.685375578	0.685375578
Test Statistic, $\alpha = 0.01$	0.6371148							0.821442788	0.821442788

Appendix D.3: Spreadsheet for Domain (52 v 61)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.034482759**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.068965517**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.103448276**
	0.0833333	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.24137931**
	0.1666667	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.24137931**
	0.25	**0**	**0**	**0.0833333**	**0.0638298**	**0.0212766**	**0**	**0**	**0.275862069**
	0.4166667	**0**	**0**	**0.1994838**	**0.0851064**	**0.0453901**	**0**	**0**	**0.413793103**
	0.4847328	**0**	**0**	**0.4317847**	**0.0851064**	**0.0453901**	**0**	**0**	**0.448275862**
	0.6020992	**0**	**0**	**0.6047198**	**0.0397163**	**0.0453901**	**0**	**0**	**0.517241379**
	0.6889313	**0**	**0**	**0.6463864**	**0.0609929**	**0.0453901**	**0**	**0.034482759**	**0.620689655**
	0.6771628	**0**	**0**	**0.795354**	**0.1248227**	**0.1120567**	**0.0666667**	**0.068965517**	**0.615763547**
	0.7903944	**0**	**0**	**0.7839233**	**0.1248227**	**0.1787234**	**0.0666667**	**0.206896552**	**0.78817734**
	0.7633588	**0**	**0.0025811**	**0.7813422**	**0.1886525**	**0.2453901**	**0.0453901**	**0.379310345**	**0.857142857**
	0.6412214	**0**	**0.0036873**	**0.7433628**	**0.1886525**	**0.2453901**	**0.0453901**	**0.413793103**	**0.714285714**
	0.5572519	**0**	**0.1474926**	**0.5929204**	**0.2099291**	**0.3120567**	**0.0453901**	**0.443349754**	**0.714285714**
	0.4427481	**0**	**0.354351**	**0.4778761**	**0.2099291**	**0.3120567**	**0.0453901**	**0.615763547**	**0.428571429**
	0.3587786	**0**	**0.210177**	**0.3451327**	**0.2524823**	**0.2907801**	**0.0453901**	**0.857142857**	**0.285714286**
	0.2900763	**0**	**0.2264012**	**0.2212389**	**0.2737589**	**0.3574468**	**0.0028369**	**0.714285714**	**0.285714286**
	0.2137405	**0**	**0.1884218**	**0.1504425**	**0.2737589**	**0.4907801**	**0.0397163**	**0.571428571**	**0.142857143**
	0.1832061	**0.0416667**	**0.1150442**	**0.1061947**	**0.3163121**	**0.6028369**	**0.0269504**	**0.571428571**	**2.22045E-16**
	0.1603053	**0.0833333**	**0.079646**	**0.1061947**	**0.3375887**	**0.648227**	**0.0723404**	**0.142857143**	**2.22045E-16**
	0.1221374	**0.1666667**	**0.0530973**	**0.0530973**	**0.3588652**	**0.6723404**	**0.0723404**	**0.142857143**	**2.22045E-16**
	0.0992366	**0.2323009**	**0.0353982**	**0.0353982**	**0.3801418**	**0.6539007**	**0.0723404**	**0**	**2.22045E-16**
	0.0839695	**0.3396018**	**0.0353982**	**0.0353982**	**0.4439716**	**0.5900709**	**0.0510638**	**0**	**2.22045E-16**
	0.0687023	**0.4646018**	**0.0176991**	**0.0265487**	**0.4652482**	**0.5049645**	**0.1177305**		
	0.0610687	**0.5807522**	**0.0176991**	**0.0265487**	**0.529078**	**0.4836879**	**0.0964539**		
	0.0534351	**0.8130531**	**0.0088496**	**0.0265487**	**0.4170213**	**0.4652482**	**0.0964539**		
	0.0458015	**0.795354**	**2.22E-16**	**0.0265487**	**0.4170213**	**0.3801418**	**0.141844**		
	0.0458015	**0.8016224**	**2.22E-16**	**0.0265487**	**0.4808511**	**0.3375887**	**0.2085106**		
	0.0381679	**0.7901917**	**2.22E-16**	**0.0265487**	**0.3021277**	**0.3404255**	**0.1659574**		
	0.0229008	**0.7345133**	**2.22E-16**	**0.0265487**	**0.3446809**	**0.3191489**	**0.1659574**		
	0.0152672	**0.6460177**	**2.22E-16**	**0.0176991**	**0.2992908**	**0.2765957**	**0.1659574**		
	0.0076336	**0.5132743**	**2.22E-16**	**0.0176991**	**0.2992908**	**0.2340426**	**0.1446809**		
	0.0076336	**0.3716814**	**2.22E-16**	**0.0088496**	**0.2992908**	**0.2340426**	**0.1446809**		
	3.331E-16	**0.2035398**	**2.22E-16**	**0.0088496**	**0.3205674**	**0.212766**	**0.1446809**		
	3.331E-16	**0.1858407**	**2.22E-16**	**0.0088496**	**0.2964539**	**0.1702128**	**0.1475177**		
	3.331E-16	**0.159292**	**2.22E-16**	**2.22E-16**	**0.2964539**	**0.1276596**	**0.1475177**		
	3.331E-16	**0.1327434**	**2.22E-16**	**2.22E-16**	**0.2723404**	**0.0851064**	**0.2141844**		
	3.331E-16	**0.0973451**	**2.22E-16**	**2.22E-16**	**0.2269504**	**0.0851064**	**0.2141844**		
	3.331E-16	**0.079646**	**2.22E-16**	**2.22E-16**	**0.2269504**	**0.0851064**	**0.3475177**		
	3.331E-16	**0.0707965**	**2.22E-16**	**2.22E-16**	**0.2269504**	**0.0638298**	**0.3716312**		
	3.331E-16	**0.0619469**	**2.22E-16**	**2.22E-16**	**0.2269504**	**0.0212766**	**0.3716312**		
	3.331E-16	**0.0530973**	**2.22E-16**	**2.22E-16**	**0.2269504**	**2.22E-16**	**0.3716312**		
	3.331E-16	**0.0530973**	**2.22E-16**	**2.22E-16**	**0.1602837**	**2.22E-16**	**0.3503546**		
	3.331E-16	**0.0530973**	**2.22E-16**	**2.22E-16**	**0.1602837**	**2.22E-16**	**0.2865248**		
	3.331E-16	**0.0353982**	**2.22E-16**	**2.22E-16**	**0.1602837**	**2.22E-16**	**0.3106383**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.1602837**	**2.22E-16**	**0.2893617**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.1815603**	**2.22E-16**	**0.2680851**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.2028369**	**2.22E-16**	**0.270922**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.2028369**	**2.22E-16**	**0.2950355**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.2241135**	**2.22E-16**	**0.2524823**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.1574468**	**2.22E-16**	**0.1886525**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.0907801**	**2.22E-16**	**0.1673759**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.1120567**	**2.22E-16**	**0.1460993**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.1120567**	**2.22E-16**	**0.1035461**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.0453901**	**2.22E-16**	**0.1035461**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.0666667**	**2.22E-16**	**0.0822695**		
	3.331E-16	**0.0265487**	**2.22E-16**	**2.22E-16**	**0.0666667**	**2.22E-16**	**0.0609929**		
	3.331E-16	**0.0176991**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0609929**		
	3.331E-16	**0.0176991**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0609929**		
	3.331E-16	**0.0176991**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0397163**		
	3.331E-16	**3.331E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0184397**		
	3.331E-16	**3.331E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0184397**		
	3.331E-16	**3.331E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0184397**		
	3.331E-16	**3.331E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0184397**		
	3.331E-16	**3.331E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0184397**		
	3.331E-16	**3.331E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0184397**		
	3.331E-16	**3.331E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0184397**		
	3.331E-16	**3.331E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**2.22E-16**	**0.0184397**		
Test Statistic, $\alpha = 0.05$	0.3019698	0.3056711	0.3056711	0.3056711	0.4033111	0.4033111	0.4033111	0.572719724	0.572719724
Test Statistic, $\alpha = 0.01$	0.3619197	0.3663558	0.3663558	0.3663558	0.4833802	0.4833802	0.4833802	0.686421433	0.686421433

Appendix D.3: Spreadsheet for Domain (52 v 62)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.090909091
	0.0833333	0	0	0	0	0	0	0	0.090909091
	0.1666667	0	0	0	0	0	0	0	0.181818182
	0.25	0	0	0.0833333	0.0333333	0	0	0	0.272727273
	0.4166667	0	0	0.2083333	0.0666667	0.0666667	0	0	0.272727273
	0.5	0	0	0.4583333	0.0666667	0.0666667	0	0	0.272727273
	0.6068182	0	0	0.6666667	0	0.0333333	0	0	0.636363636
	0.7136364	0	0	0.7083333	0.0333333	0.0333333	0	0.090909091	0.727272727
	0.7189394	0	0	0.8405172	0.0333333	0.1	0.0666667	0.272727273	0.675324675
	0.8492424	0	0.0344828	0.8477011	0.0333333	0.1666667	0.0666667	0.272727273	0.857142857
	0.7818182	0	0.0071839	0.8721264	0.0333333	0.2333333	0.0666667	0.272727273	0.857142857
	0.6545455	0	0.0028736	0.8103448	0.0666667	0.2333333	0.0666667	0.545454545	0.714285714
	0.4909091	0	0.091954	0.7068966	0.0666667	0.3	0.0666667	0.584415584	0.714285714
	0.4181818	0	0.3635057	0.4827586	0.0666667	0.3	0.0666667	0.584415584	0.428571429
	0.3636364	0	0.3362069	0.3793103	0.1333333	0.3	0.0666667	0.857142857	0.285714286
	0.3090909	0	0.295977	0.2758621	0.1666667	0.3666667	0.0666667	0.714285714	0.285714286
	0.2727273	0	0.2514368	0.1206897	0.2	0.5	0.0666667	0.571428571	0.142857143
	0.2363636	0.0416667	0.2241379	0.1034483	0.2	0.6333333	0.1	0.571428571	2.22045E-16
	0.2181818	0.0833333	0.137931	0.0689655	0.2	0.6	0.1666667	0.142857143	2.22045E-16
	0.2	0.1666667	0.0517241	0.0517241	0.3	0.6666667	0.1666667	0.142857143	2.22045E-16
	0.1818182	0.25	0.0344828	0.0172414	0.3666667	0.7	0.1333333	0	2.22045E-16
	0.1454545	0.375	0.0172414	0.0172414	0.4333333	0.6666667	0.1	0	2.22045E-16
	0.1272727	0.5	2.22E-16	0.0172414	0.4333333	0.6	0.1666667		
	0.0909091	0.625	2.22E-16	0.0172414	0.4333333	0.4333333	0.1666667		
	0.0909091	0.8577586	2.22E-16	0.0172414	0.3666667	0.5	0.1666667		
	0.0727273	0.8577586	2.22E-16	1.11E-16	0.4333333	0.4666667	0.2333333		
	0.0363636	0.8821839	2.22E-16	1.11E-16	0.4333333	0.4	0.3		
	1.11E-16	0.8548851	2.22E-16	1.11E-16	0.2333333	0.4333333	0.2666667		
	1.11E-16	0.8103448	2.22E-16	1.11E-16	0.2666667	0.3333333	0.2333333		
	1.11E-16	0.6724138	2.22E-16	1.11E-16	0.2666667	0.2666667	0.2333333		
	1.11E-16	0.5689655	2.22E-16	1.11E-16	0.2666667	0.2666667	0.2333333		
	1.11E-16	0.3965517	2.22E-16	1.11E-16	0.3333333	0.1666667	0.2		
	1.11E-16	0.3275862	2.22E-16	1.11E-16	0.3333333	0.1666667	0.2		
	1.11E-16	0.2586207	2.22E-16	1.11E-16	0.2666667	0.1333333	0.2333333		
	1.11E-16	0.2241379	2.22E-16	1.11E-16	0.3	0.1	0.2333333		
	1.11E-16	0.1724138	2.22E-16	1.11E-16	0.2666667	0.1	0.2333333		
	1.11E-16	0.1724138	2.22E-16	1.11E-16	0.2	0.1	0.1666667		
	1.11E-16	0.1034483	2.22E-16	1.11E-16	0.2	0.1	0.2333333		
	1.11E-16	0.1034483	2.22E-16	1.11E-16	0.2	0.1	0.2333333		
	1.11E-16	0.0689655	2.22E-16	1.11E-16	0.2	0.1	0.2333333		
	1.11E-16	0.0517241	2.22E-16	1.11E-16	0.2333333	0.0666667	0.2333333		
	1.11E-16	0.0172414	2.22E-16	1.11E-16	0.1666667	0.0666667	0.2		
	1.11E-16	0.0172414	2.22E-16	1.11E-16	0.1666667	0.0666667	0.1666667		
	1.11E-16	0.0172414	2.22E-16	1.11E-16	0.2	0.0666667	0.2333333		
	1.11E-16	0.0172414	2.22E-16	1.11E-16	0.2	0.0333333	0.1666667		
	1.11E-16	0.0172414	2.22E-16	1.11E-16	0.2333333	0.0333333	0.1333333		
	1.11E-16	0.0172414	2.22E-16	1.11E-16	0.2333333	0.0333333	0.2		
	1.11E-16	0.0172414	2.22E-16	1.11E-16	0.2333333	0.0333333	0.2		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0.2333333	0.0333333	0.2		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0.1666667	0.0333333	0.2		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0.1	0.0333333	0.1333333		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0.1	0	0.1333333		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0.1333333	0	0.1		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0.0666667	0	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0.0666667	0	0.0333333		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0.0666667	0	0		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0333333		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0333333		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0333333		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0333333		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	1.11E-16	0	0	0.0666667		
Test Statistic, α = 0.05	0.3327097	0.3300853	0.3300853	0.3300853	0.4300698	0.4300698	0.4300698	0.657551539	0.657551539
Test Statistic, α = 0.01	0.3987624	0.395617	0.395617	0.395617	0.5154513	0.5154513	0.5154513	0.788094859	0.788094859

Appendix D.3: Spreadsheet for Domain (52 v 63)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0833333	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1666667	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.25	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0.076923077**
	0.4166667	**0**	**0**	**0.2083333**	**0**	**0.0666667**	**0**	**0**	**0.153846154**
	0.5	**0**	**0**	**0.4583333**	**0**	**0.0666667**	**0**	**0**	**0.230769231**
	0.625	**0**	**0**	**0.6666667**	**0.0666667**	**0.0666667**	**0**	**0**	**0.384615385**
	0.75	**0**	**0**	**0.6712963**	**0.0666667**	**0.0666667**	**0**	**0**	**0.538461538**
	0.75	**0**	**0**	**0.837963**	**0.4333333**	**0.1333333**	**0.0666667**	**0**	**0.78021978**
	0.75	**0**	**0**	**0.8796296**	**0.4333333**	**0.2**	**0.0666667**	**0.076923077**	**0.857142857**
	0.6666667	**0**	**0.0046296**	**0.8842593**	**0.4333333**	**0.2666667**	**0.0666667**	**0.230769231**	**0.857142857**
	0.5833333	**0**	**0.0462963**	**0.8518519**	**0.4333333**	**0.2666667**	**0.0666667**	**0.307692308**	**0.714285714**
	0.5	**0**	**0.1851852**	**0.7037037**	**0.4333333**	**0.3333333**	**0.0666667**	**0.318681319**	**0.714285714**
	0.375	**0**	**0.4861111**	**0.5925926**	**0.4333333**	**0.3333333**	**0.0666667**	**0.626373626**	**0.428571429**
	0.2083333	**0**	**0.2685185**	**0.2962963**	**0.4333333**	**0.3333333**	**0.0666667**	**0.78021978**	**0.285714286**
	0.125	**0**	**0.212963**	**0.1851852**	**0.4333333**	**0.4**	**0.0666667**	**0.714285714**	**0.285714286**
	0.0833333	**0**	**0.1805556**	**0.1481481**	**0.4333333**	**0.5333333**	**0.0666667**	**0.571428571**	**0.142857143**
	0.0833333	**0.0416667**	**0.1111111**	**0.037037**	**0.4333333**	**0.6666667**	**0.1333333**	**0.571428571**	**2.22045E-16**
	1.11E-16	**0.0833333**	**0.0740741**	**2.22E-16**	**0.4333333**	**0.7333333**	**0.2**	**0.142857143**	**2.22045E-16**
	1.11E-16	**0.1666667**	**0.037037**	**2.22E-16**	**0.4333333**	**0.8**	**0.2**	**0.142857143**	**2.22045E-16**
	1.11E-16	**0.25**	**0**	**2.22E-16**	**0.4333333**	**0.8666667**	**0.2**	**0**	**2.22045E-16**
	1.11E-16	**0.375**	**0**	**2.22E-16**	**0.4333333**	**0.8666667**	**0.2**	**0**	**2.22045E-16**
	1.11E-16	**0.5**	**0**	**2.22E-16**	**0.4333333**	**0.8666667**	**0.2666667**		
	1.11E-16	**0.625**	**0**	**2.22E-16**	**0.4333333**	**0.3666667**	**0.2666667**		
	1.11E-16	**0.875**	**0**	**2.22E-16**	**0.8**	**0.4333333**	**0.2666667**		
	1.11E-16	**0.875**	**0**	**2.22E-16**	**0.8**	**0.4333333**	**0.3333333**		
	1.11E-16	**0.9166667**	**0**	**2.22E-16**	**0.8**	**0.0666667**	**0.4**		
	1.11E-16	**0.9212963**	**0**	**2.22E-16**	**0.6**	**1.11E-16**	**0.4**		
	1.11E-16	**0.8888889**	**0**	**2.22E-16**	**0.6**	**1.11E-16**	**0.4**		
	1.11E-16	**0.7777778**	**0**	**2.22E-16**	**0.5333333**	**1.11E-16**	**0.4**		
	1.11E-16	**0.6666667**	**0**	**2.22E-16**	**0.5333333**	**1.11E-16**	**0.4**		
	1.11E-16	**0.4444444**	**0**	**2.22E-16**	**0.5333333**	**1.11E-16**	**0.4**		
	1.11E-16	**0.2962963**	**0**	**2.22E-16**	**0.5333333**	**1.11E-16**	**0.4**		
	1.11E-16	**0.2592593**	**0**	**2.22E-16**	**0.4666667**	**1.11E-16**	**0.4666667**		
	1.11E-16	**0.1481481**	**0**	**2.22E-16**	**0.4666667**	**1.11E-16**	**0.4666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.4**	**1.11E-16**	**0.5333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.5333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.6666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.7333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.7333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.7333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.7333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.7333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.8**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.3**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.3**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.3666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.2**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.1333333**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.1333333**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.1333333**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.0666667**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.0666667**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**0.0666667**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.4333333**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
	1.11E-16	**1.11E-16**	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
Test Statistic, α = 0.05	0.3925982	0.3815369	0.3815369	0.3815369	1.0237708	1.0237708	1.0237708	0.637577834	0.637577834
Test Statistic, α = 0.01	0.4705405	0.4572831	0.4572831	0.4572831	1.2270194	1.2270194	1.2270194	0.764155786	0.764155786

Appendix D.3: Spreadsheet for Domain (52 v 64)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0.0833333	0	0	0	0	0	0	0	0.142857143
	0.1666667	0	0	0	0	0	0	0	0.142857143
	0.25	0	0	0.0833333	0	0	0	0	0.142857143
	0.4166667	0	0	0.2083333	0	0.0666667	0	0	0.285714286
	0.5	0	0	0.3333333	0	0.0666667	0	0	0.428571429
	0.625	0	0	0.5416667	0.0666667	0.0666667	0	0	0.857142857
	0.75	0	0	0.5833333	0.0666667	0.0666667	0	0	0.857142857
	0.7916667	0	0	0.75	0.0666667	0.1333333	0.0666667	0	0.857142857
	0.9583333	0	0	0.6666667	0.4333333	0.2	0.0666667	0	0.857142857
	0.8571429	0	0.0416667	0.7083333	0.4333333	0.2666667	0.0666667	0.285714286	0.857142857
	0.8571429	0	0.0833333	0.75	0.4333333	0.2666667	0.0666667	0.571428571	0.714285714
	0.5714286	0	0.3333333	0.625	0.4333333	0.3333333	0.0666667	0.714285714	0.714285714
	0.5714286	0	0.5833333	0.625	0.4333333	0.3333333	0.0666667	0.857142857	0.428571429
	0.4285714	0	0.625	0.625	0.4333333	0.3333333	0.0666667	0.857142857	0.285714286
	0.4285714	0	0.6666667	0.5	0.4333333	0.4	0.0666667	0.714285714	0.285714286
	0.1428571	0	0.2083333	0.125	0.4333333	0.5333333	0.0666667	0.571428571	0.142857143
	0.1428571	0.0416667	0.125	0.125	0.4333333	0.6666667	0.1333333	0.571428571	2.22045E-16
	0.1428571	0.0833333	2.22E-16	2.22E-16	0.4333333	0.7333333	0.2	0.142857143	2.22045E-16
	0.1428571	0.1666667	2.22E-16	2.22E-16	0.4333333	0.8	0.2	0.142857143	2.22045E-16
	0.1428571	0.25	2.22E-16	2.22E-16	0.4333333	0.8666667	0.2	0	2.22045E-16
	0.1428571	0.25	2.22E-16	2.22E-16	0.4333333	0.8666667	0.2	0	2.22045E-16
	0.1428571	0.375	2.22E-16	2.22E-16	0.4333333	0.8666667	0.2666667		
	1.11E-16	0.5	2.22E-16	2.22E-16	0.4333333	0.8666667	0.2666667		
	1.11E-16	0.75	2.22E-16	2.22E-16	0.3	0.9333333	0.2666667		
	1.11E-16	0.75	2.22E-16	2.22E-16	0.8	0.9333333	0.3333333		
	1.11E-16	0.7916667	2.22E-16	2.22E-16	0.8	0.9333333	0.4		
	1.11E-16	0.8333333	2.22E-16	2.22E-16	0.6	1	0.4		
	1.11E-16	0.75	2.22E-16	2.22E-16	0.6	1	0.4		
	1.11E-16	0.75	2.22E-16	2.22E-16	0.5333333	1	0.4		
	1.11E-16	0.625	2.22E-16	2.22E-16	0.5333333	0.5	0.4		
	1.11E-16	0.625	2.22E-16	2.22E-16	0.5333333	0.5	0.4		
	1.11E-16	0.625	2.22E-16	2.22E-16	0.5333333	1.11E-16	0.4		
	1.11E-16	0.625	2.22E-16	2.22E-16	0.4666667	1.11E-16	0.4666667		
	1.11E-16	0.5	2.22E-16	2.22E-16	0.4666667	1.11E-16	0.0333333		
	1.11E-16	0.375	2.22E-16	2.22E-16	0.4	1.11E-16	0.0333333		
	1.11E-16	0.25	2.22E-16	2.22E-16	0.3333333	1.11E-16	0.0333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.3333333	1.11E-16	0.1666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.3333333	1.11E-16	0.2333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.3333333	1.11E-16	0.2333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.3333333	1.11E-16	0.2333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.2666667	1.11E-16	0.2333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.2666667	1.11E-16	0.2333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.2666667	1.11E-16	0.3		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.2666667	1.11E-16	0.3		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.2666667	1.11E-16	0.3		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.2666667	1.11E-16	0.3666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.2666667	1.11E-16	0.4333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.2666667	1.11E-16	0.4333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.2	1.11E-16	0.4333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.1333333	1.11E-16	0.4333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.1333333	1.11E-16	0.4333333		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.1333333	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.0666667	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.0666667	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	0.0666667	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
	1.11E-16	1.11E-16	2.22E-16	2.22E-16	1.11E-16	1.11E-16	0.0666667		
Test Statistic, $\alpha = 0.05$	0.5842048	0.5552177	0.5552177	0.5552177	1.0237708	1.0237708	1.0237708	0.726950578	0.726950578
Test Statistic, $\alpha = 0.01$	0.7001866	0.6654447	0.6654447	0.6654447	1.2270194	1.2270194	1.2270194	0.871271649	0.871271649

Appendix D.3: Spreadsheet for Domain (52 v 65)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0833333	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1666667	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.25	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0**
	0.3939394	**0**	**0**	**0.2083333**	**0**	**0.0666667**	**0**	**0**	**0**
	0.4772727	**0**	**0**	**0.4583333**	**0**	**0.0666667**	**0**	**0**	**0**
	0.5795455	**0**	**0**	**0.6666667**	**0.0666667**	**0.0666667**	**0**	**0**	**0.083333333**
	0.6363636	**0**	**0**	**0.7083333**	**0.0666667**	**0.0666667**	**0**	**0**	**0.083333333**
	0.5871212	**0**	**0.0588235**	**0.875**	**0.0666667**	**0.1333333**	**0.0666667**	**0**	**0.05952381**
	0.6856061	**0**	**0.0588235**	**0.8578431**	**0.0041667**	**0.2**	**0.0666667**	**0**	**0.523809524**
	0.4772727	**0**	**0.0759804**	**0.8406863**	**0.0041667**	**0.2041667**	**0.0666667**	**0**	**0.69047619**
	0.3181818	**0**	**0.2107843**	**0.7647059**	**0.0041667**	**0.2041667**	**0.0666667**	**0**	**0.714285714**
	0.25	**0**	**0.1372549**	**0.6470588**	**0.0583333**	**0.2083333**	**0.0666667**	**0.05952381**	**0.714285714**
	0.2272727	**0**	**0.0612745**	**0.3529412**	**0.1833333**	**0.2083333**	**0.0666667**	**0.05952381**	**0.428571429**
	0.1590909	**0**	**0.25**	**0.1764706**	**0.2458333**	**0.0208333**	**0.0666667**	**0.273809524**	**0.285714286**
	0.0681818	**0**	**0.0833333**	**0.0588235**	**0.4333333**	**0.0875**	**0.0666667**	**0.547619048**	**0.285714286**
	0.0681818	**0**	**0.0416667**	**0.0588235**	**0.4333333**	**0.2208333**	**0.0666667**	**0.571428571**	**0.142857143**
	0.0681818	**0.0416667**	**2.22E-16**	**2.22E-16**	**0.4958333**	**0.2916667**	**0.1333333**	**0.571428571**	**2.22045E-16**
	0.0227273	**0.0833333**	**2.22E-16**	**2.22E-16**	**0.6208333**	**0.2333333**	**0.2**	**0.142857143**	**2.22045E-16**
	0.0227273	**0.1666667**	**2.22E-16**	**2.22E-16**	**0.6208333**	**0.3**	**0.2**	**0.142857143**	**2.22045E-16**
	0.0227273	**0.25**	**2.22E-16**	**2.22E-16**	**0.6833333**	**0.3666667**	**0.2**	**1.11022E-16**	**2.22045E-16**
	0.0227273	**0.375**	**2.22E-16**	**2.22E-16**	**0.7458333**	**0.3666667**	**0.2**	**1.11022E-16**	**2.22045E-16**
	0.0227273	**0.5**	**2.22E-16**	**2.22E-16**	**0.8708333**	**0.3666667**	**0.2041667**		
	0.0227273	**0.625**	**2.22E-16**	**2.22E-16**	**0.8708333**	**0.3041667**	**0.2041667**		
	0.0227273	**0.7573529**	**2.22E-16**	**2.22E-16**	**0.7375**	**0.3708333**	**0.2041667**		
	0.0227273	**0.7573529**	**2.22E-16**	**2.22E-16**	**0.7375**	**0.3708333**	**0.2708333**		
	0.0227273	**0.6813725**	**2.22E-16**	**2.22E-16**	**0.7375**	**0.3083333**	**0.3375**		
	0.0227273	**0.5465686**	**2.22E-16**	**2.22E-16**	**0.5375**	**0.3125**	**0.3375**		
	0.0227273	**0.4705882**	**2.22E-16**	**2.22E-16**	**0.5375**	**0.125**	**0.3375**		
	0.0227273	**0.2352941**	**2.22E-16**	**2.22E-16**	**0.4708333**	**0.0625**	**0.3375**		
	0.0227273	**0.2352941**	**2.22E-16**	**2.22E-16**	**0.4708333**	**0.0625**	**0.3375**		
	0.0227273	**0.0588235**	**2.22E-16**	**2.22E-16**	**0.4708333**	**0.0625**	**0.3375**		
	0.0227273	**0.0588235**	**2.22E-16**	**2.22E-16**	**0.4708333**	**0.0625**	**0.3375**		
	0.0227273	**0.0588235**	**2.22E-16**	**2.22E-16**	**0.4041667**	**0.0625**	**0.4041667**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.4041667**	**0.0625**	**0.4041667**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.3375**	**0.0625**	**0.4708333**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2708333**	**1.11E-16**	**0.4708333**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2708333**	**1.11E-16**	**0.5416667**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2708333**	**1.11E-16**	**0.5458333**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.5458333**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.3333333**	**1.11E-16**	**0.5458333**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.4833333**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.4833333**		
	0.0227273	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.55**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.55**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.4875**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.5541667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.5583333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2666667**	**1.11E-16**	**0.4958333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.2**	**1.11E-16**	**0.4333333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.1333333**	**1.11E-16**	**0.4333333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.1333333**	**1.11E-16**	**0.3083333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.1333333**	**1.11E-16**	**0.3083333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.0666667**	**1.11E-16**	**0.2458333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.0666667**	**1.11E-16**	**0.2458333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**0.0666667**	**1.11E-16**	**0.2458333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1833333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1833333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.1208333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0583333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0583333**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0041667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0041667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0041667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0041667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0041667**		
	0	**1.11E-16**	**2.22E-16**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**0.0041667**		
Test Statistic, $\alpha = 0.05$	0.3451131	0.4311226	0.4311226	0.4311226	0.4887808	0.4887808	0.4887808	0.646809017	0.646809017
Test Statistic, $\alpha = 0.01$	0.4136282	0.5167131	0.5167131	0.5167131	0.5858182	0.5858182	0.5858182	0.775219631	0.775219631

Appendix D.3: Spreadsheet for Domain (52 v 71)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0.0833333	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0.1666667	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0.25	**0**	**0**	**0.0833333**	**0**	**0**	**0**	**0**	**0.142857143**
	0.4166667	**0**	**0**	**0.2083333**	**0**	**0.0666667**	**0**	**0**	**0.142857143**
	0.4615385	**0**	**0**	**0.4583333**	**0**	**0.0666667**	**0**	**0**	**0.142857143**
	0.5865385	**0**	**0**	**0.6666667**	**0.0666667**	**0.0666667**	**0**	**0**	**0.142857143**
	0.7115385	**0**	**0**	**0.7083333**	**0.0666667**	**0.0666667**	**0**	**0**	**0.142857143**
	0.6378205	**0**	**0**	**0.775**	**0.0666667**	**0.1333333**	**0.0666667**	**0**	**0.142857143**
	0.650641	**0**	**0**	**0.5166667**	**0.0666667**	**0.2**	**0.0666667**	**0.142857143**	**0.428571429**
	0.4615385	**0**	**0.1583333**	**0.5583333**	**0.0444444**	**0.2666667**	**0.0666667**	**0.142857143**	**0.714285714**
	0.4230769	**0**	**0.3166667**	**0.6**	**0.1555556**	**0.2666667**	**0.0666667**	**0.142857143**	**0.714285714**
	0.3846154	**0**	**0.3666667**	**0.5**	**0.2666667**	**0.3333333**	**0.0666667**	**0**	**0.714285714**
	0.3461538	**0**	**0.0916667**	**0.4**	**0.3777778**	**0.3333333**	**0.0666667**	**0**	**0.428571429**
	0.2307692	**0**	**0.05**	**0.2**	**0.4888889**	**0.3333333**	**0.0666667**	**0.571428571**	**0.285714286**
	0.2307692	**0**	**0.0166667**	**0.1**	**0.4888889**	**0.4**	**0.0666667**	**0.714285714**	**0.285714286**
	0.2307692	**0**	**0.0416667**	**0.1**	**0.4888889**	**0.4222222**	**0.0666667**	**0.571428571**	**0.142857143**
	0.1538462	**0.0416667**	**1.11E-16**	**0.1**	**0.4888889**	**0.5555556**	**0.1333333**	**0.571428571**	**2.22045E-16**
	0.1153846	**0.0833333**	**1.11E-16**	**0.1**	**0.4888889**	**0.6222222**	**0.2**	**0.142857143**	**2.22045E-16**
	0.0384615	**0.1666667**	**1.11E-16**	**0.1**	**0.6**	**0.5777778**	**0.2**	**0.142857143**	**2.22045E-16**
	0.0384615	**0.25**	**1.11E-16**	**2.22E-16**	**0.6**	**0.5333333**	**0.2**	**1.11022E-16**	**2.22045E-16**
	0.0384615	**0.275**	**1.11E-16**	**2.22E-16**	**0.6**	**0.5333333**	**0.2**	**1.11022E-16**	**2.22045E-16**
	3.331E-16	**0.4**	**1.11E-16**	**2.22E-16**	**0.6**	**0.5333333**	**0.2666667**		
	3.331E-16	**0.525**	**1.11E-16**	**2.22E-16**	**0.6**	**0.3111111**	**0.2666667**		
	3.331E-16	**0.575**	**1.11E-16**	**2.22E-16**	**0.4666667**	**0.3777778**	**0.2666667**		
	3.331E-16	**0.575**	**1.11E-16**	**2.22E-16**	**0.6888889**	**0.2666667**	**0.3333333**		
	3.331E-16	**0.5166667**	**1.11E-16**	**2.22E-16**	**0.6888889**	**0.1555556**	**0.4**		
	3.331E-16	**0.3583333**	**1.11E-16**	**2.22E-16**	**0.4888889**	**0.2222222**	**0.4**		
	3.331E-16	**0.3**	**1.11E-16**	**2.22E-16**	**0.4888889**	**0.1111111**	**0.4**		
	3.331E-16	**0.2**	**1.11E-16**	**2.22E-16**	**0.5333333**	**0.1111111**	**0.4**		
	3.331E-16	**0.1**	**1.11E-16**	**2.22E-16**	**0.5333333**	**0.1111111**	**0.4**		
	3.331E-16	**0.1**	**1.11E-16**	**2.22E-16**	**0.5333333**	**0.1111111**	**0.4**		
	3.331E-16	**0.1**	**1.11E-16**	**2.22E-16**	**0.5333333**	**0.1111111**	**0.4**		
	3.331E-16	**0.1**	**1.11E-16**	**2.22E-16**	**0.4666667**	**0.1111111**	**0.4666667**		
	3.331E-16	**0.1**	**1.11E-16**	**2.22E-16**	**0.4666667**	**0.1111111**	**0.4666667**		
	3.331E-16	**0.1**	**1.11E-16**	**2.22E-16**	**0.4**	**0.1111111**	**0.5333333**		
	3.331E-16	**0.1**	**1.11E-16**	**2.22E-16**	**0.3333333**	**0.1111111**	**0.5333333**		
	3.331E-16	**0.1**	**1.11E-16**	**2.22E-16**	**0.3333333**	**0.1111111**	**0.6666667**		
	3.331E-16	**0.1**	**1.11E-16**	**2.22E-16**	**0.3333333**	**0.1111111**	**0.6222222**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.3333333**	**0.1111111**	**0.5111111**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.3333333**	**0.1111111**	**0.5111111**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.5111111**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.5111111**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.4666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.4666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.4666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.5333333**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.4888889**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2666667**	**3.331E-16**	**0.4888889**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.2**	**3.331E-16**	**0.4888889**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1333333**	**3.331E-16**	**0.3777778**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1333333**	**3.331E-16**	**0.3777778**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.1333333**	**3.331E-16**	**0.2666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.2666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.2666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0666667**	**3.331E-16**	**0.1555556**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.1555556**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.1555556**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0666667**		
	3.331E-16	**1.11E-16**	**1.11E-16**	**2.22E-16**	**1.11E-16**	**3.331E-16**	**0.0666667**		
Test Statistic, $\alpha = 0.05$	0.3849742	0.5118854	0.5118854	0.5118854	0.5734263	0.5734263	0.5734263	0.726950578	0.726950578
Test Statistic, $\alpha = 0.01$	0.4614029	0.6135097	0.6135097	0.6135097	0.6872683	0.6872683	0.6872683	0.871271649	0.871271649

Appendix D.3: Spreadsheet for Domain (52 v 72)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No Data from Domain 61**				**0**	**0.076628352**
	0							**0**	**0.042145594**
	0							**0**	**0.118773946**
	0							**0**	**0.019157088**
	0							**0**	**0.019157088**
	0							**0**	**0.053639847**
	0							**0**	**0.191570881**
	0.0152672							**0.111111111**	**0.107279693**
	0.0229008							**0.111111111**	**0.038314176**
	0.0500424							**0.076628352**	**0.0651341**
	0.0033927							**0.042145594**	**0.091954023**
	0.1653944							**0.01532567**	**0.264367816**
	0.0966921							**0.157088123**	**0**
	0.0856658							**0.030651341**	**0**
	0.0016964							**0.030651341**	**0**
	0.0016964							**0.203065134**	**0**
	0.0254453							**0.222222222**	**0**
	0.043257							**0**	**0**
	0.1195929							**0**	**0**
	0.1501272							**0**	**0**
	0.0619169							**0**	**0**
	0.1000848							**0**	**0**
	0.1229856							**0**	**0**
	0.1382528							**0**	**0**
	0.1535199								
	0.0500424								
	0.057676								
	0.0653096								
	0.0653096								
	0.0381679								
	0.0229008								
	0.0152672								
	0.0076336								
	0.0076336								
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Test Statistic, $\alpha = 0.05$	0.4686472							0.518932001	0.518932001
Test Statistic, $\alpha = 0.01$	0.5616874							0.621955266	0.621955266

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No data from Domain 61**				**0**	**0.111111111**
	0							**0**	**0.02020202**
	0							**0**	**0.131313131**
	0							**0**	**0.131313131**
	0							**0**	**0.04040404**
	0							**0**	**0.050505051**
	0							**0**	**0.050505051**
	0							**0.111111111**	**0.282828283**
	0.0181818							**0.111111111**	**0.080808081**
	0.0747475							**0.02020202**	**0.171717172**
	0.0383838							**0.161616162**	**0.151515152**
	0.2242424							**0.050505051**	**0.333333333**
	0.1151515							**0.050505051**	**0**
	0.0989899							**0.101010101**	**0**
	0.0646465							**0.171717172**	**0**
	0.0262626							**0.171717172**	**0**
	0.030303							**0.222222222**	**0**
	0.0242424							**0**	**0**
	0.0606061							**0**	**0**
	0.0969697							**0**	**0**
	0.0040404							**0**	**0**
	0.0222222							**0**	**0**
	0.040404							**0**	**0**
	0.0767677							**0**	**0**
	0.0949495								
	0.020202								
	0.020202								
	0.0383838								
	0.0747475								
	2.22E-16								
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	2.22E-16								
Test Statistic, $\alpha = 0.05$	0.4890196							0.611274542	0.611274542
Test Statistic, $\alpha = 0.01$	0.5861044							0.732630517	0.732630517

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No data from Domain 61**				**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0							**0**	**0.222222222**
	0							**0**	**0.145299145**
	0							**0**	**0.068376068**
	0							**0.111111111**	**0.324786325**
	0							**0.111111111**	**0.170940171**
	0.1111111							**0.111111111**	**0.017094017**
	0.0694444							**0.111111111**	**0.256410256**
	0.125							**0.145299145**	**0.333333333**
	0							**0.008547009**	**0**
	0.0277778							**0.136752137**	**0**
	0.0555556							**0.094017094**	**0**
	0.0694444							**0.213675214**	**0**
	0.125							**0.145299145**	**0**
	0.2083333							**0**	**0**
	0.25							**0**	**0**
	0.25							**0**	**0**
	0.2222222							**0**	**0**
	0.2222222							**0**	**0**
	0.2222222							**0**	**0**
	0.2222222							**0**	**0**
	0.2222222								
	0.1111111								
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Test Statistic, α = 0.05	0.5315805							0.589735563	0.589735563
Test Statistic, α = 0.01	0.6371148							0.706815417	0.706815417

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0			**No data from Domain 61**				**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0**	**0.222222222**
	0							**0**	**0.079365079**
	0							**0**	**0.079365079**
	0							**0**	**0.079365079**
	0							**0**	**0.063492063**
	0							**0.111111111**	**0.126984127**
	0							**0.111111111**	**0.301587302**
	0.1111111							**0.111111111**	**0.301587302**
	0.1111111							**0.111111111**	**0.333333333**
	0.3333333							**0.222222222**	**0.333333333**
	0.1904762							**0.063492063**	**0**
	0.3015873							**0.126984127**	**0**
	0.015873							**0.301587302**	**0**
	0.1269841							**0.444444444**	**0**
	0.0952381							**0.222222222**	**0**
	0.0952381							**0**	**0**
	0.1904762							**0**	**0**
	0.1904762							**0**	**0**
	0.0793651							**0**	**0**
	0.0793651							**0**	**0**
	0.0793651							**0**	**0**
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Test Statistic, α = 0.05	0.6853756							0.685375578	0.685375578
Test Statistic, α = 0.01	0.8214428							0.821442788	0.821442788

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							0	0
	0			No data from Domain 61				0	0.111111111
	0							0	0.111111111
	0							0	0.222222222
	0							0	0.222222222
	0							0	0.222222222
	0							0	0.222222222
	0.0227273							0	0.222222222
	0.0227273							0.111111111	0.555555556
	0.0454545							0.111111111	0.472222222
	0.0025253							0.111111111	0.472222222
	0.0934343							0.111111111	0.583333333
	0.0606061							0.222222222	0
	0.1893939							0.222222222	0.166666667
	0.2373737							0.444444444	0
	0.3055556							0.472222222	0
	0.2171717							0.472222222	0
	0.1742424							0.361111111	0
	0.2651515							0.166666667	0
	0.2651515							1.11022E-16	0
	0.2651515							1.11022E-16	0
	0.1994949							1.11022E-16	0
	0.1994949							1.11022E-16	0
	0.1994949							1.11022E-16	0
	0.1994949							1.11022E-16	0
	0.1994949								
	0.0883838								
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	0.0883838								
	0.0227273								
	0.0227273								
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	3.331E-16								
Test Statistic, $\alpha = 0.05$	0.4975414							0.599703631	0.599703631
Test Statistic, $\alpha = 0.01$	0.596318							0.71876244	0.71876244

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0							**0**	**0**
	0				**No data from Domain 61**			**0**	**0.111111111**
	0							**0**	**0.111111111**
	0							**0**	**0.222222222**
	0							**0**	**0.079365079**
	0							**0**	**0.079365079**
	0							**0**	**0.079365079**
	0							**0**	**0.079365079**
	0.0384615							**0.111111111**	**0.412698413**
	0.0384615							**0.111111111**	**0.412698413**
	0.0726496							**0.111111111**	**0.412698413**
	0.042735							**0.111111111**	**0.380952381**
	0.025641							**0.079365079**	**0.095238095**
	0.2051282							**0.079365079**	**0.142857143**
	0.1324786							**0.301587302**	**0**
	0.1709402							**0.412698413**	**0**
	0.0982906							**0.412698413**	**0**
	0.1025641							**0.063492063**	**0**
	0.1025641							**1.11022E-16**	**0**
	0.1025641							**1.11022E-16**	**0**
	0.1794872							**1.11022E-16**	**0**
	0.1068376							**1.11022E-16**	**0**
	0.1837607							**1.11022E-16**	**0**
	0.1837607							**1.11022E-16**	**0**
	0.1837607							**1.11022E-16**	**0**
	0.2222222								
	0.1111111								
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Test Statistic, $\alpha = 0.05$	0.5259749							0.685375578	0.685375578
Test Statistic, $\alpha = 0.01$	0.6303964							0.821442788	0.821442788

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.034482759**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.021943574**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.012539185**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.150470219**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.059561129**
	0	**0**	**0**	**0**	**0.0304965**	**0.0212766**	**0**	**0**	**0.003134796**
	0	**0**	**0**	**0.0088496**	**0.0184397**	**0.0212766**	**0**	**0**	**0.141065831**
	0.0152672	**0**	**0**	**0.0265487**	**0.0184397**	**0.0212766**	**0**	**0**	**0.175548589**
	0.0047189	**0**	**0**	**0.0619469**	**0.0397163**	**0.0120567**	**0**	**0**	**0.119122257**
	0.0247051	**0**	**0**	**0.0619469**	**0.0276596**	**0.0120567**	**0**	**0.056426332**	**0.106583072**
	0.0417765	**0**	**0**	**0.0451633**	**0.0914894**	**0.0120567**	**0**	**0.203761755**	**0.059561129**
	0.058848	**0**	**0.0344828**	**0.0637778**	**0.0914894**	**0.0120567**	**0**	**0.065830721**	**0.068965517**
	0.0184594	**0**	**0.009765**	**0.0907843**	**0.1553191**	**0.0120567**	**0.0212766**	**0.106583072**	**0**
	0.0133241	**0**	**0.0065609**	**0.066982**	**0.1219858**	**0.0120567**	**0.0212766**	**0.131661442**	**0**
	0.0663428	**0**	**0.0555386**	**0.1139762**	**0.1432624**	**0.0120567**	**0.0212766**	**0.141065831**	**0**
	0.0245663	**0**	**0.0091547**	**0.0048825**	**0.1432624**	**0.0120567**	**0.0212766**	**0.031347962**	**0**
	0.0048577	**0**	**0.1260299**	**0.0341776**	**0.1191489**	**0.0092199**	**0.0212766**	**0**	**0**
	0.0190146	**0**	**0.0695758**	**0.0546231**	**0.1070922**	**0.0092199**	**0.0638298**	**0**	**0**
	0.0589868	**0**	**0.063015**	**0.0297528**	**0.0737589**	**0.0092199**	**0.106383**	**0**	**0**
	0.0531575	**0**	**0.1090937**	**0.0027464**	**0.1163121**	**0.0304965**	**0.0730496**	**0**	**0**
	0.0578765	**0**	**0.058285**	**0.0372292**	**0.1375887**	**0.048227**	**0.0943262**	**0**	**0**
	0.0778626	**0**	**0.0013732**	**0.0013732**	**0.0588652**	**0.0056738**	**0.0943262**	**0**	**0**
	0.0825815	**0.0176991**	**0.0009155**	**0.0181569**	**0.0134752**	**0.0460993**	**0.0609929**	**0**	**0**
	0.0614851	**0.0353982**	**0.0181569**	**0.0181569**	**0.0106383**	**0.0765957**	**0.0489362**	**0**	**0**
	0.0585704	**0.0353982**	**0.0176991**	**0.0093073**	**0.0319149**	**0.0950355**	**0.0489362**		
	0.0298404	**0.0442478**	**0.0176991**	**0.0093073**	**0.0957447**	**0.0503546**	**0.0702128**		
	0.037474	**0.0447055**	**0.0088496**	**0.0093073**	**0.0503546**	**0.0347518**	**0.0702128**		
	0.0269257	**0.0624046**	**0**	**0.0265487**	**0.0163121**	**0.0865248**	**0.0914894**		
	0.0094379	**0.0805615**	**0**	**0.0265487**	**0.0475177**	**0.0624113**	**0.0914894**		
	0.0381679	**0.0646933**	**0**	**0.0265487**	**0.0687943**	**0.0929078**	**0.1007092**		
	0.0229008	**0.0758316**	**0**	**0.0265487**	**0.0780142**	**0.0141844**	**0.0673759**		
	0.0152672	**0.0263961**	**0**	**0.0176991**	**0.0326241**	**0.0099291**	**0.0673759**		
	0.0076336	**0.0556912**	**0**	**0.0176991**	**0.0326241**	**0.0326241**	**0.0886525**		
	0.0076336	**0.0248703**	**0**	**0.0088496**	**0.0340426**	**0.0673759**	**0.0553191**		
	2.22E-16	**0.1240464**	**0**	**0.0088496**	**0.012766**	**0.0460993**	**0.0553191**		
	2.22E-16	**0.07278**	**0**	**0.0088496**	**0.0297872**	**0.0368794**	**0.0858156**		
	2.22E-16	**0.0648459**	**0**	**1.11E-16**	**0.0035461**	**0.0276596**	**0.0858156**		
	2.22E-16	**0.0396704**	**0**	**1.11E-16**	**0.0056738**	**0.0148936**	**0.0191489**		
	2.22E-16	**0.0750687**	**0**	**1.11E-16**	**0.0269504**	**0.0148936**	**0.0475177**		
	2.22E-16	**0.0238023**	**0**	**1.11E-16**	**0.0269504**	**0.0148936**	**0.1141844**		
	2.22E-16	**0.0326518**	**0**	**1.11E-16**	**0.0269504**	**0.0361702**	**0.1382979**		
	2.22E-16	**0.0070186**	**0**	**1.11E-16**	**0.0269504**	**0.0787234**	**0.1382979**		
	2.22E-16	**0.0013732**	**0**	**1.11E-16**	**0.006383**	**0.0666667**	**0.1382979**		
	2.22E-16	**0.035856**	**0**	**1.11E-16**	**0.006383**	**0.0666667**	**0.1503546**		
	2.22E-16	**0.035856**	**0**	**1.11E-16**	**0.006383**	**0.0666667**	**0.1198582**		
	2.22E-16	**0.0181569**	**0**	**1.11E-16**	**0.0397163**	**0.0666667**	**0.077305**		
	2.22E-16	**0.0093073**	**0**	**1.11E-16**	**0.0397163**	**0.0333333**	**0.122695**		
	2.22E-16	**0.0093073**	**0**	**1.11E-16**	**0.051773**	**0.0333333**	**0.1347518**		
	2.22E-16	**0.0093073**	**0**	**1.11E-16**	**0.0304965**	**0.0333333**	**0.070922**		
	2.22E-16	**0.0093073**	**0**	**1.11E-16**	**0.0304965**	**0.0333333**	**0.0950355**		
	2.22E-16	**0.0265487**	**0**	**1.11E-16**	**0.0092199**	**0.0333333**	**0.0524823**		
	2.22E-16	**0.0265487**	**0**	**1.11E-16**	**0.0092199**	**0.0333333**	**0.0113475**		
	2.22E-16	**0.0265487**	**0**	**1.11E-16**	**0.0092199**	**0.0333333**	**0.0340426**		
	2.22E-16	**0.0265487**	**0**	**1.11E-16**	**0.0120567**	**2.22E-16**	**0.012766**		
	2.22E-16	**0.0265487**	**0**	**1.11E-16**	**0.0212766**	**2.22E-16**	**0.0035461**		
	2.22E-16	**0.0265487**	**0**	**1.11E-16**	**0.0212766**	**2.22E-16**	**0.0368794**		
	2.22E-16	**0.0265487**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0489362**		
	2.22E-16	**0.0265487**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0609929**		
	2.22E-16	**0.0176991**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0609929**		
	2.22E-16	**0.0176991**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0943262**		
	2.22E-16	**0.0176991**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0730496**		
	2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.051773**		
	2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.051773**		
	2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**1.11E-16**	**1.11E-16**	**2.22E-16**	**0.0851064**		
Test Statistic, α = 0.05	0.2185136	0.2196766	0.2196766	0.2196766	0.3178152	0.3178152	0.3178152	0.481585678	0.481585678
Test Statistic, α = 0.01	0.2618949	0.2632888	0.2632888	0.2632888	0.3809109	0.3809109	0.3809109	0.577194599	0.577194599

Appendix D.3: Spreadsheet for Domain (62v63)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.034482759**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.068965517**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.103448276**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.24137931**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.24137931**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.198938992**
	0	**0**	**0**	**0.0088496**	**0.0851064**	**0.0212766**	**0**	**0**	**0.25994695**
	0.0152672	**0**	**0**	**0.0265487**	**0.0851064**	**0.0212766**	**0**	**0**	**0.217506631**
	0.0229008	**0**	**0**	**0.0619469**	**0.106383**	**0.0212766**	**0**	**0**	**0.132625995**
	0.0610687	**0**	**0**	**0.0249099**	**0.1276596**	**0.0212766**	**0**	**0.034482759**	**0.082228117**
	0.0728372	**0**	**0**	**0.042609**	**0.3085106**	**0.0212766**	**0**	**0.068965517**	**0.164456233**
	0.0403944	**0**	**0**	**0.0957063**	**0.3085106**	**0.0212766**	**0**	**0.129973475**	**0.068965517**
	0.0966921	**0**	**0.0072108**	**0.1029171**	**0.2446809**	**0.0212766**	**0.0212766**	**0.148541114**	**0**
	0.057888	**0**	**0.042609**	**0.108489**	**0.2446809**	**0.0212766**	**0.0212766**	**0.106100796**	**0**
	0.0572519	**0**	**0.0376926**	**0.1107833**	**0.2234043**	**0.0212766**	**0.0212766**	**0.124668435**	**0**
	0.0677481	**0**	**0.1317601**	**0.1147165**	**0.2234043**	**0.0212766**	**0.0212766**	**0.01061008**	**0**
	0.1504453	**0**	**0.0583415**	**0.0488364**	**0.1808511**	**0.0425532**	**0.0212766**	**0.076923077**	**0**
	0.1650763	**0**	**0.0134382**	**0.0360538**	**0.1595745**	**0.0425532**	**0.0638298**	**0**	**0**
	0.1304071	**0**	**0.0078663**	**0.0022943**	**0.1595745**	**0.0425532**	**0.106383**	**0**	**0**
	0.0998728	**0**	**0.0039331**	**0.0691577**	**0.1170213**	**0.0638298**	**0.106383**	**0**	**0**
	0.1603053	**0**	**0.0055719**	**0.1061947**	**0.0957447**	**0.0851064**	**0.1276596**	**0**	**0**
	0.1221374	**0**	**0.0160603**	**0.0530973**	**0.0744681**	**0.1276596**	**0.1276596**	**0**	**0**
	0.0992366	**0.0176991**	**0.0353982**	**0.0353982**	**0.0531915**	**0.212766**	**0.1276596**	**0**	**0**
	0.0839695	**0.0353982**	**0.0353982**	**0.0353982**	**0.0106383**	**0.2765957**	**0.1489362**	**0**	**0**
	0.0687023	**0.0353982**	**0.0176991**	**0.0265487**	**0.0319149**	**0.3617021**	**0.1489362**		
	0.0610687	**0.0442478**	**0.0176991**	**0.0265487**	**0.0957447**	**0.1170213**	**0.1702128**		
	0.0534351	**0.0619469**	**0.0088496**	**0.0265487**	**0.3829787**	**0.0319149**	**0.1702128**		
	0.0458015	**0.079646**	**2.22E-16**	**0.0265487**	**0.3829787**	**0.0531915**	**0.1914894**		
	0.0458015	**0.1150442**	**2.22E-16**	**0.0265487**	**0.3191489**	**0.4042553**	**0.1914894**		
	0.0381679	**0.1311046**	**2.22E-16**	**0.0265487**	**0.2978723**	**0.3404255**	**0.2340426**		
	0.0229008	**0.1543756**	**2.22E-16**	**0.0265487**	**0.2553191**	**0.3191489**	**0.2340426**		
	0.0152672	**0.1317601**	**2.22E-16**	**0.0176991**	**0.2340426**	**0.2765957**	**0.2340426**		
	0.0076336	**0.1533923**	**2.22E-16**	**0.0176991**	**0.2340426**	**0.2340426**	**0.2553191**		
	0.0076336	**0.072763**	**2.22E-16**	**0.0088496**	**0.2340426**	**0.2340426**	**0.2553191**		
	2.22E-16	**0.0927565**	**2.22E-16**	**0.0088496**	**0.212766**	**0.212766**	**0.2553191**		
	2.22E-16	**0.0734186**	**2.22E-16**	**0.0088496**	**0.1702128**	**0.1702128**	**0.3191489**		
	2.22E-16	**0.0111439**	**2.22E-16**	**0**	**0.1702128**	**0.1276596**	**0.3191489**		
	2.22E-16	**0.1327434**	**2.22E-16**	**0**	**0.1276596**	**0.0851064**	**0.3191489**		
	2.22E-16	**0.0973451**	**2.22E-16**	**0**	**0.106383**	**0.0851064**	**0.3191489**		
	2.22E-16	**0.079646**	**2.22E-16**	**0**	**0.106383**	**0.0851064**	**0.3191489**		
	2.22E-16	**0.0707965**	**2.22E-16**	**0**	**0.106383**	**0.0638298**	**0.3617021**		
	2.22E-16	**0.0619469**	**2.22E-16**	**0**	**0.106383**	**0.0212766**	**0.3617021**		
	2.22E-16	**0.0530973**	**2.22E-16**	**0**	**0.106383**	**3.331E-16**	**0.3617021**		
	2.22E-16	**0.0530973**	**2.22E-16**	**0**	**0.106383**	**3.331E-16**	**0.3829787**		
	2.22E-16	**0.0530973**	**2.22E-16**	**0**	**0.106383**	**3.331E-16**	**0.4468085**		
	2.22E-16	**0.0353982**	**2.22E-16**	**0**	**0.106383**	**3.331E-16**	**0.4893617**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.106383**	**3.331E-16**	**0.0106383**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.0851064**	**3.331E-16**	**0.0319149**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.0638298**	**3.331E-16**	**0.0957447**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.0638298**	**3.331E-16**	**0.1382979**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.0425532**	**3.331E-16**	**0.1808511**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.0425532**	**3.331E-16**	**0.2446809**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.0425532**	**3.331E-16**	**0.2659574**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.0212766**	**3.331E-16**	**0.287234**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.0212766**	**3.331E-16**	**0.3297872**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0.0212766**	**3.331E-16**	**0.3297872**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.3510638**		
	2.22E-16	**0.0265487**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.3723404**		
	2.22E-16	**0.0176991**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.3723404**		
	2.22E-16	**0.0176991**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.1276596**		
	2.22E-16	**0.0176991**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.106383**		
	2.22E-16	**2.22E-16**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**2.22E-16**	**0**	**0**	**3.331E-16**	**0.0851064**		
Test Statistic, $\alpha = 0.05$	0.3019698	0.2913277	0.2913277	0.2913277	0.981913	0.981913	0.981913	0.453934173	0.453934173
Test Statistic, $\alpha = 0.01$	0.3619197	0.3491649	0.3491649	0.3491649	1.1768516	1.1768516	1.1768516	0.544053457	0.544053457

Appendix D.3: Spreadsheet for Domain (62v64)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.034482759**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.068965517**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.103448276**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.098522167**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.098522167**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.133004926**
	0	**0**	**0**	**0.0088496**	**0.0851064**	**0.0212766**	**0**	**0**	**0.128078818**
	0.0152672	**0**	**0**	**0.0984513**	**0.0851064**	**0.0212766**	**0**	**0**	**0.019704433**
	0.0229008	**0**	**0**	**0.0630531**	**0.106383**	**0.0212766**	**0**	**0**	**0.339901478**
	0.0610687	**0**	**0**	**0.0630531**	**0.1276596**	**0.0212766**	**0**	**0.034482759**	**0.236453202**
	0.1145038	**0**	**0**	**0.045354**	**0.1914894**	**0.0212766**	**0**	**0.068965517**	**0.24137931**
	0.1679389	**0**	**0**	**0.1172566**	**0.3085106**	**0.0212766**	**0**	**0.206896552**	**0.068965517**
	0.0937841	**0**	**0.0442478**	**0.0730088**	**0.2446809**	**0.0212766**	**0.0212766**	**0.093596059**	**0**
	0.2159215	**0**	**0.079646**	**0.0066372**	**0.2446809**	**0.0212766**	**0.0212766**	**0.157635468**	**0**
	0.0141767	**0**	**0.1858407**	**0.0320796**	**0.2234043**	**0.0212766**	**0.0212766**	**0.270935961**	**0**
	0.1286805	**0**	**0.2289823**	**0.1471239**	**0.2234043**	**0.0212766**	**0.0212766**	**0.24137931**	**0**
	0.0697928	**0**	**0.414823**	**0.2798673**	**0.1808511**	**0.0425532**	**0.0212766**	**0**	**0**
	0.1384951	**0**	**0.4402655**	**0.2787611**	**0.1595745**	**0.0425532**	**0.0638298**	**0**	**0**
	0.0708833	**0**	**0.0199115**	**0.0254425**	**0.1595745**	**0.0425532**	**0.106383**	**0**	**0**
	0.040349	**0**	**0.0099558**	**0.0188053**	**0.1170213**	**0.0638298**	**0.106383**	**0**	**0**
	0.0174482	**0**	**0.079646**	**0.1061947**	**0.0957447**	**0.0851064**	**0.1276596**	**0**	**0**
	0.0207197	**0**	**0.0530973**	**0.0530973**	**0.0744681**	**0.1276596**	**0.1276596**	**0**	**0**
	0.0436205	**0.0176991**	**0.0353982**	**0.0353982**	**0.0531915**	**0.212766**	**0.1276596**	**0**	**0**
	0.0588877	**0.0896018**	**0.0353982**	**0.0353982**	**0.0106383**	**0.2765957**	**0.1489362**	**0**	**0**
	0.0741549	**0.0896018**	**0.0176991**	**0.0265487**	**0.0319149**	**0.3617021**	**0.1489362**		
	0.0610687	**0.0807522**	**0.0176991**	**0.0265487**	**0.0957447**	**0.3829787**	**0.1702128**		
	0.0534351	**0.0630531**	**0.0088496**	**0.0265487**	**0.1170213**	**0.4680851**	**0.1702128**		
	0.0458015	**0.045354**	**0**	**0.0265487**	**0.3829787**	**0.5531915**	**0.1914894**		
	0.0458015	**0.0099558**	**0**	**0.0265487**	**0.3191489**	**0.5957447**	**0.1914894**		
	0.0381679	**0.0431416**	**0**	**0.0265487**	**0.2978723**	**0.6595745**	**0.2340426**		
	0.0229008	**0.0154867**	**0**	**0.0265487**	**0.2553191**	**0.6808511**	**0.2340426**		
	0.0152672	**0.1039823**	**0**	**0.0176991**	**0.2340426**	**0.7234043**	**0.2340426**		
	0.0076336	**0.1117257**	**0**	**0.0176991**	**0.2340426**	**0.2659574**	**0.2553191**		
	0.0076336	**0.2533186**	**0**	**0.0088496**	**0.2340426**	**0.2659574**	**0.2553191**		
	2.22E-16	**0.4214602**	**0**	**0.0088496**	**0.212766**	**0.212766**	**0.2553191**		
	2.22E-16	**0.4391593**	**0**	**0.0088496**	**0.1702128**	**0.1702128**	**0.3191489**		
	2.22E-16	**0.340708**	**0**	**0**	**0.1702128**	**0.1276596**	**0.1808511**		
	2.22E-16	**0.2422566**	**0**	**0**	**0.1276596**	**0.0851064**	**0.1808511**		
	2.22E-16	**0.1526549**	**0**	**0**	**0.106383**	**0.0851064**	**0.1808511**		
	2.22E-16	**0.079646**	**0**	**0**	**0.106383**	**0.0851064**	**0.1808511**		
	2.22E-16	**0.0707965**	**0**	**0**	**0.106383**	**0.0638298**	**0.1382979**		
	2.22E-16	**0.0619469**	**0**	**0**	**0.106383**	**0.0212766**	**0.1382979**		
	2.22E-16	**0.0530973**	**0**	**0**	**0.106383**	**3.331E-16**	**0.1382979**		
	2.22E-16	**0.0530973**	**0**	**0**	**0.106383**	**3.331E-16**	**0.1170213**		
	2.22E-16	**0.0530973**	**0**	**0**	**0.106383**	**3.331E-16**	**0.0531915**		
	2.22E-16	**0.0353982**	**0**	**0**	**0.106383**	**3.331E-16**	**0.0106383**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.106383**	**3.331E-16**	**0.0106383**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.0851064**	**3.331E-16**	**0.0319149**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.0638298**	**3.331E-16**	**0.0957447**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.0638298**	**3.331E-16**	**0.1382979**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.0425532**	**3.331E-16**	**0.1808511**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.0425532**	**3.331E-16**	**0.2446809**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.0425532**	**3.331E-16**	**0.2659574**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.0212766**	**3.331E-16**	**0.287234**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.0212766**	**3.331E-16**	**0.1702128**		
	2.22E-16	**0.0265487**	**0**	**0**	**0.0212766**	**3.331E-16**	**0.1702128**		
	2.22E-16	**0.0265487**	**0**	**0**	**0**	**3.331E-16**	**0.1489362**		
	2.22E-16	**0.0265487**	**0**	**0**	**0**	**3.331E-16**	**0.1276596**		
	2.22E-16	**0.0176991**	**0**	**0**	**0**	**3.331E-16**	**0.1276596**		
	2.22E-16	**0.0176991**	**0**	**0**	**0**	**3.331E-16**	**0.1276596**		
	2.22E-16	**0.0176991**	**0**	**0**	**0**	**3.331E-16**	**0.106383**		
	2.22E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0851064**		
	2.22E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0851064**		
Test Statistic, α = 0.05	0.5275866	0.4975622	0.4975622	0.4975622	0.981913	0.981913	0.981913	0.572719724	0.572719724
Test Statistic, α = 0.01	0.6323281	0.5963429	0.5963429	0.5963429	1.1768516	1.1768516	1.1768516	0.686421433	0.686421433

Appendix D.3: Spreadsheet for Domain (62v65)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.034482759**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.068965517**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.103448276**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.24137931**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.24137931**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.275862069**
	0.0227273	**0**	**0**	**0.0088496**	**0.0851064**	**0.0212766**	**0**	**0**	**0.413793103**
	0.0074601	**0**	**0**	**0.0265487**	**0.0851064**	**0.0212766**	**0**	**0**	**0.448275862**
	0.0225538	**0**	**0**	**0.0619469**	**0.106383**	**0.0212766**	**0**	**0**	**0.433908046**
	0.0525677	**0**	**0**	**0.0619469**	**0.1276596**	**0.0212766**	**0**	**0.034482759**	**0.537356322**
	0.0900416	**0**	**0.0588235**	**0.079646**	**0.1914894**	**0.0212766**	**0**	**0.068965517**	**0.675287356**
	0.1047883	**0**	**0.0588235**	**0.0739198**	**0.1289894**	**0.0212766**	**0**	**0.206896552**	**0.264367816**
	0.2860861	**0**	**0.0733993**	**0.0593441**	**0.1928191**	**0.0412234**	**0.0212766**	**0.379310345**	**0.166666667**
	0.3230396	**0**	**0.2144716**	**0.0213431**	**0.1928191**	**0.0412234**	**0.0212766**	**0.413793103**	**0**
	0.3072519	**0**	**0.2847475**	**0.0541385**	**0.1515957**	**0.1037234**	**0.0212766**	**0.502873563**	**0**
	0.2154754	**0**	**0.2930765**	**0.1249349**	**0.0265957**	**0.1037234**	**0.0212766**	**0.675287356**	**0**
	0.1996877	**0**	**0.460177**	**0.1686622**	**0.0066489**	**0.2699468**	**0.0212766**	**0.583333333**	**0**
	0.2218945	**0**	**0.3097345**	**0.1624154**	**0.1595745**	**0.2699468**	**0.0638298**	**0.166666667**	**0**
	0.1455586	**0**	**0.2300885**	**0.0916189**	**0.1595745**	**0.2699468**	**0.106383**	**1.11022E-16**	**0**
	0.1150243	**0**	**0.1150442**	**0.1061947**	**0.1795213**	**0.3111702**	**0.106383**	**1.11022E-16**	**0**
	0.1375781	**0**	**0.079646**	**0.1061947**	**0.2832447**	**0.4148936**	**0.1276596**	**1.11022E-16**	**0**
	0.0994101	**0**	**0.0530973**	**0.0530973**	**0.2619681**	**0.3723404**	**0.1276596**	**1.11022E-16**	**0**
	0.0765094	**0.0176991**	**0.0353982**	**0.0353982**	**0.3031915**	**0.287234**	**0.1276596**	**1.11022E-16**	**0**
	0.0612422	**0.0353982**	**0.0353982**	**0.0353982**	**0.3018617**	**0.2234043**	**0.1489362**	**1.11022E-16**	**0**
	0.045975	**0.0353982**	**0.0176991**	**0.0265487**	**0.4055851**	**0.1382979**	**0.0864362**		
	0.0383414	**0.0442478**	**0.0176991**	**0.0265487**	**0.3417553**	**0.1795213**	**0.1077128**		
	0.0307078	**0.0557002**	**0.0088496**	**0.0265487**	**0.3204787**	**0.0944149**	**0.1077128**		
	0.0230743	**0.038001**	**0**	**0.0265487**	**0.3204787**	**0.0093085**	**0.1289894**		
	0.0230743	**0.1202499**	**0**	**0.0265487**	**0.2566489**	**0.0292553**	**0.1289894**		
	0.0154407	**0.2436231**	**0**	**0.0265487**	**0.2353723**	**0.0279255**	**0.1715426**		
	0.0001735	**0.263925**	**0**	**0.0265487**	**0.1928191**	**0.1941489**	**0.1715426**		
	0.0074601	**0.4107236**	**0**	**0.0176991**	**0.1715426**	**0.2140957**	**0.1715426**		
	0.0150937	**0.2779802**	**0**	**0.0176991**	**0.1715426**	**0.1715426**	**0.1928191**		
	0.0150937	**0.3128579**	**0**	**0.0088496**	**0.1715426**	**0.1715426**	**0.1928191**		
	0.0227273	**0.1447163**	**0**	**0.0088496**	**0.150266**	**0.150266**	**0.1928191**		
	0.0227273	**0.1270172**	**0**	**0.0088496**	**0.1077128**	**0.1077128**	**0.2566489**		
	0.0227273	**0.159292**	**0**	**0**	**0.1077128**	**0.0651596**	**0.2566489**		
	0.0227273	**0.1327434**	**0**	**0**	**0.0651596**	**0.0226064**	**0.2566489**		
	0.0227273	**0.0973451**	**0**	**0**	**0.043883**	**0.0851064**	**0.2566489**		
	0.0227273	**0.079646**	**0**	**0**	**0.043883**	**0.0851064**	**0.1941489**		
	0.0227273	**0.0707965**	**0**	**0**	**0.043883**	**0.0638298**	**0.1742021**		
	0.0227273	**0.0619469**	**0**	**0**	**0.106383**	**0.0212766**	**0.1742021**		
	0.0227273	**0.0530973**	**0**	**0**	**0.106383**	**3.331E-16**	**0.1742021**		
	0.0227273	**0.0530973**	**0**	**0**	**0.106383**	**3.331E-16**	**0.1329787**		
	0.0227273	**0.0530973**	**0**	**0**	**0.106383**	**3.331E-16**	**0.1968085**		
	0.0227273	**0.0353982**	**0**	**0**	**0.106383**	**3.331E-16**	**0.2393617**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.106383**	**3.331E-16**	**0.2606383**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.0851064**	**3.331E-16**	**0.2194149**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.0638298**	**3.331E-16**	**0.2832447**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.0638298**	**3.331E-16**	**0.2632979**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.0425532**	**3.331E-16**	**0.2433511**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.0425532**	**3.331E-16**	**0.2446809**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.0425532**	**3.331E-16**	**0.2659574**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.0212766**	**3.331E-16**	**0.162234**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.0212766**	**3.331E-16**	**0.2047872**		
	3.331E-16	**0.0265487**	**0**	**0**	**0.0212766**	**3.331E-16**	**0.1422872**		
	3.331E-16	**0.0265487**	**0**	**0**	**0**	**3.331E-16**	**0.1635638**		
	3.331E-16	**0.0265487**	**0**	**0**	**0**	**3.331E-16**	**0.1848404**		
	3.331E-16	**0.0176991**	**0**	**0**	**0**	**3.331E-16**	**0.1223404**		
	3.331E-16	**0.0176991**	**0**	**0**	**0**	**3.331E-16**	**0.1223404**		
	3.331E-16	**0.0176991**	**0**	**0**	**0**	**3.331E-16**	**0.081117**		
	3.331E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0398936**		
	3.331E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0398936**		
	3.331E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0226064**		
	3.331E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0226064**		
	3.331E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0226064**		
	3.331E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0226064**		
	3.331E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0226064**		
	3.331E-16	**2.22E-16**	**0**	**0**	**0**	**3.331E-16**	**0.0226064**		
Test Statistic, $\alpha = 0.05$	0.2369714	0.3537911	0.3537911	0.3537911	0.3936409	0.3936409	0.3936409	0.466811143	0.466811143
Test Statistic, $\alpha = 0.01$	0.2840172	0.424029	0.424029	0.424029	0.4717902	0.4717902	0.4717902	0.559486885	0.559486885

Appendix D.3: Spreadsheet for Domain (62 v 71)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.034482759**
	0	**0**	**0**	**0**	**0.0425532**	**0**	**0**	**0**	**0.068965517**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.103448276**
	0	**0**	**0**	**0**	**0.0638298**	**0**	**0**	**0**	**0.098522167**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.098522167**
	0	**0**	**0**	**0**	**0.0638298**	**0.0212766**	**0**	**0**	**0.133004926**
	0	**0**	**0**	**0.0088496**	**0.0851064**	**0.0212766**	**0**	**0**	**0.270935961**
	0.0231944	**0**	**0**	**0.0265487**	**0.0851064**	**0.0212766**	**0**	**0**	**0.305418719**
	0.0155608	**0**	**0**	**0.0619469**	**0.106383**	**0.0212766**	**0**	**0**	**0.374384236**
	0.0226072	**0**	**0**	**0.0619469**	**0.1276596**	**0.0212766**	**0**	**0.034482759**	**0.477832512**
	0.0393423	**0**	**0**	**0.020354**	**0.1914894**	**0.0212766**	**0**	**0.068965517**	**0.472906404**
	0.1397534	**0**	**0**	**0.2672566**	**0.1914894**	**0.0212766**	**0**	**0.064039409**	**0.359605911**
	0.3018203	**0**	**0.1557522**	**0.2230088**	**0.144208**	**0.0212766**	**0.0212766**	**0.236453202**	**0.142857143**
	0.2181445	**0**	**0.320354**	**0.1433628**	**0.0330969**	**0.0212766**	**0.0212766**	**0.270935961**	**0**
	0.1726365	**0**	**0.5141593**	**0.0929204**	**0.0567376**	**0.0212766**	**0.0212766**	**0.443349754**	**0**
	0.0965942	**0**	**0.4460177**	**0.0778761**	**0.1678487**	**0.0212766**	**0.0212766**	**0.615763547**	**0**
	0.1280094	**0**	**0.260177**	**0.1451327**	**0.2364066**	**0.0425532**	**0.0212766**	**0.285714286**	**0**
	0.0593071	**0**	**0.2097345**	**0.1212389**	**0.21513**	**0.0425532**	**0.0638298**	**1.11022E-16**	**0**
	0.0170288	**0**	**0.2300885**	**0.0504425**	**0.21513**	**0.0685579**	**0.106383**	**1.11022E-16**	**0**
	0.02936	**0**	**0.1150442**	**0.0061947**	**0.1725768**	**0.0472813**	**0.106383**	**1.11022E-16**	**0**
	0.0449207	**0**	**0.079646**	**0.0061947**	**0.1513002**	**0.0260047**	**0.1276596**	**1.11022E-16**	**0**
	0.0836759	**0**	**0.0530973**	**0.0469027**	**0.2411348**	**0.0945626**	**0.1276596**	**1.11022E-16**	**0**
	0.0607751	**0.0176991**	**0.0353982**	**0.0353982**	**0.2198582**	**0.1205674**	**0.1276596**	**1.11022E-16**	**0**
	0.0455079	**0.0646018**	**0.0353982**	**0.0353982**	**0.1560284**	**0.0567376**	**0.1489362**	**1.11022E-16**	**0**
	0.0687023	**0.0646018**	**0.0176991**	**0.0265487**	**0.1347518**	**0.0283688**	**0.1489362**		
	0.0610687	**0.0557522**	**0.0176991**	**0.0265487**	**0.070922**	**0.1725768**	**0.1702128**		
	0.0534351	**0.2380531**	**0.0088496**	**0.0265487**	**0.0496454**	**0.0874704**	**0.1702128**		
	0.0458015	**0.220354**	**1.11E-16**	**0.0265487**	**0.2718676**	**0.1134752**	**0.1914894**		
	0.0458015	**0.2849558**	**1.11E-16**	**0.0265487**	**0.2080378**	**0.1820331**	**0.1914894**		
	0.0381679	**0.4318584**	**1.11E-16**	**0.0265487**	**0.1867612**	**0.1182033**	**0.2340426**		
	0.0229008	**0.4345133**	**1.11E-16**	**0.0265487**	**0.144208**	**0.2080378**	**0.2340426**		
	0.0152672	**0.4460177**	**1.11E-16**	**0.0176991**	**0.2340426**	**0.1654846**	**0.2340426**		
	0.0076336	**0.4132743**	**1.11E-16**	**0.0176991**	**0.2340426**	**0.1229314**	**0.2553191**		
	0.0076336	**0.2716814**	**1.11E-16**	**0.0088496**	**0.2340426**	**0.1229314**	**0.2553191**		
	0	**0.1035398**	**1.11E-16**	**0.0088496**	**0.212766**	**0.1016548**	**0.2553191**		
	0	**0.0858407**	**1.11E-16**	**0.0088496**	**0.1702128**	**0.0591017**	**0.3191489**		
	0	**0.059292**	**1.11E-16**	**0**	**0.1702128**	**0.0165485**	**0.3191489**		
	0	**0.0327434**	**1.11E-16**	**0**	**0.1276596**	**0.0260047**	**0.3191489**		
	0	**0.0026549**	**1.11E-16**	**0**	**0.106383**	**0.0260047**	**0.3191489**		
	0	**0.020354**	**1.11E-16**	**0**	**0.106383**	**0.0260047**	**0.3191489**		
	0	**0.0292035**	**1.11E-16**	**0**	**0.106383**	**0.0472813**	**0.250591**		
	0	**0.0619469**	**1.11E-16**	**0**	**0.106383**	**0.0898345**	**0.1394799**		
	0	**0.0530973**	**1.11E-16**	**0**	**0.106383**	**0.1111111**	**0.1394799**		
	0	**0.0530973**	**1.11E-16**	**0**	**0.106383**	**5.551E-16**	**0.1607565**		
	0	**0.0530973**	**1.11E-16**	**0**	**0.106383**	**5.551E-16**	**0.2245863**		
	0	**0.0353982**	**1.11E-16**	**0**	**0.106383**	**5.551E-16**	**0.1560284**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.106383**	**5.551E-16**	**0.177305**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.0851064**	**5.551E-16**	**0.1985816**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.0638298**	**5.551E-16**	**0.2624113**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.0638298**	**5.551E-16**	**0.1938534**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.0425532**	**5.551E-16**	**0.2364066**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.0425532**	**5.551E-16**	**0.3002364**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.0425532**	**5.551E-16**	**0.2104019**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.0212766**	**5.551E-16**	**0.2316785**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.0212766**	**5.551E-16**	**0.1631206**		
	0	**0.0265487**	**1.11E-16**	**0**	**0.0212766**	**5.551E-16**	**0.1631206**		
	0	**0.0265487**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.1843972**		
	0	**0.0265487**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0945626**		
	0	**0.0176991**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0945626**		
	0	**0.0176991**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0945626**		
	0	**0.0176991**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.106383**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0851064**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0851064**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0851064**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0851064**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0851064**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0851064**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0851064**		
	0	**2.22E-16**	**1.11E-16**	**0**	**0**	**5.551E-16**	**0.0851064**		
Test Statistic, $\alpha = 0.05$	0.2919889	0.448696	0.448696	0.448696	0.4948377	0.4948377	0.4948377	0.572719724	0.572719724
Test Statistic, $\alpha = 0.01$	0.3499573	0.5377754	0.5377754	0.5377754	0.5930775	0.5930775	0.5930775	0.686421433	0.686421433

Appendix D.3: Spreadsheet for Domain (62 v 72)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.181818182**
	0	**0**	**0**	**0**	**0.0333333**	**0**	**0**	**0**	**0.195804196**
	0	**0**	**0**	**0**	**0.0666667**	**0**	**0**	**0**	**0.118881119**
	0	**0**	**0**	**0**	**0.0666667**	**0**	**0**	**0**	**0.041958042**
	0.0181818	**0**	**0**	**0**	**0.0666667**	**0.0333333**	**0**	**0**	**0.251748252**
	0.0363636	**0**	**0**	**0.037037**	**0.1**	**0.0333333**	**0**	**0.090909091**	**0.188811189**
	0.0310606	**0**	**0**	**0.0025543**	**0.4**	**0.0333333**	**0**	**0.272727273**	**0.104895105**
	0.0992424	**0**	**0.0344828**	**0.0319285**	**0.4**	**0.0333333**	**0**	**0.195804196**	**0**
	0.1151515	**0**	**0.0025543**	**0.0121328**	**0.4**	**0.0333333**	**0**	**0.041958042**	**0**
	0.0712121	**0**	**0.0491699**	**0.041507**	**0.3666667**	**0.0333333**	**0**	**0.237762238**	**0**
	0.0090909	**0**	**0.0932312**	**0.0031928**	**0.3666667**	**0.0333333**	**0**	**0.265734266**	**0**
	0.0431818	**0**	**0.1226054**	**0.109834**	**0.3666667**	**0.0333333**	**0**	**0.041958042**	**0**
	0.155303	**0**	**0.0676884**	**0.083014**	**0.3**	**0.0333333**	**0**	**0.076923077**	**0**
	0.1840909	**0**	**0.083014**	**0.0906769**	**0.2666667**	**0.0333333**	**0**	**0**	**0**
	0.1893939	**0**	**0.0708812**	**0.0274585**	**0.2333333**	**0.0333333**	**0**	**0**	**0**
	0.1530303	**0**	**0.1130268**	**0.0664112**	**0.2333333**	**0.0333333**	**0.0333333**	**0**	**0**
	0.2181818	**0**	**0.063857**	**0.0689655**	**0.2333333**	**0.1333333**	**0.0333333**	**0**	**0**
	0.2	**0**	**0.0146871**	**0.0517241**	**0.1333333**	**0.1333333**	**0.0333333**	**0**	**0**
	0.1818182	**0**	**0.0344828**	**0.0172414**	**0.0666667**	**0.1666667**	**0.0666667**	**0**	**0**
	0.1454545	**0**	**0.0172414**	**0.0172414**	**0**	**0.2**	**0.1**	**0**	**0**
	0.1272727	**0**	**2.22E-16**	**0.0172414**	**0**	**0.2666667**	**0.1**		
	0.0909091	**0**	**2.22E-16**	**0.0172414**	**0**	**0.0666667**	**0.1**		
	0.0909091	**0.0172414**	**2.22E-16**	**0.0172414**	**0.4333333**	**0.0666667**	**0.1**		
	0.0727273	**0.0172414**	**2.22E-16**	**1.11E-16**	**0.3666667**	**0.0333333**	**0.1**		
	0.0363636	**0.0344828**	**2.22E-16**	**1.11E-16**	**0.3666667**	**0.4666667**	**0.1**		
	0	**0.0664112**	**2.22E-16**	**1.11E-16**	**0.3666667**	**0.4333333**	**0.1333333**		
	0	**0.0785441**	**2.22E-16**	**1.11E-16**	**0.3333333**	**0.3333333**	**0.1666667**		
	0	**0.105364**	**2.22E-16**	**1.11E-16**	**0.2666667**	**0.2666667**	**0.1666667**		
	0	**0.0977011**	**2.22E-16**	**1.11E-16**	**0.2666667**	**0.2666667**	**0.1666667**		
	0	**0.0478927**	**2.22E-16**	**1.11E-16**	**0.2**	**0.1666667**	**0.2**		
	0	**0.0312899**	**2.22E-16**	**1.11E-16**	**0.2**	**0.1666667**	**0.2**		
	0	**0.0006386**	**2.22E-16**	**1.11E-16**	**0.2**	**0.1333333**	**0.2333333**		
	0	**0.0759898**	**2.22E-16**	**1.11E-16**	**0.1666667**	**0.1**	**0.2333333**		
	0	**0.1724138**	**2.22E-16**	**1.11E-16**	**0.1333333**	**0.1**	**0.3**		
	0	**0.1724138**	**2.22E-16**	**1.11E-16**	**0.1333333**	**0.1**	**0.3666667**		
	0	**0.1034483**	**2.22E-16**	**1.11E-16**	**0.1333333**	**0.1**	**0.4333333**		
	0	**0.1034483**	**2.22E-16**	**1.11E-16**	**0.1333333**	**0.1**	**0.5**		
	0	**0.0689655**	**2.22E-16**	**1.11E-16**	**0.1333333**	**0.1**	**0.5**		
	0	**0.0517241**	**2.22E-16**	**1.11E-16**	**0.1**	**0.0666667**	**0.5**		
	0	**0.0172414**	**2.22E-16**	**1.11E-16**	**0.1**	**0.0666667**	**0.5333333**		
	0	**0.0172414**	**2.22E-16**	**1.11E-16**	**0.1**	**0.0666667**	**0.5666667**		
	0	**0.0172414**	**2.22E-16**	**1.11E-16**	**0.0666667**	**0.0666667**	**0.5666667**		
	0	**0.0172414**	**2.22E-16**	**1.11E-16**	**0.0666667**	**0.0333333**	**0.1333333**		
	0	**0.0172414**	**2.22E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.1666667**		
	0	**0.0172414**	**2.22E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.1666667**		
	0	**0.0172414**	**2.22E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.3**		
	0	**0**	**2.22E-16**	**1.11E-16**	**0.0333333**	**1.11E-16**	**0.3**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.3333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.3666667**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.4**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.4333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.4333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
	0	**0**	**2.22E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
Test Statistic, α = 0.05	0.3327097	0.3168491	0.3168491	0.3168491	0.9932036	0.9932036	0.9932036	0.557155613	0.557155613
Test Statistic, α = 0.01	0.3987624	0.379753	0.379753	0.379753	1.1903837	1.1903837	1.1903837	0.66776739	0.66776739

Appendix D.3: Spreadsheet for Domain (63v64)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.051948052**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.038961039**
0	**0**	**0**	**0**	**0.0333333**	**0**	**0**	**0**	**0.12987013**
0	**0**	**0**	**0**	**0.0666667**	**0**	**0**	**0**	**0.012987013**
0	**0**	**0**	**0.125**	**0.0666667**	**0**	**0**	**0**	**0.155844156**
0.0181818	**0**	**0**	**0.125**	**0.0666667**	**0.0333333**	**0**	**0**	**0.220779221**
0.0363636	**0**	**0**	**0.125**	**0.1**	**0.0333333**	**0**	**0.090909091**	**0.12987013**
0.0727273	**0**	**0**	**0.0905172**	**0.1**	**0.0333333**	**0**	**0.272727273**	**0.181818182**
0.1090909	**0**	**0.0344828**	**0.1810345**	**0.4**	**0.0333333**	**0**	**0.272727273**	**0**
0.0753247	**0**	**0.0344828**	**0.1637931**	**0.4**	**0.0333333**	**0**	**0.012987013**	**0**
0.2025974	**0**	**0.0862069**	**0.0603448**	**0.3666667**	**0.0333333**	**0**	**0.025974026**	**0**
0.0805195	**0**	**0.2413793**	**0.0818966**	**0.3666667**	**0.0333333**	**0**	**0.12987013**	**0**
0.1532468	**0**	**0.2198276**	**0.1422414**	**0.3666667**	**0.0333333**	**0**	**0.272727273**	**0**
0.0649351	**0**	**0.2887931**	**0.2456897**	**0.3**	**0.0333333**	**0**	**0**	**0**
0.1194805	**0**	**0.3706897**	**0.2241379**	**0.2666667**	**0.0333333**	**0**	**0**	**0**
0.1298701	**0**	**0.0431034**	**0.0043103**	**0.2333333**	**0.0333333**	**0**	**0**	**0**
0.0935065	**0**	**0.0991379**	**0.0215517**	**0.2333333**	**0.0333333**	**0.0333333**	**0**	**0**
0.0753247	**0**	**0.137931**	**0.0689655**	**0.2333333**	**0.1333333**	**0.0333333**	**0**	**0**
0.0571429	**0**	**0.0517241**	**0.0517241**	**0.1333333**	**0.1333333**	**0.0333333**	**0**	**0**
0.038961	**0**	**0.0344828**	**0.0172414**	**0.0666667**	**0.1666667**	**0.0666667**	**0**	**0**
0.0025974	**0.125**	**0.0172414**	**0.0172414**	**0**	**0.2**	**0.1**	**0**	**0**
0.0155844	**0.125**	**0**	**0.0172414**	**0**	**0.2666667**	**0.1**		
0.0909091	**0.125**	**0**	**0.0172414**	**0**	**0.4333333**	**0.1**		
0.0909091	**0.1077586**	**0**	**0.0172414**	**0.0666667**	**0.4333333**	**0.1**		
0.0727273	**0.1077586**	**0**	**1.11E-16**	**0.3666667**	**0.4666667**	**0.1**		
0.0363636	**0.0905172**	**0**	**1.11E-16**	**0.3666667**	**0.5333333**	**0.1**		
0	**0.0215517**	**0**	**1.11E-16**	**0.3666667**	**0.5666667**	**0.1333333**		
0	**0.0603448**	**0**	**1.11E-16**	**0.3333333**	**0.6666667**	**0.1666667**		
0	**0.0775862**	**0**	**1.11E-16**	**0.2666667**	**0.7333333**	**0.1666667**		
0	**0.0560345**	**0**	**1.11E-16**	**0.2666667**	**0.2333333**	**0.1666667**		
0	**0.2284483**	**0**	**1.11E-16**	**0.2**	**0.3333333**	**0.2**		
0	**0.2974138**	**0**	**1.11E-16**	**0.2**	**0.1666667**	**0.2**		
0	**0.3663793**	**0**	**1.11E-16**	**0.2**	**0.1333333**	**0.2333333**		
0	**0.2758621**	**0**	**1.11E-16**	**0.1666667**	**0.1**	**0.2666667**		
0	**0.2025862**	**0**	**1.11E-16**	**0.1333333**	**0.1**	**0.2**		
0	**0.0775862**	**0**	**1.11E-16**	**0.1333333**	**0.1**	**0.1333333**		
0	**0.1034483**	**0**	**1.11E-16**	**0.1333333**	**0.1**	**0.0666667**		
0	**0.1034483**	**0**	**1.11E-16**	**0.1333333**	**0.1**	**5.551E-17**		
0	**0.0689655**	**0**	**1.11E-16**	**0.1333333**	**0.1**	**5.551E-17**		
0	**0.0517241**	**0**	**1.11E-16**	**0.1**	**0.0666667**	**5.551E-17**		
0	**0.0172414**	**0**	**1.11E-16**	**0.1**	**0.0666667**	**0.0333333**		
0	**0.0172414**	**0**	**1.11E-16**	**0.1**	**0.0666667**	**0.0666667**		
0	**0.0172414**	**0**	**1.11E-16**	**0.0666667**	**0.0666667**	**0.0666667**		
0	**0.0172414**	**0**	**1.11E-16**	**0.0666667**	**0.0333333**	**0.1333333**		
0	**0.0172414**	**0**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.1666667**		
0	**0.0172414**	**0**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.1666667**		
0	**0.0172414**	**0**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2333333**		
0	**0**	**0**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2333333**		
0	**0**	**0**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2333333**		
0	**0**	**0**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.3**		
0	**0**	**0**	**1.11E-16**	**0.0333333**	**1.11E-16**	**0.3**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.1666667**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.1333333**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.1**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0666667**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**0.0333333**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		
0	**0**	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**1.11E-16**		

Test Statistic, $\alpha = 0.05$	0.5457634	0.5129227	0.5129227	0.5129227	0.9932036	0.9932036	0.9932036	0.657551539	0.657551539
Test Statistic, $\alpha = 0.01$	0.6541135	0.6147529	0.6147529	0.6147529	1.1903837	1.1903837	1.1903837	0.788094859	0.788094859

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.090909091
	0	0	0	0	0	0	0	0	0.181818182
	0	0	0	0	0.0333333	0	0	0	0.272727273
	0.0227273	0	0	0	0.0666667	0	0	0	0.272727273
	0.0227273	0	0	0	0.0666667	0	0	0	0.272727273
	0.0272727	0	0	0	0.0666667	0.0333333	0	0	0.553030303
	0.0772727	0	0	0	0.1	0.0333333	0	0.090909091	0.643939394
	0.1318182	0	0.0588235	0.0344828	0.1	0.0333333	0	0.272727273	0.734848485
	0.1636364	0	0.0243408	0.010142	0.0375	0.0333333	0	0.272727273	0.333333333
	0.3045455	0	0.0831643	0.0314402	0.0375	0.0291667	0	0.272727273	0.166666667
	0.3363636	0	0.2079108	0.0456389	0.0708333	0.0291667	0	0.545454545	0
	0.2409091	0	0.2292089	0.0598377	0.0083333	0.0916667	0	0.643939394	0
	0.1909091	0	0.3022312	0.1298174	0.1166667	0.0916667	0	0.643939394	0
	0.2045455	0	0.5862069	0.2028398	0.1125	0.2791667	0	0.583333333	0
	0.2409091	0	0.3793103	0.2170385	0.2666667	0.2791667	0	0.166666667	0
	0.2045455	0	0.2931034	0.0618661	0.2333333	0.2791667	0	1.11022E-16	0
	0.1681818	0	0.2241379	0.1034483	0.2958333	0.3416667	0.0333333	1.11022E-16	0
	0.1954545	0	0.137931	0.0689655	0.4208333	0.3666667	0.0333333	1.11022E-16	0
	0.1772727	0	0.0517241	0.0517241	0.3208333	0.3666667	0.0333333	1.11022E-16	0
	0.1590909	0	0.0344828	0.0172414	0.3166667	0.3333333	0.0666667	1.11022E-16	0
	0.1227273	0	0.0172414	0.0172414	0.3125	0.3	0.1	1.11022E-16	0
	0.1045455	0	0	0.0172414	0.4375	0.2333333	0.0375		
	0.0681818	0	0	0.0172414	0.4375	0.1291667	0.0375		
	0.0681818	0.1004057	0	0.0172414	0.3708333	0.1291667	0.0375		
	0.05	0.1004057	0	1.11E-16	0.3041667	0.0958333	0.0375		
	0.0136364	0.2008114	0	1.11E-16	0.3041667	0.0916667	0.0375		
	0.0227273	0.3083164	0	1.11E-16	0.3041667	0.1208333	0.0708333		
	0.0227273	0.3397566	0	1.11E-16	0.2708333	0.2083333	0.1041667		
	0.0227273	0.4371197	0	1.11E-16	0.2041667	0.2041667	0.1041667		
	0.0227273	0.3336714	0	1.11E-16	0.2041667	0.2041667	0.1041667		
	0.0227273	0.3377282	0	1.11E-16	0.1375	0.1041667	0.1375		
	0.0227273	0.2687627	0	1.11E-16	0.1375	0.1041667	0.1375		
	0.0227273	0.1997972	0	1.11E-16	0.1375	0.0708333	0.1708333		
	0.0227273	0.2241379	0	1.11E-16	0.1041667	0.0375	0.1708333		
	0.0227273	0.1724138	0	1.11E-16	0.0708333	0.0375	0.2375		
	0.0227273	0.1724138	0	1.11E-16	0.0708333	0.1	0.3041667		
	0.0227273	0.1034483	0	1.11E-16	0.0708333	0.1	0.3083333		
	0.0227273	0.1034483	0	1.11E-16	0.0708333	0.1	0.3125		
	0.0227273	0.0689655	0	1.11E-16	0.1333333	0.1	0.3125		
	0.0227273	0.0517241	0	1.11E-16	0.1	0.0666667	0.3125		
	0.0227273	0.0172414	0	1.11E-16	0.1	0.0666667	0.2833333		
	0.0227273	0.0172414	0	1.11E-16	0.1	0.0666667	0.3166667		
	0.0227273	0.0172414	0	1.11E-16	0.0666667	0.0666667	0.3166667		
	1.11E-16	0.0172414	0	1.11E-16	0.0666667	0.0333333	0.3833333		
	1.11E-16	0.0172414	0	1.11E-16	0.0333333	0.0333333	0.3541667		
	1.11E-16	0.0172414	0	1.11E-16	0.0333333	0.0333333	0.3541667		
	1.11E-16	0.0172414	0	1.11E-16	0.0333333	0.0333333	0.3583333		
	1.11E-16	0	0	1.11E-16	0.0333333	0.0333333	0.2958333		
	1.11E-16	0	0	1.11E-16	0.0333333	0.0333333	0.2333333		
	1.11E-16	0	0	1.11E-16	0.0333333	0.0333333	0.3		
	1.11E-16	0	0	1.11E-16	0.0333333	1.11E-16	0.175		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.2083333		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.1791667		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.2125		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.2458333		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.1833333		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.2166667		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.1541667		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0916667		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0916667		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0625		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0625		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0625		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0625		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0625		
	1.11E-16	0	0	1.11E-16	1.11E-16	1.11E-16	0.0625		
Test Statistic, $\alpha = 0.05$	0.2750735	0.3750862	0.3750862	0.3750862	0.4210146	0.4210146	0.4210146	0.567696035	0.567696035
Test Statistic, $\alpha = 0.01$	0.3296837	0.4495518	0.4495518	0.4495518	0.5045984	0.5045984	0.5045984	0.680400395	0.680400395

Appendix D.3: Spreadsheet for Domain (63 v 71)

w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.090909091**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.051948052**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.038961039**
0	**0**	**0**	**0**	**0.0333333**	**0**	**0**	**0**	**0.12987013**
0	**0**	**0**	**0**	**0.0666667**	**0**	**0**	**0**	**0.12987013**
0.0384615	**0**	**0**	**0**	**0.0666667**	**0**	**0**	**0**	**0.12987013**
0.0202797	**0**	**0**	**0**	**0.0666667**	**0.0333333**	**0**	**0**	**0.493506494**
0.0020979	**0**	**0**	**0**	**0.1**	**0.0333333**	**0**	**0.090909091**	**0.584415584**
0.0811189	**0**	**0**	**0.0655172**	**0.1**	**0.0333333**	**0**	**0.272727273**	**0.532467532**
0.1986014	**0**	**0.0344828**	**0.3310345**	**0.1**	**0.0333333**	**0**	**0.12987013**	**0.428571429**
0.3202797	**0**	**0.1655172**	**0.3137931**	**0.0111111**	**0.0333333**	**0**	**0.12987013**	**0.142857143**
0.2314685	**0**	**0.3137931**	**0.2103448**	**0.0888889**	**0.0333333**	**0**	**0.402597403**	**0**
0.1062937	**0**	**0.4586207**	**0.2068966**	**0.2**	**0.0333333**	**0**	**0.584415584**	**0**
0.072028	**0**	**0.4551724**	**0.0827586**	**0.3111111**	**0.0333333**	**0**	**0.584415584**	**0**
0.1328671	**0**	**0.3862069**	**0.1793103**	**0.3555556**	**0.0333333**	**0**	**0.285714286**	**0**
0.0783217	**0**	**0.2793103**	**0.1758621**	**0.3222222**	**0.0333333**	**0**	**1.11022E-16**	**0**
0.041958	**0**	**0.2931034**	**0.0206897**	**0.2888889**	**0.0777778**	**0**	**1.11022E-16**	**0**
0.0825175	**0**	**0.2241379**	**0.0034483**	**0.2888889**	**0.0777778**	**0.0333333**	**1.11022E-16**	**0**
0.1027972	**0**	**0.137931**	**0.0310345**	**0.2888889**	**0.0222222**	**0.0333333**	**1.11022E-16**	**0**
0.1615385	**0**	**0.0517241**	**0.0482759**	**0.3**	**0.0888889**	**0.0333333**	**1.11022E-16**	**0**
0.1433566	**0**	**0.0344828**	**0.0172414**	**0.2333333**	**0.1666667**	**0.0666667**	**1.11022E-16**	**0**
0.106993	**0.1**	**0.0172414**	**0.0172414**	**0.1666667**	**0.1333333**	**0.1**	**1.11022E-16**	**0**
0.1272727	**0.1**	**1.11E-16**	**0.0172414**	**0.1666667**	**0.0666667**	**0.1**		
0.0909091	**0.1**	**1.11E-16**	**0.0172414**	**0.1666667**	**0.1222222**	**0.1**		
0.0909091	**0.2827586**	**1.11E-16**	**0.0172414**	**0.1**	**0.1222222**	**0.1**		
0.0727273	**0.2827586**	**1.11E-16**	**1.11E-16**	**0.2555556**	**0.2**	**0.1**		
0.0363636	**0.3655172**	**1.11E-16**	**1.11E-16**	**0.2555556**	**0.2444444**	**0.1**		
2.22E-16	**0.4965517**	**1.11E-16**	**1.11E-16**	**0.2555556**	**0.2111111**	**0.1333333**		
2.22E-16	**0.5103448**	**1.11E-16**	**1.11E-16**	**0.2222222**	**0.2222222**	**0.1666667**		
2.22E-16	**0.4724138**	**1.11E-16**	**1.11E-16**	**0.2666667**	**0.1555556**	**0.1666667**		
2.22E-16	**0.4689655**	**1.11E-16**	**1.11E-16**	**0.2666667**	**0.1555556**	**0.1666667**		
2.22E-16	**0.2965517**	**1.11E-16**	**1.11E-16**	**0.2**	**0.0555556**	**0.2**		
2.22E-16	**0.2275862**	**1.11E-16**	**1.11E-16**	**0.2**	**0.0555556**	**0.2**		
2.22E-16	**0.1586207**	**1.11E-16**	**1.11E-16**	**0.2**	**0.0222222**	**0.2333333**		
2.22E-16	**0.1241379**	**1.11E-16**	**1.11E-16**	**0.1666667**	**0.0111111**	**0.2333333**		
2.22E-16	**0.0724138**	**1.11E-16**	**1.11E-16**	**0.1333333**	**0.0111111**	**0.3**		
2.22E-16	**0.0724138**	**1.11E-16**	**1.11E-16**	**0.1333333**	**0.0111111**	**0.3666667**		
2.22E-16	**0.0034483**	**1.11E-16**	**1.11E-16**	**0.1333333**	**0.0111111**	**0.4333333**		
2.22E-16	**0.0034483**	**1.11E-16**	**1.11E-16**	**0.1333333**	**0.0111111**	**0.3888889**		
2.22E-16	**0.0689655**	**1.11E-16**	**1.11E-16**	**0.1333333**	**0.0111111**	**0.2777778**		
2.22E-16	**0.0517241**	**1.11E-16**	**1.11E-16**	**0.1**	**0.0444444**	**0.2777778**		
2.22E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.1**	**0.0666667**	**0.3111111**		
2.22E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.1**	**0.0666667**	**0.3444444**		
2.22E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.0666667**	**0.0666667**	**0.2333333**		
2.22E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.0666667**	**0.0333333**	**0.3**		
2.22E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.3333333**		
2.22E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.3333333**		
2.22E-16	**0.0172414**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2888889**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2888889**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2888889**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**0.0333333**	**0.0333333**	**0.2444444**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**0.0333333**	**3.331E-16**	**0.2444444**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0.1666667**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0.2**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0.2333333**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0.1555556**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0.1555556**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0.1888889**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0.0333333**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0.0333333**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**0.0333333**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		
2.22E-16	**0**	**1.11E-16**	**1.11E-16**	**1.11E-16**	**3.331E-16**	**1.11E-16**		

	w (%)	wL (%)	wP (%)	IP (%)	% Gravel	% Sand	% Fines	Bulk Density	Dry Density
Test Statistic, α = 0.05	0.3236782	0.4656712	0.4656712	0.4656712	0.5168795	0.5168795	0.5168795	0.657551539	0.657551539
Test Statistic, α = 0.01	0.3879378	0.5581206	0.5581206	0.5581206	0.6194953	0.6194953	0.6194953	0.788094859	0.788094859

Appendix D.3: Spreadsheet for Domain (63 v 72)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.065934066**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.131868132**
	0	**0**	**0**	**0.125**	**0**	**0**	**0**	**0**	**0.197802198**
	0	**0**	**0**	**0.125**	**0**	**0**	**0**	**0**	**0.472527473**
	0	**0**	**0**	**0.087963**	**0**	**0**	**0**	**0**	**0.318681319**
	0.0416667	**0**	**0**	**0.087963**	**0.5**	**0**	**0**	**0**	**0.076923077**
	0.2083333	**0**	**0**	**0.212963**	**0**	**0**	**0**	**0.076923077**	**0**
	0.1904762	**0**	**0.037037**	**0.1759259**	**0**	**0**	**0**	**0.054945055**	**0**
	0.2738095	**0**	**0.037037**	**0.1018519**	**0**	**0**	**0**	**0.263736264**	**0**
	0.0714286	**0**	**0.1481481**	**0.0787037**	**0**	**0**	**0**	**0.395604396**	**0**
	0.1964286	**0**	**0.0972222**	**0.0324074**	**0**	**0**	**0**	**0.230769231**	**0**
	0.2202381	**0**	**0.3564815**	**0.3287037**	**0**	**0**	**0**	**0.076923077**	**0**
	0.3035714	**0**	**0.4537037**	**0.3148148**	**0**	**0**	**0**	**0**	**0**
	0.0595238	**0**	**0.0277778**	**0.0231481**	**0**	**0**	**0**	**0**	**0**
	0.0595238	**0**	**0.0138889**	**0.087963**	**0**	**0**	**0**	**0**	**0**
	0.1428571	**0**	**0.0740741**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1428571	**0**	**0.037037**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1428571	**0**	**2.22E-16**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1428571	**0.125**	**2.22E-16**	**0**	**0**	**0**	**0**	**0**	**0**
	0.1428571	**0.125**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0.125**	**2.22E-16**	**0**	**0**	**0.5**	**0**		
	0	**0.125**	**2.22E-16**	**0**	**0.5**	**0.5**	**0**		
	0	**0.125**	**2.22E-16**	**0**	**0**	**0.5**	**0**		
	0	**0.125**	**2.22E-16**	**0**	**0**	**1**	**0**		
	0	**0.087963**	**2.22E-16**	**0**	**0**	**1**	**0**		
	0	**0.1388889**	**2.22E-16**	**0**	**0**	**1**	**0**		
	0	**0.0277778**	**2.22E-16**	**0**	**0**	**1**	**0**		
	0	**0.0416667**	**2.22E-16**	**0**	**0**	**0.5**	**0**		
	0	**0.1805556**	**2.22E-16**	**0**	**0**	**0.5**	**0**		
	0	**0.3287037**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0.3657407**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0.3518519**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0.375**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0.25**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0.5**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
	0	**0**	**2.22E-16**	**0**	**0**	**0**	**0**		
Test Statistic, α = 0.05	0.5842048	0.547452	0.547452	0.547452	1.36	1.36	1.36	0.637577834	0.637577834
Test Statistic, α = 0.01	0.7001866	0.6561373	0.6561373	0.6561373	1.63	1.63	1.63	0.764155786	0.764155786

Appendix D.3: Spreadsheet for Domain (64v65)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.076923077
	0.0227273	0	0	0	0	0	0	0	0.153846154
	0.0227273	0	0	0	0	0	0	0	0.230769231
	0.0454545	0	0	0	0	0	0	0	0.301282051
	0.1136364	0	0	0.037037	0	0	0	0	0.455128205
	0.1628788	0	0.0588235	0.037037	0.5	0	0	0	0.83974359
	0.0643939	0	0.0588235	0.0217865	0.4375	0	0	0.076923077	0.333333333
	0.1893939	0	0.08061	0.043573	0.4375	0.0625	0	0.230769231	0.166666667
	0.2651515	0	0.2570806	0.087146	0.4375	0.0625	0	0.307692308	0
	0.25	0	0.3224401	0.0566449	0.375	0.125	0	0.378205128	0
	0.1477273	0	0.4248366	0.2396514	0.25	0.125	0	0.685897436	0
	0.0492424	0	0.5185185	0.1198257	0.1875	0.3125	0	0.506410256	0
	0.0568182	0	0.2962963	0.1263617	0	0.3125	0	0.166666667	0
	0.0151515	0	0.2222222	0.0893246	0	0.3125	0	1.11022E-16	0
	0.0151515	0	0.1111111	0.037037	0.0625	0.375	0	1.11022E-16	0
	0.0227273	0	0.0740741	0	0.1875	0.5	0	1.11022E-16	0
	0.0227273	0	0.037037	0	0.1875	0.5	0	1.11022E-16	0
	0.0227273	0	2.22E-16	0	0.25	0.5	0	1.11022E-16	0
	0.0227273	0	2.22E-16	0	0.3125	0.5	0	1.11022E-16	0
	0.0227273	0	2.22E-16	0	0.4375	0.5	0.0625		
	0.0227273	0	2.22E-16	0	0.4375	0.0625	0.0625		
	0.0227273	0.1176471	2.22E-16	0	0.0625	0.0625	0.0625		
	0.0227273	0.1176471	2.22E-16	0	0.0625	0.0625	0.0625		
	0.0227273	0.2352941	2.22E-16	0	0.0625	0.375	0.0625		
	0.0227273	0.3747277	2.22E-16	0	0.0625	0.3125	0.0625		
	0.0227273	0.4183007	2.22E-16	0	0.0625	0.125	0.0625		
	0.0227273	0.5424837	2.22E-16	0	0.0625	0.0625	0.0625		
	0.0227273	0.4313725	2.22E-16	0	0.0625	0.0625	0.0625		
	0.0227273	0.3856209	2.22E-16	0	0.0625	0.0625	0.0625		
	0.0227273	0.2374728	2.22E-16	0	0.0625	0.0625	0.0625		
	0.0227273	0.2004357	2.22E-16	0	0.0625	0.0625	0.0625		
	0.0227273	0.1481481	2.22E-16	0	0.0625	0.0625	0.0625		
	0.0227273	0	2.22E-16	0	0.0625	0.0625	0.0625		
	0.0227273	0	2.22E-16	0	0.0625	0	0.0625		
	0.0227273	0	2.22E-16	0	0.0625	0	0.125		
	0.0227273	0	2.22E-16	0	0.0625	0	0.1875		
	0.0227273	0	2.22E-16	0	0	0	0.1875		
	0.0227273	0	2.22E-16	0	0	0	0.1875		
	0.0227273	0	2.22E-16	0	0	0	0.25		
	0.0227273	0	2.22E-16	0	0	0	0.25		
	0.0227273	0	2.22E-16	0	0	0	0.25		
	1.11E-16	0	2.22E-16	0	0	0	0.25		
	1.11E-16	0	2.22E-16	0	0	0	0.1875		
	1.11E-16	0	2.22E-16	0	0	0	0.1875		
	1.11E-16	0	2.22E-16	0	0	0	0.125		
	1.11E-16	0	2.22E-16	0	0	0	0.0625		
	1.11E-16	0	2.22E-16	0	0	0	0		
	1.11E-16	0	2.22E-16	0	0	0	0		
	1.11E-16	0	2.22E-16	0	0	0	0.125		
	1.11E-16	0	2.22E-16	0	0	0	0.125		
	1.11E-16	0	2.22E-16	0	0	0	0.1875		
	1.11E-16	0	2.22E-16	0	0	0	0.1875		
	1.11E-16	0	2.22E-16	0	0	0	0.1875		
	1.11E-16	0	2.22E-16	0	0	0	0.25		
	1.11E-16	0	2.22E-16	0	0	0	0.25		
	1.11E-16	0	2.22E-16	0	0	0	0.1875		
	1.11E-16	0	2.22E-16	0	0	0	0.125		
	1.11E-16	0	2.22E-16	0	0	0	0.125		
	1.11E-16	0	2.22E-16	0	0	0	0.0625		
	1.11E-16	0	2.22E-16	0	0	0	0.0625		
	1.11E-16	0	2.22E-16	0	0	0	0.0625		
	1.11E-16	0	2.22E-16	0	0	0	0.0625		
	1.11E-16	0	2.22E-16	0	0	0	0.0625		
	1.11E-16	0	2.22E-16	0	0	0	0.0625		
Test Statistic, α = 0.05	0.3451131	0.4210745	0.4210745	0.4210745	1.02	1.02	1.02	0.544435723	0.544435723
Test Statistic, α = 0.01	0.4136282	0.5046701	0.5046701	0.5046701	1.2225	1.2225	1.2225	0.652522227	0.652522227

Appendix D.3: Spreadsheet for Domain (64 v 71)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.065934066
	0	0	0	0	0	0	0	0	0.010989011
	0.0384615	0	0	0	0	0	0	0	0.087912088
	0.0384615	0	0	0	0	0	0	0	0.241758242
	0.0384615	0	0	0.037037	0	0	0	0	0.395604396
	0.1121795	0	0	0.062963	0.5	0	0	0	0.637362637
	0.099359	0	0	0.362963	0.5	0	0	0.065934066	0.428571429
	0.2051282	0	0.162963	0.3259259	0.3888889	0	0	0.087912088	0.142857143
	0.1602564	0	0.362963	0.2518519	0.2777778	0	0	0.164835165	0
	0.1153846	0	0.5518519	0.2037037	0.1666667	0	0	0.318681319	0
	0.0288462	0	0.5777778	0.1925926	0.0555556	0	0	0.626373626	0
	0.0224359	0	0.3185185	0.0962963	0.0555556	0	0	0.208791209	0
	0.1057692	0	0.1962963	0.0851852	0.0555556	0	0	1.11022E-16	0
	0.1474359	0	0.2222222	0.0481481	0.0555556	0.1111111	0	1.11022E-16	0
	0.0705128	0	0.1111111	0.062963	0.0555556	0.1111111	0	1.11022E-16	0
	0.1153846	0	0.0740741	0.1	0.0555556	0.1111111	0	1.11022E-16	0
	0.0384615	0	0.037037	0.1	0.1666667	0.2222222	0	1.11022E-16	0
	0.0384615	0	1.11E-16	0	0.1666667	0.3333333	0	1.11022E-16	0
	0.0384615	0.1	1.11E-16	0	0.1666667	0.3333333	0	1.11022E-16	0
	2.22E-16	0.1	1.11E-16	0	0.1666667	0.3333333	0		
	2.22E-16	0.1	1.11E-16	0	0.1666667	0.0555556	0		
	2.22E-16	0.3	1.11E-16	0	0.3333333	0.0555556	0		
	2.22E-16	0.3	1.11E-16	0	0.1111111	0.1666667	0		
	2.22E-16	0.4	1.11E-16	0	0.1111111	0.2222222	0		
	2.22E-16	0.562963	1.11E-16	0	0.1111111	0.2222222	0		
	2.22E-16	0.5888889	1.11E-16	0	0.1111111	0.1111111	0		
	2.22E-16	0.5777778	1.11E-16	0	0	0.1111111	0		
	2.22E-16	0.5666667	1.11E-16	0	0	0.1111111	0		
	2.22E-16	0.3444444	1.11E-16	0	0	0.1111111	0		
	2.22E-16	0.1962963	1.11E-16	0	0	0.1111111	0		
	2.22E-16	0.1592593	1.11E-16	0	0	0.1111111	0		
	2.22E-16	0.0481481	1.11E-16	0	0	0.1111111	0		
	2.22E-16	0.1	1.11E-16	0	0	0.1111111	0		
	2.22E-16	0.1	1.11E-16	0	0	0.1111111	0		
	2.22E-16	0.1	1.11E-16	0	0	0.1111111	0		
	2.22E-16	0.1	1.11E-16	0	0	0.1111111	0.1111111		
	2.22E-16	0	1.11E-16	0	0	0.1111111	0.2222222		
	2.22E-16	0	1.11E-16	0	0	0.1111111	0.2222222		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.2222222		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.2222222		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.3333333		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.1666667		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.1666667		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.1666667		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.0555556		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.0555556		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.0555556		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.0555556		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.0555556		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.1666667		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.1666667		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.1666667		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.2777778		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.2777778		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0.2222222		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0		
	2.22E-16	0	1.11E-16	0	0	2.22E-16	0		
Test Statistic, $\alpha = 0.05$	0.3849742	0.5034518	0.5034518	0.5034518	1.0631609	1.0631609	1.0631609	0.637577834	0.637577834
Test Statistic, $\alpha = 0.01$	0.4614029	0.6034018	0.6034018	0.6034018	1.2742296	1.2742296	1.2742296	0.764155786	0.764155786

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.142857143
	0	0	0	0	0	0	0	0	0.142857143
	0.0227273	0	0	0	0	0	0	0	0.285714286
	0.0227273	0	0	0.125	0	0	0	0	0.428571429
	0.0454545	0	0	0.125	0	0	0	0	0.773809524
	0.1136364	0	0	0.125	0	0	0	0	0.773809524
	0.2045455	0	0.0588235	0.125	0	0	0	0	0.916666667
	0.2727273	0	0.0588235	0.1911765	0.4375	0	0	0	0.333333333
	0.3798701	0	0.1176471	0.1323529	0.4375	0.0625	0	0.285714286	0.166666667
	0.538961	0	0.2941176	0.0147059	0.4375	0.0625	0	0.571428571	0
	0.3214286	0	0.4705882	0.0220588	0.375	0.125	0	0.773809524	0
	0.3441558	0	0.5220588	0.2720588	0.25	0.125	0	0.916666667	0
	0.2694805	0	0.875	0.4485294	0.1875	0.3125	0	0.583333333	0
	0.3603896	0	0.75	0.4411765	0	0.3125	0	0.166666667	0
	0.0746753	0	0.25	0.0661765	0	0.3125	0	1.11022E-16	0
	0.0746753	0	0.125	0.125	0.0625	0.375	0	1.11022E-16	0
	0.1201299	0	0	0	0.1875	0.5	0	1.11022E-16	0
	0.1201299	0	0	0	0.1875	0.5	0	1.11022E-16	0
	0.1201299	0	0	0	0.25	0.5	0	1.11022E-16	0
	0.1201299	0.125	0	0	0.3125	0.5	0	1.11022E-16	0
	0.1201299	0.125	0	0	0.4375	0.5	0.0625		
	0.0227273	0.125	0	0	0.4375	0.5625	0.0625		
	0.0227273	0.0073529	0	0	0.4375	0.5625	0.0625		
	0.0227273	0.0073529	0	0	0.0625	0.5625	0.0625		
	0.0227273	0.1102941	0	0	0.0625	0.625	0.0625		
	0.0227273	0.2867647	0	0	0.0625	0.6875	0.0625		
	0.0227273	0.2794118	0	0	0.0625	0.875	0.0625		
	0.0227273	0.5147059	0	0	0.0625	0.9375	0.0625		
	0.0227273	0.3897059	0	0	0.0625	0.4375	0.0625		
	0.0227273	0.5661765	0	0	0.0625	0.4375	0.0625		
	0.0227273	0.5661765	0	0	0.0625	0.0625	0.0625		
	0.0227273	0.5661765	0	0	0.0625	0.0625	0.0625		
	0.0227273	0.5	0	0	0.0625	0.0625	0.4375		
	0.0227273	0.375	0	0	0.0625	0.0625	0.4375		
	0.0227273	0.25	0	0	0.0625	0	0.4375		
	0.0227273	0	0	0	0.0625	0	0.375		
	0.0227273	0	0	0	0.0625	0	0.3125		
	0.0227273	0	0	0	0	0	0.3125		
	0.0227273	0	0	0	0	0	0.3125		
	0.0227273	0	0	0	0	0	0.25		
	0.0227273	0	0	0	0	0	0.25		
	0.0227273	0	0	0	0	0	0.25		
	1.11E-16	0	0	0	0	0	0.25		
	1.11E-16	0	0	0	0	0	0.1875		
	1.11E-16	0	0	0	0	0	0.1875		
	1.11E-16	0	0	0	0	0	0.125		
	1.11E-16	0	0	0	0	0	0.0625		
	1.11E-16	0	0	0	0	0	0		
	1.11E-16	0	0	0	0	0	0		
	1.11E-16	0	0	0	0	0	0.125		
	1.11E-16	0	0	0	0	0	0.375		
	1.11E-16	0	0	0	0	0	0.3125		
	1.11E-16	0	0	0	0	0	0.3125		
	1.11E-16	0	0	0	0	0	0.3125		
	1.11E-16	0	0	0	0	0	0.25		
	1.11E-16	0	0	0	0	0	0.25		
	1.11E-16	0	0	0	0	0	0.1875		
	1.11E-16	0	0	0	0	0	0.125		
	1.11E-16	0	0	0	0	0	0.125		
	1.11E-16	0	0	0	0	0	0.0625		
	1.11E-16	0	0	0	0	0	0.0625		
	1.11E-16	0	0	0	0	0	0.0625		
	1.11E-16	0	0	0	0	0	0.0625		
	1.11E-16	0	0	0	0	0	0.0625		
	1.11E-16	0	0	0	0	0	0.0625		
Test Statistic, $\alpha = 0.05$	0.5534121	0.5830952	0.5830952	0.5830952	1.02	1.02	1.02	0.646809017	0.646809017
Test Statistic, $\alpha = 0.01$	0.6632807	0.6988567	0.6988567	0.6988567	1.2225	1.2225	1.2225	0.775219631	0.775219631

Appendix D.3: Spreadsheet for Domain (65 v 71)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0.0384615	**0**	**0**	**0.125**	**0**	**0**	**0**	**0**	**0.285714286**
	0.0384615	**0**	**0**	**0.125**	**0**	**0**	**0**	**0**	**0.714285714**
	0.0384615	**0**	**0**	**0.125**	**0**	**0**	**0**	**0**	**0.714285714**
	0.1538462	**0**	**0**	**0.025**	**0**	**0**	**0**	**0**	**0.714285714**
	0.3076923	**0**	**0**	**0.15**	**0.5**	**0**	**0**	**0.142857143**	**0.428571429**
	0.3956044	**0**	**0.2**	**0.15**	**0.3888889**	**0**	**0**	**0.142857143**	**0.142857143**
	0.4340659	**0**	**0.4**	**0.15**	**0.2777778**	**0**	**0**	**0.428571429**	**0**
	0.1868132	**0**	**0.7**	**0.125**	**0.1666667**	**0**	**0**	**0.714285714**	**0**
	0.2252747	**0**	**0.675**	**0.225**	**0.0555556**	**0**	**0**	**0.857142857**	**0**
	0.1978022	**0**	**0.675**	**0.425**	**0.0555556**	**0**	**0**	**0.285714286**	**0**
	0.1978022	**0**	**0.65**	**0.4**	**0.0555556**	**0**	**0**	**1.11022E-16**	**0**
	0.0879121	**0**	**0.25**	**0.025**	**0.0555556**	**0.1111111**	**0**	**1.11022E-16**	**0**
	0.010989	**0**	**0.125**	**0.025**	**0.0555556**	**0.1111111**	**0**	**1.11022E-16**	**0**
	0.0274725	**0**	**1.11E-16**	**0.1**	**0.0555556**	**0.1111111**	**0**	**1.11022E-16**	**0**
	0.1043956	**0**	**1.11E-16**	**0.1**	**0.1666667**	**0.2222222**	**0**	**1.11022E-16**	**0**
	0.1043956	**0**	**1.11E-16**	**0**	**0.1666667**	**0.3333333**	**0**	**1.11022E-16**	**0**
	0.1043956	**0.025**	**1.11E-16**	**0**	**0.1666667**	**0.3333333**	**0**	**1.11022E-16**	**0**
	0.1428571	**0.025**	**1.11E-16**	**0**	**0.1666667**	**0.3333333**	**0**		
	2.22E-16	**0.025**	**1.11E-16**	**0**	**0.1666667**	**0.5555556**	**0**		
	2.22E-16	**0.175**	**1.11E-16**	**0**	**0.1666667**	**0.5555556**	**0**		
	2.22E-16	**0.175**	**1.11E-16**	**0**	**0.1111111**	**0.6666667**	**0**		
	2.22E-16	**0.275**	**1.11E-16**	**0**	**0.1111111**	**0.7777778**	**0**		
	2.22E-16	**0.475**	**1.11E-16**	**0**	**0.1111111**	**0.7777778**	**0**		
	2.22E-16	**0.45**	**1.11E-16**	**0**	**0.1111111**	**0.8888889**	**0**		
	2.22E-16	**0.55**	**1.11E-16**	**0**	**0**	**0.8888889**	**0**		
	2.22E-16	**0.525**	**1.11E-16**	**0**	**0**	**0.3888889**	**0**		
	2.22E-16	**0.525**	**1.11E-16**	**0**	**0**	**0.3888889**	**0**		
	2.22E-16	**0.525**	**1.11E-16**	**0**	**0**	**0.1111111**	**0**		
	2.22E-16	**0.525**	**1.11E-16**	**0**	**0**	**0.1111111**	**0**		
	2.22E-16	**0.4**	**1.11E-16**	**0**	**0**	**0.1111111**	**0.5**		
	2.22E-16	**0.275**	**1.11E-16**	**0**	**0**	**0.1111111**	**0.5**		
	2.22E-16	**0.15**	**1.11E-16**	**0**	**0**	**0.1111111**	**0.5**		
	2.22E-16	**0.1**	**1.11E-16**	**0**	**0**	**0.1111111**	**0.5**		
	2.22E-16	**0.1**	**1.11E-16**	**0**	**0**	**0.1111111**	**0.3888889**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**0.1111111**	**0.2777778**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**0.1111111**	**0.2777778**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.2777778**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.2777778**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.1666667**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.1666667**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.1666667**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.1666667**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0555556**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0555556**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0555556**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0555556**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0555556**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.3333333**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.3333333**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.3333333**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.2222222**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.2222222**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.2222222**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0**		
	2.22E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0**		
Test Statistic, $\alpha = 0.05$	0.5791088	0.6451046	0.6451046	0.6451046	1.0631609	1.0631609	1.0631609	0.726950578	0.726950578
Test Statistic, $\alpha = 0.01$	0.694079	0.7731769	0.7731769	0.7731769	1.2742296	1.2742296	1.2742296	0.871271649	0.871271649

Appendix D.3: Spreadsheet for Domain (65 v 72)

	w (%) Kolmogorov Smirnov Test	wL (%) Kolmogorov Smirnov Test	wP (%) Kolmogorov Smirnov Test	IP (%) Kolmogorov Smirnov Test	% Gravel Kolmogorov Smirnov Test	% Sand Kolmogorov Smirnov Test	% Fines Kolmogorov Smirnov Test	Bulk Density Kolmogorov Smirnov Test	Dry Density Kolmogorov Smirnov Test
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0.0227273	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0.0157343	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.142857143**
	0.006993	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.05952381**
	0.0751748	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.05952381**
	0.0506993	**0**	**0.0588235**	**0.1**	**0**	**0**	**0**	**0**	**0.202380952**
	0.034965	**0**	**0.0588235**	**0.3411765**	**0.0625**	**0**	**0**	**0.142857143**	**0.095238095**
	0.0157343	**0**	**0.0823529**	**0.2823529**	**0.0486111**	**0.0625**	**0**	**0.142857143**	**0.023809524**
	0.1048951	**0**	**0.1058824**	**0.1647059**	**0.1597222**	**0.0625**	**0**	**0.142857143**	**0**
	0.1346154	**0**	**0.2294118**	**0.1470588**	**0.2083333**	**0.125**	**0**	**0.05952381**	**0**
	0.1188811	**0**	**0.1529412**	**0.0470588**	**0.1944444**	**0.125**	**0**	**0.05952381**	**0**
	0.0716783	**0**	**0.2**	**0.0235294**	**0.2430556**	**0.3125**	**0**	**0.297619048**	**0**
	0.1625874	**0**	**0.1**	**0.0411765**	**0.0555556**	**0.3125**	**0**	**0.166666667**	**0**
	0.1625874	**0**	**1.11E-16**	**0.0411765**	**0.0555556**	**0.2013889**	**0**	**0**	**0**
	0.0856643	**0**	**1.11E-16**	**0.1**	**0.0069444**	**0.2638889**	**0**	**0**	**0**
	0.0926573	**0**	**1.11E-16**	**0.1**	**0.1319444**	**0.3888889**	**0**	**0**	**0**
	0.0157343	**0**	**1.11E-16**	**0.1**	**0.0208333**	**0.2777778**	**0**	**0**	**0**
	0.0157343	**0**	**1.11E-16**	**0**	**0.0833333**	**0.1666667**	**0**	**0**	**0**
	0.0157343	**0.1**	**1.11E-16**	**0**	**0.1458333**	**0.1666667**	**0**	**0**	**0**
	0.0227273	**0.1**	**1.11E-16**	**0**	**0.2708333**	**0.1666667**	**0.0625**		
	0.0227273	**0.1**	**1.11E-16**	**0**	**0.2708333**	**0.0069444**	**0.0625**		
	0.0227273	**0.1823529**	**1.11E-16**	**0**	**0.2708333**	**0.0069444**	**0.0625**		
	0.0227273	**0.1823529**	**1.11E-16**	**0**	**0.0486111**	**0.1041667**	**0.0625**		
	0.0227273	**0.1647059**	**1.11E-16**	**0**	**0.0486111**	**0.1527778**	**0.0625**		
	0.0227273	**0.1882353**	**1.11E-16**	**0**	**0.0486111**	**0.0902778**	**0.0625**		
	0.0227273	**0.1705882**	**1.11E-16**	**0**	**0.0486111**	**0.0138889**	**0.0625**		
	0.0227273	**0.0352941**	**1.11E-16**	**0**	**0.0625**	**0.0486111**	**0.0625**		
	0.0227273	**0.1352941**	**1.11E-16**	**0**	**0.0625**	**0.0486111**	**0.0625**		
	0.0227273	**0.0411765**	**1.11E-16**	**0**	**0.0625**	**0.0486111**	**0.0625**		
	0.0227273	**0.0411765**	**1.11E-16**	**0**	**0.0625**	**0.0486111**	**0.0625**		
	0.0227273	**0.0411765**	**1.11E-16**	**0**	**0.0625**	**0.0486111**	**0.0625**		
	0.0227273	**0.1**	**1.11E-16**	**0**	**0.0625**	**0.0486111**	**0.0625**		
	0.0227273	**0.1**	**1.11E-16**	**0**	**0.0625**	**0.0486111**	**0.0625**		
	0.0227273	**0.1**	**1.11E-16**	**0**	**0.0625**	**0.1111111**	**0.0625**		
	0.0227273	**0.1**	**1.11E-16**	**0**	**0.0625**	**0.1111111**	**0.125**		
	0.0227273	**0.1**	**1.11E-16**	**0**	**0.0625**	**0.1111111**	**0.0763889**		
	0.0227273	**0**	**1.11E-16**	**0**	**0**	**0.1111111**	**0.0347222**		
	0.0227273	**0**	**1.11E-16**	**0**	**0**	**0.1111111**	**0.0347222**		
	0.0227273	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0277778**		
	0.0227273	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0277778**		
	0.0227273	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0833333**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0833333**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0208333**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0208333**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0694444**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0069444**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0555556**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0555556**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0694444**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0416667**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0208333**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0208333**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0902778**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0277778**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0277778**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.1875**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.125**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.125**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0625**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0625**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0625**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0625**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0625**		
	3.331E-16	**0**	**1.11E-16**	**0**	**0**	**2.22E-16**	**0.0625**		
Test Statistic, $\alpha = 0.05$	0.3364147	0.5419963	0.5419963	0.5419963	0.5666667	0.5666667	0.5666667	0.646809017	0.646809017
Test Statistic, $\alpha = 0.01$	0.4032029	0.6495985	0.6495985	0.6495985	0.6791667	0.6791667	0.6791667	0.775219631	0.775219631

Appendix D.3: Spreadsheet for Domain (71v72)