IGSL Ltd

NDFA Social Housing Bundles 4/5
Lot 2 – Collins Avenue

Ground Investigation Report

Project No. 25000-2

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FOREWORD
The following conditions and notes on the geotechnical site investigation procedures should be read in conjunction with this report.

Standards
The ground investigation works for this project (**NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue**) have been carried out by IGSL in accordance with Eurocode 7 - Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as Engineers Ireland Specification for Ground Investigation (2nd Ed, 2016), BS 5930 (2015+A1:2020) and BS 1377 (Parts 1 to 9) and the following European Norms:

- EN 1997-2 Eurocode 7: 2007 – Geotechnical Design – Part 2: Ground Investigation & Testing
- EN ISO 22475-1:2006 Geotechnical Investigation and Sampling – Sampling Methods & Groundwater Measurements
- EN ISO 14688-1:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 1: Identification and Description
- EN ISO 14688-2:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 2: Principles for a classification
- EN ISO 14689-1:2017 Geotechnical Investigation and Testing – Identification, description & classification of rock

The Eurocode 7, Part 2 – Ground Investigation and Testing GI specification shall be read in conjunction with the Specification and Related Documents for Ground Investigation in Ireland, 2nd Edition, published by Engineers Ireland in 2016.

Reporting
No responsibility can be held by IGSL Ltd for ground conditions between exploratory hole locations. The engineering logs provide ground profiles and configuration of strata relevant to the investigation depths achieved and caution should be taken when extrapolating between exploratory points. No liability is accepted for ground conditions extraneous to the investigation points. Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction, mining works or karstification below or close to the site.

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Boring Procedures
Where required, 'shell and auger' or cable percussive boring technique is employed as defined by Section 6.3 of IS EN ISO 22475-1:2006. The boring operations, sampling and in-situ testing meet with the recommendations set out in IS EN 1997-2:2007 and BS 1377:1990 and EN ISO 22476-3:2005. The shell and auger boring technique allows for continuous sampling in clay and silt above the water table and sand and gravel below the water table (Table 2 of IS EN ISO 22475-1:2006).

It is highlighted that some disturbance and variation is unavoidable in particular ground (e.g. blowing sands, gravel / cobble dominant glacial deposits etc). Attention is drawn to this condition, whenever it is suspected. Where cobbles and boulders are recorded, no conclusion should be drawn concerning the size, presence, lithological nature, or numbers per unit volume of ground.

In-Situ Testing
Where required, Standard Penetration Tests (SPT's) are conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated in accordance with EN ISO 22476-3:2005 and the Energy Ratio (E_r). A calibration certificate is

available upon request. The E_r is defined as the ratio of the actual energy E_{meas} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (E_{theor}) as calculated from the drive weight assembly. The measured number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

Soil Sampling

Three categories of sampling methods are outlined in EN ISO 22475-1:2006. The categories are referenced A, B and C for any given ground conditions and are shown in Tables 1 and 2 of EN ISO 22475-1:2006. Reference should be made to EN 1997-2:2002 for guidelines on sample class and quality for strength and compressibility testing. Samples of quality classes 1 or 2 can only be obtained by using Category A sampling methods.

Class 1 thin wall undisturbed tube samples (UT100) were obtained in fine grained soils and strictly meet the requirements of EN 1997-2:2002 and EN ISO 22475-1:2006. Soil samples for laboratory tests are divided into five classes with respect to the soil properties that are assumed to remain unchanged during sampling, handling transport and storage. The minimum sample quality required for testing purposes to Eurocode 7 compatibility (EN 1997-2:2002) is shown in Table A.

Table A – Details of Sample Quality Requirements

EN 1997 Clause	Test	Minimum Sample Quality Class
5.5.3	Water Content	3
5.5.4	Bulk Density	2
5.5.5	Particle Density	N/S
5.5.6	Particle Size Analysis	N/S
5.5.7	Consistency Limits	4
5.5.8	Density Index	N/S
5.5.9	Soil Dispersivity	N/S
5.5.10	Frost Susceptibility	N/S
5.6.2	Organic Content	4
5.6.3	Carbonate Content	3
5.6.4	Sulphate Content	3
5.6.5	pH	3
5.6.6	Chloride Content	3
5.7	Strength Index	1
5.8	Strength Tests	1
5.9	Compressibility Tests	1
5.10	Compaction Tests	N/S
5.11	Permeability	2

N/S – not stated. Presume a representative sample of appropriate size.

Samples recovered from trial pits or trenches meet the requirements of IS EN ISO 22475-1. It is highlighted that unforeseen circumstances such as variations in geological strata may lead to lower quality sample classes being obtained.

Groundwater

The depth of entry of any influx of groundwater is recorded during the course of boring operations. However, the normal rate of boring does not usually permit the recording of an equilibrium level for any one water strike. Where possible, drilling is suspended for a period of twenty minutes to monitor the subsequent rise in water level. Groundwater conditions observed in the borings or pits are those appertaining to the period of investigation. It should be noted however, that groundwater levels are

subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc.

Engineering Logging

Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2017 and IS EN ISO 14688-2:2017. Rock weathering classification conforms to IS EN ISO 14689-1:2017 along with discontinuities (bedding planes, joints, cleavages, faults etc) as classified in Section 6.4 of IS EN ISO 14689-1:2017 and Annex C of same. Rock mechanical indices (TCR, SCR, RQD) are defined in accordance with IS EN ISO 22475-1:2006.

Where peat has been encountered, samples have been logged in accordance with the Von Post Classification (ref. Von Post, L. 1992. Sveriges Gologiska Undersoknings torvinventering och nogra av dess hittils vunna resultat (SGU peat inventory and some preliminary results) Svenska Mosskulturforeningens Tidskrift, Jonkoping, Swedden, 36, 1-37 and Hobbs N. B. Mire morphology and the properties of some British and foreign peats. QJEG, Vol. 19, 1986.

Retention of Samples

After satisfactory completion of all the scheduled laboratory tests on any sample, the remaining material will be discarded. Unless a period of retention of samples is agreed, it is our normal practice to discard all soil samples one month after submission of our final report.

1. INTRODUCTION

An investigation of subsoil conditions was undertaken by IGSL Limited at the site of a proposed social housing development at Collins Avenue Extension, Dublin 9. The works were undertaken for Malone O'Regan Consulting Engineers [MORCE] on behalf of the National Development Finance Agency (the "NDFA"). The site was formerly a Dublin City Council Depot being used also as a 'Bring Centre'. The site consists of a number of covered sheds and office buildings in an elongate site extending from Collins Avenue Extension in the south towards 'Milner's Square' multi-storey apartment complex to the north and Crestfield Road houses to the east. The industrial area comprising Shanowen Business Centre and Kaybee House, Shanowen Road form much of the northern boundary of the site (Figure 1).

Figure 1 - Location Plan

Retrieved from Google Earth Professional (Dated 04/2020)

The investigations comprised cable percussion boreholes, rotary drilling, machine-dug trial pits, foundation inspection pits, slit trenching and soakaway tests (to BRE365). The investigations were executed in accordance with BS 5930, Code of Practice for Site Investigations (2015+A1:2020) and EN 1997-2 Eurocode 7 Part 2 Ground Investigation & Testing and supervised by an IGSL geotechnical engineer.

Geotechnical, chemical and environmental laboratory testing was scheduled on a range of soil samples. The geotechnical soil testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing in addition to hydrometer testing. Suites of both chemical testing and environmental testing were undertaken on soils. This report presents an interpretation of the data and an assessment of the key geotechnical issues. The exploratory hole locations are plotted on the site plans in Appendix 10.

2. FIELDWORK

2.1 General

The fieldworks were undertaken during November and December 2023 and January 2024 and comprised the following:

- Trial Pit (11 No.) of which 4 no. are Foundation Inspection Pits
- Cable Percussion Boring (19 No.)
- Rotary Drilling (4 No.)
- Slit Trenching (9 No.)
- Soakaway Tests (to BRE 365) (3 No.)
- Surveying of Exploratory Hole Locations

2.2 Trial Pits & Foundation Inspection Pits

Trial pitting was performed at eleven locations across the site. Four of the trial pits prefixed TP/FP were undertaken adjacent to existing structures to examine the depth of wall footings on site. All eleven trial pits were excavated, logged and sampled under the direction of an IGSL geotechnical engineer in accordance with BS 5930 (2015+A1:2020). Bulk disturbed samples (typically 20 to 30kg) were taken as the pits progressed.

The bulk samples were placed in heavy-duty polyethylene bags. The trial pits were backfilled with the as-dug arisings and reinstated to the satisfaction of IGSL's site geotechnical engineer. The trial pit logs and photos are presented in Appendix 1 and include descriptions of the soils encountered, groundwater conditions and stability of the pit sidewalls.

As mentioned, in order to establish the depth and projection of existing foundations associated with the wall marking the northern boundary of the site, foundation inspection pits were undertaken at four locations. As with pits, the inspection pits were excavated and logged under the direction of an IGSL geotechnical engineer in accordance with BS 5930 (2015+A1:2020). Machine-assisted hand digging was used at each location with pits ranging in depth from 0.65 to 2.60m bgl. The pit logs and photos are presented in Appendix 2 and include descriptions of the soils encountered, the foundations exposed and any groundwater conditions noted during the excavation, if observed.

2.3 Cable Percussion Boreholes

Cable percussive boring (200mm diameter) was conducted at nineteen locations [BH_] using a Dando 2000 rig. The boreholes extended to depths of between 4.50m and 6.30m. At each location, boring commenced through hand-dug service inspection pits. Disturbed bulk samples were recovered at 1m intervals or change of strata during boring and these are denoted 'B' on the engineering logs.

Standard Penetration Tests (SPT's) were performed in the boreholes and given the nature of the soils, a solid cone was used. It is noted that the SPT N-Values reported are the number of blows for 300mm increment penetration (e.g. BH01 at 2.0m where N=27). These exclude the seating blow values, which represent the initial 150mm depth of penetration. Where partial penetration was achieved during testing, the number of blows is shown for the actual penetration depth achieved (e.g. BH01 at 5.0m where N=50/225mm). It is highlighted that the SPT N-Values reported on the engineering logs are uncorrected for energy ratio. The SPT hammer energy ratio calibration certificate features in Appendix 3.

Descriptions of the soils encountered, in-situ tests undertaken and samples recovered are presented on the borehole records in Appendix 3. Details of groundwater strikes and hard strata boring (i.e. chiselling) are also presented on the aforementioned records.

2.4 Rotary Drilling

Rotary drilling was carried out (holes denoted RC_) at four locations using a tracked Beretta T44. Symmetrex drilling was utilised within the overlying superficial deposits (accompanied by SPT testing) with coring techniques used in the underlying bedrock when encountered. In both RC03 and RC04, open hole drilling was used solely given rock was not encountered to their respective end depth of 14.90m bgl. The rotary drilling in bedrock at both RC01 and RC02 produced 78mm diameter cores. Bedrock was described generally as fresh to slightly weathered weak to strong, medium to thinly bedded (to locally thinly laminated), light to dark grey/black, fine-grained LIMESTONE. The limestone was reported as being interbedded argillaceous/muddy layers with calci-siltite/sandy layers, local pyrite formation and very localised thin shale layers.

The cores were placed in 3m capacity timber boxes and logged by an IGSL engineering geologist. This included photography of the cores with a digital camera. Where rock core was recovered, a graphic fracture log is also presented alongside the mechanical indices. This illustrates the fracture state of the rock cores and allows easy identification of highly fractured / non-intact zones and discontinuity spacings. It should be noted that no correction for dip of the joints has been made and that the spacings shown are successive joint / core intersections within the core.

Groundwater monitoring standpipes were installed in two of the RC_ drillholes on site (RC01 & RC04). The standpipes consisted of 50mm diameter HDPE pipework with proprietary 1mm slots and incorporated a pea gravel filter pack and cement / bentonite grout seal. Headwork covers were concreted in place.

The core log records are presented in Appendix 4 and this includes engineering geological descriptions, details of the bedding / discontinuities and mechanical indices (TCR, SCR and RQD's) for each core run. Core photographs are also presented in Appendix 4 and these illustrate the structure and fracture state of the bedrock. The SPT hammer energy ratio calibration certificate also features in Appendix 4.

2.5 Slit Trenching

Slit trenching was undertaken at nine locations on the site (ST01 – ST09). The machine-assisted hand-dug trenches were opened to reveal the track of potential existing buried services.

Detailed records of the pit findings including depth, diameter and type of service (where found) are presented in Appendix 5. The soil profile provided on the slit trench logs describes the majority of the soils across the transverse trench. The location of trench extremities (X and Y) were surveyed to ITM using GPS techniques. Photographs taken during excavation are also presented on the logs as well as separately in Appendix 5.

2.6 Soakaway Tests (to BRE 365)

Three number infiltration tests were performed to assess the suitability of the sub-soils for dispersion of storm water through a soakaway system. The infiltration tests were each performed in accordance with BRE Digest 365 'Soakaway Design'. To obtain a measure of the infiltration rate of the sub-soils, water was poured into each test pit, with records taken of the fall in water level against time. Following the first soak cycle, the procedure was repeated to ensure saturation of the sub-soils. The infiltration rate is the volume of water dispersed per unit of exposed area per unit of time, and is generally expressed as metres / minute or metres / second. Designs are based on the slowest infiltration rate, which is generally calculated from the final soak cycle. The soakaway design logs are presented in Appendix 6.

2.7 Surveying of Exploratory Hole Locations

Following completion of the exploratory works, surveying was carried out using GPS techniques. Co-ordinates (x, y) were measured to Irish Transverse Mercator and ground levels (z) established to

Malin Head. The co-ordinates and ground levels are incorporated on the exploratory hole logs with locations shown on the exploratory hole plans in Appendix 10.

3. LABORATORY TESTING

Geotechnical laboratory testing was carried out at IGSL's INAB-accredited laboratory in accordance with the methods set out in BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute:1990. The laboratory applies best practice management systems as per International Standard IS EN ISO/IEC 17025. The geotechnical testing included moisture contents, Atterberg Limits, particle size distribution [PSD] and hydrometer testing. The results from geotechnical testing on selected trial pit and cable percussive borehole soil samples are presented in Appendix 7.

Chemical analysis incorporating BRE SD1 Suite B (Brownfield – Pyrite Present) was scheduled on recovered soils. The soil chemical results are presented in Appendix 8. A total of twenty-seven soil samples were selected for Waste Acceptance Criteria (WAC) analysis as per the *Rilta* Suite of testing. The results can be used to classify the material with regard to its potential for disposal to landfill. The results are enclosed in the report in Appendix 8.

Rock strength testing on selected core specimens comprised Point Load Strength Index [PLSI] testing. The tests were performed in accordance ISRM Suggested Methods for Rock characterization, Testing and Monitoring. The results are presented in Appendix 9.

4. DESK STUDY

4.1 GSI / OSI Database Information

Reference to the OSI drawings from the early twentieth century (Cassini 1910's-1950's drawing) shows vacant ground bound by watercourses to the north. There is little to indicate the development which would sprawl across the area in the mid 1900's. Collins Avenue was built in 1938 to replace a dirt-track known as "Puckstown Lane." (Dublin Dioceses, n.d.)

The late twentieth century orthophotograph from 1995 shows the thin area occupied currently by the Dublin City Council Depot.

Apart from changes to neighbouring buildings to the north, little if any change is noted at the site in the 2013-2018 aerial image.

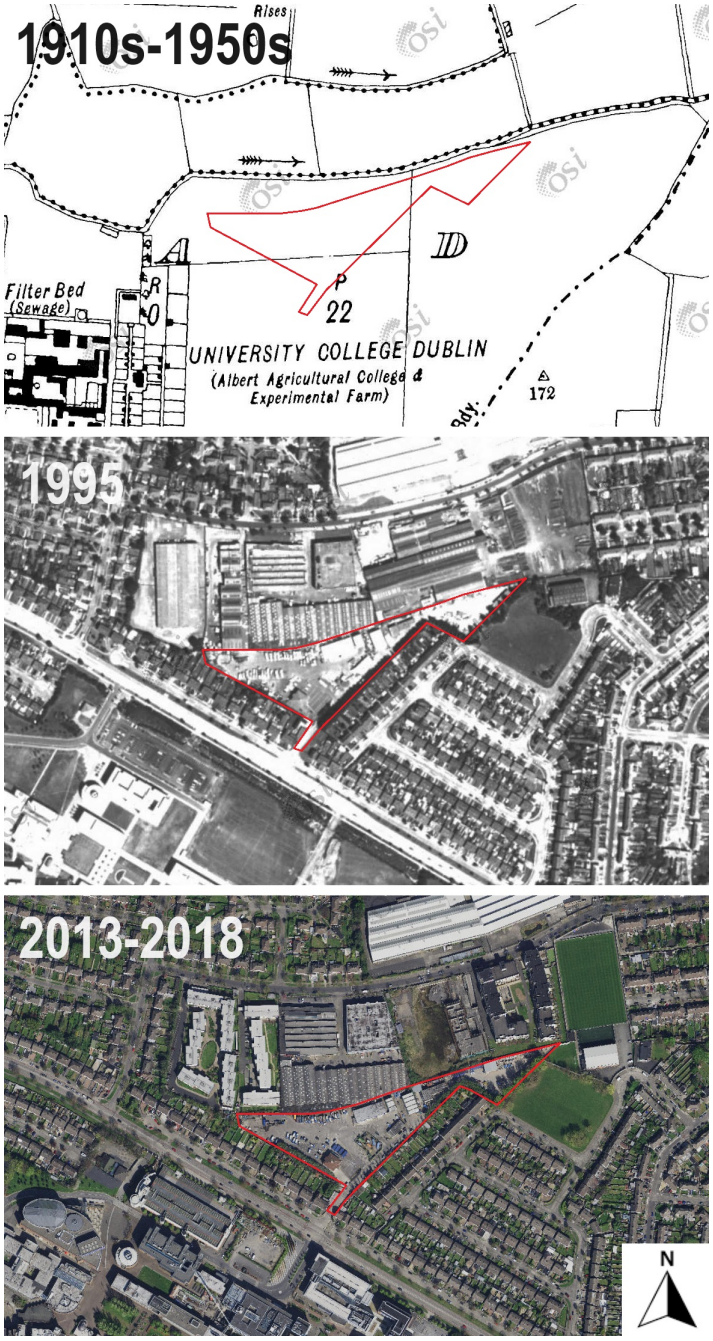


Figure 2 – Tailte Éireann (OSI) Cassini drawing dated 1910's-1950's with more recent 1995 and 2013-2018 images showing the evolution of the site.

The Quaternary Soils plot for the area (Figure 3 - retrieved from GSI website) reaffirms the findings of the investigation and highlights the underlying clay-dominant till derived from the ubiquitous Carboniferous Limestone of the area.

Figure 3 – Quaternary Soils Plot for the Collins Avenue Site (Site area outlined)

Map Key **TLs** - Till derived from Limestones

Reference to the GSI map for the area (Figure 4, 1:100,000 Solid Geology series) shows that the site is underlain by Lower Carboniferous, Lucan Formation. The Lucan Formation (Nolan 1986, 1989) forms the bulk of the basinal rocks throughout the geologically termed 'Dublin Basin', and is characterised by graded, intraclastic skeletal packstone/grainstone interbedded with anoxic calcareous mudstone / black shale, laminated calcisiltite and argillaceous micrite (i.e. impure limestone with clay minerals).

Its base is defined by the first appearance of thick graded beds of limestone, and a marked decrease in the proportion of interbedded shale, compared with the underlying Tober Colleen Formation. The Lucan Formation is widely known as the Calp Limestone (Marchant and Sevastopulo, 1980) but is also referred to as the Upper Dark Limestone and has long been a source of building materials and aggregate for Dublin. The Calp is largely undifferentiated geologically.

Figure 4 - Bedrock Geological Map for the Stanley Street Site (retrieved from the GSI website)

Key: **LU** = Lucan Formation

5. GROUND CONDITIONS & GROUNDWATER

5.1 Ground Profile – Superficial Deposits

The following is a summary of the ground conditions encountered across the site.

MADE GROUND

- Given the layout of the site with its concrete paved yard areas and shed spaces, all trial pits and boreholes required removal of either concrete or tarmacadam pavement. The concrete ranged in thickness from 150mm to 250mm thick (as viewed in trial pit excavations). A concrete thickness of 200mm to 300mm was reported in the boreholes. Where tarmacadam was the finished surface, trial pits TP02 and TP05 noted thicknesses of 80mm. The boreholes positioned on tarmacadam were all located to the southwest of the site namely BH02, BH05, BH06 and BH09. They encountered between 100mm and 200mm of tarmacadam pavement.

- Underlying the hardstanding pavement layer, there was a range of Made Ground types encountered. Overall, there was infrequent evidence of engineered backfill / gravel hardcore. In areas, the underlying Made Ground was described as grey to brownish grey clayey angular Gravel with cobbles and concrete fragments. A slight hydrocarbon odour was detected in this layer in a number of pits where anthropogenic constituents included timber fragments, old tarmacadam and concrete rubble (TP01, TP04, TP09). This layer extended to 1.0m bgl at TP04. In TP03, concrete rubble and old slabs were found extending to a depth of 1.30m. At TP07, the Made Ground also included rare plastic rubbish (<5%) and was logged to a depth of 1.50m bgl. The rare 'plastic rubbish' was also intercepted in TP08 to a depth of 0.85m bgl. In the case of TP11, The concrete was reported directly on an underlying stratum of grey to dark grey sandy slightly gravelly Silt/Clay with organic fragments and boulders.

- Where an angular type granular Fill was reported, it extended to depths up to 600mm bgl and was described as a grey to brownish grey and black clayey angular Gravel and Cobbles. In the case of TP06, a sandy gravelly CLAY was also logged within the granular Fill layer suggesting a generally mixed quality fill.

- Across the eleven trial pits, the more appreciable thicknesses of Made Ground were found nearing the northern boundary (up to 1.50m depth). Figure 2 shows a watercourse marking this northern boundary. It may be the case that the site sloped naturally towards this watercourse and therefore the area would have likely required more infill to achieve a consistency in ground levels (ca. 48m OD).

- A granular-dominant Fill layer was evidenced in each of BH07, BH08, BH09, BH11 and BH13. In the case of BH09, BH11 and BH13 the sandy gravelly Fill with cobbles extends to a mere 0.30m and 0.40m bgl. This suggests engineered placement. Elsewhere, at both BH07 and BH08, the grey sandy Gravel (MADE GROUND) continues to 0.90m bgl. It contained pieces of tarmac at BH08 suggestive of rubble fill.

- At all fourteen other boreholes, the soil found immediately beneath the pavement was remarked as a SILT/CLAY, sometimes classed as a 'MADE GROUND' or 'Possible MADE GROUND' layer. This was frequently observed to be soft in consistency and grey or grey black in colour, irrespective of being Made Ground or not.

Possible ALLUVIUM / Glaciolacustrine Sediments

- There are repeated inferences made to 'organic remnants' and rarely to 'shell fragments' in the soils underlying the site. These constituents are reserved for near surface subsoils. In trial pits the 'organic'-containing layer is generally firm and grey brown to grey. The SILT/CLAY extends to depths ranging 0.90m (47.28m OD) to 1.30m bgl (47.05m OD).

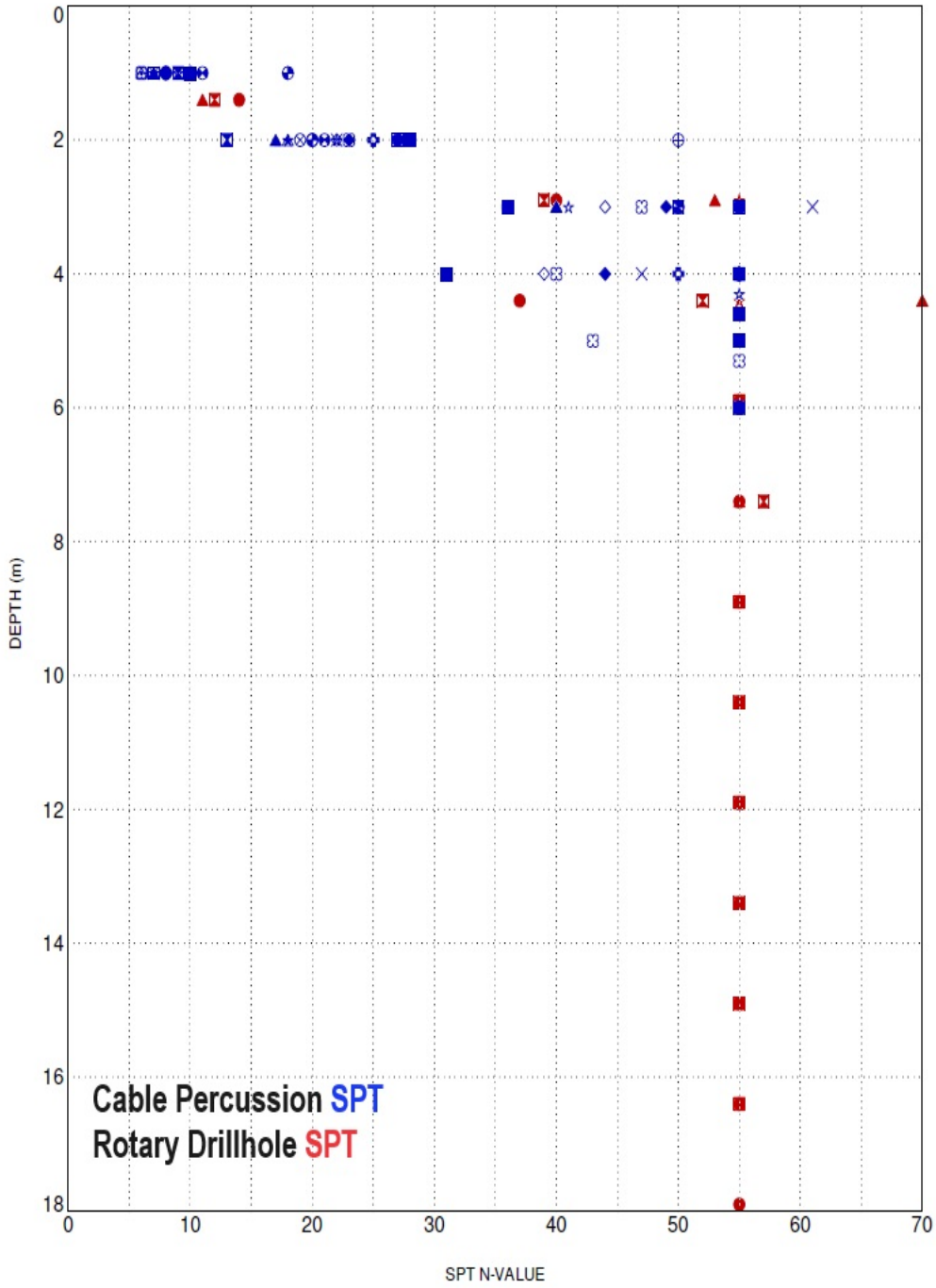
- The layer containing 'occasional shells' was found in TP04 from 1.0m to 1.90m (46.09m OD). It was described as a firm grey slightly sandy SILT/CLAY. In TP04, it was in turn underlain by a soft to firm brown grey mottled slightly sandy gravelly CLAY with cobbles. Two water seepages occurred in this layer. This may have attributed to its being logged as a 'soft to firm' deposit to a depth of 3.0m (44.99m OD).

- With the exception of BH12 and BH13, soft and soft to firm grey brown soils were logged in each borehole across the site to depths up to 2.80m, but generally to ca. 1.60m to 1.80m bgl. The lack of a cobble- and gravel-sized coarse component to the soils suggests low energy depositional environment similar to the organic-containing and shelly deposits noted in trial pitting.

- No soft natural soils were intercepted in either BH12 or BH13. Instead, firm and firm to stiff colour-mottled Clays were met to 1.90m (46.11m OD) and 1.60m (46.44m OD).

- The gradational increase in strength of the upper soils is illustrated by the SPT plot in Figure 5. The standard penetration test [SPT] allows for an appraisal of the ground stiffness. The first SPT tests were undertaken at 1.0m bgl in cable percussion boreholes and at 1.50m in rotary drillholes. The increase in soil strength as profiled in the plot can be seen to be approximately linear from 1.0m, through 1.50m and on to 2.0m depth. Based on SPT results, a soft consistency is not seen beyond 1.50m depth. Therefore, it could be surmised that the occurrence of soft and soft to firm soil deposits (inclusive of Made Ground) is restricted to the upper metre to 1.50m. 'Low strength' deposits are those where N values of <10 blows are present.

Figure 5 – SPT Plot versus Depth for Cable Percussion Boreholes and Rotary Drillholes



GLACIAL DEPOSITS (Glacial Lodgement Till)

- There is a gradational change from firm to stiff brown grey mottled CLAY to that of the underlying very stiff dark grey sandy gravelly CLAY with cobbles and boulders.

- The firm to stiff brown grey colour-mottled CLAY and brown CLAY is noted in trial pits from 0.70m to 2.50m bgl (ca. 45.80m OD) underlain by the stiff to very stiff over-consolidated glacial till. Towards the northeast of the site, the stiff to very stiff dark grey CLAY till appears at ca. 44.90m OD (TP09 and TP10). This corresponds to a depth of ca. 1.90m bgl.

- At depth across all bores, without exception there was reported the underlying glacial till comprising stiff and very stiff black sandy gravelly silty CLAY with cobbles and boulders. The colour-mottled CLAY overlying the heavily over-consolidated till was reported as being stiff in consistency, more often than not from 1.50m bgl.

- Boreholes demonstrate the entry more succinctly of the stiff to very stiff CLAY flagged by the higher SPT N-values obtained in test drives. Figure 5 shows that from 2.0m, the higher SPT N-values were generally obtained typical of stiff CLAY deposits.

- Boreholes terminated in the stiff to very stiff CLAY across all holes. The bores terminating in the over-consolidated CLAY ended at depths of between 4.70m and 6.30m. The thickness of the basal stiff to very stiff CLAY prior to termination in the till ranged from 2.20m (BH14) to 4.10m (BH10).

- Rotary open hole drilling was deployed at four locations on the site. Very stiff CLAY was found to persist to rockhead in each of RC01 and RC02 at 19.0m bgl (29.36m OD) and 19.40m bgl (28.61) respectively.

Figures 6A & 6B – Sidewall profiles photographed during trial pitting. Fig 6A TP05 Gravelly Made Ground onto natural firm to stiff brown grey CLAY with occasional organic remnants to 1.0m underlain by firm to stiff greyish brown sandy gravelly CLAY to 2.20m. The stiff to very stiff dark brown till completes the pit to 3.0m (44.97m OD). Slow water ingress at 1.80m. **Fig 6B** At TP08, concrete over mixed Made Ground over firm to stiff slightly sandy SILT/CLAY. From 1.15m bgl, a firm to stiff greyish brown sandy very gravelly cobbly CLAY passes to the stiff to very stiff till from 2.50m (45.46m OD). The pit ended at 3.0m (44.96m OD).

Fig 6A

Fig 6B

5.2 Bedrock

As referenced earlier in Section 4.1, the GSI rock map for the area (Figure 4, 1:100,000 Solid Geology series) shows that the Lucan Formation underlies the site. The formation is comprised of argillaceous bioclastic limestones and interbedded shales.

Rotary drilling was conducted at four points on site. At two locations, drilling successfully penetrated the thick mantle of glacial till deposits and cored the underlying bedrock commencing at depths ranging 19.20m (RC01) and 19.40m bgl (RC02) ranging in elevation from 29.16m OD (RC01) deepening to 28.61m OD (RC02). Figure 7 depicts the core recovery in RC02. The transition from very stiff CLAY superficial deposits to underlying bedrock can be viewed at 19.40m bgl.

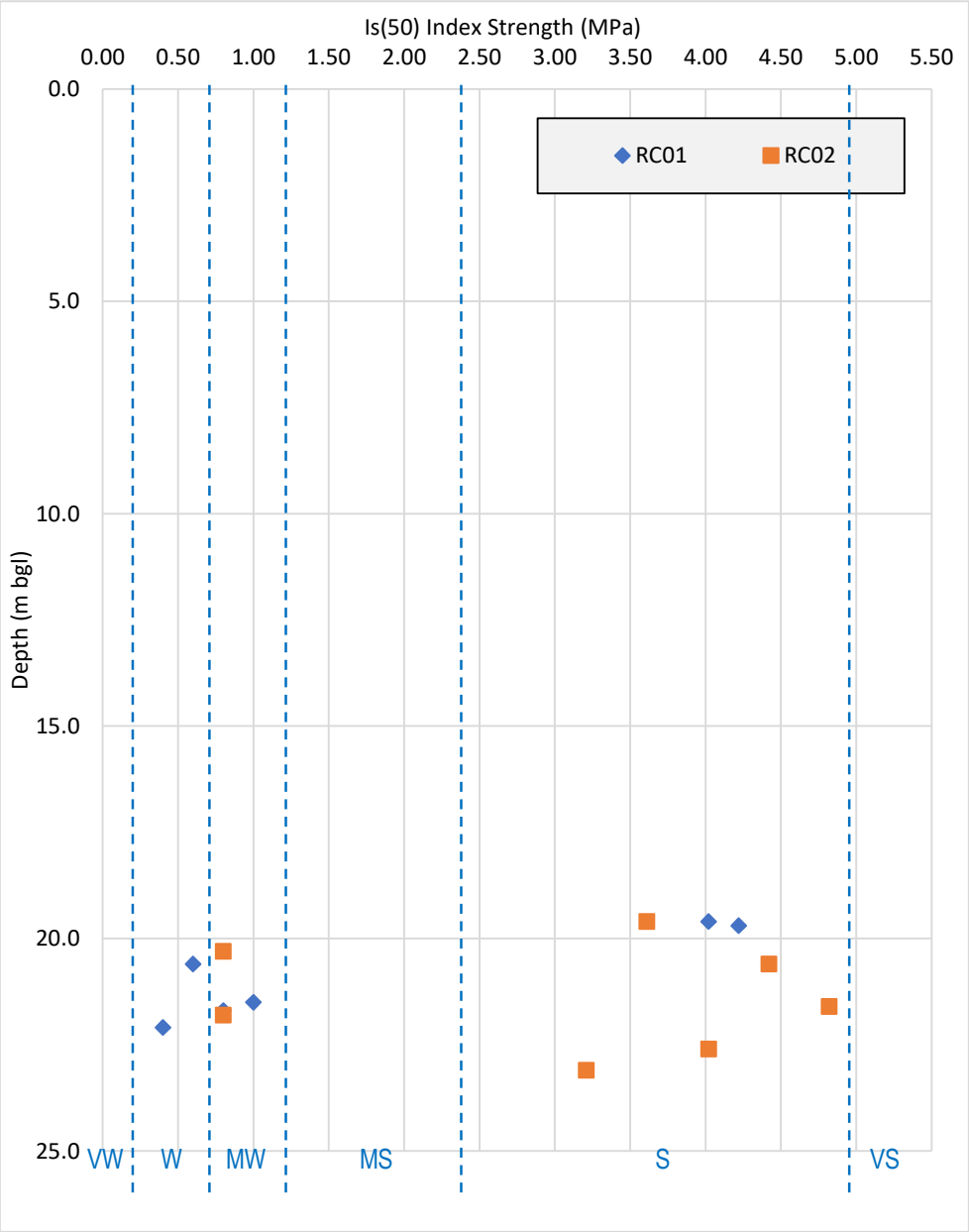
Recovered cores were logged as fresh to slightly weathered weak to strong, medium to thinly bedded (to locally thinly laminated), light to dark grey/black, fine-grained LIMESTONE. The limestone was reported as being interbedded argillaceous/muddy layers with calci-siltite/sandy layers, local pyrite formation and very localised thin shale layers.

Figure 7 – Bedrock cores in RC02 from 17.50-23.10m with transition from CLAY (Glacial Till) to ROCK at 19.40m bgl (28.61m OD).

Discontinuity spacings in the rotary cores generally ranged from medium (200 to 600mm) to closely spaced (60 to 200mm). The discontinuity surfaces are typically smooth to locally rough, planar to curviplanar with frequent incipient fractures. Apertures are tight to partly open, locally exhibiting clay smearing and rarely gravel fill. Iron-oxide staining and calcite veining were also remarked. Dips are 20° to 40°, locally 60° and irregular.

The point load strength index (PLSI) test data produced $I_s(50)$ values ranging from 0.60 to 4.82 MPa with a mean value of 2.52 MPa. The strengths form two distinct distributions on the PLSI chart (Figure 8), corroborating the variability in rock strength between the interbedded weaker shale / mudrock and the generally strong limestone recorded in core logging.

Figure 8 – $I_s(50)$ strengths obtained from diametrial Point Load Strength Index testing



VW = Very Weak, W = Weak, MW = Moderately Weak, MS = Medium Strong, S = Strong, VS = Very Strong (ISO 14689:2017 (E))

Using a correlation factor (K) of 20 to assess compressive strength, this suggests a characteristic strength envelope in the order of 12 to 96.4 MPa and categorizes the bedrock as weak (5 to 12.5MPa) to strong (50 to 100MPa). The visual strength descriptors determined during engineering geological logging marry well with the overall plot scatter in Figure 8.

ISO 14689:2017 (E) rock strength parameters are drawn on Figure 8 to allow correlation between UCS and Point Load Strength tests. A correlation factor (K) of 20 was used to plot the ISO 14689:2017 (E) MPa strength divisions on the Point Load strength ($I_s(50)$) plot.

5.3 Groundwater

Water ingress was noted only infrequently in boreholes with seepages and moderate ingress observed during the boring of both BH08 and BH14. The ingress in BH14 was most charged with a water strike in the black till rising from an initial strike of 2.80m bgl (44.60m OD) to ca. 1.10m bgl. Only a seepage was recorded in BH08 in the same deeply buried black till at 6.30m bgl (41.70m OD). No strike was recorded in BH02 during boring but groundwater was recorded post-drilling in the hole at 5.40m bgl. Deep-seated groundwater was logged in two of the four drillholes. The "shallow" drillholes (base depths of 14.90m bgl) remained dry.

In open excavations, trial pits often recorded minor seepages with some moderate ingress also reported. The groundwater incursions were inconsistent in depth, suggestive of localised perched groundwater bodies sited largely on impermeable till layers.

Where groundwater was noted upon completion of boring/drilling (in borehole BH02 and drillhole RC01) it is likely to be a result of casing-off a water strike in the impermeable CLAY, thus preventing water entry along the length of the hole until casing was removed. Table 1 outlines where water was met in each of the exploratory holes. The potential does exist for there to be seasonal changes in groundwater level. The works were carried out during winter 2023/24. Ongoing monitoring of standpipes at both RC01 and RC04 would permit a fuller understanding of the long term water re-equilibration on site.

Table 1 – Water measurements in on-site exploratory holes

	Exploratory Hole No.	Water Struck **m bgl** (m OD)	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Cable Percussion Boreholes	BH02	-	-	-	Water was noted at **5.40m** bgl (42.92m OD) in the borehole upon removal of the drill casing. BH ended at 6.20m. (21-11-23)
	BH08	**6.30** (41.70)	Very stiff black gravelly silty CLAY with some cobbles and boulders	Seepage	No reported rise in water during a 20minute observation period
	BH14	**2.80** (44.60)	Stiff to very stiff black sandy gravelly CLAY with cobbles and boulders	Moderate – water rose to **1.40m** in 20min	Water was noted at **1.40m** bgl (46m OD) in the borehole after Day 1 (BH base depth 3.0m). (08-01-24) BH ended at 4.30m. (09-01-24) Upon removal of the drill casing, water was dipped at 1.10m bgl.

Cont.

Rotary Drillholes	RC01	**-**	-	-	Water was noted at **15.40m** bgl (32.96m OD) in the drillhole upon removal of the drill casing. RC ended at 22.20m. (10-01-24)
	RC02	**17.0** (31.01)	BOULDER	Slow	Water was noted at **9.0m** bgl (39.01m OD) in the drillhole upon removal of the drill casing. RC ended at 23.10m. (31-01-24)
	RC04	-	-	-	Hoel was dry upon removal of the drill casing. RC ended at 14.90m. (04-01-24)
Trial Pits	TP02	**2.50** (45.68)	Interface of upper firm to stiff brown sandy gravelly CLAY and lower very stiff dark grey sandy gravelly CLAY	Seepage	Trial Pit remarked as slightly unstable.
	TP03	**1.30** (46.84)	Interface of upper Made Ground and lower firm brown grey mottled slightly sandy gravelly cobbly CLAY	Seepage	Trial Pit unstable from 1.90m to 2.60m bgl
		1.90 (46.24)	Firm brown grey mottled slightly sandy gravelly cobbly CLAY	Slow	
	TP04	**1.90** (46.09)	Interface of upper firm shelly CLAY/SILT and lower soft to firm brown grey mottled slightly sandy gravelly cobbly CLAY	Seepage	Trial Pit unstable from 1.90m to 3.0m bgl
		2.70 (45.29)	Soft to firm brown grey mottled slightly sandy gravelly cobbly CLAY	Moderate	

Cont.

Trial Pits	TP05	**1.80** (46.17)	Firm to stiff greyish brown sightly sandy gravelly cobbly CLAY	Slow	Good stability
	TP06	**0.70** (47.39)	Interface of upper MADE GROUND and lower firm grey slightly sandy SILT/CLAY with rootlets	Seepage	Pit unstable to 2.50m
	TP07	**1.50** (46.64)	Interface of upper MADE GROUND and lower firm to stiff greyish brown slightly sandy gravelly cobbly CLAY	Moderate	Pit unstable to 1.50m
	TP09	**1.10** (45.60)	Interface of upper firm grey slightly sandy SILT/CLAY with organics and lower firm brownish grey sandy gravelly cobbly CLAY	Seepage	Pit slightly unstable from 1.10m to 1.80m
		1.80 (44.90)	Interface of upper firm brownish grey sandy gravelly cobbly CLAY and lower stiff to very stiff till	Slow	
	TP10	**0.70** (46.14)	Firm to stiff greyish brown slightly sandy gravelly cobbly CLAY	Seepage	Good stabiity

6. GROUND ASSESSMENT & ENGINEERING RECOMMENDATIONS

6.1 General

In light of the ground investigation findings, the following geotechnical issues are developed and discussed:

- Foundations
- Groundwater / Infiltration
- Slopes / Batters
- Buried Concrete
- Waste Acceptance Criteria [WAC] & Environmental Testing
  - Soils destined for Landfill

6.2 Foundations

The ground investigation findings demonstrate a variable sequence of shallow surficial soils mantling the site. The upper materials consist of MADE GROUND overlying natural / indigenous firm occasionally soft to firm organic soils transitioning to firm to stiff colour-mottled CLAY. The depth to the basal very stiff and stiff till was recorded in trial pits from 1.85m (TP09) to 3.0m (TP04) with boreholes suggesting its appearance from 1.80m (BH17) to 2.80m (BH01). From these depths, it can be surmised that the depth to the black boulder CLAY / over-consolidated till rises from west to east across the site.

Ahead of the grey very stiff brown to black CLAY, there exists both an upper firm to stiff grey slightly organic CLAY overlying a firm to stiff colour-mottled CLAY. Positioning conventional footings on the colour-mottled CLAY, an allowable bearing capacity of 150kPa would be recommended. However, if more substantial bearing capacities are envisaged, excavation of pads to the underlying dark grey brown to black 'boulder CLAY' would see capacities increase to 275kPa to 300kPa. At bearing pressures of this magnitude, settlement (immediate elastic and long-term consolidation) would be expected to be small and <10mm. If the higher strength soils are selected as the main bearing stratum these should be confirmed or validated by a competent geotechnical engineer or engineering geologist.

Floor slab loadings for the development are unknown but it may be possible, if the existing soils are rolled (compaction using a smooth drum roller without vibration with a mass per metre of roll of not less than 5400 kg) and capped with a layer of SR21 Annex E compliant granular material, an adequate support for floor slabs could be generated, unless unusually high pressures are envisaged. Plate bearing tests could be undertaken across the site to assess the performance of the existing Made Ground / upper subsoil layer and devise the thickness for a granular ground slab-supporting layer. Given the non-inert concentrations of total organic carbon detected in shallow soils, ground gas may be present on site. Measures should be incorporated in the ground slab design for the inclusion of a barrier to any such subterranean gases.

6.3 Groundwater / Infiltration

As noted in Section 5.3, shallow groundwater strikes were present in the open excavations ranging from slow to moderate ingress at depths ranging 0.70m to 2.70m. Discounting the uppermost seepages at 0.70m in both TP06 and TP10, the overall groundwater strike level was from ca. 1.50m bgl. The absence of water entry in two of the eleven pits may be attributed to the permeability of the natural CLAY (or lack thereof). This should limit the ingress of groundwater where excavations are formed solely in fine soils. Therefore, shallow temporary excavation should generally see an absence of water ingress in natural deposits. It should be noted that groundwater can exist in perched waterbodies often hosted in mixed Made Ground, most especially towards the Made Ground base. It should also be noted that seepages acted as precursors to more intense water ingress in both TP03, TP04 and TP09. The three pits lie in proximity to one another towards the southwest of the site. The ingress may therefore suggest some localised water body. The secondary strikes were noted as being of 'slow' ingress in two pits, observed as 'moderate' in TP04 (at 2.70m bgl / 45.29m OD).

Deeper-seated water entry was observed in three boreholes during their construction, the most intense reading being in BH14, where water struck at 2.80m rose to 1.10m. This appears to be a localised strike. The lack of permeability in the underlying cemented till implies where minor sand or gravel layers do exist, water will be encountered within these porous lenses. This may be the case with the strike in BH14.

Should water be encountered during deeper digs / excavations it is likely that de-watering will be required through a combination of strategic sump pumping and / or perimeter drains. As mentioned in Section 5.3, the potential does exist for there to be seasonal changes in groundwater level. The works were carried out during winter 2023/24. It may be the case that the various waterbodies at depth are subject to seasonal variations.

Three soakaway tests were conducted on the site. The tests were carried out in the natural overburden soils within open excavations. The impermeable nature of the soils may account for the low to negligible infiltration rates obtained.

It is likely that such soils would not be suitable for conventional soakaways being classified as offering only low natural infiltration (Table 2).

Table 2 – Measured infiltration rates (f) expressed as exposed area (metre) per unit time (minute)

Soakaway Test No.	Depth of Test (m bgl)	*f* (m/min)	*f* (m/sec)
TP/SA01	1.70	0.000039 m/min	6.569E -07 m/sec
TP/SA06	1.80	0 m/min	0 m/sec
TP/SA10	1.70	0 m/min	0 m/sec

6.4 Slopes / Batters

A maximum temporary slope angle of 1V to 1.5H (33º) is anticipated for batters constructed within the upper medium strength fine grained soils. A slope angle of 1V to 2H (26°) should be appropriate for long term batters in the same soils. Instability was noted during pitting with sidewall collapse and general instability displayed by the Made Ground and uppermost medium strength deposits. Where deep excavation works are required in the superficial deposits, the use of trench box support is advised. In addition, the uppermost fine subsoils will be susceptible to softening and degradation and surface water or groundwater ingress can lead to a significant reduction in shear strength. Perched water can exist locally and this should be considered in risk assessments for excavations. Presence of ground gas should also be a consideration given the drape of Made Ground on the site coupled with the hydrcarbon signature identified detected in some of the pits.

Site operatives or personnel should not enter unsupported excavations and should be informed of potential risks. Where site operatives or engineering staff work in close proximity to temporary slopes or batters, these should be inspected and approved by a suitably experienced civil engineer, preferably with geotechnical experience. Where there is a risk of spalling of battered slopes, the use of a geogrid is recommended. The geogrid should be anchored at the top and bottom of the ridge face to contain particles such as gravel, cobbles and / or boulders, anthropogenic materials that may become dislodged.

6.5 Buried Concrete

The chemical analysis tests on natural soil samples (BRE SD1 analysis suite) show pH (2.5:1) values ranging from 7.8 to 10. The sulphate aqueous extract (SO_4) results from borehole and trial pit samples determined values of <10 and 450mg/l. This would suggest the ‘as-received‘ soil samples tested could be categorised as BRE Class DS-1.

Table C2 ACEC for brownfield sites in BRE SD 1 (2005) can be used in the selection and design of concrete. If mobile groundwater conditions prevail at the site and given the pH values obtained from the testing, then ACEC class AC-1 would be expected to be appropriate for buried concrete in the soils. In line with I.S. EN 206-1:2013, given the acid soluble sulphate contents reported (up to 1900mg/kg (SO_4^{2-}), concrete could be manufactured to Class XA1 where founded or positioned in the upper soils (Class XA1 being ≥3000 and ≤ 3000 SO_4^{2-} mg/kg).

6.6 Waste Acceptance Criteria [WAC] & Environmental Testing – *Soils destined for Landfill*

Twenty-seven soil samples from boreholes and trial pits were analysed for their compliance to the criteria set out in the 2002 European Landfill Directive (2003/33/EC). The results from testing feature in Appendix 8.

It would be prudent, given the volume of analysis, that a waste characterisation assessment of the results would be carried out in accordance with the Environmental Protection Agency (EPA) Guidelines on the Classification of Waste (2015). We would recommend that a specialist environmental consultant (e.g. O'Callaghan Moran Consultants) be engaged to undertake this assessment.

REFERENCES

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5.0 Irish Standard IS 888:2016, NSAI (Published in March 2016)

6.0 Marchant T.R. and Sevastopulo G. D. (1980). The Calp of the Dublin District. Journal of Earth Sciences, 3(2), pp195-203

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Appendix 1

Trial Pit Logs & Photographs

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP01**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,038.64 E 738,885.28 N
		DATE STARTED	08/11/2023
		DATE COMPLETED	08/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	48.35
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 CONCRETE		0.20	48.15						
MADE GROUND comprising grey to brownish grey clayey angular gravel, cobbles, old concrete slab - Possible slight HC contamination					AA196364	B	0.50		
Firm greyish brown slightly sandy slightly gravelly SILT/CLAY with rare organic remnants. Sand is fine to to medium. Gravel is fine subangular to subrounded.		0.90	47.45						
1.0					AA196365	B	1.10		
Firm to stiff brown/grey mottled slightly sandy gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded of limestone.		1.30	47.05						
2.0					AA196366	B	2.00		
Very stiff dark grey slightly sandy gravelly CLAY with a high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles and boulders are subangular to subrounded of limestone (up to 300mm).		2.50	45.85						
					AA196367	B	2.90		
3.0 End of Trial Pit at 3.00m		3.00	45.35						

Groundwater Conditions
Dry

Stability
Good

General Remarks
Soakaway test SA01 carried out at TP01

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP02**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,064.44 E 738,872.77 N
		DATE STARTED	08/11/2023
		DATE COMPLETED	08/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	48.18
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TARMACADAM		0.08	48.10						
MADE GROUND comprising grey to brownish grey clayey angular gravel, cobbles					AA196368	B	0.50		
Firm grey/brown mottled slightly sandy SILT/CLAY with organic remnants. Sand is fine to to medium.		0.60	47.58		AA196369	B	0.80		
Firm to stiff brown sandy gravelly CLAY with a high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded of limestone.		0.90	47.28						
1.0									
1.70m - 60mm diameter clay land drain					AA196370	B	1.70		
2.0									
Very stiff dark grey slightly sandy gravelly CLAY with a high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles and boulders are subangular to subrounded of limestone (up to 350mm).		2.50	45.68	1 (Seepage)	AA196371	B	2.70		
3.0 End of Trial Pit at 3.00m		3.00	45.18						

Groundwater Conditions
Seepage at 2.50m

Stability
Pit slightly unstable

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP03**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,069.96 E 738,899.83 N
		DATE STARTED	08/11/2023
		DATE COMPLETED	08/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	48.14
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 CONCRETE		0.20	47.94						
MADE GROUND comprising brown/grey mottled slightly clayey angular gravel and cobbles					AA196372	B	0.70		
		0.80	47.34						
1.0 MADE GROUND comprising brown rounded sandy gravel, concrete rubble/old slab									
		1.30	46.84	1 (Seepage)					
Firm brown/grey mottled slightly sandy gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded.					AA196373	B	1.50		
2.0				2 (Slow)					
					AA196374	B	2.40		
Stiff dark grey slightly sandy gravelly CLAY with a high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded of limestone.		2.60	45.54						
3.0 End of Trial Pit at 3.00m		3.00	45.14						

Groundwater Conditions
Seepage at 1.30m; Slow water flow at 1.90m

Stability
Pit unstable from 1.90m to 2.6m

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP04**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,096.23 E 738,880.63 N
		DATE STARTED	08/11/2023
		DATE COMPLETED	08/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	47.99
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 CONCRETE		0.20	47.79						
MADE GROUND comprising brown/grey/black sandy gravelly Clay, angular gravel, cobbles, concrete rubble, timber pieces, old tarmac) - Possible slight HC contamination					AA196375	B	0.80		
1.0 Firm grey slightly sandy SILT/CLAY with occasional shells		1.00	46.99		AA196376	B	1.60		
Soft to firm brown/grey mottled slightly sandy gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subrounded to subangular. Cobbles are subangular to subrounded.		1.90	46.09	1 (Seepage)					
2.0				2 (Moderate)	AA196377	B	2.60		
3.0 Stiff dark grey slightly sandy gravelly CLAY with a high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded of limestone.		3.00	44.99						
End of Trial Pit at 3.30m		3.30	44.69						

Groundwater Conditions
Seepage at 1.90m; Moderate water flow at 2.70m

Stability
Pit unstable from 1.90m to 3.0m

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP05**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,117.97 E 738,847.77 N
		DATE STARTED	08/11/2023
		DATE COMPLETED	08/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	47.97
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TARMADACAM		0.08	47.89						
MADE GROUND comprising grey/black clayey angular gravel and cobbles		0.45	47.52		AA196378	B	0.40		
Firm to stiff yellowish brown/grey mottled slightly sandy slightly gravelly SILT/CLAY with occasional organic remnants. Sand is fine to coarse. Gravel is fine to medium subangular to subrounded.		1.00	46.97		AA196379	B	0.90		
1.0 Firm to stiff greyish brown slightly sandy gravelly CLAY with a high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded.				1 (Slow)	AA196380	B	1.70		
2.0 Stiff to very stiff dark grey slightly sandy very gravelly CLAY with a high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles and boulders are subangular to subrounded of limestone (up to 300mm).		2.20	45.77		AA196381	B	2.60		
3.0 End of Trial Pit at 3.00m		3.00	44.97						

Groundwater Conditions
Slow water flow at 1.80m

Stability
Good

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP06**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,128.36 E 738,868.65 N
		DATE STARTED	09/11/2023
		DATE COMPLETED	09/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	48.09
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 CONCRETE									
MADE GROUND comprising dark grey/black/grey clayey angular gravel and cobbles, sandy gravelly clay		0.25	47.84		AA204940	B	0.50		
Firm grey slightly sandy SILT/CLAY with rootlets. Sand is fine to medium.		0.70	47.39	1 (Seepage)	AA204941	B	1.00		
1.0									
Firm greyish brown sandy gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded.		1.30	46.79		AA204942	B	1.80		
2.0									
Stiff dark grey slightly sandy gravelly CLAY with a high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded of limestone.		2.50	45.59		AA204943	B	2.80		
3.0 End of Trial Pit at 3.00m		3.00	45.09						

Groundwater Conditions
Seepage at 0.70m

Stability
Pit unstable to 2.50m

General Remarks
Soakaway test SA06 carried out at TP06

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP07**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,140.67 E 738,902.35 N
		DATE STARTED	09/11/2023
		DATE COMPLETED	09/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	48.14
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 CONCRETE									
		0.25	47.89						
MADE GROUND comprising dark grey angular gravel and cobbles					AA196396	B	0.50		
		0.65	47.49						
MADE GROUND comprising brown/grey/black sandy gravelly Clay, old concrete slab and rubble, old tarmac, cobbles, boulders, rare plastic rubbish									
1.0					AA196397	B	1.30		
		1.50	46.64	1 (Moderate)					
Firm to stiff greyish brown slightly sandy gravelly CLAY with a high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded.									
2.0					AA196398	B	2.00		
		2.40	45.74						
Stiff to very stiff dark brownish grey slightly sandy very gravelly CLAY with a high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles and boulders are subangular to subrounded of limestone (up to 350mm).					AA196399	B	2.60		
		2.70	45.44						
End of Trial Pit at 2.70m									
3.0									

Groundwater Conditions
Moderate water flow at 1.50m

Stability
Pit unstable to 1.50m

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP08**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,165.78 E 738,902.93 N
		DATE STARTED	09/11/2023
		DATE COMPLETED	09/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	47.96
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 CONCRETE		0.15	47.81						
MADE GROUND comprising dark grey/grey/brown mottled sandy gravel, sandy gravelly clay, cobbles and rare plastic rubbish.					AA196392	B	0.60		
Firm to stiff slightly sandy SILT/CLAY with some organic remnants		0.85	47.11						
1.0					AA196393	B	1.00		
Firm to stiff greyish brown sandy very gravelly CLAY with a high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded.		1.15	46.81						
2.0					AA196394	B	1.80		
Stiff to very stiff grey slightly sandy gravelly CLAY with a high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles and boulders are subangular to subrounded of limestone (up to 300mm).		2.50	45.46						
					AA196395	B	2.80		
3.0 End of Trial Pit at 3.00m		3.00	44.96						

Groundwater Conditions
Dry

Stability
Good

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP09**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,259.22 E 738,959.44 N
		DATE STARTED	09/11/2023
		DATE COMPLETED	09/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	46.70
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 CONCRETE		0.25	46.45						
MADE GROUND comprising dark grey/grey slightly clayey sandy rounded Gravel - Possible HC contamination		0.50	46.20		AA196388	B	0.40		
Firm grey slightly sandy SILT/CLAY with some organic remnants					AA196389	B	0.90		
1.0 Firm brownish grey sandy gravelly CLAY with a high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded. Possible HC contamination		1.10	45.60	1 (Seepage)					
					AA196390	B	1.60		
Stiff to very stiff dark grey slightly sandy gravelly CLAY with a high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles and boulders are subangular to subrounded of limestone (up to 400m).		1.85	44.85	2 (Slow)					
2.0					AA196391	B	2.30		
Pit terminated due to boulder obstructions End of Trial Pit at 2.40m		2.40	44.30						
3.0									

Groundwater Conditions
Seepage at 1.10m; Slow water flow at 1.80m

Stability
Pit slightly unstable from 1.10m to 1.80m

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP10**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,274.89 E 738,943.47 N
		DATE STARTED	09/11/2023
		DATE COMPLETED	09/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	46.84
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 CONCRETE									
		0.22	46.62						
MADE GROUND comprising brown clayey rounded sandy Gravel		0.45	46.39						
Firm to stiff greyish brown slightly sandy gravelly CLAY with a high cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles are subangular to subrounded.				1 (Seepage)	AA196382	B	0.70		
1.0 1.40m - Occasional lenses of silty Sand					AA196383	B	1.60		
2.0 Stiff to very stiff dark grey slightly sandy gravelly CLAY with a high cobble and boulder content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded. Cobbles and boulders are subangular to subrounded of limestone (up to 300mm).		1.95	44.89						
					AA196384	B	2.40		
Pit terminated due to boulder obstructions End of Trial Pit at 2.50m		2.50	44.34						
3.0									

Groundwater Conditions
Seepage at 0.70m

Stability
Good

General Remarks
Soakaway test SA10 carried out at TP10

TRIAL PIT RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**TRIAL PIT NO.**	**TP11**
		SHEET	Sheet 1 of 1
LOGGED BY	IR	**CO-ORDINATES**	716,323.25 E 738,979.93 N
		DATE STARTED	09/11/2023
		DATE COMPLETED	09/11/2023
CLIENT	NDFA	**GROUND LEVEL (m)**	46.41
ENGINEER	MORCE	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 CONCRETE									
		0.25	46.16						
MADE GROUND comprising grey/dark grey sandy slightly gravelly Silt/Clay with organic remnants and boulders					AA196395	B	0.40		
					AA196386	B	0.80		
		0.90	45.51						
1.0 Soft to firm brown/grey mottled slightly sandy slightly gravelly SILT/CLAY with a medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subrounded to subangular. Cobbles are subangular to subrounded.									
1.45m - Lense of rounded coarse gravel - Possible track of existing culvert				1 (Rapid)	AA196387	B	1.50		
		1.70	44.71						
Pit terminated due to rapid water ingress End of Trial Pit at 1.70m									
2.0									
3.0									

Groundwater Conditions
Rapid water flow at 1.45m

Stability
Pit slightly unstable from 1.5m

General Remarks
Pit terminated at 1.70m due to rapid water ingress through gravel surround / trenchfill of adjacent culvert

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD
TP 01

TP 01 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD
TP 02

TP 02 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD
TP 03

TP 03 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD
TP 04

TP 04 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD
TP 05

TP 05 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD

TP 06

TP 06 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD
TP 07

TP 07 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD
TP 08

TP 08 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD
TP 09

TP 09 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD

TP 10

TP 10 – spoil

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

TRIAL PIT PHOTOGRAPHY RECORD
TP 11

TP 11 – spoil

Appendix 2

Foundation Pit Logs

FOUNDATION INSPECTION PIT RECORD

REPORT NUMBER

25000-2

CONTRACT: NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue

LOCATION: FP02 (at ST02-0)

LOGGED BY: P.Nixon

Date of survey: 31-01-24

TRIAL PIT NO. **FP02**

SHEET Sheet 1 of 1

Summary of ground conditions

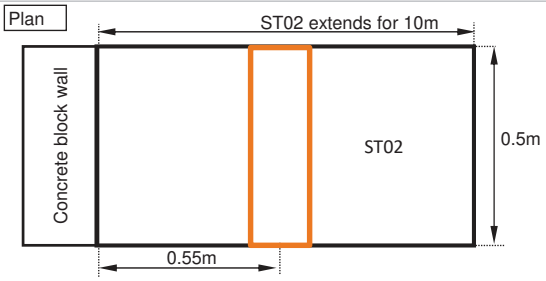
from	to	Description	Ground water
0.00	0.25	CONCRETE	
0.25	0.40	MADE GROUND comprising Hardcore Fill	Dry
		4inch wavin pipe encountered at 0.40m - Pit terminated	

NOTE: See also ST02 log

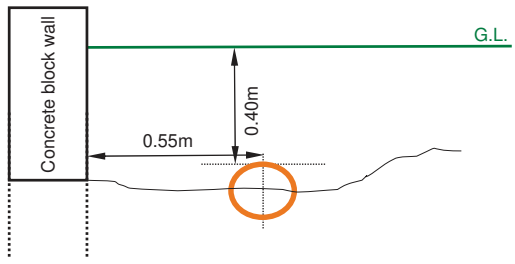
LOCATION **FP02**

Location Details: E:716054.456, N:738910.795, Elev. 48.327mOD

Plan



Elevation



FOUNDATION INSPECTION PIT RECORD

REPORT NUMBER

25000-2

CONTRACT: NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue

LOCATION: FP03 (at ST03-0)

LOGGED BY: P.Nixon

Date of survey: 01-02-24

TRIAL PIT NO. **FP03**

SHEET Sheet 1 of 1

Summary of ground conditions

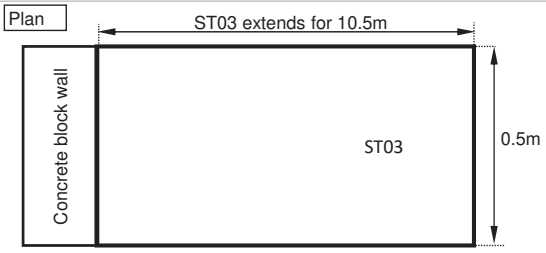
from	to	Description	Ground water
0.00	0.30	CONCRETE	Water at 0.30m from both Hardcore Fill and surface
0.30	0.50	MADE GROUND comprising Hardcore Fill	
		Pit terminated due to water ingress	

NOTE: See also ST03 log

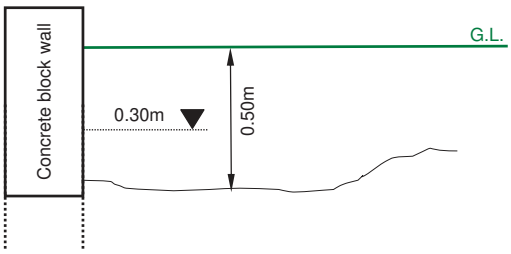
LOCATION **FP03**

Location Details: E:716090.815, N:738913.508, Elev. 48.065mOD

Plan



Elevation



FOUNDATION INSPECTION PIT RECORD

REPORT NUMBER

25000-2

CONTRACT: NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue

LOCATION: FP04 (at ST04-0)

LOGGED BY: P.Nixon

Date of survey: 01-02-24

TRIAL PIT NO. **FP04**

SHEET Sheet 1 of 1

Summary of ground conditions

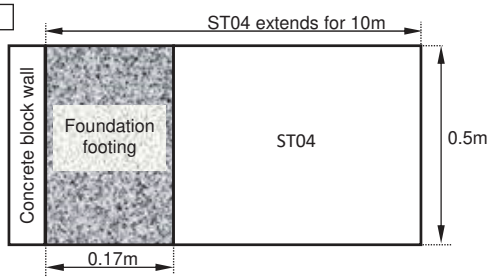
from	to	Description	Ground water
0.00	0.25	CONCRETE	Water in pit at 0.50m
0.25	0.40	MADE GROUND comprising Hardcore Fill	
0.40	1.50	MADE GROUND comprising sandy slightly gravelly Silt/Clay with a low boulder content	

NOTE: See also ST04 log

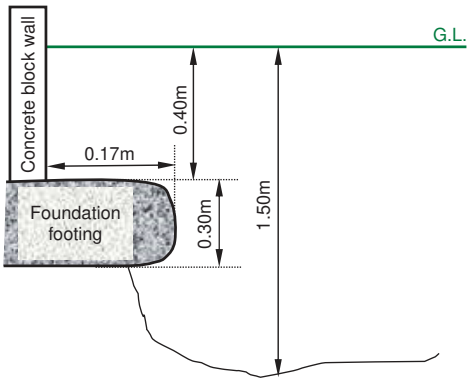
LOCATION **FP04**

Location Details: E:716244.284, N:738961.149, Elev. 46.715mOD

Plan



Elevation



FOUNDATION INSPECTION PIT RECORD

REPORT NUMBER

25000-2

CONTRACT: NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue

LOCATION: FP05 (at ST05-0)

LOGGED BY: P.Nixon

Date of survey: 02-02-24

TRIAL PIT NO. **FP05**

SHEET Sheet 1 of 1

Summary of ground conditions

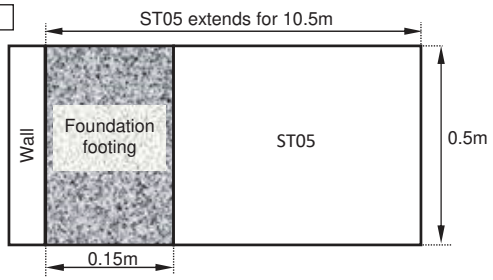
from	to	Description	Ground water
0.00	0.20	CONCRETE	
0.20	1.50	MADE GROUND comprising Greenish brown sandy gravelly CLAY with a low boulder content	

NOTE: See also ST05 log

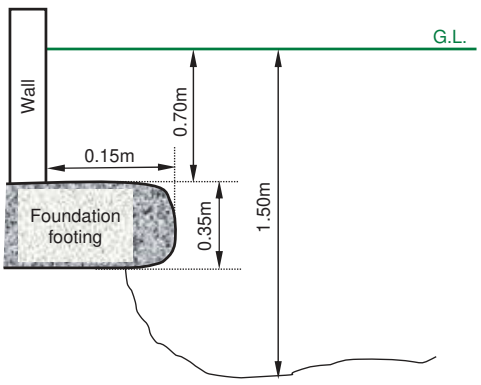
LOCATION **FP05**

Location Details: E:716300.979, N:738977.008, Elev. 46.494mOD

Plan



Elevation



Appendix 3

Cable Percussion Borehole Logs

SPT Calibration Sheet (Er)

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH01**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,002.22 E 738,902.17 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.20	**BOREHOLE DEPTH (m)**	6.30
		DATE COMMENCED	17/11/2023
		DATE COMPLETED	20/11/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		48.00	0.20						
	Black/grey sandy slightly gravelly SILT/CLAY		47.50	0.70	AA119034	B	0.50			
1	Soft grey sandy gravelly SILT/CLAY		46.90	1.30	AA119035	B	1.00		N = 8 (1, 1, 1, 2, 2, 3)	
	Stiff grey/brown sandy gravelly SILT/CLAY		46.00	2.20	AA119036	B	2.00		N = 27 (1, 2, 4, 5, 7, 11)	
2	Stiff to very stiff grey sandy gravelly SILT/CLAY with occasional cobbles		45.40	2.80						
	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA119037	B	3.00		N = 50/225 mm (8, 14, 14, 14, 22)	
3										
					AA119038	B	4.00		N = 50/225 mm (10, 11, 14, 15, 21)	
4										
					AA119039	B	5.00		N = 50/225 mm (12, 10, 14, 16, 20)	
5										
					AA119040	B	6.00		N = 50/150 mm (13, 12, 22, 28)	
6			41.90	6.30						
	Obstruction End of Borehole at 6.30 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.50	6.30	1	
6.10	6.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH02**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,048.23 E 738,874.53 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.32	**BOREHOLE DEPTH (m)**	6.20
		DATE COMMENCED	20/11/2023
		DATE COMPLETED	21/11/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TARMACADAM		48.12	0.20						
	Grey sandy slightly gravelly SILT/CLAY		47.62	0.70	AA119041	B	0.50			
1	Soft grey/brown sandy gravelly SILT/CLAY		46.92	1.40	AA119042	B	1.00		N = 9 (0, 1, 1, 2, 3, 3)	
2	Firm mottled grey sandy gravelly SILT/CLAY with occasional cobbles		45.52	2.80	AA119043	B	2.00		N = 13 (2, 2, 2, 4, 4, 3)	
3	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA119044	B	3.00		N = 50 (8, 13, 14, 14, 14, 8)	
4					AA119045	B	4.00		N = 50/75 mm (17, 8, 50)	
5					AA119046	B	5.00		N = 50/75 mm (11, 14, 50)	
6			42.12	6.20	AA119047	B	6.00		N = 50/75 mm (12, 13, 50)	
	Obstruction End of Borehole at 6.20 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.20	6.20	1	
6.00	6.20	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
21-11-23	6.20	Nil	5.40	End of BH

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH03**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,057.27 E 738,889.96 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.28	**BOREHOLE DEPTH (m)**	6.30
		DATE COMMENCED	22/11/2023
		DATE COMPLETED	23/11/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		47.98	0.30						
	Soft grey sandy gravelly SILT/CLAY with some cobbles (Possible Made Ground)		47.28	1.00	AA204208	B	0.50			
1	Soft to firm light grey sandy slightly gravelly SILT/CLAY		46.28	2.00	AA204209	B	1.00		N = 7 (0, 1, 1, 2, 2, 2)	
2	Stiff grey/brown sandy gravelly SILT/CLAY with occasional cobbles		45.48	2.80	AA204210	B	2.00		N = 17 (2, 2, 4, 4, 5, 4)	
3	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA204211	B	3.00		N = 40 (6, 8, 8, 10, 10, 12)	
4					AA204212	B	4.00		N = 35/225 mm (8, 12, 14, 15, 6)	
5					AA204213	B	5.00		N = 50/225 mm (10, 13, 18, 18, 14)	
6			41.98	6.30	AA204214	B	6.00		N = 50/150 mm (12, 13, 23, 27)	
	Obstruction End of Borehole at 6.30 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.60	6.80	1	
6.10	6.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH04**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,062.06 E 738,904.87 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.21	**BOREHOLE DEPTH (m)**	6.30
		DATE COMMENCED	23/11/2023
		DATE COMPLETED	24/11/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		47.91	0.30						
	Soft grey/black sandy gravelly SILT/CLAY with occasional cobbles (Possible Made Ground)		47.21	1.00	AA204215	B	0.50			
1	Soft grey/brown sandy slightly gravelly SILT/CLAY		46.71	1.50	AA204216	B	1.00		N = 7 (0, 1, 1, 2, 2, 2)	
2	Firm mottled light grey sandy gravelly SILT/CLAY with occasional cobbles		45.71	2.50	AA204217	B	2.00		N = 18 (2, 3, 4, 4, 5, 5)	
	Firm to stiff grey sandy gravelly SILT/CLAY with occasional cobbles		45.41	2.80						
3	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA204218	B	3.00		N = 50/225 mm (8, 15, 16, 16, 18)	
4					AA204219	B	4.00		N = 50/75 mm (18, 7, 50)	
5					AA204220	B	5.00		N = 50/225 mm (16, 9, 18, 18, 14)	
6			41.91	6.30	AA204221	B	6.00		N = 50/150 mm (13, 12, 23, 27)	
	Obstruction End of Borehole at 6.30 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.90	6.30	1.25	
6.10	6.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH05**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,068.51 E 738,862.78 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.08	**BOREHOLE DEPTH (m)**	6.20
		DATE COMMENCED	21/11/2023
		DATE COMPLETED	22/11/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TARMACADAM		47.98	0.10						
	Grey sandy slightly gravelly SILT/CLAY		47.38	0.70	AA204201	B	0.50			
1	Soft mottled grey/brown sandy gravelly SILT/CLAY with occasional cobbles		46.28	1.80	AA204202	B	1.00		N = 6 (0, 1, 1, 1, 2, 2)	
2	Stiff grey/black sandy gravelly SILT/CLAY with some cobbles		45.58	2.50	AA204203	B	2.00		N = 28 (1, 2, 5, 5, 8, 10)	
3	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA204204	B	3.00		N = 50/225 mm (8, 14, 16, 16, 18)	
4					AA204205	B	4.00		N = 50/75 mm (16, 9, 50)	
5					AA204206	B	5.00		N = 50/150 mm (17, 8, 35, 15)	
6			41.88	6.20	AA204207	B	6.00		N = 50/75 mm (19, 6, 50)	
	Obstruction End of Borehole at 6.20 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.10	6.00	1	
6.00	6.20	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH06**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,084.35 E 738,875.35 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.11	**BOREHOLE DEPTH (m)**	6.30
		DATE COMMENCED	24/11/2023
		DATE COMPLETED	27/11/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TARMACADAM		47.91	0.20						
	Grey sandy slightly gravelly SILT/CLAY				AA204222	B	0.50			
			47.11	1.00						
1	Soft mottled light grey sandy gravelly SILT/CLAY with occasional cobbles				AA204223	B	1.00		N = 8 (0, 1, 2, 1, 2, 3)	
			46.51	1.60						
	Stiff mottled grey/brown sandy gravelly SILT/CLAY with some cobbles									
2					AA204224	B	2.00		N = 25 (2, 4, 5, 5, 6, 9)	
			45.61	2.50						
	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders									
3					AA204225	B	3.00		N = 36 (5, 6, 7, 9, 9, 11)	
4					AA204226	B	4.00		N = 50 (7, 8, 9, 11, 16, 14)	
5					AA204227	B	5.00		N = 50/225 mm (9, 16, 18, 18, 14)	
6					AA204228	B	6.00		N = 50/150 mm (6, 19, 27, 23)	
			41.81	6.30						
	Obstruction End of Borehole at 6.30 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.70	6.90	1.25	
6.10	6.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH07**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,114.93 E 738,910.14 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.09	**BOREHOLE DEPTH (m)**	6.20
		DATE COMMENCED	05/12/2023
		DATE COMPLETED	05/12/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		47.89	0.20						
	Grey sandy GRAVEL with some cobbles (Possible Made Ground)		47.19	0.90	AA209208	B	0.50			
1	Soft grey/black sandy slightly gravelly SILT/CLAY		46.49	1.60	AA209209	B	1.00		N = 10 (0, 1, 2, 2, 4, 2)	
2	Firm grey/brown sandy gravelly SILT/CLAY with occasional cobbles		45.49	2.60	AA209210	B	2.00		N = 20 (4, 5, 4, 5, 5, 6)	
3	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA209211	B	3.00		N = 50 (8, 14, 14, 14, 15, 7)	
4					AA209212	B	4.00		N = 50/75 mm (15, 9, 50)	
5					AA209213	B	5.00		N = 50/150 mm (20, 5, 30, 20)	
6			41.89	6.20	AA209214	B	6.00		N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 6.20 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.90	6.20	1	
6.00	6.20	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH08**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,116.25 E 738,898.74 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.00	**BOREHOLE DEPTH (m)**	6.30
		DATE COMMENCED	30/11/2023
		DATE COMPLETED	04/12/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		47.80	0.20						
	MADE GROUND comprising grey sandy gravelly Fill with pieces of tarmacadam		47.10	0.90	AA209201	B	0.50			
1	Soft mottled brown sandy slightly gravelly SILT/CLAY		46.60	1.40	AA209202	B	1.00		N = 6 (0, 2, 1, 2, 1, 2)	
	Firm becoming firm to stiff grey sandy gravelly SILT/CLAY with occasional cobbles									
2			45.40	2.60	AA209203	B	2.00		N = 18 (2, 3, 4, 4, 5, 5)	
	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA209204	B	3.00		N = 40 (5, 8, 9, 9, 10, 12)	
3										
4					AA209205	B	4.00		N = 50/225 mm (8, 14, 16, 16, 16, 18)	
5					AA209206	B	5.00		N = 50/75 mm (17, 8, 50)	
6			41.70	6.30	AA209207	B	6.00		N = 50/150 mm (9, 16, 30, 20)	
	Obstruction End of Borehole at 6.30 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.80	6.00	1	
6.10	6.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.30	6.30	No	No	20	Seepage

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH09**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,105.93 E 738,868.09 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.00	**BOREHOLE DEPTH (m)**	6.20
		DATE COMMENCED	27/11/2023
		DATE COMPLETED	28/11/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TARMACADAM		47.90	0.10						
	MADE GROUND comprising Cl.804-type stone Fill		47.70	0.30						
	Soft brown sandy slightly gravelly SILT/CLAY				AA204229	B	0.50			
1			46.80	1.20	AA204230	B	1.00		N = 8 (0, 1, 1, 2, 2, 3)	
	Soft becoming firm to stiff grey/brown sandy gravelly SILT/CLAY with occasional boulders									
2					AA204231	B	2.00		N = 19 (1, 2, 3, 4, 6, 6)	
			45.50	2.50	AA204232	B	2.50			
	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders									
3					AA204233	B	3.00		N = 50/225 mm (8, 12, 17, 17, 16)	
4					AA204234	B	4.00		N = 50/75 mm (25, 33, 50)	
5					AA204235	B	5.00		N = 12/75 mm (25, 38, 12)	
6			41.80	6.20	AA204236	B	6.00		N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 6.20 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.00	6.20	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH10**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,107.34 E 738,843.96 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.06	**BOREHOLE DEPTH (m)**	6.30
		DATE COMMENCED	28/11/2023
		DATE COMPLETED	29/11/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		47.86	0.20						
	Grey sandy slightly gravelly SILT/CLAY		47.56	0.50						
	Soft to firm grey sandy gravelly SILT/CLAY with occasional cobbles				AA204237	B	0.50			
1					AA204238	B	1.00		N = 10 (1, 2, 2, 3, 2, 3)	
			46.56	1.50						
	Very stiff grey/brown sandy gravely SILT/CLAY with some cobbles									
2			45.86	2.20	AA204239	B	2.00		N = 50 (5, 10, 12, 13, 13, 12)	
	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders									
3					AA204240	B	3.00		N = 50/75 mm (8, 14, 50)	
4					AA204241	B	4.00		N = 50/150 mm (13, 12, 30, 20)	
5					AA204242	B	5.00		N = 50/75 mm (15, 10, 50)	
6					AA204243	B	6.00		N = 50/150 mm (14, 11, 22, 28)	
			41.76	6.30						
	Obstruction End of Borehole at 6.30 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.30	6.50	1.25	
6.10	6.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH11**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,128.23 E 738,857.88 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	47.95	**BOREHOLE DEPTH (m)**	5.20
		DATE COMMENCED	29/11/2023
		DATE COMPLETED	30/11/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		47.75	0.20						
	MADE GROUND comprising grey sandy gravelly Fill with large cobbles		47.55	0.40	AA204244	B	0.50			
	Grey sandy slightly gravelly SILT/CLAY		47.05	0.90						
1	Soft mottled grey sandy gravelly SILT/CLAY		46.35	1.60	AA204245	B	1.00		N = 7 (0, 1, 1, 2, 2, 2)	
2	Stiff brown sandy gravely SILT/CLAY with some cobbles		45.75	2.20	AA204246	B	2.00		N = 27 (1, 2, 3, 5, 7, 12)	
3	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA204247	B	3.00		N = 50/225 mm (10, 14, 16, 16, 18)	
4					AA204248	B	4.00		N = 50/75 mm (15, 10, 50)	
5			42.75	5.20	AA204249	B	5.00		N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 5.20 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.80	5.00	1	
5.00	5.20	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH12**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,156.14 E 738,886.34 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.01	**BOREHOLE DEPTH (m)**	6.30
		DATE COMMENCED	07/12/2023
		DATE COMPLETED	07/12/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		47.81	0.20						
	Grey sandy slightly gravelly SILT/CLAY		47.61	0.40						
	Firm to stiff mottled grey sandy gravelly SILT/CLAY with occasional cobbles				AA209222	B	0.50			
1					AA209223	B	1.00		N = 11 (0, 1, 2, 2, 2, 5)	
			46.11	1.90						
2	Stiff grey/brown mottled sandy gravelly SILT/CLAY with some cobbles				AA209224	B	2.00		N = 21 (1, 2, 4, 5, 5, 7)	
			45.41	2.60						
	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA209225	B	3.00		N = 50/225 mm (9, 16, 17, 17, 16)	
4					AA209226	B	4.00		N = 50/75 mm (8, 17, 50)	
5					AA209227	B	5.00		N = 50/75 mm (12, 13, 50)	
6					AA209228	B	6.00		N = 50/150 mm (13, 12, 26, 24)	
			41.71	6.30						
	Obstruction End of Borehole at 6.30 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.50	6.30	1	
6.10	6.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH13**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,163.41 E 738,912.39 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	48.04	**BOREHOLE DEPTH (m)**	6.30
		DATE COMMENCED	06/12/2023
		DATE COMPLETED	06/12/2023
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		47.84	0.20						
	MADE GROUND comprising grey sandy gravelly Fill		47.64	0.40						
	Firm grey sandy SILT/CLAY with occasional cobbles				AA209215	B	0.50			
1			46.84	1.20	AA209216	B	1.00		N = 18 (0, 2, 3, 5, 5, 5)	
	Firm mottled brown sandy gravelly SILT/CLAY with occasional cobbles		46.44	1.60						
	Stiff mottled grey/brown sandy gravelly SILT/CLAY with cobbles				AA209217	B	2.00		N = 20 (1, 2, 5, 4, 5, 6)	
2			45.34	2.70						
	Very stiff black sandy gravelly silty CLAY with some cobbles and occasional boulders				AA209218	B	3.00		N = 50 (7, 13, 13, 13, 17, 7)	
3										
4					AA209219	B	4.00		N = 50/225 mm (10, 12, 15, 15, 20)	
5					AA209220	B	5.00		N = 50/225 mm (12, 13, 16, 16, 18)	
6					AA209221	B	6.00		N = 50/150 mm (13, 12, 28, 22)	
			41.74	6.30						
	Obstruction End of Borehole at 6.30 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.10	6.30	1	
6.10	6.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH14**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,195.87 E 738,919.36 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	47.40	**BOREHOLE DEPTH (m)**	4.50
		DATE COMMENCED	08/01/2024
		DATE COMPLETED	09/01/2024
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		47.20	0.20	AA209229	B	0.00			
	MADE GROUND comprising grey/brown sandy slightly gravelly SILT/CLAY									
1			46.20	1.20	AA209230	B	1.00		N = 9 (1, 2, 2, 2, 2, 3)	
	Firm mottled grey sandy gravelly SILT/CLAY									
2			45.30	2.10	AA209231	B	2.00		N = 22 (2, 3, 4, 4, 5, 9)	
	Stiff to very stiff black sandy gravelly CLAY with some cobbles and occasional boulders									
3					AA209232	B	3.00		N = 41 (6, 7, 7, 9, 12, 13)	
4					AA209233	B	4.00		N = 50/150 mm (15, 10, 33, 17) N = 50/75 mm (25, 50)	
			43.10	4.30						
	Obstruction End of Borehole at 4.50 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.30	3.50	1	
3.70	3.90	0.75	
4.10	4.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.80	2.80	3.10	1.40	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
08-01-24	3.00	3.00	1.40	End of 1st Day
09-01-24	4.30	Nil	1.10	End of BH

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH15**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,247.68 E 738,946.31 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	46.95	**BOREHOLE DEPTH (m)**	5.30
		DATE COMMENCED	12/01/2024
		DATE COMPLETED	12/01/2024
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		46.75	0.20						
	MADE GROUND comprising grey sandy slightly gravelly SILT/CLAY		46.05	0.90	AA209234	B	0.50			
1	Soft grey/brown sandy slightly gravelly SILT/CLAY		45.35	1.60	AA210263	B	1.00		N = 6 (0, 1, 1, 1, 2, 2)	
2	Stiff mottled brown sandy silty gravelly CLAY with occasional cobbles		44.65	2.30	AA210264	B	2.00		N = 23 (2, 2, 3, 5, 5, 10)	
3	Very stiff black sandy silty gravelly CLAY with some cobbles and occasional boulders				AA210265	B	3.00		N = 47 (15, 10, 10, 14, 11, 12)	
4					AA210266	B	4.00		N = 40 (7, 7, 9, 10, 10, 11)	
5			41.65	5.30	AA210267	B	5.00		N = 43 (9, 9, 9, 10, 14, 10) N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 5.30 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.00	4.20	1	
4.50	4.70	1	
5.20	5.30	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH16**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,267.60 E 738,940.16 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	46.87	**BOREHOLE DEPTH (m)**	4.70
		DATE COMMENCED	11/01/2024
		DATE COMPLETED	11/01/2024
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		46.67	0.20						
	MADE GROUND comprising grey sandy slightly gravelly SILT/CLAY		45.97	0.90	AA210257	B	0.50			
1	Soft to firm grey/brown sandy gravelly SILT/CLAY		45.17	1.70	AA210258	B	1.00		N = 10 (0, 1, 2, 2, 2, 4)	
2	Stiff mottled dark brown sandy silty gravelly CLAY with occasional cobbles		44.57	2.30	AA210259	B	2.00		N = 28 (2, 3, 5, 5, 8, 10)	
3	Very stiff black sandy gravelly CLAY with some cobbles				AA210260	B	3.00		N = 36 (9, 6, 8, 9, 10, 9)	
4					AA210261	B	4.00		N = 31 (8, 7, 8, 8, 8, 7)	
			42.17	4.70	AA210262	B	4.50		N = 50/75 mm (25, 50)	
5	Obstruction End of Borehole at 4.70 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.00	4.20	1	
4.60	4.70	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH17**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,278.87 E 738,935.25 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	46.97	**BOREHOLE DEPTH (m)**	5.30
		DATE COMMENCED	10/01/2024
		DATE COMPLETED	11/01/2024
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		46.77	0.20						
	MADE GROUND comprising grey mottled sandy slightly SILT/CLAY. Gravel is fine.				AA210251	B	0.50			
1			45.87	1.10	AA210252	B	1.00		N = 8 (0, 2, 2, 1, 2, 3)	
	Soft grey/brown sandy slightly gravelly SILT/CLAY		45.17	1.80						
2	Stiff to very stiff black sandy gravelly CLAY with some cobbles				AA210253	B	2.00		N = 23 (2, 3, 3, 4, 5, 11)	
3					AA210254	B	3.00		N = 49 (15, 10, 10, 9, 15, 15)	
4					AA210255	B	4.00		N = 44 (11, 14, 9, 10, 11, 14)	
5			41.77	5.20	AA210256	B	5.00		N = 50/150 mm (17, 8, 22, 28)	
	Obstruction End of Borehole at 5.30 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.30	3.80	0.75	
4.20	4.60	1	
5.10	5.20	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH18**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,284.00 E 738,963.71 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	46.62	**BOREHOLE DEPTH (m)**	5.20
		DATE COMMENCED	10/01/2024
		DATE COMPLETED	10/01/2024
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		46.42	0.20						
	MADE GROUND comprising mottled grey sandy slightly gravelly SILT/CLAY. Gravel is fine.		45.62	1.00	AA209240	B	0.50			
1	Soft grey sandy slightly gravelly SILT/CLAY		45.02	1.60	AA209241	B	1.00		N = 8 (0, 2, 2, 1, 2, 3)	
2	Stiff grey/brown sandy silty gravelly CLAY with occasional cobbles		44.22	2.40	AA209242	B	2.00		N = 22 (2, 3, 3, 4, 5, 10)	
3	Very stiff black sandy gravelly CLAY with some cobbles and occasional boulders				AA209243	B	3.00		N = 44 (7, 7, 10, 6, 14, 14)	
4					AA209244	B	4.00		N = 39 (16, 9, 8, 9, 11, 11)	
5			41.42	5.20	AA209245	B	5.00		N = 50/150 mm (19, 6, 29, 21)	
	Obstruction End of Borehole at 5.20 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.50	5.20	1	
5.10	5.20	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**BOREHOLE NO.**	**BH19**
		SHEET	Sheet 1 of 1
CO-ORDINATES	716,311.88 E 738,970.66 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (mOD)	46.54	**BOREHOLE DEPTH (m)**	5.30
		DATE COMMENCED	09/01/2024
		DATE COMPLETED	09/01/2024
CLIENT	NDFA	**SPT HAMMER REF. NO.**	SA7
ENGINEER	MORCE	**ENERGY RATIO (%)**	74.07
		BORED BY	DT
		PROCESSED BY	FC

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	CONCRETE		46.34	0.20						
	MADE GROUND comprising grey sandy slightly gravelly SILT/CLAY. Gravel is fine.				AA209234	B	0.50			
1					AA209235	B	1.00		N = 7 (0, 1, 1, 2, 2, 2)	
			44.94	1.60						
	Stiff brown sandy gravelly SILT/CLAY									
2					AA209236	B	2.00		N = 22 (2, 2, 3, 4, 4, 11)	
			44.24	2.30						
	Very stiff black sandy gravelly CLAY with occasional cobbles									
3					AA209237	B	3.00		N = 61 (7, 14, 11, 18, 18, 14)	
4					AA209238	B	4.00		N = 47 (17, 8, 11, 14, 9, 13)	
5					AA209239	B	5.00		N = 50/225 mm (15, 10, 17, 18, 15)	
			41.24	5.30						
	End of Borehole at 5.30 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.60	3.80	0.75	
4.10	4.20	0.5	
5.20	5.30	4.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location with hand dug inspection pit carried out.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

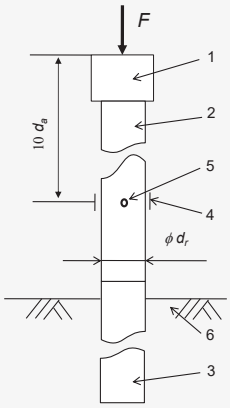
IGSL BH LOG 25000 - SITE2.GPJ IGSL.GDT 22/2/24

SPT Calibration Report

Hammer Energy Measurement Report

Type of Hammer		SPT Hammer
Test No		EQU2023_59
Client		IGSL
Test Depth (m)		9.70
Mass of hammer	m =	63.5kg
Falling height	h =	0.76m
E_{theor} =	$m \times g \times h$ =	473J

Characteristics of the instrumented rod



Key

1 Anvil
2 Part of instrumented rod
3 Drive Rod
4 Strain Gauge
5 Accelerometer
6 Ground

F Force
d_r Diameter of rod

Fig. B.1 and B.2
BS EN ISO 22476-3 : 2005 + A1 : 2011

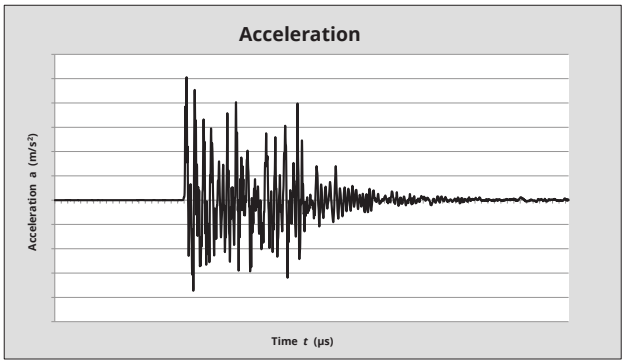
Diameter	d_r =	0.052 m
Length of instrumented rod		0.558 m
Area	A =	11.61 cm²
Modulus	E_a =	206843 MPa

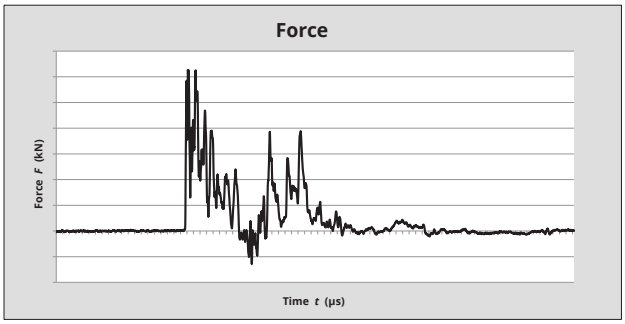
DATE OF TEST	VALID UNTIL	HAMMER ID
06/03/2023	05/03/2024	SA7

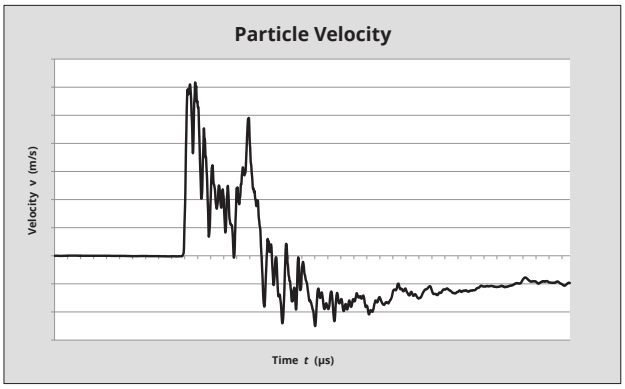
E_{meas} = **0.350** kN-m

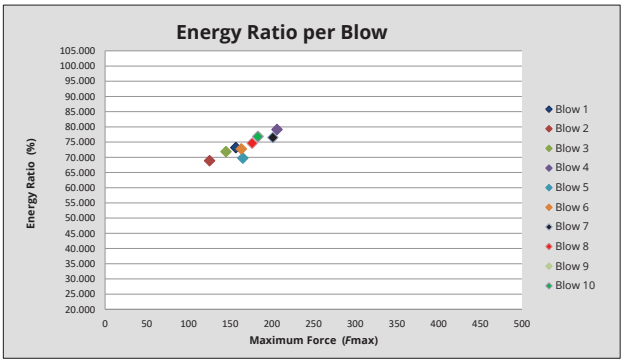
E_{theor} = **0.473** kN-m

Comments









Energy Ratio (Er) = $\frac{E_{meas}}{E_{theor}}$ **74.07%**

Equipe SPT Analyzer Operator	Certificate prepared by	Certificate checked by	Certificate date
JL			10/03/2023

 Equipe Group, The Paddocks, Home Farm Offices, The Upton Estate, Banbury, Oxfordshire, OX15 6HU
Tel: +44 (0)1295 670990 Fax: +44 (0)1295 678232 Email: info@equipegroup.com

Appendix 4

Rotary Drillhole Logs & Core Photographs

SPT Calibration Sheet (Er)

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue

DRILLHOLE NO RC01
SHEET Sheet 1 of 3

CO-ORDINATES 716,039.88 E, 738,898.65 N
GROUND LEVEL (mOD) 48.36
CLIENT NDFA
ENGINEER MORCE

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE COMMENCED 08/01/2024
DATE COMPLETED 10/01/2024
DRILLED BY IGSL - DH
LOGGED BY D. O' Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								CORE DRILLING: No recovery, observed by driller as returns of MADE GROUND comprising CONCRETE	0.25	48.11		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of MADE GROUND comprising grey brown sandy gravelly clay with fragments of brick	1.20	47.16		
1	1.50	0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY				N = 14 (2, 1, 3, 4, 3, 4)
2												
3	3.00	0	0	0								N = 40 (3, 6, 7, 10, 11, 12)
4	4.50	0	0	0								N = 37 (4, 5, 8, 13, 9, 7)
5		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black sandy SILT	4.90	43.46		
6	6.00	0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY	5.80	42.56		N = 40/180 mm (7, 10, 9, 21, 10)
7	7.50	0	0	0								N = 29/70 mm (8, 21, 29)
8												
9	9.00	0	0	0								N = 22/55 mm (12, 28, 22)

REMARKS

Hole cased from 0.00-19.20m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
	22.20	2.00	22.20	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**DRILLHOLE NO**	**RC01**
		SHEET	Sheet 2 of 3
CO-ORDINATES	716,039.88 E 738,898.65 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	48.36	**FLUSH**	Air/Mist
		DATE COMMENCED	08/01/2024
CLIENT	NDFA	**INCLINATION (deg)**	-90
ENGINEER	MORCE	**CORE DIAMETER (mm)**	78
		DATE COMPLETED	10/01/2024
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O' Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.50							SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY *(continued)*				N = 27/80 mm (8, 23, 23, 4)
11		0	0	0								
12	12.00	0	0	0								N = 29/30 mm (21, 29)
13	13.50	0	0	0								N = 7/10 mm (43, 7)
14		0	0	0								
15	15.00	0	0	0								N = 10/25 mm (40, 10)
16	16.50	0	0	0								N = 50/50 mm (50, 50)
17		0	0	0								
18	18.00	0	0	0								N = 50/20 mm (50, 50)
19	19.20	100	42	35				SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	19.00 19.20	29.36 29.16		

REMARKS

Hole cased from 0.00-19.20m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
	22.20	2.00	22.20	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue

DRILLHOLE NO RC01
SHEET Sheet 3 of 3

CO-ORDINATES 716,039.88 E
738,898.65 N
GROUND LEVEL (mOD) 48.36

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE COMMENCED 08/01/2024
DATE COMPLETED 10/01/2024

CLIENT NDFA
ENGINEER MORCE

DRILLED BY IGSL - DH
LOGGED BY D. O' Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.50							Weak to strong, medium to thinly bedded (to locally thinly laminated), light to dark grey/black, fine-grained LIMESTONE (interbedded argillaceous/muddy layers with calci-siltite/sandy layers, locally pyrite formation, very local thin shale layers at 22.01-22.05m), fresh to slightly weathered.				
21	21.60	100	33	0				Discontinuities are medium to closely spaced, smooth to locally rough, fractures are planar to locally irregular, frequent incipient fractures. Apertures are tight to moderately open, locally clay smeared, locally moderately iron-oxide stained. Dips are 20-40° & locally 60° & irregular. *(continued)*				
22	22.20	100	20	0				End of Borehole at 22.20 m	22.20	26.16		
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-19.20m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
	22.20	2.00	22.20	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
10-01-24	22.20	19.20	15.40	Water levels recorded 5 mins after end of drilling.

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**DRILLHOLE NO**	**RC02**
		SHEET	Sheet 1 of 3
CO-ORDINATES	716,105.24 E 738,904.26 N		
GROUND LEVEL (mOD)	48.01	**DATE COMMENCED**	29/01/2024
		DATE COMPLETED	31/01/2024
CLIENT	NDFA	**DRILLED BY**	IGSL - DH
ENGINEER	MORCE	**LOGGED BY**	D. O' Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								CORE DRILLING: No recovery, observed by driller as returns of MADE GROUND comprising CONCRETE	0.25	47.76		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of MADE GROUND comprising grey brown sandy gravelly clay with fragments of brick	1.40	46.61		
1	1.50							SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown silty sandy gravelly CLAY	2.00	46.01		N = 12 (1, 3, 2, 3, 3, 4)
2		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown black silty sandy GRAVEL	2.40	45.61		
	3.00							SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black gravelly CLAY				N = 39 (2, 4, 6, 9, 11, 13)
3		0	0	0								
4	4.50											N = 52 (2, 3, 7, 10, 16, 19)
5		0	0	0								
	6.00											N = 50/180 mm (5, 8, 13, 27, 10)
6		0	0	0								
7	7.50								7.40	40.61		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly SILT	8.20	39.81		N = 57 (2, 4, 7, 10, 18, 22)
8		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY				
	9.00											N = 50/170 mm (7, 9, 14, 23, 13)
9		0	0	0								

REMARKS

Hole cased from 0.00-17.50m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
17.00	17.00	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	**DRILLHOLE NO**	**RC02**
		SHEET	Sheet 2 of 3
CO-ORDINATES	716,105.24 E 738,904.26 N	**DATE COMMENCED**	29/01/2024
GROUND LEVEL (mOD)	48.01	**DATE COMPLETED**	31/01/2024
CLIENT	NDFA	**DRILLED BY**	IGSL - DH
ENGINEER	MORCE	**LOGGED BY**	D. O' Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.50							SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY *(continued)*				N = 50/110 mm (5, 11, 28, 22)
11		0	0	0								
12	12.00	0	0	0								N = 50/190 mm (4, 6, 11, 19, 20)
13	13.50	0	0	0								N = 5/5 mm (20, 25, 5)
14												
15	15.00	0	0	0								N = 13/15 mm (37, 13)
									15.40	32.61		
16	16.50	0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black gravelly CLAY				N = 10/20 mm (40, 10)
17		0	0	0					17.00	31.01		
	17.50							SYMMETRIX DRILLING: No recovery, observed by driller as returns of BOULDER	17.50	30.51		
18		100	0	0				Stiff sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of varios lithologies.				
19	19.10											
		100	27	8					19.40	28.61		

REMARKS

Hole cased from 0.00-17.50m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
17.00	17.00	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue

DRILLHOLE NO RC02
SHEET Sheet 3 of 3

CO-ORDINATES 716,105.24 E
738,904.26 N
GROUND LEVEL (mOD) 48.01

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE COMMENCED 29/01/2024
DATE COMPLETED 31/01/2024

CLIENT NDFA
ENGINEER MORCE

DRILLED BY IGSL - DH
LOGGED BY D. O' Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.40							Moderately weak to strong, medium to thinly bedded (to locally thinly laminated), light to dark grey/black, fine-grained LIMESTONE (interbedded argillaceous/muddy layers with calci-siltite/sandy layers, locally pyrite formation, very local thin shale layers at 19.40-19.50m, 19.85-19.89m, 20.42-20.46m, 21.32-21.36m, 22.13-22.15m & 22.92-22.98m), fresh to slightly weathered.				
21	21.70	100	68	48				Discontinuities are medium to closely spaced, smooth to locally rough, fractures are planar to curviplanar, frequent incipient fractures. Apertures are tight to moderately open, locally clay/gravel-filled (at 19.91-20.01m, 20.92-21.00m), locally moderately iron-oxide stained, locally calcite-veined (1-10mm thick). Dips are 20-40° & locally 60° & irregular. *(continued)*				
22	23.10	100	76	34				End of Borehole at 23.10 m	23.10	24.91		
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-17.50m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
17.00	17.00	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
31-01-24	23.10	17.50	9.00	Water levels recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue

DRILLHOLE NO RC03
SHEET Sheet 1 of 2

CO-ORDINATES 716,224.60 E
738,945.56 N
GROUND LEVEL (mOD) 47.05

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm)

DATE COMMENCED 04/01/2024
DATE COMPLETED 05/01/2024

CLIENT NDFA
ENGINEER MORCE

DRILLED BY IGSL - DH
LOGGED BY D. O' Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								CORE DRILLING: No recovery, observed by driller as returns of MADE GROUND comprising CONCRETE	0.20	46.85		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown black silty sandy gravelly CLAY				N = 11 (1, 1, 1, 2, 3, 5)
2									1.90	45.15		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black gravelly CLAY				N = 53 (3, 4, 5, 9, 19, 20)
4												
5												N = 70 (4, 8, 14, 16, 17, 23)
6												N = 50/155 mm (7, 12, 21, 24, 5)
7												
8												N = 24/50 mm (14, 26, 24)
9												N = 50/125 mm (10, 18, 27, 23)

REMARKS

Hole cased from 0.00-12.00m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue

DRILLHOLE NO RC03
SHEET Sheet 2 of 2

CO-ORDINATES 716,224.60 E
738,945.56 N
GROUND LEVEL (mOD) 47.05

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm)

DATE COMMENCED 04/01/2024
DATE COMPLETED 05/01/2024

CLIENT NDFA
ENGINEER MORCE

DRILLED BY IGSL - DH
LOGGED BY D. O' Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black gravelly CLAY *(continued)*				N = 50/140 mm (8, 13, 21, 29)
11												
12												N = 25/40 mm (12, 25, 25)
13												
14												N = 10/10 mm (40, 10)
									14.90	32.15		
15								End of Borehole at 14.90 m				N = 50/30 mm (50, 50)
16												
17												
18												
19												

REMARKS

Hole cased from 0.00-12.00m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue

DRILLHOLE NO RC04
SHEET Sheet 1 of 2

CO-ORDINATES 716,295.26 E, 738,952.46 N
GROUND LEVEL (mOD) 46.74
CLIENT NDFA
ENGINEER MORCE

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE COMMENCED 03/01/2024
DATE COMPLETED 04/01/2024
DRILLED BY IGSL - DH
LOGGED BY D. O' Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								CORE DRILLING: No recovery, observed by driller as returns of MADE GROUND comprising CONCRETE	0.25	46.49		
1	1.50	0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of MADE GROUND comprising grey brown black sandy gravelly clay with fragments of brick.	1.10	45.64		N = 14 (1, 1, 2, 4, 3, 5)
2	3.00	0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown silty sandy gravelly CLAY	2.00	44.74		N = 50/190 mm (4, 7, 13, 27, 10)
3	4.50	0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black gravelly CLAY				N = 30/85 mm (9, 20, 25, 5)
4	6.00	0	0	0								N = 35/55 mm (8, 15, 35)
5	7.50	0	0	0					7.00	39.74		N = 27/25 mm (23, 27)
6	9.00	0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY				N = 24/30 mm (16, 26, 24)
7												
8												
9												

REMARKS

Hole cased from 0.00-14.90m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
04-01-24	14.90	1.00	14.90	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25000-2

CONTRACT NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue

DRILLHOLE NO RC04
SHEET Sheet 2 of 2

CO-ORDINATES 716,295.26 E
738,952.46 N
GROUND LEVEL (mOD) 46.74

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE COMMENCED 03/01/2024
DATE COMPLETED 04/01/2024

CLIENT NDFA
ENGINEER MORCE

DRILLED BY IGSL - DH
LOGGED BY D. O' Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.50							SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY *(continued)*				N = 29/25 mm (19, 21, 29)
11		0	0	0								
12	12.00											N = 20/15 mm (14, 30, 20)
13		0	0	0								
14	13.50											N = 50/50 mm (50, 50)
15	14.90	0	0	0					14.90	31.84		N = 50/40 mm (50, 50)
16								End of Borehole at 14.90 m				
17												
18												
19												

REMARKS

Hole cased from 0.00-14.90m. SPT Er = 82.22%

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
04-01-24	14.90	1.00	14.90	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
04-01-24	14.90	14.90	Dry	Water levels recorded 5 mins after end of drilling.

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

RC01 – Box 1 of 1 – 19.20-22.20m

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

RC02 – Box 1 of 2 – 17.50-20.20m

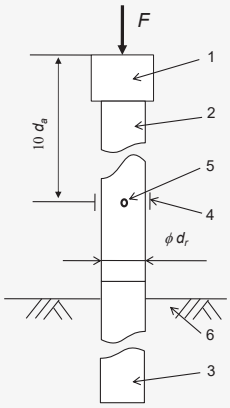
RC02 – Box 2 of 2 – 20.20-23.10m

SPT Calibration Report

Hammer Energy Measurement Report

Type of Hammer		Beretta
Test No		EQU2023_67
Client		IGSL
Test Depth (m)		9.70
Mass of hammer	m =	63.5kg
Falling height	h =	0.76m
E_{theor} =	$m \times g \times h$ =	473J

Characteristics of the instrumented rod



Key

1 Anvil
2 Part of instrumented rod
3 Drive Rod
4 Strain Gauge
5 Accelerometer
6 Ground

F Force
d_r Diameter of rod

Fig. B.1 and B.2
BS EN ISO 22476-3 : 2005 + A1 : 2011

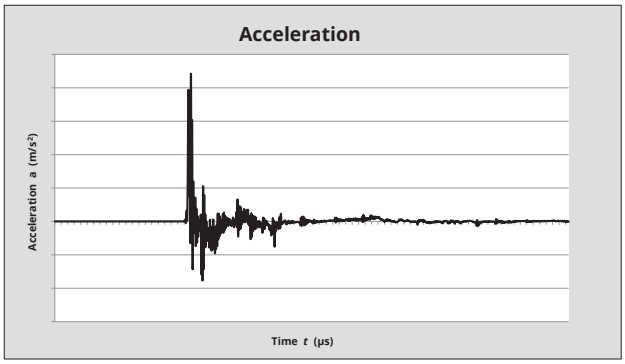
Diameter	d_r =	0.052 m
Length of instrumented rod		0.558 m
Area	A =	11.61 cm²
Modulus	E_a =	206843 MPa

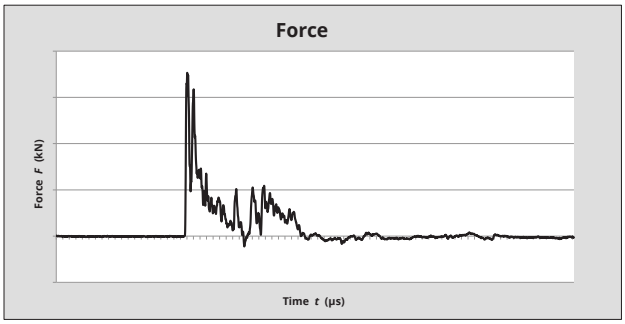
DATE OF TEST	VALID UNTIL	HAMMER ID
06/03/2023	05/03/2024	T44

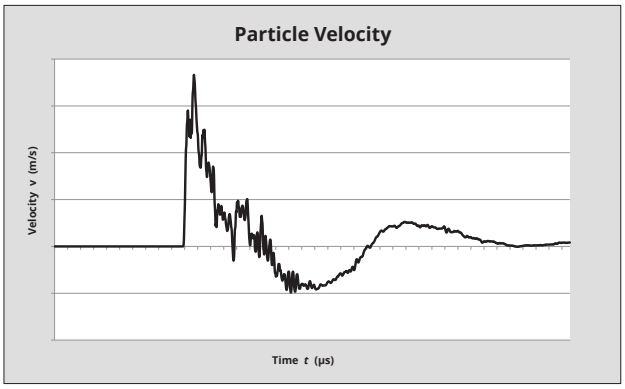
E_{meas} = **0.389** kN-m

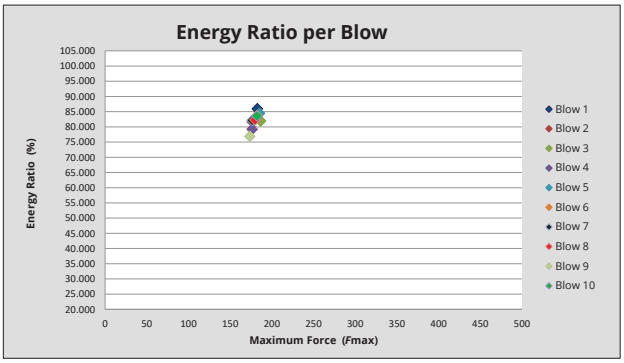
E_{theor} = **0.473** kN-m

Comments









Energy Ratio (Er) = $\frac{E_{meas}}{E_{theor}}$ **82.22%**

Equipe SPT Analyzer Operator	Certificate prepared by	Certificate checked by	Certificate date
JL			10/03/2023

 Equipe Group, The Paddocks, Home Farm Offices, The Upton Estate, Banbury, Oxfordshire, OX15 6HU
Tel: +44 (0)1295 670990 Fax: +44 (0)1295 678232 Email: info@equipegroup.com

Appendix 5

Slit Trench Logs & Photographs

Report No. 25000-2	SLIT TRENCH RECORD	FACING DIRECTION: N / W / E / S	IGSL

		Survey				
Project:	NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue				Slit Trench No.	ST01
Engineer:	MORCE		Easting (m)	Northing (m)	Elevation (mOD)	Sheet 1 of 1
Client:	NDFA	Start of Trench	715999.84	738895.85	48.221	Date Commenced 30/01/2024
Crew:	ESK	End of Trench	716010.424	738895.767	48.217	Date Completed 30/01/2024

Ground Conditions

From (m)	To (m)	Soil Description
0	0.35	CONCRETE
0.35	0.6	MADE GROUND comprising sandy gravely Clay including concrete blocks and lean mix concrete
0.6	1.6	MADE GROUND comprising firm brown sandy gravelly Clay with cobbles

Photograph

Trench Dimensions	
LHS of Trench (m)	0.0
RHS of Trench (m)	10.00
Trench Depth (m)	1.60
Trench Width (m)	0.5
Facing Direction	NORTH
Facing Features	Towards Shanowen Hall Accommodation
Groundwater	None encountered

Location

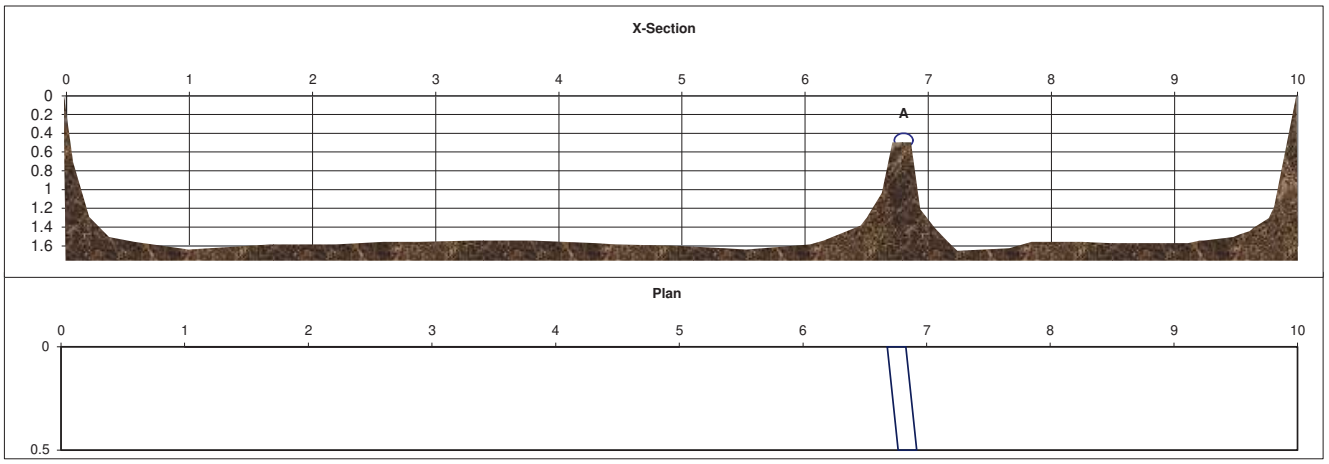
SAMPLES

AA210363

Excavation Quantities

Surface	Length (m)	Material
Road		
Path (LHS)		
Path (RHS)		
Grass Verge (LHS)		
Grass Verge (RHS)		
Other	10	Concrete
Total Length	10.0	Concrete

Zero Metres Taken As: Concrete seem



	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)
Service A	150	Concrete	Concrete storm drain	6.8	0.4	100
Service B						
Service C						
Service D						
Service E						
Service F						
Service G						
Service H						
Service I						
Service J						
Service K						
Service L						
Service M						

Report No. 25000-2	SLIT TRENCH RECORD	FACING DIRECTION: N / W / E / S	IGSL

		Survey				
Project:	NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue				Slit Trench No.	ST02
Engineer:	MORCE		Easting (m)	Northing (m)	Elevation (mOD)	Sheet 1 of 1
Client:	NDFA	Start of Trench	716054.456	738910.795	48.327	Date Commenced 31/01/2024
Crew:	PN / ESK	End of Trench	716054.646	738899.568	48.216	Date Completed 31/01/2024

Ground Conditions

From (m)	To (m)	Soil Description
0	0.3	CONCRETE
0.3	1.0	MADE GROUND ccomprising Hardcore Fill
1.0	1.7	MADE GROUND comprising sandy gravelly Clay with a low to medium cobble and boulder content

Photograph

Trench Dimensions

LHS of Trench (m)	0.0
RHS of Trench (m)	11.60
Trench Depth (m)	1.70
Trench Width (m)	0.5

Location

Excavation Quantities

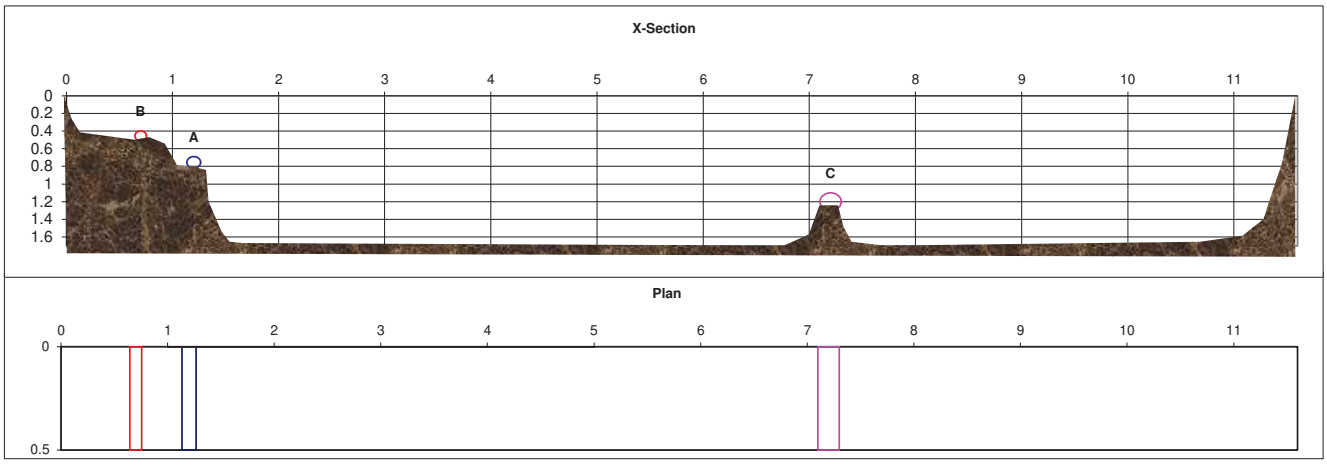
Surface	Length (m)	Material
Road		
Path (LHS)		
Path (RHS)		
Grass Verge (LHS)		
Grass Verge (RHS)		
Other	11.6	Concrete
Total Length	11.6	

Facing Direction	EAST
Facing Features	Along Depot
Groundwater	None encountered

SAMPLES

AA210364

Zero Metres Taken As: Wall



	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)
Service A	130	Steel	Steel pipe	1.2	0.69	90
Service B	110	PVC	Orange PVC pipe	0.7	0.4	90
Service C	200	Lean mix	Lean mix haunching	7.2	1.1	90
Service D						
Service E						
Service F						
Service G						
Service H						
Service I						
Service J						
Service K						
Service L						
Service M						

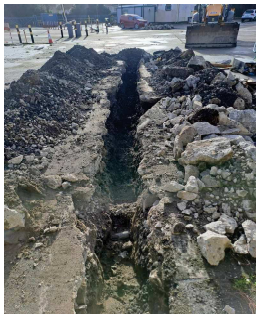
Report No. 25000-2	SLIT TRENCH RECORD	FACING DIRECTION: N / W / E / S	IGSL

		Survey				
Project:	NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue				Slit Trench No.	ST03
Engineer:	MORCE		Easting (m)	Northing (m)	Elevation (mOD)	Sheet 1 of 1
Client:	NDFA	Start of Trench	716090.815	738913.508	48.065	Date Commenced 01/02/2024
Crew:	PN / ESK	End of Trench	716093.227	738902.316	48.034	Date Completed 01/02/2024

Ground Conditions

From (m)	To (m)	Soil Description
0	0.3	CONCRETE
0.3	1.1	MADE GROUND comprising loose sandy Gravel
1.1	1.6	MADE GROUND comprising sandy gravelly Clay with a medium boulder and cobble content

Photograph



Trench Dimensions

LHS of Trench (m)	0.0
RHS of Trench (m)	10.50
Trench Depth (m)	1.60
Trench Width (m)	0.5

Location

Excavation Quantities

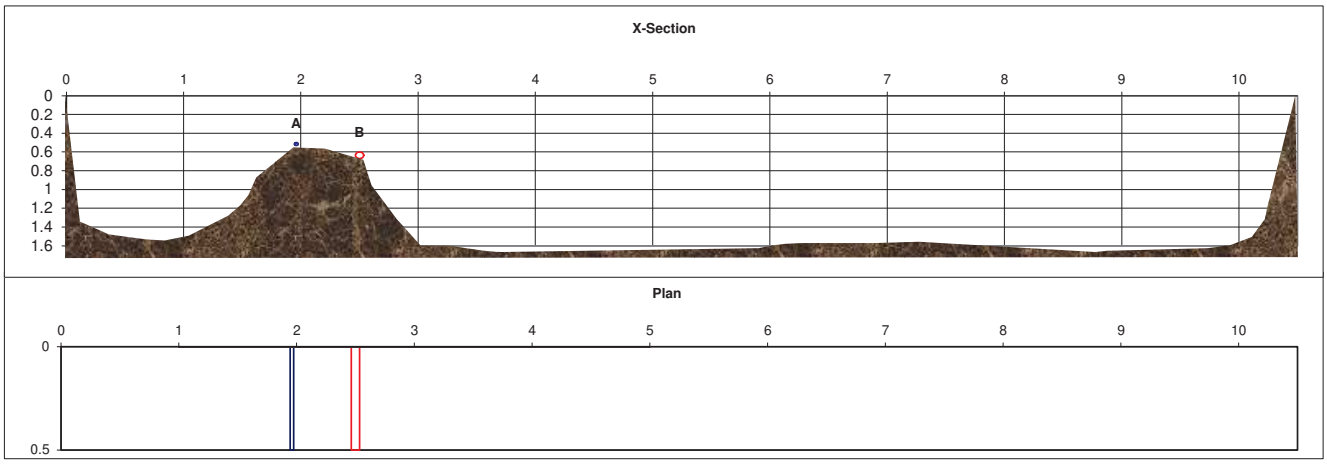
Surface	Length (m)	Material
Road		
Path (LHS)		
Path (RHS)		
Grass Verge (LHS)		
Grass Verge (RHS)		
Other	10.5	Concrete
Total Length		

Facing Direction	EAST
Facing Features	Along Depot
Groundwater	None encountered

SAMPLES

AA210365

Zero Metres Taken As: Wall



	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)
Service A	30	Steel	Steel pipe with valve (terminating in open trench)	1.96	0.5	90
Service B	70	PVC	Black PVC pipe	2.5	0.6	90
Service C						
Service D						
Service E						
Service F						
Service G						
Service H						
Service I						
Service J						
Service K						
Service L						
Service M						

Report No. 25000-2	SLIT TRENCH RECORD	FACING DIRECTION: N / W / E / S	IGSL

		Survey				
Project:	NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue				Slit Trench No.	ST04
Engineer:	MORCE		Easting (m)	Northing (m)	Elevation (mOD)	Sheet 1 of 1
Client:	NDFA	Start of Trench	716244.284	738961.149	46.715	Date Commenced 01/02/2024
Crew:	PN / ESK	End of Trench	716247.031	738951.503	46.792	Date Completed 01/02/2024

Ground Conditions

From (m)	To (m)	Soil Description
0	0.25	CONCRETE
0.25	0.4	MADE GROUND comprising Hardcore Fill
0.4	1.6	MADE GROUND comprising sandy slightly gravelly Silt/Clay with a low to medium boulder content - **strong hydrocarbon odour**

Photograph

Trench Dimensions

LHS of Trench (m)	0.0
RHS of Trench (m)	10.00
Trench Depth (m)	1.60
Trench Width (m)	0.5

Location

Excavation Quantities

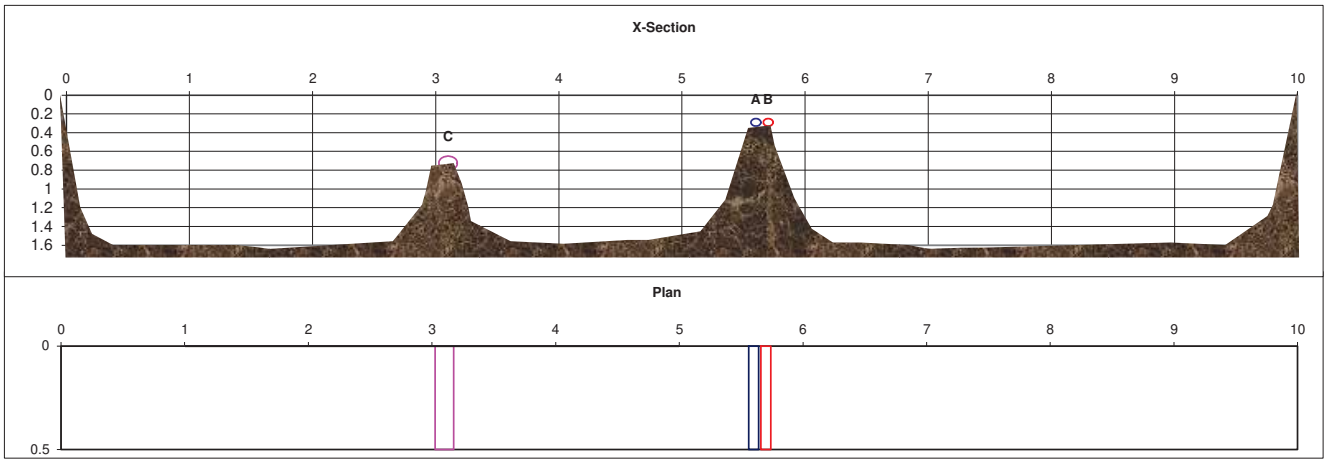
Surface	Length (m)	Material
Road		
Path (LHS)		
Path (RHS)		
Grass Verge (LHS)		
Grass Verge (RHS)		
Other		
Total Length		

Facing Direction	EAST
Facing Features	Towards St. Kevins F.C.
Groundwater	Seepage at base of pit

SAMPLES

AA210366

Zero Metres Taken As:



	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)
Service A	80	PVC	Black PVC pipe	5.6	0.25	90
Service B	80	PVC	Black PVC pipe	5.7	0.25	90
Service C	150	Concrete	Lean mix haunching	3.1	0.65	90
Service D						
Service E						
Service F						
Service G						
Service H						
Service I						
Service J						
Service K						
Service L						
Service M						

Report No. 25000-2	SLIT TRENCH RECORD	FACING DIRECTION: N / W / E / S	IGSL

		Survey				
Project:	NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue				Slit Trench No.	ST05
Engineer:	MORCE		Easting (m)	Northing (m)	Elevation (mOD)	Sheet 1 of 1
Client:	NDFA	Start of Trench	716300.979	738977.008	46.494	Date Commenced 02/02/2024
Crew:	PN / ESK	End of Trench	716308.154	738969.698	46.478	Date Completed 02/02/2024

Ground Conditions

From (m)	To (m)	Soil Description	Photograph
0	0.25	CONCRETE	
0.25	1.6	MADE GROUND comprising greenish grey sandy gravelly Clay with a low cobble and boulder content and with red brick fragments	

Trench Dimensions

LHS of Trench (m)	0.0
RHS of Trench (m)	10.50
Trench Depth (m)	1.60
Trench Width (m)	0.5

Location

Excavation Quantities

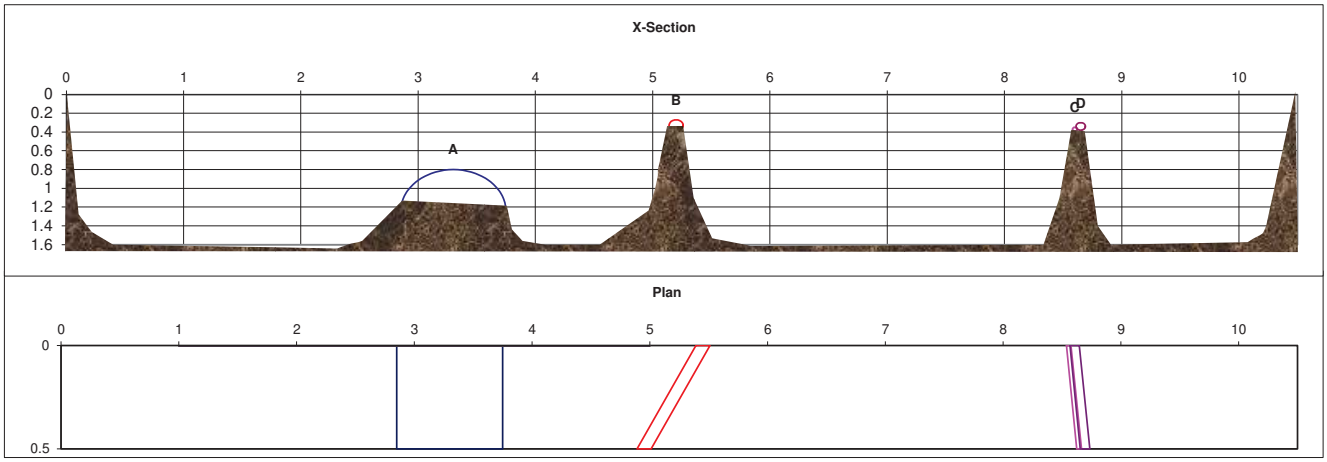
Surface	Length (m)	Material
Road		
Path (LHS)		
Path (RHS)		
Grass Verge (LHS)		
Grass Verge (RHS)		
Other	10.5	Concrete
Total Length	10.5	Concrete

Facing Direction	Northeast
Facing Features	Towards St. Kevins F.C.
Groundwater	None encountered

SAMPLES

AA210367

Zero Metres Taken As: Wall



	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)
Service A	900	Gravel	Gravel water trap	3.3	0.8	90
Service B	120	Concrete	Lean mix haunching	5.2	0.27	45
Service C	40	PVC	Black PVC pipe	8.6	0.35	100
Service D	80	PVC	Green corrugated pipe	8.65	0.3	100
Service E						
Service F						
Service G						
Service H						
Service I						
Service J						
Service K						
Service L						
Service M						

Report No. 25000-2	SLIT TRENCH RECORD	FACING DIRECTION: N / W / E / S	IGSL

		Survey				
Project:	NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue				Slit Trench No.	ST06
Engineer:	MORCE		Easting (m)	Northing (m)	Elevation (mOD)	Sheet 1 of 1
Client:	NDFA	Start of Trench	716136.688	738845.424	47.994	Date Commenced 12/02/2024
Crew:	PN / ESK	End of Trench	716130.119	738851.925	47.854	Date Completed 12/02/2024

Ground Conditions

From (m)	To (m)	Soil Description
0	0.25	TARMACADAM
0.25	0.45	MADE GROUND comprising Hardcore Fill
0.45	1.6	MADE GROUND comprising firm yellowish brown sandy gravelly Clay with fragments of red brick

Photograph

Trench Dimensions	
LHS of Trench (m)	0.0
RHS of Trench (m)	10.90
Trench Depth (m)	1.60
Trench Width (m)	0.5

Location

Excavation Quantities

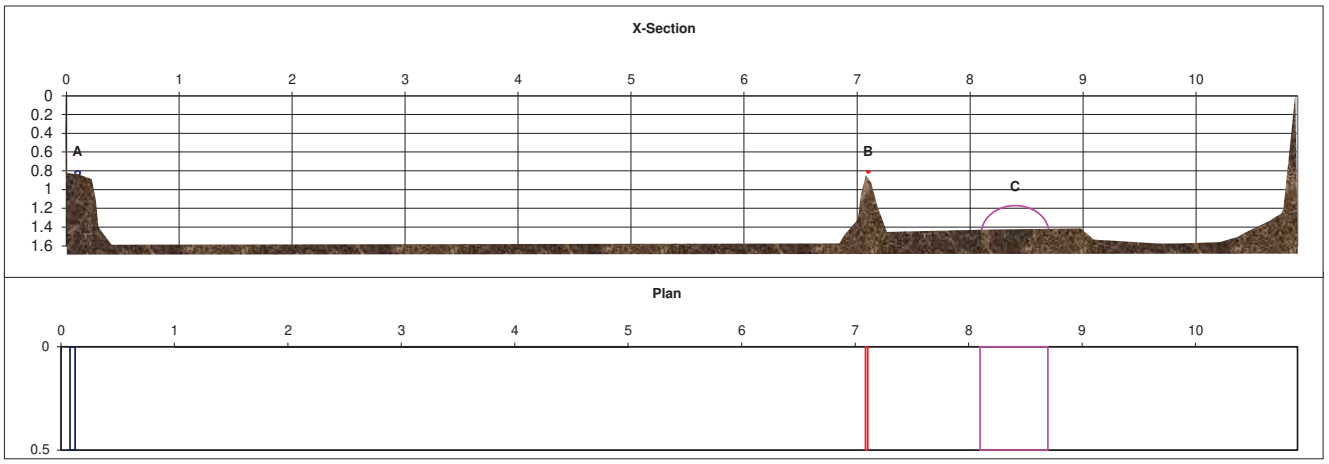
Surface	Length (m)	Material
Road	9.4	Tarmac
Path (LHS)	1.5	Tarmac
Path (RHS)		
Grass Verge (LHS)		
Grass Verge (RHS)		
Other		
Total Length		

Facing Direction	Southwest
Facing Features	Entrance Gate off Collins Avenue Ext
Groundwater	slow flow

SAMPLES

AA210371

Zero Metres Taken As: Edge of path (Tree-side)



	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)
Service A	45	PVC	Black PVC pipe	0.1	0.8	90
Service B	20	Cable	Black cable	7.1	0.8	90
Service C	600	Concrete	Concrete	8.4	1.17	90
Service D						
Service E						
Service F						
Service G						
Service H						
Service I						
Service J						
Service K						
Service L						
Service M						

Report No. 25000-2	SLIT TRENCH RECORD	FACING DIRECTION: N / W / E / S	IGSL

		Survey				
Project:	NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue				Slit Trench No.	ST07
Engineer:	MORCE		Easting (m)	Northing (m)	Elevation (mOD)	Sheet 1 of 1
Client:	NDFA	Start of Trench	716159.727	738868.07	48.084	Date Commenced 09/12/2024
Crew:	PN / ESK	End of Trench	716152.918	738875.157	47.936	Date Completed 09/12/2024

Ground Conditions

From (m)	To (m)	Soil Description
0	0.1	TARMACADAM
0.1	0.3	CONCRETE
0.3	0.8	MADE GROUND comprising Hardcore Fill
0.8	1.6	MADE GROUND comprising brownish grey sandy Silt/Clay with a low cobble and boulder content and with red brick fragments

Photograph

Trench Dimensions

LHS of Trench (m)	0.0
RHS of Trench (m)	9.50
Trench Depth (m)	1.60
Trench Width (m)	0.5

Location

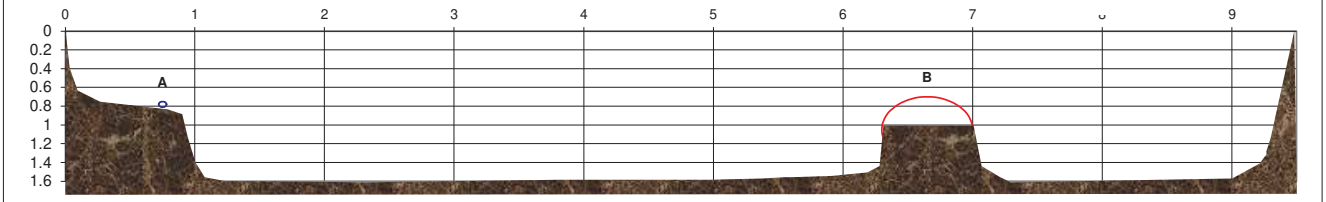
Excavation Quantities

Surface	Length (m)	Material
Road	8.0	Tarmac
Path (LHS)	1.5	Tarmac
Path (RHS)		
Grass Verge (LHS)		
Grass Verge (RHS)		
Other		
Total Length		

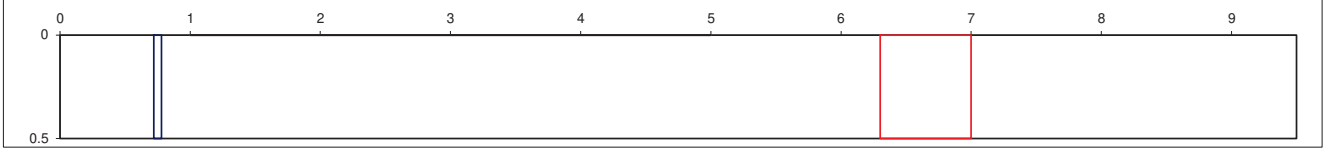
Facing Direction	Southwest	**SAMPLES**
Facing Features	Entrance Gate off Collins Avenue Ext	AA210370
Groundwater	slow flow	

Zero Metres Taken As: Edge of path (Tree side)

X-Section



Plan



	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)
Service A	60	PVC	Black PVC pipe	0.75	0.75	90
Service B	700	Concrete	Concrete slab (possible services below)	6.65	0.7	90
Service C						
Service D						
Service E						
Service F						
Service G						
Service H						
Service I						
Service J						
Service K						
Service L						
Service M						

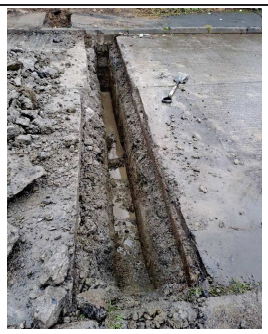
Report No. 25000-2	SLIT TRENCH RECORD	FACING DIRECTION: N / W / E / S	IGSL

		Survey				
Project:	NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue				Slit Trench No.	ST08
Engineer:	MORCE		Easting (m)	Northing (m)	Elevation (mOD)	Sheet 1 of 1
Client:	NDFA	Start of Trench	716194.219	738898.104	47.586	Date Commenced 08/02/2024
Crew:	PN / ESK	End of Trench	716187.158	738904.927	47.571	Date Completed 08/02/2024

Ground Conditions

From (m)	To (m)	Soil Description
0	0.3	CONCRETE
0.3	0.5	MADE GROUND comprising Hardcore Fill
0.5	1.7	MADE GROUND comprising Firm greenish grey sandy gravelly Clay

Photograph



Trench Dimensions

LHS of Trench (m)	0.0
RHS of Trench (m)	9.90
Trench Depth (m)	1.70
Trench Width (m)	0.5

Location

Excavation Quantities

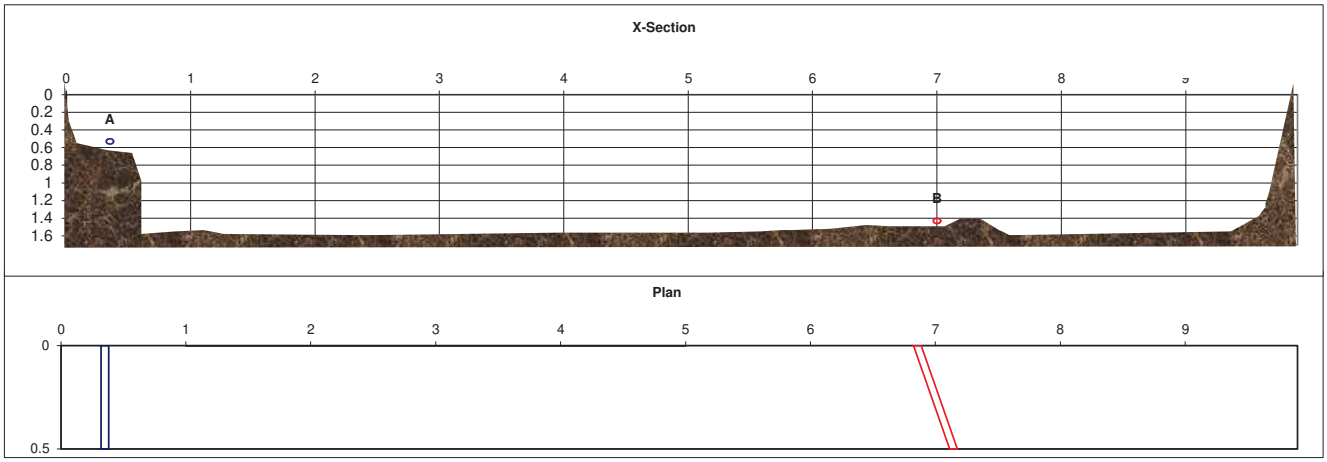
Surface	Length (m)	Material
Road	5.6	Concrete
Path (LHS)	1.0	Tarmac
Path (RHS)		
Grass Verge (LHS)	3.3	Topsoil
Grass Verge (RHS)		
Other		
Total Length	9.9	

Facing Direction	Southwest
Facing Features	Entrance Gate off Collins Avenue Ext
Groundwater	slow flow

SAMPLES

AA210369

Zero Metres Taken As: Wall



	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)
Service A	60	PVC	Black PVC pipe	0.35	0.5	90
Service B	60	CLAY	Clay pipe	7	1.4	120
Service C						
Service D						
Service E						
Service F						
Service G						
Service H						
Service I						
Service J						
Service K						
Service L						
Service M						

Report No. 25000-2	SLIT TRENCH RECORD	FACING DIRECTION: N / W / E / S	IGSL

			Survey				
Project:	NDFA Social Housing Bundles 4/5 - Lot 2 – Collins Avenue		Easting (m)	Northing (m)	Elevation (mOD)	Slit Trench No.	ST09
Engineer:	MORCE					Sheet	1 of 1
Client:	NDFA	Start of Trench	716232.021	738937.823	-	Date Commenced	06/02/2024
Crew:	PN / ESK	End of Trench	716226.576	738943.398	46.972	Date Completed	06/02/2024

Ground Conditions

From (m)	To (m)	Soil Description
0	0.3	CONCRETE
0.3	0.7	MADE GROUND comprising Harcore Fill
0.7	1.7	MADE GROUND comprising Soft mottled grey and brown sandy gravelly Clay with low cobble and boulder content

Photograph

Trench Dimensions

LHS of Trench (m)	0.0
RHS of Trench (m)	10.00
Trench Depth (m)	1.70
Trench Width (m)	0.5

Location

Excavation Quantities

Surface	Length (m)	Material
Road	5.8	Concrete
Path (LHS)		
Path (RHS)		
Grass Verge (LHS)	4.2	Grass
Grass Verge (RHS)		
Other		
Total Length	10.0	

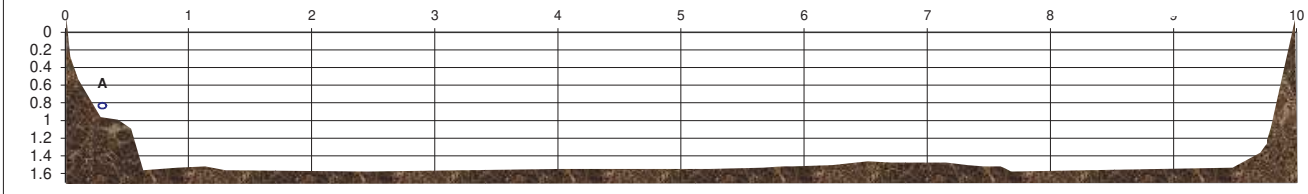
Facing Direction	Southwest
Facing Features	Entrance Gate off Collins Avenue Ext
Groundwater	None encountered

SAMPLES

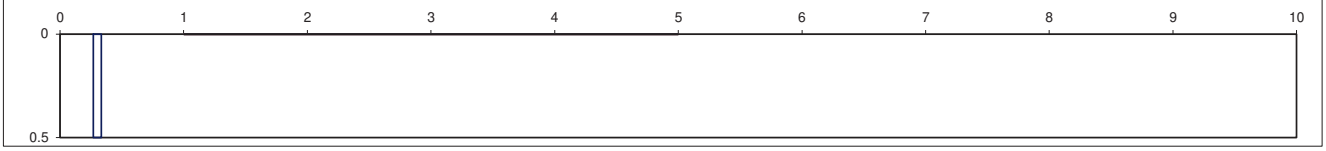
AA210368

Zero Metres Taken As: Wall (Tree side)

X-Section



Plan



	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)
Service A	65	PVC	Black PVC pipe	0.3	0.8	90
Service B						
Service C						
Service D						
Service E						
Service F						
Service G						
Service H						
Service I						
Service J						
Service K						
Service L						
Service M						

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST01

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST01

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST02

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

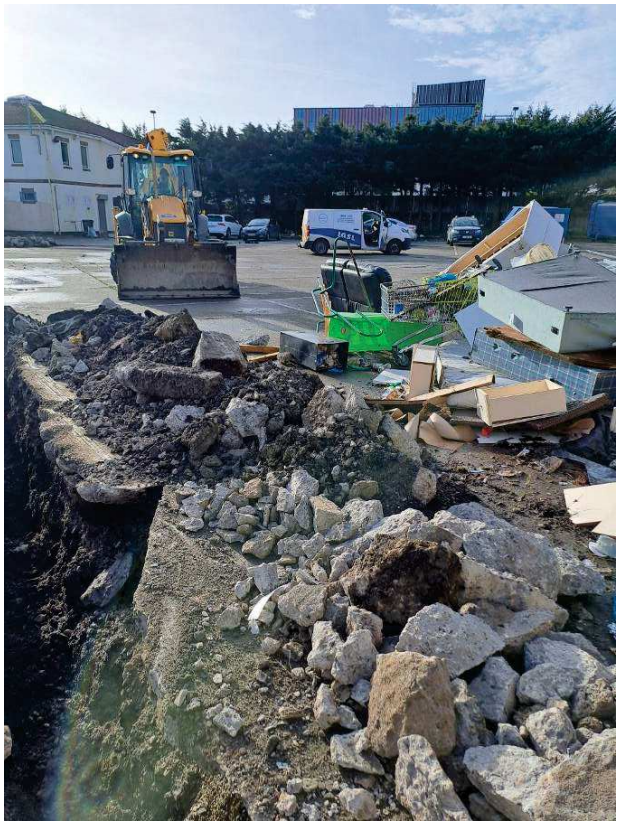
ST02

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST03

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST03



Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST04

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST04

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST05

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST05

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST06

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST06

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST06

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST07

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST07

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST08

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST08

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST09

Project Number: **25000-2**
Project: NDFA Social Housing Bundles 4/5 – Lot 2 – Collins Avenue
Engineer: MORCE

ST09

Appendix 6

Soakaway Records

Soakaway Design f -value from field tests

IGSL

Contract:	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	Contract No.	25000-2
Test No.	SA01	Easting	716038.6
Engineer	MORCE	Northing	738887
Date:	10/11/2023	Elevation	48.31mOD

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	CONCRETE	DRY
0.20	0.90	MADE GROUND comprising grey to brownish grey clayey angular gravel, cobbles, old concrete slab - Possible slight HC contamination	
0.90	1.30	Firm greyish brown slightly sandy slightly gravelly SILT/CLAY with rare organic remnants	
1.30	1.70	Firm to stiff brown/grey mottled slightly sandy gravelly CLAY with a medium cobble content.	

Notes: SA01 undertaken at TP01 location

Field Data

Depth to Water (m)	Elapsed Time (min)
0.950	0.00
0.950	1.00
0.950	2.00
0.950	3.00
0.950	4.00
0.950	5.00
0.955	6.00
0.955	7.00
0.955	8.00
0.955	9.00
0.955	10.00
0.955	12.00
0.960	14.00
0.960	16.00
0.960	18.00
0.960	20.00
0.960	25.00
0.960	30.00
0.960	40.00
0.960	50.00
0.960	60.00

Field Test

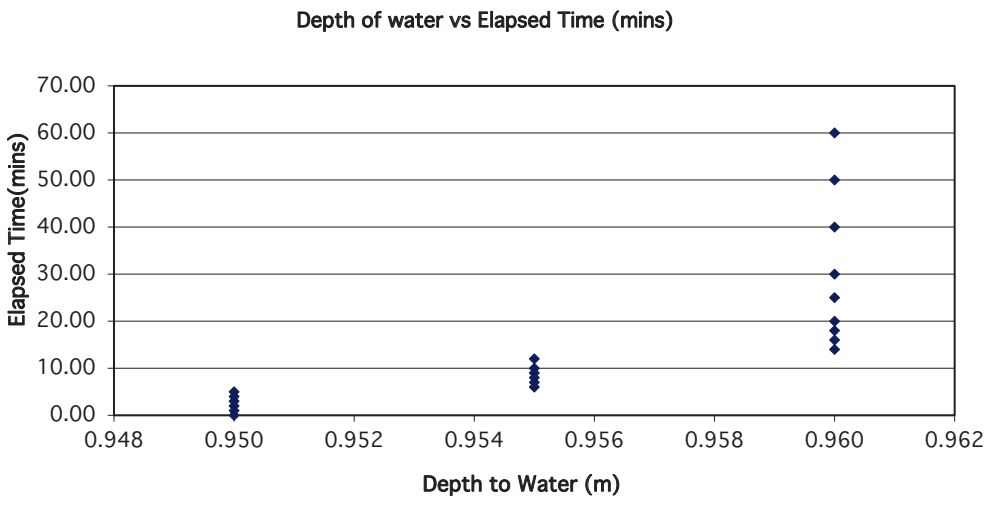
Depth of Pit (D)	1.70	m
Width of Pit (B)	0.60	m
Length of Pit (L)	2.00	m
Initial depth to Water =	0.95	m
Final depth to water =	0.96	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m

Water soakage stop at 0.96m

Base area=	1.2	m2
*Av. side area of permeable stratum over test perio	3.874	m2
Total Exposed area =	5.074	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 3.9E-05 m/min or 6.56944E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract:	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	Contract No.	25000-2
Test No.	SA06	Easting	716126
Engineer	MORCE	Northing	738871.8
Date:	10/11/2023	Elevation	48.124mOD

Summary of ground conditions

from	to	Description	Ground water
0.00	0.25	CONCRETE	DRY
0.25	0.70	MADE GROUND comprising dark grey/black/grey clayey angular gravel and cobbles, sandy gravelly clay	
0.70	1.30	Firm grey slightly sandy SILT/CLAY with rootlets	
1.30	1.80	Firm greyish brown sandy gravelly CLAY with a medium cobble content	

Notes: SA06 undertaken at TP06 location

Field Data

Depth to Water (m)	Elapsed Time (min)
0.770	0.00
0.770	1.00
0.770	2.00
0.770	3.00
0.770	4.00
0.770	5.00
0.770	6.00
0.770	7.00
0.770	8.00
0.770	9.00
0.770	10.00
0.770	12.00
0.770	14.00
0.770	16.00
0.770	18.00
0.770	20.00
0.770	25.00
0.770	30.00
0.770	40.00
0.770	50.00
0.770	60.00

Field Test

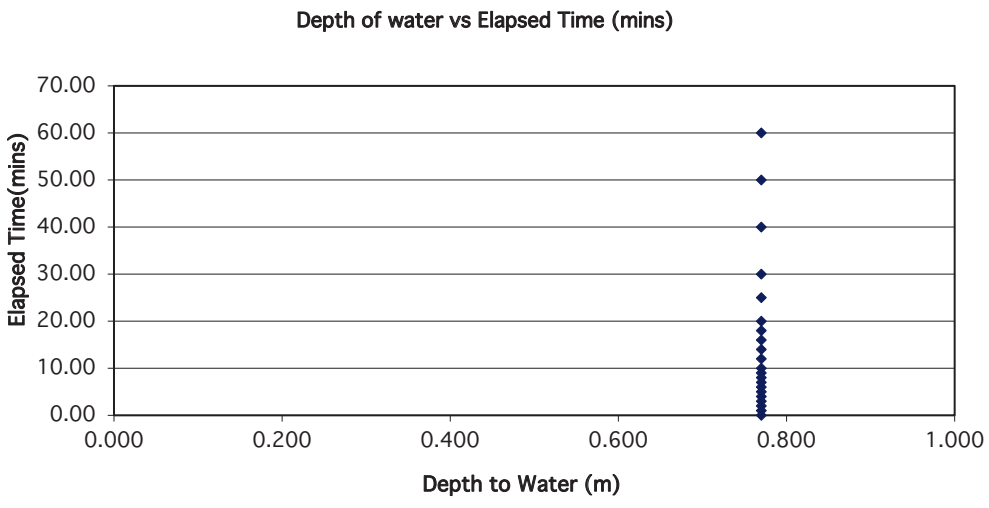
Depth of Pit (D)	1.80	m
Width of Pit (B)	0.60	m
Length of Pit (L)	2.00	m
Initial depth to Water =	0.77	m
Final depth to water =	0.77	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m

No any Water soakage

Base area=	1.2	m2
*Av. side area of permeable stratum over test perio	5.356	m2
Total Exposed area =	6.556	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Soakaway Design f -value from field tests

IGSL

Contract:	NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue	Contract No.	25000-2
Test No.	SA10	Easting	716277.8
Engineer	MORCE	Northing	738946.1
Date:	09/11/2023	Elevation	46.814mOD

Summary of ground conditions

from	to	Description	Ground water
0.00	0.22	CONCRETE	DRY
0.22	0.45	MADE GROUND comprising brown clayey rounded sandy Gravel	
0.45	1.70	Firm to stiff greyish brown slightly sandy gravelly CLAY with a high cobble content	

Notes: SA10 undertaken at TP10 location

Field Data

Depth to Water (m)	Elapsed Time (min)
0.760	0.00
0.760	1.00
0.760	2.00
0.760	3.00
0.760	4.00
0.760	5.00
0.760	6.00
0.760	7.00
0.760	8.00
0.760	9.00
0.760	10.00
0.760	12.00
0.760	14.00
0.760	16.00
0.760	18.00
0.760	20.00
0.760	25.00
0.760	30.00
0.760	40.00
0.760	50.00
0.760	60.00

Field Test

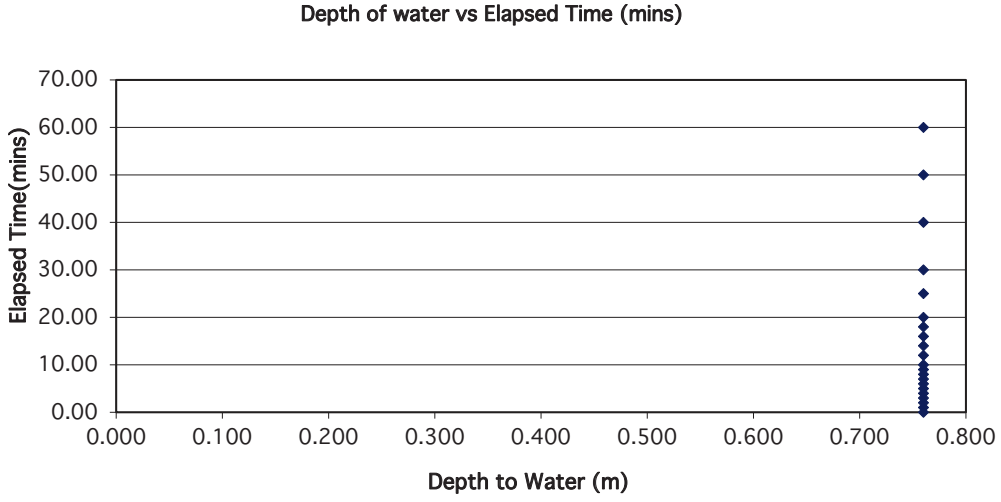
Depth of Pit (D)	1.70	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.80	m
Initial depth to Water =	0.76	m
Final depth to water =	0.76	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m

No any Water Soakage

Base area=	0.9	m2
*Av. side area of permeable stratum over test perio	4.324	m2
Total Exposed area =	5.224	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Appendix 7

Geotechnical Laboratory Results (Soil)

Appendix 8

Geo-Environmental & Chemical Laboratory Results (Soils)

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	24-00485-1
Initial Date of Issue:	18-Jan-2024
Re-Issue Details:	
Client	IGSL
Client Address:	M7 Business Park Naas County Kildare Ireland
Contact(s):	Darren Keogh
Project	25000-2 Site 2 NDFA Social Housing

Quotation No.:		**Date Received:**	09-Jan-2024
Order No.:		**Date Instructed:**	09-Jan-2024
No. of Samples:	45		
Turnaround (Wkdays):	8	**Results Due:**	18-Jan-2024
Date Approved:	18-Jan-2024		

Approved By:

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL						Chemtest Job No.:	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:						Chemtest Sample ID.:	1751932	1751934	1751936	1751938	1751940	1751941	1751943	1751945	1751946	1751948	1751950	1751952
Order No.:						Client Sample Ref.:	AA119035	AA119042	AA204208	AA204215	AA204202	AA204222	AA209208	AA209210	AA209201	AA204230	AA204238	AA204244
						Sample Location:	BH01	BH02	BH03	BH04	BH05	BH06	BH07	BH07	BH08	BH09	BH10	BH11
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	1.00	1.00	0.50	0.50	1.00	0.50	0.50	2.00	0.50	1.00	1.00	0.50
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**													
Ammonium	U	1220	10:1	mg/l	0.050		2.7	0.067	< 0.050	< 0.050	< 0.050	0.20	< 0.050	0.48	0.072	0.17	0.10	1.9
Ammonium	N	1220	10:1	mg/kg	0.10		29	0.84	0.65	0.51	1.1	15	0.67	12	1.3	2.4	1.2	22

Results - Leachate

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL						**Chemtest Job No.:**	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:						**Chemtest Sample ID.:**	1751953	1751955	1751957	1751959	1751960	1751961	1751963	1751965	1751967	1751968	1751969	1751971
Order No.:						Client Sample Ref.:	AA209223	AA209215	AA196364	AA196368	AA196372	AA196373	AA196375	AA196378	AA196380	AA204940	AA196397	AA196392
						Sample Location:	BH12	BH13	TP01	TP02	TP03	TP03	TP04	TP05	TP05	TP06	TP07	TP08
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	1.00	0.50	0.50	0.50	0.70	1.50	0.80	0.40	1.70	0.50	1.30	0.60
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**													
Ammonium	U	1220	10:1	mg/l	0.050		1.8	< 0.050	0.058	0.072	0.058	0.11	0.13	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Ammonium	N	1220	10:1	mg/kg	0.10		21	1.5	0.67	0.76	0.63	1.2	1.5	0.84	0.74	0.86	1.3	0.37

Results - Leachate

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL						**Chemtest Job No.:**	24-00485	24-00485	24-00485
Quotation No.:						**Chemtest Sample ID.:**	1751972	1751974	1751975
Order No.:						Client Sample Ref.:	AA196388	AA196390	AA196386
						Sample Location:	TP09	TP09	TP11
						Sample Type:	SOIL	SOIL	SOIL
						Top Depth (m):	0.40	1.60	0.80
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**				
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	0.13	0.41
Ammonium	N	1220	10:1	mg/kg	0.10	0.47	1.8	4.4

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL				**Chemtest Job No.:**		24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:				**Chemtest Sample ID.:**		1751932	1751933	1751934	1751935	1751936	1751937	1751938	1751939
Order No.:				Client Sample Ref.:		AA119035	AA119036	AA119042	AA119044	AA204208	AA204209	AA204215	AA204217
				Sample Location:		BH01	BH01	BH02	BH02	BH03	BH03	BH04	BH04
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.00	1.00	3.00	0.50	1.00	0.50	2.00
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		U	2192		N/A	-		-		-		-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	
Moisture		N	2030	%	0.020	26	12	12	10	7.4	17	7.5	18
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Sand	Clay	Sand	Sand	Sand	Clay	Sand	Sand
pH at 20C		M	2010		4.0	[A] 7.7		[A] 8.6		[A] 10.0		[A] 10.2	
pH (2.5:1) at 20C		N	2010		4.0		[A] 8.9		[A] 9.0		[A] 8.5		[A] 8.4
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	[A] 1.0		[A] < 0.40		[A] < 0.40		[A] < 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		[A] < 0.010		[A] < 0.010		[A] < 0.010		[A] < 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		[A] < 0.010		[A] < 0.010		[A] 0.058		[A] 0.15
Total Sulphur		U	2175	%	0.010		[A] 0.023		[A] 0.17		[A] 0.090		[A] 0.087
Sulphur (Elemental)		M	2180	mg/kg	1.0	[A] 64		[A] 1.8		[A] 4.2		[A] 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010		[A] 0.015		[A] 0.022		[A] 0.027		[A] 0.021
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		< 0.010		< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	[A] < 0.50		[A] < 0.50		[A] < 0.50		[A] < 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	[A] 5.6		[A] 7.9		[A] 7.7		[A] 7.2	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01		< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	[A] 0.14		[A] 0.068		[A] 0.45		[A] 0.42	
Sulphate (Acid Soluble)		U	2430	%	0.010		[A] 0.019		[A] 0.084		[A] 0.10		[A] 0.10
Arsenic		M	2455	mg/kg	0.5	8.7		9.8		12		34	
Barium		M	2455	mg/kg	0	120		88		160		560	
Cadmium		M	2455	mg/kg	0.10	1.4		2.3		0.95		1.9	
Chromium		M	2455	mg/kg	0.5	24		17		13		11	
Molybdenum		M	2455	mg/kg	0.5	2.7		3.6		1.7		1.1	
Antimony		N	2455	mg/kg	2.0	< 2.0		2.0		2.7		6.7	
Copper		M	2455	mg/kg	0.50	21		25		26		37	
Mercury		M	2455	mg/kg	0.05	0.09		0.05		0.05		0.10	
Nickel		M	2455	mg/kg	0.50	33		43		25		23	
Lead		M	2455	mg/kg	0.50	25		26		280		300	
Selenium		M	2455	mg/kg	0.25	1.3		0.97		1.4		0.89	
Zinc		M	2455	mg/kg	0.50	84		69		90		330	
Chromium (Trivalent)		N	2490	mg/kg	1.0	24		17		13		11	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL				**Chemtest Job No.:**		24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:				**Chemtest Sample ID.:**		1751932	1751933	1751934	1751935	1751936	1751937	1751938	1751939
Order No.:				Client Sample Ref.:		AA119035	AA119036	AA119042	AA119044	AA204208	AA204209	AA204215	AA204217
				Sample Location:		BH01	BH01	BH02	BH02	BH03	BH03	BH04	BH04
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.00	1.00	3.00	0.50	1.00	0.50	2.00
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	[A] < 0.25		[A] < 0.25		[A] < 0.25		[A] < 0.25	
Aliphatic EPH >C10-C12	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0		[A] < 2.0		[A] < 2.0		[A] < 2.0	
Aliphatic EPH >C12-C16	EH_2D_AL_#1	M	2690	mg/kg	1.00	[A] < 1.0		[A] 1.2		[A] 1.3		[A] < 1.0	
Aliphatic EPH >C16-C21	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] 2.5		[A] 2.4		[A] < 2.0		[A] < 2.0	
Aliphatic EPH >C21-C35	EH_2D_AL_#1	M	2690	mg/kg	3.00	[A] 5.5		[A] 15		[A] 22		[A] 14	
Aliphatic EPH >C35-C40	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] < 10		[A] 11		[A] 12		[A] < 10	
Total Aliphatic EPH >C10-C35	EH_2D_AL_#1	M	2690	mg/kg	5.00	[A] 8.0		[A] 20		[A] 27		[A] 17	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	[A] < 0.25		[A] < 0.25		[A] < 0.25		[A] < 0.25	
Aromatic EPH >C10-C12	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0		[A] < 1.0		[A] < 1.0		[A] < 1.0	
Aromatic EPH >C12-C16	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0		[A] < 1.0		[A] < 1.0		[A] < 1.0	
Aromatic EPH >C16-C21	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] 2.8		[A] 2.5		[A] < 2.0		[A] < 2.0	
Aromatic EPH >C21-C35	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] 15		[A] 11		[A] 8.7		[A] 7.1	
Aromatic EPH >C35-C40	EH_2D_AR_#1	N	2690	mg/kg	1.00	[A] 4.7		[A] 15		[A] 6.5		[A] 6.8	
Total Aromatic EPH >C10-C35	EH_2D_AR_#1	U	2690	mg/kg	5.00	[A] 18		[A] 14		[A] 8.9		[A] 7.4	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	[A] < 0.50		[A] < 0.50		[A] < 0.50		[A] < 0.50	
Total EPH >C10-C35	EH_2D_Total_#1	U	2690	mg/kg	10.00	[A] 26		[A] 34		[A] 36		[A] 24	
Organic Matter		M	2625	%	0.40								
Total Organic Carbon		M	2625	%	0.20	[A] 1.2		[A] 1.3		[A] 4.8		[A] 4.3	
Mineral Oil EPH	EH_2D_AL_#1	N	2670	mg/kg	10	< 10		31		39		17	
Benzene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0		[A] 2.6	
Toluene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0		[A] < 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0		[A] < 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0		[A] < 1.0	
o-Xylene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0		[A] < 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0		[A] < 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL						**Chemtest Job No.:**	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:						**Chemtest Sample ID.:**	1751932	1751933	1751934	1751935	1751936	1751937	1751938	1751939
Order No.:						Client Sample Ref.:	AA119035	AA119036	AA119042	AA119044	AA204208	AA204209	AA204215	AA204217
						Sample Location:	BH01	BH01	BH02	BH02	BH03	BH03	BH04	BH04
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	1.00	2.00	1.00	3.00	0.50	1.00	0.50	2.00
						Asbestos Lab:	DURHAM		DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**									
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0	
PCB 28		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010		[A] < 0.010	
PCB 52		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010		[A] < 0.010	
PCB 101		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010		[A] < 0.010	
PCB 118		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010		[A] < 0.010	
PCB 153		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010		[A] < 0.010	
PCB 138		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010		[A] < 0.010	
PCB 180		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010		[A] < 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10	

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL					**Chemtest Job No.:**	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:					**Chemtest Sample ID.:**	1751940	1751941	1751942	1751943	1751944	1751945	1751946	1751947
Order No.:					Client Sample Ref.:	AA204202	AA204222	AA204224	AA209208	AA209209	AA209210	AA209201	AA209203
					Sample Location:	BH05	BH06	BH06	BH07	BH07	BH07	BH08	BH08
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	1.00	0.50	2.00	0.50	1.00	2.00	0.50	2.00
					Asbestos Lab:	DURHAM	DURHAM		DURHAM		DURHAM	DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		U	2192		N/A	-	-		-		-	-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	
Moisture		N	2030	%	0.020	12	13	12	10	8.9	16	8.4	19
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Clay
pH at 20C		M	2010		4.0	[A] 8.7	[A] 9.7		[A] 10.6		[A] 8.7	[A] 8.8	
pH (2.5:1) at 20C		N	2010		4.0			[A] 8.6		[A] 10.0			[A] 8.9
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	[A] < 0.40	[A] 0.90		[A] < 0.40		[A] < 0.40	[A] 0.41	
Magnesium (Water Soluble)		N	2120	g/l	0.010			[A] < 0.010		[A] < 0.010			[A] < 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010			[A] < 0.010		[A] 0.45			[A] 0.095
Total Sulphur		U	2175	%	0.010			[A] 0.015		[A] 0.40			[A] 0.13
Sulphur (Elemental)		M	2180	mg/kg	1.0	[A] 36	[A] 3.1		[A] 3.0		[A] 3.5	[A] 28	
Chloride (Water Soluble)		M	2220	g/l	0.010			[A] 0.012		[A] 0.024			[A] 0.053
Nitrate (Water Soluble)		N	2220	g/l	0.010			< 0.010		< 0.010			0.036
Cyanide (Total)		M	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50		[A] < 0.50		[A] < 0.50	[A] < 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	[A] 5.1	[A] 8.6		[A] 6.7		[A] 5.0	[A] 11	
Ammonium (Water Soluble)		M	2220	g/l	0.01			< 0.01		< 0.01			< 0.01
Sulphate (Total)		U	2430	%	0.010	[A] 0.11	[A] 0.66		[A] 0.47		[A] 0.062	[A] 0.35	
Sulphate (Acid Soluble)		U	2430	%	0.010			[A] 0.038		[A] 0.19			[A] 0.092
Arsenic		M	2455	mg/kg	0.5	18	19		40		16	11	
Barium		M	2455	mg/kg	0	120	180		520		170	270	
Cadmium		M	2455	mg/kg	0.10	3.4	1.3		3.3		2.8	1.4	
Chromium		M	2455	mg/kg	0.5	27	21		17		21	15	
Molybdenum		M	2455	mg/kg	0.5	6.2	1.8		2.2		4.2	1.9	
Antimony		N	2455	mg/kg	2.0	3.1	2.5		32		4.6	< 2.0	
Copper		M	2455	mg/kg	0.50	43	32		270		43	44	
Mercury		M	2455	mg/kg	0.05	0.08	0.07		0.20		0.08	0.12	
Nickel		M	2455	mg/kg	0.50	75	36		36		55	27	
Lead		M	2455	mg/kg	0.50	36	92		1600		150	67	
Selenium		M	2455	mg/kg	0.25	1.6	0.96		1.3		1.1	1.1	
Zinc		M	2455	mg/kg	0.50	120	140		460		110	200	
Chromium (Trivalent)		N	2490	mg/kg	1.0	27	21		17		21	15	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50		< 0.50		< 0.50	< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL				**Chemtest Job No.:**		24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:				**Chemtest Sample ID.:**		1751940	1751941	1751942	1751943	1751944	1751945	1751946	1751947
Order No.:				Client Sample Ref.:		AA204202	AA204222	AA204224	AA209208	AA209209	AA209210	AA209201	AA209203
				Sample Location:		BH05	BH06	BH06	BH07	BH07	BH07	BH08	BH08
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	0.50	2.00	0.50	1.00	2.00	0.50	2.00
				Asbestos Lab:		DURHAM	DURHAM		DURHAM		DURHAM	DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	[A] < 0.25	[A] < 0.25		[A] < 0.25		[A] < 0.25	[A] < 0.25	
Aliphatic EPH >C10-C12	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0	[A] < 2.0		[A] 2.1		[A] 2.3	[A] 2.8	
Aliphatic EPH >C12-C16	EH_2D_AL_#1	M	2690	mg/kg	1.00	[A] < 1.0	[A] 3.8		[A] < 1.0		[A] 4.6	[A] 4.4	
Aliphatic EPH >C16-C21	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] 2.1	[A] 11		[A] 4.2		[A] 4.7	[A] 3.6	
Aliphatic EPH >C21-C35	EH_2D_AL_#1	M	2690	mg/kg	3.00	[A] 21	[A] 40		[A] 39		[A] 15	[A] 20	
Aliphatic EPH >C35-C40	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] 14	[A] 19		[A] 13		[A] 10	[A] 14	
Total Aliphatic EPH >C10-C35	EH_2D_AL_#1	M	2690	mg/kg	5.00	[A] 26	[A] 56		[A] 46		[A] 27	[A] 31	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	[A] < 0.25	[A] < 0.25		[A] < 0.25		[A] < 0.25	[A] < 0.25	
Aromatic EPH >C10-C12	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aromatic EPH >C12-C16	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] 1.3	
Aromatic EPH >C16-C21	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] < 2.0	[A] 8.1		[A] < 2.0		[A] 2.5	[A] 24	
Aromatic EPH >C21-C35	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] 8.5	[A] 180		[A] 18		[A] 12	[A] 43	
Aromatic EPH >C35-C40	EH_2D_AR_#1	N	2690	mg/kg	1.00	[A] 7.4	[A] 56		[A] 6.6		[A] 6.7	[A] 9.3	
Total Aromatic EPH >C10-C35	EH_2D_AR_#1	U	2690	mg/kg	5.00	[A] 10	[A] 190		[A] 18		[A] 14	[A] 69	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	[A] < 0.50	[A] < 0.50		[A] < 0.50		[A] < 0.50	[A] < 0.50	
Total EPH >C10-C35	EH_2D_Total_#1	U	2690	mg/kg	10.00	[A] 36	[A] 250		[A] 64		[A] 41	[A] 100	
Organic Matter		M	2625	%	0.40								
Total Organic Carbon		M	2625	%	0.20	[A] 0.38	[A] 2.9		[A] 4.1		[A] 0.92	[A] 5.3	
Mineral Oil EPH	EH_2D_AL_#1	N	2670	mg/kg	10	40	75		59		37	45	
Benzene		M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	
Toluene		M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	
o-Xylene		M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	0.15	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	0.18	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	0.87	
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	0.90	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	0.43		< 0.10		< 0.10	5.3	
Anthracene		M	2800	mg/kg	0.10	< 0.10	0.16		< 0.10		< 0.10	2.5	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	1.1		< 0.10		< 0.10	13	
Pyrene		M	2800	mg/kg	0.10	< 0.10	0.92		< 0.10		< 0.10	11	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	0.53		< 0.10		< 0.10	5.9	

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL						24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:						1751940	1751941	1751942	1751943	1751944	1751945	1751946	1751947
Order No.:						AA204202	AA204222	AA204224	AA209208	AA209209	AA209210	AA209201	AA209203
						BH05	BH06	BH06	BH07	BH07	BH07	BH08	BH08
						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						1.00	0.50	2.00	0.50	1.00	2.00	0.50	2.00
						DURHAM	DURHAM		DURHAM		DURHAM	DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Chrysene		M	2800	mg/kg	0.10	< 0.10	0.57		< 0.10		< 0.10	4.7	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	1.0		< 0.10		< 0.10	7.7	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	0.30		< 0.10		< 0.10	2.4	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	0.94		< 0.10		< 0.10	6.3	
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	3.9	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	0.70	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	3.4	
Coronene		N	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10	
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	< 1.0	6.0		< 1.0		< 1.0	69	
PCB 28		U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 52		U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 101		U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 118		U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 153		U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 138		U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 180		U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10	0.14		< 0.10		< 0.10	< 0.10	

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL						**Chemtest Job No.:**	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:						**Chemtest Sample ID.:**	1751948	1751949	1751950	1751951	1751952	1751953	1751954	1751955
Order No.:						Client Sample Ref.:	AA204230	AA204231	AA204238	AA204239	AA204244	AA209223	AA209224	AA209215
						Sample Location:	BH09	BH09	BH10	BH10	BH11	BH12	BH12	BH13
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	1.00	2.00	1.00	2.00	0.50	1.00	2.00	0.50
						Asbestos Lab:	DURHAM		DURHAM		DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type		U	2192		N/A		-		-		-	-		-
Asbestos Identification		U	2192		N/A		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020		17	10	18	11	18	18	11	8.5
Soil Colour		N	2040		N/A		Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A		Stones	Stones	Stones and Roots	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2040		N/A		Sand	Clay	Sand	Sand	Sand	Sand	Clay	Sand
pH at 20C		M	2010		4.0		[A] 8.3		[A] 8.6		[A] 8.4	[A] 8.5		[A] 10.5
pH (2.5:1) at 20C		N	2010		4.0			[A] 9.0		[A] 8.9			[A] 9.2	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40		[A] < 0.40		[A] 0.52		[A] 1.6	[A] 0.81		[A] < 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010			[A] < 0.010		[A] < 0.010			[A] < 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010			[A] < 0.010		[A] < 0.010			[A] < 0.010	
Total Sulphur		U	2175	%	0.010			[A] 0.014		[A] 0.045			[A] 0.027	
Sulphur (Elemental)		M	2180	mg/kg	1.0		[A] 1.8		[A] 2.0		[A] 12	[A] 10		[A] 4.9
Chloride (Water Soluble)		M	2220	g/l	0.010			[A] 0.032		[A] 0.055			[A] 0.036	
Nitrate (Water Soluble)		N	2220	g/l	0.010			< 0.010		< 0.010			< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50		[A] < 0.50		[A] < 0.50		[A] < 0.50	[A] < 0.50		[A] < 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		[A] 5.1		[A] 3.8		[A] 8.5	[A] 6.0		[A] 4.7
Ammonium (Water Soluble)		M	2220	g/l	0.01			< 0.01		< 0.01			< 0.01	
Sulphate (Total)		U	2430	%	0.010		[A] 0.064		[A] 0.039		[A] 0.14	[A] 0.11		[A] 0.46
Sulphate (Acid Soluble)		U	2430	%	0.010			[A] 0.025		[A] 0.031			[A] 0.023	
Arsenic		M	2455	mg/kg	0.5		18		21		13	19		25
Barium		M	2455	mg/kg	0		150		97		160	170		280
Cadmium		M	2455	mg/kg	0.10		3.5		2.2		1.2	3.8		1.3
Chromium		M	2455	mg/kg	0.5		30		30		16	29		15
Molybdenum		M	2455	mg/kg	0.5		4.5		6.1		2.0	4.5		1.9
Antimony		N	2455	mg/kg	2.0		2.4		2.8		< 2.0	2.4		4.2
Copper		M	2455	mg/kg	0.50		28		31		26	36		26
Mercury		M	2455	mg/kg	0.05		0.11		0.09		0.12	0.15		0.09
Nickel		M	2455	mg/kg	0.50		76		64		28	68		27
Lead		M	2455	mg/kg	0.50		41		45		59	62		110
Selenium		M	2455	mg/kg	0.25		1.2		1.4		0.84	1.3		0.83
Zinc		M	2455	mg/kg	0.50		110		110		79	120		200
Chromium (Trivalent)		N	2490	mg/kg	1.0		30		30		16	29		15
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50		< 0.50		< 0.50	< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05		[A] < 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05		[A] < 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05		[A] < 0.05

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL				**Chemtest Job No.:**		24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:				**Chemtest Sample ID.:**		1751948	1751949	1751950	1751951	1751952	1751953	1751954	1751955
Order No.:				Client Sample Ref.:		AA204230	AA204231	AA204238	AA204239	AA204244	AA209223	AA209224	AA209215
				Sample Location:		BH09	BH09	BH10	BH10	BH11	BH12	BH12	BH13
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.00	1.00	2.00	0.50	1.00	2.00	0.50
				Asbestos Lab:		DURHAM		DURHAM		DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05		[A] < 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	[A] < 0.25		[A] < 0.25		[A] < 0.25	[A] < 0.25		[A] < 0.25
Aliphatic EPH >C10-C12	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0		[A] 2.2		[A] 2.3	[A] 2.4		[A] 2.5
Aliphatic EPH >C12-C16	EH_2D_AL_#1	M	2690	mg/kg	1.00	[A] < 1.0		[A] 1.2		[A] < 1.0	[A] 2.7		[A] 5.2
Aliphatic EPH >C16-C21	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] 2.4		[A] < 2.0		[A] 3.2	[A] 3.0		[A] 6.7
Aliphatic EPH >C21-C35	EH_2D_AL_#1	M	2690	mg/kg	3.00	[A] 11		[A] 10		[A] 12	[A] 15		[A] 45
Aliphatic EPH >C35-C40	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] 13		[A] 11		[A] 10	[A] 16		[A] 12
Total Aliphatic EPH >C10-C35	EH_2D_AL_#1	M	2690	mg/kg	5.00	[A] 16		[A] 15		[A] 19	[A] 23		[A] 59
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05		[A] < 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05		[A] < 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05		[A] < 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	[A] < 0.25		[A] < 0.25		[A] < 0.25	[A] < 0.25		[A] < 0.25
Aromatic EPH >C10-C12	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0
Aromatic EPH >C12-C16	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0
Aromatic EPH >C16-C21	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] < 2.0		[A] 3.0		[A] 5.9	[A] 2.3		[A] 3.3
Aromatic EPH >C21-C35	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] 8.7		[A] 16		[A] 34	[A] 14		[A] 21
Aromatic EPH >C35-C40	EH_2D_AR_#1	N	2690	mg/kg	1.00	[A] 6.4		[A] 7.7		[A] 12	[A] 8.9		[A] 7.1
Total Aromatic EPH >C10-C35	EH_2D_AR_#1	U	2690	mg/kg	5.00	[A] 10		[A] 19		[A] 39	[A] 17		[A] 24
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	[A] < 0.50		[A] < 0.50		[A] < 0.50	[A] < 0.50		[A] < 0.50
Total EPH >C10-C35	EH_2D_Total_#1	U	2690	mg/kg	10.00	[A] 27		[A] 34		[A] 58	[A] 40		[A] 83
Organic Matter		M	2625	%	0.40								
Total Organic Carbon		M	2625	%	0.20	[A] 0.51		[A] 0.72		[A] 2.6	[A] 1.8		[A] 5.2
Mineral Oil EPH	EH_2D_AL_#1	N	2670	mg/kg	10	29		26		29	39		71
Benzene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0
Toluene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0
Ethylbenzene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0
m & p-Xylene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0
o-Xylene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		0.18
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Fluoranthene		M	2800	mg/kg	0.10	0.35		< 0.10		0.29	0.14		0.37
Pyrene		M	2800	mg/kg	0.10	0.33		< 0.10		0.31	0.15		0.31
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		0.20

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL						**Chemtest Job No.:**	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:						**Chemtest Sample ID.:**	1751948	1751949	1751950	1751951	1751952	1751953	1751954	1751955
Order No.:						Client Sample Ref.:	AA204230	AA204231	AA204238	AA204239	AA204244	AA209223	AA209224	AA209215
						Sample Location:	BH09	BH09	BH10	BH10	BH11	BH12	BH12	BH13
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	1.00	2.00	1.00	2.00	0.50	1.00	2.00	0.50
						Asbestos Lab:	DURHAM		DURHAM		DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**									
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		0.14
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		0.21
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	< 1.0		< 1.0		< 1.0	< 1.0		1.4
PCB 28		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010
PCB 52		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010
PCB 101		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010
PCB 118		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] 0.012	[A] < 0.010		[A] < 0.010
PCB 153		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] 0.012	[A] < 0.010		[A] < 0.010
PCB 138		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] 0.012	[A] < 0.010		[A] < 0.010
PCB 180		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010		[A] 0.012	[A] < 0.010		[A] < 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	[A] < 0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05		[A] < 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10		< 0.10	< 0.10		< 0.10

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL					**Chemtest Job No.:**	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:					**Chemtest Sample ID.:**	1751956	1751957	1751958	1751959	1751960	1751961	1751962	1751963
Order No.:					Client Sample Ref.:	AA209217	AA196364	AA196366	AA196368	AA196372	AA196373	AA196374	AA196375
					Sample Location:	BH13	TP01	TP01	TP02	TP03	TP03	TP03	TP04
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	2.00	0.50	2.00	0.50	0.70	1.50	2.40	0.80
					Asbestos Lab:		DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		U	2192		N/A		-		-	-	-		-
Asbestos Identification		U	2192		N/A		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	10	7.7	9.5	3.8	6.0	17	9.9	12
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Clay	Sand	Clay	Loam	Sand	Sand	Clay	Sand
pH at 20C		M	2010		4.0		[A] 9.2		[A] 8.3	[A] 9.0	[A] 8.2		[A] 8.7
pH (2.5:1) at 20C		N	2010		4.0	[A] 9.2		[A] 9.0				[A] 8.7	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40		[A] < 0.40		[A] < 0.40	[A] < 0.40	[A] 0.69		[A] 0.57
Magnesium (Water Soluble)		N	2120	g/l	0.010	[A] < 0.010		[A] < 0.010				[A] < 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	[A] 0.018		[A] 0.013				[A] < 0.010	
Total Sulphur		U	2175	%	0.010	[A] 0.027		[A] 0.021				[A] 0.018	
Sulphur (Elemental)		M	2180	mg/kg	1.0		[A] 2.6		[A] 1.1	[A] 1.6	[A] 61		[A] 4.4
Chloride (Water Soluble)		M	2220	g/l	0.010	[A] < 0.010		[A] < 0.010				[A] 0.050	
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010		< 0.010				< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50		[A] < 0.50		[A] < 0.50	[A] < 0.50	[A] < 0.50		[A] < 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		[A] 6.8		[A] 5.5	[A] 5.3	[A] 5.9		[A] 5.2
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01		< 0.01				< 0.01	
Sulphate (Total)		U	2430	%	0.010		[A] 0.45		[A] 0.65	[A] 0.32	[A] 0.11		[A] 0.23
Sulphate (Acid Soluble)		U	2430	%	0.010	[A] 0.030		[A] 0.020				[A] 0.020	
Arsenic		M	2455	mg/kg	0.5		33		31	65	6.4		20
Barium		M	2455	mg/kg	0		260		290	670	71		320
Cadmium		M	2455	mg/kg	0.10		1.9		1.5	3.6	0.88		1.4
Chromium		M	2455	mg/kg	0.5		14		9.0	15	18		31
Molybdenum		M	2455	mg/kg	0.5		2.1		1.3	2.3	1.8		1.7
Antimony		N	2455	mg/kg	2.0		8.4		4.3	32	< 2.0		2.9
Copper		M	2455	mg/kg	0.50		64		30	250	16		38
Mercury		M	2455	mg/kg	0.05		0.08		0.07	0.18	0.06		0.13
Nickel		M	2455	mg/kg	0.50		37		28	39	26		40
Lead		M	2455	mg/kg	0.50		340		120	2100	26		180
Selenium		M	2455	mg/kg	0.25		1.3		0.81	1.2	0.58		0.97
Zinc		M	2455	mg/kg	0.50		280		220	670	67		220
Chromium (Trivalent)		N	2490	mg/kg	1.0		14		9.0	15	18		31
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL				**Chemtest Job No.:**		24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:				**Chemtest Sample ID.:**		1751956	1751957	1751958	1751959	1751960	1751961	1751962	1751963
Order No.:				Client Sample Ref.:		AA209217	AA196364	AA196366	AA196368	AA196372	AA196373	AA196374	AA196375
				Sample Location:		BH13	TP01	TP01	TP02	TP03	TP03	TP03	TP04
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		2.00	0.50	2.00	0.50	0.70	1.50	2.40	0.80
				Asbestos Lab:			DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25		[A] < 0.25		[A] < 0.25	[A] < 0.25	[A] < 0.25		[A] < 0.25
Aliphatic EPH >C10-C12	EH_2D_AL_#1	M	2690	mg/kg	2.00		[A] 3.0		[A] < 2.0	[A] < 2.0	[A] < 2.0		[A] < 2.0
Aliphatic EPH >C12-C16	EH_2D_AL_#1	M	2690	mg/kg	1.00		[A] 4.4		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] 39
Aliphatic EPH >C16-C21	EH_2D_AL_#1	M	2690	mg/kg	2.00		[A] 3.7		[A] < 2.0	[A] < 2.0	[A] < 2.0		[A] 50
Aliphatic EPH >C21-C35	EH_2D_AL_#1	M	2690	mg/kg	3.00		[A] 16		[A] 12	[A] 5.2	[A] 22		[A] 41
Aliphatic EPH >C35-C40	EH_2D_AL_#1	N	2690	mg/kg	10.00		[A] < 10		[A] 18	[A] < 10	[A] 32		[A] 31
Total Aliphatic EPH >C10-C35	EH_2D_AL_#1	M	2690	mg/kg	5.00		[A] 27		[A] 14	[A] 6.7	[A] 22		[A] 130
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25		[A] < 0.25		[A] < 0.25	[A] < 0.25	[A] < 0.25		[A] < 0.25
Aromatic EPH >C10-C12	EH_2D_AR_#1	U	2690	mg/kg	1.00		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Aromatic EPH >C12-C16	EH_2D_AR_#1	U	2690	mg/kg	1.00		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] 9.1
Aromatic EPH >C16-C21	EH_2D_AR_#1	U	2690	mg/kg	2.00		[A] 2.9		[A] 2.4	[A] 2.5	[A] 2.0		[A] 49
Aromatic EPH >C21-C35	EH_2D_AR_#1	U	2690	mg/kg	2.00		[A] 9.6		[A] 26	[A] 20	[A] 11		[A] 35
Aromatic EPH >C35-C40	EH_2D_AR_#1	N	2690	mg/kg	1.00		[A] 5.8		[A] 7.1	[A] 6.5	[A] 29		[A] 26
Total Aromatic EPH >C10-C35	EH_2D_AR_#1	U	2690	mg/kg	5.00		[A] 12		[A] 28	[A] 22	[A] 13		[A] 93
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50		[A] < 0.50		[A] < 0.50	[A] < 0.50	[A] < 0.50		[A] < 0.50
Total EPH >C10-C35	EH_2D_Total_#1	U	2690	mg/kg	10.00		[A] 39		[A] 42	[A] 29	[A] 35		[A] 220
Organic Matter		M	2625	%	0.40								
Total Organic Carbon		M	2625	%	0.20		[A] 2.2		[A] 3.5	[A] 5.5	[A] 0.42		[A] 2.0
Mineral Oil EPH	EH_2D_AL_#1	N	2670	mg/kg	10		27		32	< 10	54		160
Benzene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Toluene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Ethylbenzene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
m & p-Xylene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
o-Xylene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Naphthalene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		0.15
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		0.24
Acenaphthene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		0.85
Fluorene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		0.79
Phenanthrene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		7.3
Anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		3.5
Fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		30
Pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		24
Benzo[a]anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		16

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL						**Chemtest Job No.:**	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:						**Chemtest Sample ID.:**	1751956	1751957	1751958	1751959	1751960	1751961	1751962	1751963
Order No.:						Client Sample Ref.:	AA209217	AA196364	AA196366	AA196368	AA196372	AA196373	AA196374	AA196375
						Sample Location:	BH13	TP01	TP01	TP02	TP03	TP03	TP03	TP04
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	2.00	0.50	2.00	0.50	0.70	1.50	2.40	0.80
						Asbestos Lab:		DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**									
Chrysene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10			12
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10			21
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10			7.1
Benzo[a]pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10			19
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10			11
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10			2.0
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10			9.9
Coronene		N	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10			< 0.10
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0			160
PCB 28		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010			[A] < 0.010
PCB 52		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010			[A] < 0.010
PCB 101		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010			[A] < 0.010
PCB 118		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010			[A] < 0.010
PCB 153		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010			[A] < 0.010
PCB 138		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010			[A] < 0.010
PCB 180		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010			[A] < 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05			[A] < 0.05
Total Phenols		M	2920	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10			< 0.10

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL					**Chemtest Job No.:**	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:					**Chemtest Sample ID.:**	1751964	1751965	1751966	1751967	1751968	1751969	1751970	1751971
Order No.:					Client Sample Ref.:	AA196376	AA196378	AA196379	AA196380	AA204940	AA196397	AA196398	AA196392
					Sample Location:	TP04	TP05	TP05	TP05	TP06	TP07	TP07	TP08
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	1.60	0.40	0.90	1.70	0.50	1.30	2.00	0.60
					Asbestos Lab:		DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		U	2192		N/A		-		-	-	-		-
Asbestos Identification		U	2192		N/A		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	19	13	14	8.6	5.3	16	12	6.3
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	None	Stones
Soil Texture		N	2040		N/A	Loam	Loam	Loam	Clay	Clay	Clay	Clay	Loam
pH at 20C		M	2010		4.0		[A] 8.2		[A] 8.3	[A] 9.4	[A] 9.5		[A] 9.0
pH (2.5:1) at 20C		N	2010		4.0	[A] 8.3		[A] 8.5				[A] 8.7	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40		[A] 0.52		[A] < 0.40	[A] < 0.40	[A] 0.55		[A] < 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010	[A] < 0.010		[A] < 0.010				[A] < 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	[A] 0.025		[A] 0.11				[A] < 0.010	
Total Sulphur		U	2175	%	0.010	[A] 0.052		[A] 0.074				[A] 0.010	
Sulphur (Elemental)		M	2180	mg/kg	1.0		[A] 6.5		[A] < 1.0	[A] 8.7	[A] 37		[A] 15
Chloride (Water Soluble)		M	2220	g/l	0.010	[A] 0.046		[A] 0.069				[A] < 0.010	
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010		< 0.010				< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50		[A] < 0.50		[A] < 0.50	[A] < 0.50	[A] < 0.50		[A] < 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		[A] 6.0		[A] 6.4	[A] 4.9	[A] 5.5		[A] 6.1
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01		< 0.01				< 0.01	
Sulphate (Total)		U	2430	%	0.010		[A] 0.71		[A] 0.044	[A] 0.41	[A] 0.13		[A] 0.35
Sulphate (Acid Soluble)		U	2430	%	0.010	[A] 0.081		[A] 0.053				[A] 0.038	
Arsenic		M	2455	mg/kg	0.5		28		9.3	22	15		20
Barium		M	2455	mg/kg	0		260		58	210	150		120
Cadmium		M	2455	mg/kg	0.10		1.2		1.9	0.75	0.97		0.74
Chromium		M	2455	mg/kg	0.5		19		14	14	19		7.5
Molybdenum		M	2455	mg/kg	0.5		2.5		3.3	1.0	2.4		1.1
Antimony		N	2455	mg/kg	2.0		4.2		< 2.0	3.7	2.0		3.4
Copper		M	2455	mg/kg	0.50		77		24	23	21		27
Mercury		M	2455	mg/kg	0.05		0.13		< 0.05	0.07	0.25		0.08
Nickel		M	2455	mg/kg	0.50		45		40	26	35		28
Lead		M	2455	mg/kg	0.50		96		21	86	49		73
Selenium		M	2455	mg/kg	0.25		1.1		1.4	0.61	0.76		0.80
Zinc		M	2455	mg/kg	0.50		130		73	86	98		96
Chromium (Trivalent)		N	2490	mg/kg	1.0		19		14	14	19		7.5
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL				**Chemtest Job No.:**		24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:				**Chemtest Sample ID.:**		1751964	1751965	1751966	1751967	1751968	1751969	1751970	1751971
Order No.:				Client Sample Ref.:		AA196376	AA196378	AA196379	AA196380	AA204940	AA196397	AA196398	AA196392
				Sample Location:		TP04	TP05	TP05	TP05	TP06	TP07	TP07	TP08
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.60	0.40	0.90	1.70	0.50	1.30	2.00	0.60
				Asbestos Lab:			DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25		[A] < 0.25		[A] < 0.25	[A] < 0.25	[A] < 0.25		[A] < 0.25
Aliphatic EPH >C10-C12	EH_2D_AL_#1	M	2690	mg/kg	2.00		[A] < 2.0		[A] < 2.0	[A] < 2.0	[A] < 2.0		[A] < 2.0
Aliphatic EPH >C12-C16	EH_2D_AL_#1	M	2690	mg/kg	1.00		[A] 5.1		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Aliphatic EPH >C16-C21	EH_2D_AL_#1	M	2690	mg/kg	2.00		[A] 4.3		[A] < 2.0	[A] < 2.0	[A] < 2.0		[A] < 2.0
Aliphatic EPH >C21-C35	EH_2D_AL_#1	M	2690	mg/kg	3.00		[A] 50		[A] 20	[A] 18	[A] 23		[A] 23
Aliphatic EPH >C35-C40	EH_2D_AL_#1	N	2690	mg/kg	10.00		[A] 46		[A] 30	[A] 29	[A] 38		[A] 28
Total Aliphatic EPH >C10-C35	EH_2D_AL_#1	M	2690	mg/kg	5.00		[A] 61		[A] 20	[A] 18	[A] 27		[A] 23
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25		[A] < 0.25		[A] < 0.25	[A] < 0.25	[A] < 0.25		[A] < 0.25
Aromatic EPH >C10-C12	EH_2D_AR_#1	U	2690	mg/kg	1.00		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Aromatic EPH >C12-C16	EH_2D_AR_#1	U	2690	mg/kg	1.00		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Aromatic EPH >C16-C21	EH_2D_AR_#1	U	2690	mg/kg	2.00		[A] 2.4		[A] < 2.0	[A] < 2.0	[A] 24		[A] < 2.0
Aromatic EPH >C21-C35	EH_2D_AR_#1	U	2690	mg/kg	2.00		[A] 29		[A] 8.5	[A] 43	[A] 24		[A] 9.4
Aromatic EPH >C35-C40	EH_2D_AR_#1	N	2690	mg/kg	1.00		[A] 31		[A] 25	[A] 24	[A] 25		[A] 23
Total Aromatic EPH >C10-C35	EH_2D_AR_#1	U	2690	mg/kg	5.00		[A] 32		[A] 10	[A] 45	[A] 48		[A] 11
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50		[A] < 0.50		[A] < 0.50	[A] < 0.50	[A] < 0.50		[A] < 0.50
Total EPH >C10-C35	EH_2D_Total_#1	U	2690	mg/kg	10.00		[A] 92		[A] 30	[A] 63	[A] 76		[A] 34
Organic Matter		M	2625	%	0.40	[A] 2.2							
Total Organic Carbon		M	2625	%	0.20		[A] 4.3		[A] 2.3	[A] 6.0	[A] 2.1		[A] 6.0
Mineral Oil EPH	EH_2D_AL_#1	N	2670	mg/kg	10		140		50	47	75		51
Benzene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Toluene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Ethylbenzene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
m & p-Xylene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
o-Xylene		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0		[A] < 1.0
Naphthalene		M	2800	mg/kg	0.10		0.13		< 0.10	< 0.10	< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10		0.53		< 0.10	< 0.10	1.3		0.18
Anthracene		M	2800	mg/kg	0.10		0.17		< 0.10	< 0.10	0.43		< 0.10
Fluoranthene		M	2800	mg/kg	0.10		0.90		< 0.10	< 0.10	3.7		0.31
Pyrene		M	2800	mg/kg	0.10		0.82		< 0.10	< 0.10	2.9		0.28
Benzo[a]anthracene		M	2800	mg/kg	0.10		0.35		< 0.10	< 0.10	2.2		< 0.10

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL						**Chemtest Job No.:**	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:						**Chemtest Sample ID.:**	1751964	1751965	1751966	1751967	1751968	1751969	1751970	1751971
Order No.:						Client Sample Ref.:	AA196376	AA196378	AA196379	AA196380	AA204940	AA196397	AA196398	AA196392
						Sample Location:	TP04	TP05	TP05	TP05	TP06	TP07	TP07	TP08
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	1.60	0.40	0.90	1.70	0.50	1.30	2.00	0.60
						Asbestos Lab:		DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**									
Chrysene		M	2800	mg/kg	0.10		0.30		< 0.10	< 0.10	1.5		< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		0.45		< 0.10	< 0.10	3.3		< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		0.15		< 0.10	< 0.10	0.95		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10		0.28		< 0.10	< 0.10	2.7		< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		0.39		< 0.10	< 0.10	2.0		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	0.25		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10		0.36		< 0.10	< 0.10	1.5		< 0.10
Coronene		N	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0		4.8		< 1.0	< 1.0	23		< 1.0
PCB 28		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010
PCB 52		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010
PCB 101		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010
PCB 118		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010
PCB 153		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010
PCB 138		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010
PCB 180		U	2815	mg/kg	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010		[A] < 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05		[A] < 0.05		[A] < 0.05	[A] < 0.05	[A] < 0.05		[A] < 0.05
Total Phenols		M	2920	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL				**Chemtest Job No.:**		24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:				**Chemtest Sample ID.:**		1751972	1751973	1751974	1751975	1751976
Order No.:				Client Sample Ref.:		AA196388	AA196389	AA196390	AA196386	AA196387
				Sample Location:		TP09	TP09	TP09	TP11	TP11
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.40	0.90	1.60	0.80	1.50
				Asbestos Lab:		DURHAM		DURHAM	DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type		U	2192		N/A	-		-	-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	
Moisture		N	2030	%	0.020	9.7	16	11	17	21
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Sand	Clay	Clay	Loam	Clay
pH at 20C		M	2010		4.0	[A] 9.4		[A] 9.0	[A] 8.2	
pH (2.5:1) at 20C		N	2010		4.0		[A] 8.6			[A] 8.6
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	[A] 0.72		[A] < 0.40	[A] 1.6	
Magnesium (Water Soluble)		N	2120	g/l	0.010		[A] < 0.010			[A] < 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		[A] 0.057			[A] 0.060
Total Sulphur		U	2175	%	0.010		[A] 0.036			[A] 0.084
Sulphur (Elemental)		M	2180	mg/kg	1.0	[A] 97		[A] 3.9	[A] 35	
Chloride (Water Soluble)		M	2220	g/l	0.010		[A] 0.37			[A] 0.084
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010			0.023
Cyanide (Total)		M	2300	mg/kg	0.50	[A] < 0.50		[A] < 0.50	[A] 0.80	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	[A] 4.0		[A] 5.5	[A] 11	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01			< 0.01
Sulphate (Total)		U	2430	%	0.010	[A] 0.17		[A] 0.066	[A] 0.17	
Sulphate (Acid Soluble)		U	2430	%	0.010		[A] 0.051			[A] 0.068
Arsenic		M	2455	mg/kg	0.5	8.3		12	13	
Barium		M	2455	mg/kg	0	48		110	120	
Cadmium		M	2455	mg/kg	0.10	2.0		2.2	2.5	
Chromium		M	2455	mg/kg	0.5	17		25	24	
Molybdenum		M	2455	mg/kg	0.5	2.8		2.8	3.6	
Antimony		N	2455	mg/kg	2.0	< 2.0		2.0	3.4	
Copper		M	2455	mg/kg	0.50	25		32	40	
Mercury		M	2455	mg/kg	0.05	< 0.05		0.05	0.28	
Nickel		M	2455	mg/kg	0.50	32		56	50	
Lead		M	2455	mg/kg	0.50	21		30	87	
Selenium		M	2455	mg/kg	0.25	1.3		1.1	2.1	
Zinc		M	2455	mg/kg	0.50	76		98	180	
Chromium (Trivalent)		N	2490	mg/kg	1.0	17		25	24	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50	< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05	[A] < 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05	[A] < 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05	[A] < 0.05	

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL				**Chemtest Job No.:**		24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:				**Chemtest Sample ID.:**		1751972	1751973	1751974	1751975	1751976
Order No.:				Client Sample Ref.:		AA196388	AA196389	AA196390	AA196386	AA196387
				Sample Location:		TP09	TP09	TP09	TP11	TP11
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.40	0.90	1.60	0.80	1.50
				Asbestos Lab:		DURHAM		DURHAM	DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05	[A] < 0.05	
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	[A] < 0.25		[A] < 0.25	[A] < 0.25	
Aliphatic EPH >C10-C12	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] < 2.0		[A] < 2.0	[A] < 2.0	
Aliphatic EPH >C12-C16	EH_2D_AL_#1	M	2690	mg/kg	1.00	[A] 14		[A] 3.5	[A] < 1.0	
Aliphatic EPH >C16-C21	EH_2D_AL_#1	M	2690	mg/kg	2.00	[A] 32		[A] 3.0	[A] < 2.0	
Aliphatic EPH >C21-C35	EH_2D_AL_#1	M	2690	mg/kg	3.00	[A] 58		[A] 18	[A] 29	
Aliphatic EPH >C35-C40	EH_2D_AL_#1	N	2690	mg/kg	10.00	[A] 31		[A] 25	[A] 29	
Total Aliphatic EPH >C10-C35	EH_2D_AL_#1	M	2690	mg/kg	5.00	[A] 100		[A] 25	[A] 30	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05	[A] < 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05	[A] < 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	[A] < 0.05		[A] < 0.05	[A] < 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	[A] < 0.25		[A] < 0.25	[A] < 0.25	
Aromatic EPH >C10-C12	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aromatic EPH >C12-C16	EH_2D_AR_#1	U	2690	mg/kg	1.00	[A] 2.6		[A] < 1.0	[A] < 1.0	
Aromatic EPH >C16-C21	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] 6.4		[A] < 2.0	[A] < 2.0	
Aromatic EPH >C21-C35	EH_2D_AR_#1	U	2690	mg/kg	2.00	[A] 21		[A] 7.5	[A] 29	
Aromatic EPH >C35-C40	EH_2D_AR_#1	N	2690	mg/kg	1.00	[A] 24		[A] 22	[A] 29	
Total Aromatic EPH >C10-C35	EH_2D_AR_#1	U	2690	mg/kg	5.00	[A] 30		[A] 8.7	[A] 31	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	[A] < 0.50		[A] < 0.50	[A] < 0.50	
Total EPH >C10-C35	EH_2D_Total_#1	U	2690	mg/kg	10.00	[A] 130		[A] 33	[A] 61	
Organic Matter		M	2625	%	0.40		[A] 2.1			
Total Organic Carbon		M	2625	%	0.20	[A] 6.8		[A] 1.3	[A] 4.5	
Mineral Oil EPH	EH_2D_AL_#1	N	2670	mg/kg	10	130		50	59	
Benzene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Toluene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
o-Xylene		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	0.19		< 0.10	0.11	
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	0.17		< 0.10	0.18	
Pyrene		M	2800	mg/kg	0.10	0.15		< 0.10	0.18	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	

Results - Soil

Project: 25000-2 Site 2 NDFA Social Housing

Client: IGSL				**Chemtest Job No.:**		24-00485	24-00485	24-00485	24-00485	24-00485
Quotation No.:				**Chemtest Sample ID.:**		1751972	1751973	1751974	1751975	1751976
Order No.:				Client Sample Ref.:		AA196388	AA196389	AA196390	AA196386	AA196387
				Sample Location:		TP09	TP09	TP09	TP11	TP11
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.40	0.90	1.60	0.80	1.50
				Asbestos Lab:		DURHAM		DURHAM	DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	< 1.0		< 1.0	< 1.0	
PCB 28		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 52		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 101		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 118		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 153		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 138		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 180		U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	[A] < 0.05		[A] < 0.05	[A] < 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10	< 0.10	

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751932							
Sample Ref:	AA119035							
Sample ID:								
Sample Location:	BH01							
Top Depth(m):	1.00							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 1.2	3	5	6
Loss On Ignition	2610		M	%	4.0	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		7.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	0.024	0.24	20	100	300
Cadmium	1455		U	0.00014	0.0014	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0023	0.023	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0032	0.032	0.5	10	30
Nickel	1455		U	0.0026	0.026	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0010	0.011	0.06	0.7	5
Selenium	1455		U	0.0013	0.013	0.1	0.5	7
Zinc	1455		U	0.004	0.036	4	50	200
Chloride	1220		U	9.8	98	800	15000	25000
Fluoride	1220		U	0.27	2.7	10	150	500
Sulphate	1220		U	35	350	1000	20000	50000
Total Dissolved Solids	1020		N	150	1500	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.0	60	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	26

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751934							
Sample Ref:	AA119042							
Sample ID:								
Sample Location:	BH02							
Top Depth(m):	1.00							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 1.3	3	5	6
Loss On Ignition	2610		M	%	3.9	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0006	0.0056	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0094	0.094	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0008	0.0077	0.1	0.5	7
Zinc	1455		U	0.011	0.11	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	2.8	28	1000	20000	50000
Total Dissolved Solids	1020		N	5.6	56	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.4	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751936							
Sample Ref:	AA204208							
Sample ID:								
Sample Location:	BH03							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 4.8	3	5	6
Loss On Ignition	2610		M	%	1.0	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] 93	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		10.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.013	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0031	0.5	2	25
Barium	1455		U	0.041	0.41	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0073	0.073	0.5	10	70
Copper	1455		U	0.0033	0.033	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0028	0.029	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0015	0.015	0.06	0.7	5
Selenium	1455		U	0.0025	0.025	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	8.5	85	800	15000	25000
Fluoride	1220		U	0.26	2.6	10	150	500
Sulphate	1220		U	34	340	1000	20000	50000
Total Dissolved Solids	1020		N	160	1600	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.3	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751938							
Sample Ref:	AA204215							
Sample ID:								
Sample Location:	BH04							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 4.3	3	5	6
Loss On Ignition	2610		M	%	2.0	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		10.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.013	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0013	0.013	0.5	2	25
Barium	1455		U	0.067	0.67	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0065	0.065	0.5	10	70
Copper	1455		U	0.0035	0.035	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0022	0.022	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0021	0.021	0.06	0.7	5
Selenium	1455		U	0.0021	0.021	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	3.2	32	800	15000	25000
Fluoride	1220		U	0.19	1.9	10	150	500
Sulphate	1220		U	21	210	1000	20000	50000
Total Dissolved Solids	1020		N	130	1300	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751940							
Sample Ref:	AA204202							
Sample ID:								
Sample Location:	BH05							
Top Depth(m):	1.00							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 0.38	3	5	6
Loss On Ignition	2610		M	%	2.4	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	< 0.0005	< 0.0050	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0051	0.052	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0067	0.1	0.5	7
Zinc	1455		U	0.004	0.041	4	50	200
Chloride	1220		U	3.8	38	800	15000	25000
Fluoride	1220		U	0.18	1.8	10	150	500
Sulphate	1220		U	3.6	36	1000	20000	50000
Total Dissolved Solids	1020		N	6.2	62	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.2	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751941							
Sample Ref:	AA204222							
Sample ID:								
Sample Location:	BH06							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 2.9	3	5	6
Loss On Ignition	2610		M	%	3.0	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] 300	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		9.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0082	0.082	0.5	2	25
Barium	1455		U	0.022	0.22	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.012	0.12	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0050	0.050	0.5	10	30
Nickel	1455		U	0.0079	0.079	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0041	0.041	0.06	0.7	5
Selenium	1455		U	0.0025	0.025	0.1	0.5	7
Zinc	1455		U	0.006	0.056	4	50	200
Chloride	1220		U	6.8	68	800	15000	25000
Fluoride	1220		U	0.17	1.7	10	150	500
Sulphate	1220		U	73	730	1000	20000	50000
Total Dissolved Solids	1020		N	160	1600	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	8.4	84	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751943							
Sample Ref:	AA209208							
Sample ID:								
Sample Location:	BH07							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 4.1	3	5	6
Loss On Ignition	2610		M	%	2.0	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		10.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.018	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0013	0.013	0.5	2	25
Barium	1455		U	0.038	0.38	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.020	0.20	0.5	10	70
Copper	1455		U	0.020	0.20	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0033	0.033	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0046	0.046	0.06	0.7	5
Selenium	1455		U	0.0023	0.023	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.20	2.0	10	150	500
Sulphate	1220		U	25	250	1000	20000	50000
Total Dissolved Solids	1020		N	160	1600	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751945							
Sample Ref:	AA209210							
Sample ID:								
Sample Location:	BH07							
Top Depth(m):	2.00							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 0.92	3	5	6
Loss On Ignition	2610		M	%	10	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.013	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0014	0.014	0.5	2	25
Barium	1455		U	0.087	0.87	20	100	300
Cadmium	1455		U	0.00021	0.0021	0.04	1	5
Chromium	1455		U	0.0012	0.012	0.5	10	70
Copper	1455		U	0.0043	0.043	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0069	0.069	0.5	10	30
Nickel	1455		U	0.0036	0.036	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	0.0014	0.014	0.06	0.7	5
Selenium	1455		U	0.0010	0.0099	0.1	0.5	7
Zinc	1455		U	0.009	0.086	4	50	200
Chloride	1220		U	3.0	30	800	15000	25000
Fluoride	1220		U	0.32	3.2	10	150	500
Sulphate	1220		U	7.6	76	1000	20000	50000
Total Dissolved Solids	1020		N	86	860	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.5	65	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	16

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751946							
Sample Ref:	AA209201							
Sample ID:								
Sample Location:	BH08							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	[A] 5.3	3	5	6
Loss On Ignition	2610		M	%	3.3	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] 140	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0069	0.069	0.5	2	25
Barium	1455		U	0.052	0.52	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0090	0.5	10	70
Copper	1455		U	0.0039	0.039	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0063	0.063	0.5	10	30
Nickel	1455		U	0.0020	0.020	0.4	10	40
Lead	1455		U	0.0014	0.014	0.5	10	50
Antimony	1455		U	0.0040	0.040	0.06	0.7	5
Selenium	1455		U	0.0045	0.045	0.1	0.5	7
Zinc	1455		U	0.005	0.051	4	50	200
Chloride	1220		U	7.9	79	800	15000	25000
Fluoride	1220		U	0.24	2.4	10	150	500
Sulphate	1220		U	33	330	1000	20000	50000
Total Dissolved Solids	1020		N	120	1200	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.4	64	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751948							
Sample Ref:	AA204230							
Sample ID:								
Sample Location:	BH09							
Top Depth(m):	1.00							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 0.51	3	5	6
Loss On Ignition	2610		M	%	2.2	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0008	0.0075	0.5	2	25
Barium	1455		U	0.011	0.11	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0011	0.011	0.5	10	70
Copper	1455		U	0.0014	0.014	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0038	0.038	0.5	10	30
Nickel	1455		U	0.0017	0.017	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0008	0.0082	0.1	0.5	7
Zinc	1455		U	0.004	0.044	4	50	200
Chloride	1220		U	5.3	53	800	15000	25000
Fluoride	1220		U	0.34	3.4	10	150	500
Sulphate	1220		U	15	150	1000	20000	50000
Total Dissolved Solids	1020		N	89	890	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751950							
Sample Ref:	AA204238							
Sample ID:								
Sample Location:	BH10							
Top Depth(m):	1.00							
Bottom Depth(m):								
Sampling Date:								
						Inert Waste Landfill	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	[A] 0.72	3	5	6
Loss On Ignition	2610		M	%	2.0	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.018	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0013	0.013	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0094	0.5	10	70
Copper	1455		U	0.0022	0.022	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0056	0.056	0.5	10	30
Nickel	1455		U	0.0025	0.025	0.4	10	40
Lead	1455		U	0.0008	0.0078	0.5	10	50
Antimony	1455		U	0.0006	0.0056	0.06	0.7	5
Selenium	1455		U	0.0013	0.013	0.1	0.5	7
Zinc	1455		U	0.008	0.075	4	50	200
Chloride	1220		U	38	380	800	15000	25000
Fluoride	1220		U	0.51	5.1	10	150	500
Sulphate	1220		U	4.8	48	1000	20000	50000
Total Dissolved Solids	1020		N	150	1500	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.3	53	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	18

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751952							
Sample Ref:	AA204244							
Sample ID:								
Sample Location:	BH11							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 2.6	3	5	6
Loss On Ignition	2610		M	%	1.8	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.015	0.15	0.5	2	25
Barium	1455		U	0.018	0.18	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0015	0.015	0.5	10	70
Copper	1455		U	0.0091	0.091	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0072	0.072	0.5	10	30
Nickel	1455		U	0.0035	0.035	0.4	10	40
Lead	1455		U	0.0023	0.023	0.5	10	50
Antimony	1455		U	0.0036	0.036	0.06	0.7	5
Selenium	1455		U	0.0033	0.033	0.1	0.5	7
Zinc	1455		U	0.006	0.061	4	50	200
Chloride	1220		U	21	210	800	15000	25000
Fluoride	1220		U	0.24	2.4	10	150	500
Sulphate	1220		U	20	200	1000	20000	50000
Total Dissolved Solids	1020		N	140	1400	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	9.1	91	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	18

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751953							
Sample Ref:	AA209223							
Sample ID:								
Sample Location:	BH12							
Top Depth(m):	1.00							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 1.8	3	5	6
Loss On Ignition	2610		M	%	1.9	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0039	0.039	0.5	2	25
Barium	1455		U	0.033	0.33	20	100	300
Cadmium	1455		U	0.00043	0.0043	0.04	1	5
Chromium	1455		U	0.0018	0.018	0.5	10	70
Copper	1455		U	0.0080	0.080	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0071	0.071	0.5	10	30
Nickel	1455		U	0.0085	0.085	0.4	10	40
Lead	1455		U	0.0031	0.031	0.5	10	50
Antimony	1455		U	0.0021	0.021	0.06	0.7	5
Selenium	1455		U	0.0015	0.015	0.1	0.5	7
Zinc	1455		U	0.016	0.16	4	50	200
Chloride	1220		U	4.4	44	800	15000	25000
Fluoride	1220		U	0.56	5.6	10	150	500
Sulphate	1220		U	11	110	1000	20000	50000
Total Dissolved Solids	1020		N	100	1000	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	8.6	86	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	18

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751955							
Sample Ref:	AA209215							
Sample ID:								
Sample Location:	BH13							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 5.2	3	5	6
Loss On Ignition	2610		M	%	4.8	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		10.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0072	0.5	2	25
Barium	1455		U	0.048	0.48	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.011	0.11	0.5	10	70
Copper	1455		U	0.010	0.10	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0049	0.049	0.5	10	30
Nickel	1455		U	0.0042	0.042	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0054	0.054	0.06	0.7	5
Selenium	1455		U	0.0031	0.031	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	3.7	37	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	33	330	1000	20000	50000
Total Dissolved Solids	1020		N	170	1700	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751957							
Sample Ref:	AA196364							
Sample ID:								
Sample Location:	TP01							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 2.2	3	5	6
Loss On Ignition	2610		M	%	2.0	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		9.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0013	0.013	0.5	2	25
Barium	1455		U	0.028	0.28	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0051	0.051	0.5	10	70
Copper	1455		U	0.0006	0.0061	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0040	0.040	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0014	0.014	0.06	0.7	5
Selenium	1455		U	0.0019	0.019	0.1	0.5	7
Zinc	1455		U	0.003	0.029	4	50	200
Chloride	1220		U	28	280	800	15000	25000
Fluoride	1220		U	0.21	2.1	10	150	500
Sulphate	1220		U	90	900	1000	20000	50000
Total Dissolved Solids	1020		N	210	2100	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751959							
Sample Ref:	AA196368							
Sample ID:								
Sample Location:	TP02							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 3.5	3	5	6
Loss On Ignition	2610		M	%	1.5	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0004	0.0042	0.5	2	25
Barium	1455		U	0.024	0.24	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	< 0.0005	< 0.0050	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0017	0.017	0.5	10	30
Nickel	1455		U	0.0008	0.0076	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0006	0.0059	0.06	0.7	5
Selenium	1455		U	0.0013	0.014	0.1	0.5	7
Zinc	1455		U	0.009	0.089	4	50	200
Chloride	1220		U	5.0	50	800	15000	25000
Fluoride	1220		U	0.27	2.7	10	150	500
Sulphate	1220		U	180	1800	1000	20000	50000
Total Dissolved Solids	1020		N	260	2600	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751960							
Sample Ref:	AA196372							
Sample ID:								
Sample Location:	TP03							
Top Depth(m):	0.70							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 5.5	3	5	6
Loss On Ignition	2610		M	%	1.6	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		9.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0060	0.060	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0006	0.0060	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0008	0.0076	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0007	0.0067	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.004	0.042	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.076	< 1.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	22	210	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.6	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751961							
Sample Ref:	AA196373							
Sample ID:								
Sample Location:	TP03							
Top Depth(m):	1.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 0.42	3	5	6
Loss On Ignition	2610		M	%	3.7	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0022	0.022	0.5	2	25
Barium	1455		U	0.011	0.11	20	100	300
Cadmium	1455		U	0.00023	0.0023	0.04	1	5
Chromium	1455		U	0.0015	0.015	0.5	10	70
Copper	1455		U	0.0049	0.049	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0049	0.050	0.5	10	30
Nickel	1455		U	0.0048	0.048	0.4	10	40
Lead	1455		U	0.0028	0.028	0.5	10	50
Antimony	1455		U	0.0015	0.016	0.06	0.7	5
Selenium	1455		U	0.0006	0.0065	0.1	0.5	7
Zinc	1455		U	0.016	0.16	4	50	200
Chloride	1220		U	4.5	45	800	15000	25000
Fluoride	1220		U	0.34	3.4	10	150	500
Sulphate	1220		U	15	150	1000	20000	50000
Total Dissolved Solids	1020		N	86	850	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751963							
Sample Ref:	AA196375							
Sample ID:								
Sample Location:	TP04							
Top Depth(m):	0.80							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 2.0	3	5	6
Loss On Ignition	2610		M	%	9.2	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] 2300	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.012	0.12	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0038	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	0.0006	0.0061	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.092	4	50	200
Chloride	1220		U	1.8	18	800	15000	25000
Fluoride	1220		U	0.089	< 1.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	57	570	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.2	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751965							
Sample Ref:	AA196378							
Sample ID:								
Sample Location:	TP05							
Top Depth(m):	0.40							
Bottom Depth(m):								
Sampling Date:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	[A] 4.3	3	5	6
Loss On Ignition	2610		M	%	3.4	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0009	0.0091	0.5	2	25
Barium	1455		U	0.028	0.28	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0013	0.013	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0044	0.044	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0006	0.0060	0.06	0.7	5
Selenium	1455		U	0.0010	0.010	0.1	0.5	7
Zinc	1455		U	0.005	0.054	4	50	200
Chloride	1220		U	20	200	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	110	1100	1000	20000	50000
Total Dissolved Solids	1020		N	230	2300	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751967							
Sample Ref:	AA196380							
Sample ID:								
Sample Location:	TP05							
Top Depth(m):	1.70							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 2.3	3	5	6
Loss On Ignition	2610		M	%	2.0	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0030	0.5	2	25
Barium	1455		U	0.007	0.068	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0006	0.0055	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0093	0.093	0.5	10	30
Nickel	1455		U	0.0006	0.0063	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.003	0.033	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.21	2.1	10	150	500
Sulphate	1220		U	4.1	41	1000	20000	50000
Total Dissolved Solids	1020		N	6.1	61	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.1	51	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751968							
Sample Ref:	AA204940							
Sample ID:								
Sample Location:	TP06							
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 6.0	3	5	6
Loss On Ignition	2610		M	%	1.5	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		9.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.010	0.10	0.5	2	25
Barium	1455		U	0.015	0.15	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0031	0.031	0.5	10	70
Copper	1455		U	0.0047	0.047	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0023	0.023	0.5	10	30
Nickel	1455		U	0.0009	0.0092	0.4	10	40
Lead	1455		U	0.0005	0.0052	0.5	10	50
Antimony	1455		U	0.0017	0.017	0.06	0.7	5
Selenium	1455		U	0.0018	0.018	0.1	0.5	7
Zinc	1455		U	0.007	0.066	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.14	1.4	10	150	500
Sulphate	1220		U	9.0	90	1000	20000	50000
Total Dissolved Solids	1020		N	63	630	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.2	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	5.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751969							
Sample Ref:	AA196397							
Sample ID:								
Sample Location:	TP07							
Top Depth(m):	1.30							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 2.1	3	5	6
Loss On Ignition	2610		M	%	2.9	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		9.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0030	0.030	0.5	2	25
Barium	1455		U	0.012	0.12	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0015	0.015	0.5	10	70
Copper	1455		U	0.0028	0.028	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0079	0.079	0.5	10	30
Nickel	1455		U	0.0023	0.023	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	0.0012	0.012	0.06	0.7	5
Selenium	1455		U	0.0018	0.018	0.1	0.5	7
Zinc	1455		U	0.007	0.072	4	50	200
Chloride	1220		U	2.2	22	800	15000	25000
Fluoride	1220		U	0.44	4.4	10	150	500
Sulphate	1220		U	29	290	1000	20000	50000
Total Dissolved Solids	1020		N	100	990	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	7.2	72	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	16

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751971							
Sample Ref:	AA196392							
Sample ID:								
Sample Location:	TP08							
Top Depth(m):	0.60							
Bottom Depth(m):								
Sampling Date:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	[A] 6.0	3	5	6
Loss On Ignition	2610		M	%	0.78	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		9.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0019	0.019	0.5	10	70
Copper	1455		U	0.0022	0.022	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0008	0.0079	0.5	10	30
Nickel	1455		U	0.0020	0.020	0.4	10	40
Lead	1455		U	0.0016	0.016	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.013	0.13	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.27	2.7	10	150	500
Sulphate	1220		U	1.5	15	1000	20000	50000
Total Dissolved Solids	1020		N	49	490	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.4	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751972							
Sample Ref:	AA196388							
Sample ID:								
Sample Location:	TP09							
Top Depth(m):	0.40							
Bottom Depth(m):								
Sampling Date:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	[A] 6.8	3	5	6
Loss On Ignition	2610		M	%	1.8	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		9.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.011	0.11	0.5	2	25
Barium	1455		U	0.007	0.066	20	100	300
Cadmium	1455		U	0.00022	0.0022	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0073	0.073	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0050	0.050	0.5	10	30
Nickel	1455		U	0.0053	0.053	0.4	10	40
Lead	1455		U	0.0035	0.035	0.5	10	50
Antimony	1455		U	0.0039	0.039	0.06	0.7	5
Selenium	1455		U	0.0035	0.035	0.1	0.5	7
Zinc	1455		U	0.010	0.097	4	50	200
Chloride	1220		U	17	170	800	15000	25000
Fluoride	1220		U	0.19	1.9	10	150	500
Sulphate	1220		U	53	530	1000	20000	50000
Total Dissolved Solids	1020		N	180	1800	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.3	63	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751974							
Sample Ref:	AA196390							
Sample ID:								
Sample Location:	TP09							
Top Depth(m):	1.60							
Bottom Depth(m):								
Sampling Date:								
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	[A] 1.3	3	5	6
Loss On Ignition	2610		M	%	3.3	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		9.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0060	0.060	0.5	2	25
Barium	1455		U	0.012	0.12	20	100	300
Cadmium	1455		U	0.00021	0.0021	0.04	1	5
Chromium	1455		U	0.0032	0.032	0.5	10	70
Copper	1455		U	0.013	0.13	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.010	0.10	0.5	10	30
Nickel	1455		U	0.013	0.13	0.4	10	40
Lead	1455		U	0.0067	0.067	0.5	10	50
Antimony	1455		U	0.0021	0.022	0.06	0.7	5
Selenium	1455		U	0.0017	0.017	0.1	0.5	7
Zinc	1455		U	0.036	0.36	4	50	200
Chloride	1220		U	34	340	800	15000	25000
Fluoride	1220		U	0.30	3.0	10	150	500
Sulphate	1220		U	16	160	1000	20000	50000
Total Dissolved Solids	1020		N	160	1600	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.9	59	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Site 2 NDFA Social Housing

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-00485							
Chemtest Sample ID:	1751975							
Sample Ref:	AA196386							
Sample ID:								
Sample Location:	TP11							
Top Depth(m):	0.80							
Bottom Depth(m):								
Sampling Date:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	[A] 4.5	3	5	6
Loss On Ignition	2610		M	%	6.5	--	--	10
Total BTEX	2760		M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_1D_Total_CU	M	mg/kg	[A] < 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.015	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0026	0.026	0.5	2	25
Barium	1455		U	0.017	0.17	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0042	0.042	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0072	0.072	0.5	10	30
Nickel	1455		U	0.0022	0.022	0.4	10	40
Lead	1455		U	0.0008	0.0081	0.5	10	50
Antimony	1455		U	0.0030	0.030	0.06	0.7	5
Selenium	1455		U	0.0015	0.015	0.1	0.5	7
Zinc	1455		U	0.006	0.058	4	50	200
Chloride	1220		U	4.3	43	800	15000	25000
Fluoride	1220		U	0.26	2.6	10	150	500
Sulphate	1220		U	30	300	1000	20000	50000
Total Dissolved Solids	1020		N	140	1400	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	8.0	80	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1751932	AA119035		BH01		A	Amber Glass 250ml
1751932	AA119035		BH01		A	Plastic Tub 500g
1751933	AA119036		BH01		A	Amber Glass 250ml
1751933	AA119036		BH01		A	Plastic Tub 500g
1751934	AA119042		BH02		A	Amber Glass 250ml
1751934	AA119042		BH02		A	Plastic Tub 500g
1751935	AA119044		BH02		A	Amber Glass 250ml
1751935	AA119044		BH02		A	Plastic Tub 500g
1751936	AA204208		BH03		A	Amber Glass 250ml
1751936	AA204208		BH03		A	Plastic Tub 500g
1751937	AA204209		BH03		A	Amber Glass 250ml
1751937	AA204209		BH03		A	Plastic Tub 500g
1751938	AA204215		BH04		A	Amber Glass 250ml
1751938	AA204215		BH04		A	Plastic Tub 500g
1751939	AA204217		BH04		A	Amber Glass 250ml
1751939	AA204217		BH04		A	Plastic Tub 500g
1751940	AA204202		BH05		A	Amber Glass 250ml
1751940	AA204202		BH05		A	Plastic Tub 500g
1751941	AA204222		BH06		A	Amber Glass 250ml
1751941	AA204222		BH06		A	Plastic Tub 500g
1751942	AA204224		BH06		A	Amber Glass 250ml
1751942	AA204224		BH06		A	Plastic Tub 500g

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1751943	AA209208		BH07		A	Amber Glass 250ml
1751943	AA209208		BH07		A	Plastic Tub 500g
1751944	AA209209		BH07		A	Amber Glass 250ml
1751944	AA209209		BH07		A	Plastic Tub 500g
1751945	AA209210		BH07		A	Amber Glass 250ml
1751945	AA209210		BH07		A	Plastic Tub 500g
1751946	AA209201		BH08		A	Amber Glass 250ml
1751946	AA209201		BH08		A	Plastic Tub 500g
1751947	AA209203		BH08		A	Amber Glass 250ml
1751947	AA209203		BH08		A	Plastic Tub 500g
1751948	AA204230		BH09		A	Amber Glass 250ml
1751948	AA204230		BH09		A	Plastic Tub 500g
1751949	AA204231		BH09		A	Amber Glass 250ml
1751949	AA204231		BH09		A	Plastic Tub 500g
1751950	AA204238		BH10		A	Amber Glass 250ml
1751950	AA204238		BH10		A	Plastic Tub 500g
1751951	AA204239		BH10		A	Amber Glass 250ml
1751951	AA204239		BH10		A	Plastic Tub 500g
1751952	AA204244		BH11		A	Amber Glass 250ml
1751952	AA204244		BH11		A	Plastic Tub 500g
1751953	AA209223		BH12		A	Amber Glass 250ml
1751953	AA209223		BH12		A	Plastic Tub 500g

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1751954	AA209224		BH12		A	Amber Glass 250ml
1751954	AA209224		BH12		A	Plastic Tub 500g
1751955	AA209215		BH13		A	Amber Glass 250ml
1751955	AA209215		BH13		A	Plastic Tub 500g
1751956	AA209217		BH13		A	Amber Glass 250ml
1751956	AA209217		BH13		A	Plastic Tub 500g
1751957	AA196364		TP01		A	Amber Glass 250ml
1751957	AA196364		TP01		A	Plastic Tub 500g
1751958	AA196366		TP01		A	Amber Glass 250ml
1751958	AA196366		TP01		A	Plastic Tub 500g
1751959	AA196368		TP02		A	Amber Glass 250ml
1751959	AA196368		TP02		A	Plastic Tub 500g
1751960	AA196372		TP03		A	Amber Glass 250ml
1751960	AA196372		TP03		A	Plastic Tub 500g
1751961	AA196373		TP03		A	Amber Glass 250ml
1751961	AA196373		TP03		A	Plastic Tub 500g
1751962	AA196374		TP03		A	Amber Glass 250ml
1751962	AA196374		TP03		A	Plastic Tub 500g
1751963	AA196375		TP04		A	Amber Glass 250ml
1751963	AA196375		TP04		A	Plastic Tub 500g
1751964	AA196376		TP04		A	Amber Glass 250ml
1751964	AA196376		TP04		A	Plastic Tub 500g

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1751965	AA196378		TP05		A	Amber Glass 250ml
1751965	AA196378		TP05		A	Plastic Tub 500g
1751966	AA196379		TP05		A	Amber Glass 250ml
1751966	AA196379		TP05		A	Plastic Tub 500g
1751967	AA196380		TP05		A	Amber Glass 250ml
1751967	AA196380		TP05		A	Plastic Tub 500g
1751968	AA204940		TP06		A	Amber Glass 250ml
1751968	AA204940		TP06		A	Plastic Tub 500g
1751969	AA196397		TP07		A	Amber Glass 250ml
1751969	AA196397		TP07		A	Plastic Tub 500g
1751970	AA196398		TP07		A	Amber Glass 250ml
1751970	AA196398		TP07		A	Plastic Tub 500g
1751971	AA196392		TP08		A	Amber Glass 250ml
1751971	AA196392		TP08		A	Plastic Tub 500g
1751972	AA196388		TP09		A	Amber Glass 250ml
1751972	AA196388		TP09		A	Plastic Tub 500g
1751973	AA196389		TP09		A	Amber Glass 250ml
1751973	AA196389		TP09		A	Plastic Tub 500g
1751974	AA196390		TP09		A	Amber Glass 250ml
1751974	AA196390		TP09		A	Plastic Tub 500g
1751975	AA196386		TP11		A	Amber Glass 250ml
1751975	AA196386		TP11		A	Plastic Tub 500g

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1751976	AA196387		TP11		A	Amber Glass 250ml
1751976	AA196387		TP11		A	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH at 20°C	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH at 20°C	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID

Test Methods

SOP	Title	Parameters included	Method summary
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	24-03994-1
Initial Date of Issue:	19-Feb-2024
Re-Issue Details:	
Client	IGSL
Client Address:	M7 Business Park Naas County Kildare Ireland
Contact(s):	Darren Keogh
Project	25000-2 Collins Avenue
Quotation No.:	Q20-21693
Order No.:	
No. of Samples:	8
Turnaround (Wkdays):	7
Date Approved:	19-Feb-2024
Approved By:	

Date Received:	09-Feb-2024
Date Instructed:	09-Feb-2024
Results Due:	19-Feb-2024

Details: Stuart Henderson, Technical Manager

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25000-2 Collins Avenue

Client: IGSL						**Chemtest Job No.:**	24-03994	24-03994	24-03994	24-03994
Quotation No.: Q20-21693						**Chemtest Sample ID.:**	1764863	1764865	1764868	1764869
Order No.:						Client Sample Ref.:	BH14	BH16	BH18	BH19
						Sample Type:	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	1.00	0.50	1.00	1.00
						Date Sampled:	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**					
Ammonium	U	1220	10:1	mg/l	0.050		0.32	< 0.050	0.20	0.11
Ammonium	N	1220	10:1	mg/kg	0.10		4.0	3.5	7.6	2.8

Results - Soil

Project: 25000-2 Collins Avenue

Client: IGSL				**Chemtest Job No.:**		24-03994	24-03994	24-03994	24-03994	24-03994	24-03994	24-03994
Quotation No.: Q20-21693				**Chemtest Sample ID.:**		1764863	1764864	1764865	1764866	1764867	1764868	1764869
Order No.:				Client Sample Ref.:		BH14	BH14	BH16	BH16	BH17	BH18	BH19
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.00	0.50	2.00	1.00	1.00	1.00
				Date Sampled:		08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024
				Asbestos Lab:		DURHAM		DURHAM			DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		U	2192		N/A	-		-			-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected			No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	17	16	26	17	18	23	20
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones	Roots and Stones	Stones	Stones
Soil Texture		N	2040		N/A	Sand	Clay	Clay	Clay	Sand	Clay	Clay
pH at 20C		M	2010		4.0	8.6		8.9			8.7	8.9
pH (2.5:1) at 20C		N	2010		4.0		8.4		7.8	8.4		
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		0.49			0.51	< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010	< 0.010		
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.015		< 0.010	0.015		
Total Sulphur		U	2175	%	0.010		0.041		0.017	0.029		
Sulphur (Elemental)		M	2180	mg/kg	1.0	4.3		27			69	4.7
Chloride (Water Soluble)		M	2220	g/l	0.010		0.046		0.49	0.17		
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		0.021	< 0.010		
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		0.50			< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	3.6		5.3			14	6.4
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01	< 0.01		
Sulphate (Total)		U	2430	%	0.010	0.15		0.16			0.14	0.094
Sulphate (Acid Soluble)		U	2430	%	0.010		0.037		0.028	0.034		
Arsenic		M	2455	mg/kg	0.5	17		17			12	19
Barium		M	2455	mg/kg	0	130		110			82	100
Cadmium		M	2455	mg/kg	0.10	3.1		2.8			1.7	2.9
Chromium		M	2455	mg/kg	0.5	26		33			24	30
Molybdenum		M	2455	mg/kg	0.5	7.1		5.1			4.2	5.2
Antimony		N	2455	mg/kg	2.0	2.4		2.1			< 2.0	2.2
Copper		M	2455	mg/kg	0.50	41		42			30	43
Mercury		M	2455	mg/kg	0.05	0.08		0.11			0.09	0.08
Nickel		M	2455	mg/kg	0.50	75		64			47	69
Lead		M	2455	mg/kg	0.50	35		35			30	37
Selenium		M	2455	mg/kg	0.25	3.1		1.9			2.1	3.4
Zinc		M	2455	mg/kg	0.50	130		120			93	120
Chromium (Trivalent)		N	2490	mg/kg	1.0	26		33			24	30
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50			< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	< 0.05

Results - Soil

Project: 25000-2 Collins Avenue

Client: IGSL				**Chemtest Job No.:**		24-03994	24-03994	24-03994	24-03994	24-03994	24-03994	24-03994
Quotation No.: Q20-21693				**Chemtest Sample ID.:**		1764863	1764864	1764865	1764866	1764867	1764868	1764869
Order No.:				Client Sample Ref.:		BH14	BH14	BH16	BH16	BH17	BH18	BH19
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.00	0.50	2.00	1.00	1.00	1.00
				Date Sampled:		08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024
				Asbestos Lab:		DURHAM		DURHAM			DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25			< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_AL_2D_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0			< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_AL_2D_#1	M	2690	mg/kg	1.00	2.4		< 1.0			< 1.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_AL_2D_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0			< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_AL_2D_#1	M	2690	mg/kg	3.00	3.4		3.5			< 3.0	3.1
Aliphatic EPH >C35-C40 MC	EH_AL_2D_#1	N	2690	mg/kg	10.00	< 10		< 10			< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_AL_2D_#1	M	2690	mg/kg	5.00	7.9		< 5.0			< 5.0	< 5.0
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25			< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0			< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0			< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	4.6		4.3			4.6	11
Aromatic EPH >C21-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	3.6		< 2.0			< 2.0	< 2.0
Aromatic EPH >C35-C40 MC	EH_AR_2D_#1	N	2690	mg/kg	1.00	1.4		1.0			1.6	1.3
Total Aromatic EPH >C10-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	5.00	8.2		5.8			5.5	11
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50			< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_Total_2D_#1	U	2690	mg/kg	10.00	16		10			< 10	15
Total Organic Carbon		M	2625	%	0.20	0.62		1.9			2.0	0.57
Mineral Oil EPH	EH_AL_2D_#1	N	2670	mg/kg	10	< 10		< 10			< 10	< 10
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10

Results - Soil

Project: 25000-2 Collins Avenue

Client: IGSL				**Chemtest Job No.:**		24-03994	24-03994	24-03994	24-03994	24-03994	24-03994	24-03994
Quotation No.: Q20-21693				**Chemtest Sample ID.:**		1764863	1764864	1764865	1764866	1764867	1764868	1764869
Order No.:				Client Sample Ref.:		BH14	BH14	BH16	BH16	BH17	BH18	BH19
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.00	0.50	2.00	1.00	1.00	1.00
				Date Sampled:		08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024	08-Feb-2024
				Asbestos Lab:		DURHAM		DURHAM			DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	< 1.0		< 1.0			< 1.0	< 1.0
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05			< 0.05	< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10			< 0.10	< 0.10

Results - Soil

Project: 25000-2 Collins Avenue

Client: IGSL				**Chemtest Job No.:**		24-03994
Quotation No.: Q20-21693				**Chemtest Sample ID.:**		1764870
Order No.:				Client Sample Ref.:		BH19
				Sample Type:		SOIL
				Top Depth (m):		2.00
				Date Sampled:		08-Feb-2024
				Asbestos Lab:		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type		U	2192		N/A	
Asbestos Identification		U	2192		N/A	
Moisture		N	2030	%	0.020	15
Soil Colour		N	2040		N/A	Brown
Other Material		N	2040		N/A	Stones
Soil Texture		N	2040		N/A	Sand
pH at 20C		M	2010		4.0	
pH (2.5:1) at 20C		N	2010		4.0	8.5
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.032
Total Sulphur		U	2175	%	0.010	0.027
Sulphur (Elemental)		M	2180	mg/kg	1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010	0.14
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01
Sulphate (Total)		U	2430	%	0.010	
Sulphate (Acid Soluble)		U	2430	%	0.010	0.040
Arsenic		M	2455	mg/kg	0.5	
Barium		M	2455	mg/kg	0	
Cadmium		M	2455	mg/kg	0.10	
Chromium		M	2455	mg/kg	0.5	
Molybdenum		M	2455	mg/kg	0.5	
Antimony		N	2455	mg/kg	2.0	
Copper		M	2455	mg/kg	0.50	
Mercury		M	2455	mg/kg	0.05	
Nickel		M	2455	mg/kg	0.50	
Lead		M	2455	mg/kg	0.50	
Selenium		M	2455	mg/kg	0.25	
Zinc		M	2455	mg/kg	0.50	
Chromium (Trivalent)		N	2490	mg/kg	1.0	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	

Results - Soil

Project: 25000-2 Collins Avenue

Client: IGSL				**Chemtest Job No.:**		24-03994
Quotation No.: Q20-21693				**Chemtest Sample ID.:**		1764870
Order No.:				Client Sample Ref.:		BH19
				Sample Type:		SOIL
				Top Depth (m):		2.00
				Date Sampled:		08-Feb-2024
				Asbestos Lab:		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	
Aliphatic EPH >C10-C12 MC	EH_AL_2D_#1	M	2690	mg/kg	2.00	
Aliphatic EPH >C12-C16 MC	EH_AL_2D_#1	M	2690	mg/kg	1.00	
Aliphatic EPH >C16-C21 MC	EH_AL_2D_#1	M	2690	mg/kg	2.00	
Aliphatic EPH >C21-C35 MC	EH_AL_2D_#1	M	2690	mg/kg	3.00	
Aliphatic EPH >C35-C40 MC	EH_AL_2D_#1	N	2690	mg/kg	10.00	
Total Aliphatic EPH >C10-C35 MC	EH_AL_2D_#1	M	2690	mg/kg	5.00	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	
Aromatic EPH >C10-C12 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	
Aromatic EPH >C12-C16 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	
Aromatic EPH >C16-C21 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	
Aromatic EPH >C21-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	
Aromatic EPH >C35-C40 MC	EH_AR_2D_#1	N	2690	mg/kg	1.00	
Total Aromatic EPH >C10-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	5.00	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	
Total EPH >C10-C35 MC	EH_Total_2D_#1	U	2690	mg/kg	10.00	
Total Organic Carbon		M	2625	%	0.20	
Mineral Oil EPH	EH_AL_2D_#1	N	2670	mg/kg	10	
Benzene		M	2760	µg/kg	1.0	
Toluene		M	2760	µg/kg	1.0	
Ethylbenzene		M	2760	µg/kg	1.0	
m & p-Xylene		M	2760	µg/kg	1.0	
o-Xylene		M	2760	µg/kg	1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	
Naphthalene		M	2800	mg/kg	0.10	
Acenaphthylene		N	2800	mg/kg	0.10	
Acenaphthene		M	2800	mg/kg	0.10	
Fluorene		M	2800	mg/kg	0.10	
Phenanthrene		M	2800	mg/kg	0.10	
Anthracene		M	2800	mg/kg	0.10	
Fluoranthene		M	2800	mg/kg	0.10	
Pyrene		M	2800	mg/kg	0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	
Chrysene		M	2800	mg/kg	0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	

Results - Soil

Project: 25000-2 Collins Avenue

Client: IGSL				**Chemtest Job No.:**		24-03994
Quotation No.: Q20-21693				**Chemtest Sample ID.:**		1764870
Order No.:				Client Sample Ref.:		BH19
				Sample Type:		SOIL
				Top Depth (m):		2.00
				Date Sampled:		08-Feb-2024
				Asbestos Lab:		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	
Coronene		N	2800	mg/kg	0.10	
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	
PCB 28		U	2815	mg/kg	0.010	
PCB 52		U	2815	mg/kg	0.010	
PCB 101		U	2815	mg/kg	0.010	
PCB 118		U	2815	mg/kg	0.010	
PCB 153		U	2815	mg/kg	0.010	
PCB 138		U	2815	mg/kg	0.010	
PCB 180		U	2815	mg/kg	0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	
Total Phenols		M	2920	mg/kg	0.10	

Results - Single Stage WAC

Project: 25000-2 Collins Avenue

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-03994							
Chemtest Sample ID:	1764863							
Sample Ref:	BH14							
Sample ID:								
Sample Location:								
Top Depth(m):	1.00							
Bottom Depth(m):								
Sampling Date:	08-Feb-2024							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.62	3	5	6
Loss On Ignition	2610		M	%	100	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.15	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0073	0.5	2	25
Barium	1455		U	0.006	0.064	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.011	0.11	0.5	10	30
Nickel	1455		U	0.0011	0.011	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0014	0.014	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.011	0.11	4	50	200
Chloride	1220		U	9.2	92	800	15000	25000
Fluoride	1220		U	0.33	3.3	10	150	500
Sulphate	1220		U	7.5	75	1000	20000	50000
Total Dissolved Solids	1020		N	85	840	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Collins Avenue

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-03994							
Chemtest Sample ID:	1764865							
Sample Ref:	BH16							
Sample ID:								
Sample Location:								
Top Depth(m):	0.50							
Bottom Depth(m):								
Sampling Date:	08-Feb-2024					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.9	3	5	6
Loss On Ignition	2610		M	%	3.1	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.9	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.085	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.026	0.26	0.5	2	25
Barium	1455		U	0.012	0.12	20	100	300
Cadmium	1455		U	0.0012	0.012	0.04	1	5
Chromium	1455		U	0.010	0.10	0.5	10	70
Copper	1455		U	0.035	0.35	2	50	100
Mercury	1455		U	0.00006	0.00063	0.01	0.2	2
Molybdenum	1455		U	0.028	0.28	0.5	10	30
Nickel	1455		U	0.031	0.31	0.4	10	40
Lead	1455		U	0.020	0.20	0.5	10	50
Antimony	1455		U	0.0082	0.082	0.06	0.7	5
Selenium	1455		U	0.0063	0.063	0.1	0.5	7
Zinc	1455		U	0.10	1.0	4	50	200
Chloride	1220		U	82	820	800	15000	25000
Fluoride	1220		U	0.85	8.5	10	150	500
Sulphate	1220		U	42	420	1000	20000	50000
Total Dissolved Solids	1020		N	310	3100	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	16	160	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	26

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Collins Avenue

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-03994							
Chemtest Sample ID:	1764868							
Sample Ref:	BH18							
Sample ID:								
Sample Location:								
Top Depth(m):	1.00							
Bottom Depth(m):								
Sampling Date:	08-Feb-2024					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	2.0	3	5	6
Loss On Ignition	2610		M	%	3.1	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.13	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0039	0.039	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0011	0.011	0.5	10	70
Copper	1455		U	0.0071	0.071	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.036	0.36	0.5	10	30
Nickel	1455		U	0.0033	0.033	0.4	10	40
Lead	1455		U	0.0015	0.015	0.5	10	50
Antimony	1455		U	0.0009	0.0092	0.06	0.7	5
Selenium	1455		U	0.0029	0.029	0.1	0.5	7
Zinc	1455		U	0.023	0.23	4	50	200
Chloride	1220		U	99	990	800	15000	25000
Fluoride	1220		U	0.51	5.1	10	150	500
Sulphate	1220		U	12	120	1000	20000	50000
Total Dissolved Solids	1020		N	320	3200	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.0	50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	23

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25000-2 Collins Avenue

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-03994							
Chemtest Sample ID:	1764869							
Sample Ref:	BH19							
Sample ID:								
Sample Location:								
Top Depth(m):	1.00							
Bottom Depth(m):								
Sampling Date:	08-Feb-2024							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.57	3	5	6
Loss On Ignition	2610		M	%	2.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.9	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.13	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0062	0.062	0.5	2	25
Barium	1455		U	0.008	0.077	20	100	300
Cadmium	1455		U	0.00017	0.0017	0.04	1	5
Chromium	1455		U	0.0030	0.030	0.5	10	70
Copper	1455		U	0.012	0.12	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.026	0.26	0.5	10	30
Nickel	1455		U	0.011	0.11	0.4	10	40
Lead	1455		U	0.0050	0.050	0.5	10	50
Antimony	1455		U	0.0013	0.013	0.06	0.7	5
Selenium	1455		U	0.0015	0.015	0.1	0.5	7
Zinc	1455		U	0.058	0.58	4	50	200
Chloride	1220		U	44	440	800	15000	25000
Fluoride	1220		U	0.56	5.6	10	150	500
Sulphate	1220		U	11	110	1000	20000	50000
Total Dissolved Solids	1020		N	150	1500	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.1	51	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	20

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water

Report Information

RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix 9

Geotechnical Laboratory Results (Rock)

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Social Housing Bundles 4 & 5 - Collins Avenue
Contract no. 25000

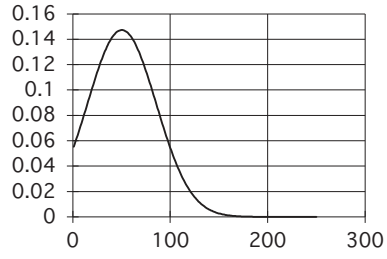
Sample Type: Core
Date of test: 07/02/2024

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC01	19.6	78	20.0	1.222	3.29	4.02	80	d	//
	19.7	78	21.0	1.222	3.45	4.22	84	d	//
	20.6	78	3.0	1.222	0.49	0.60	12	d	//
	21.5	78	5.0	1.222	0.82	1.00	20	d	//
	21.7	78	4.0	1.222	0.66	0.80	16	d	//
	22.1	78	2.0	1.222	0.33	0.40	8	d	//
RC02	19.6	78	18.0	1.222	2.96	3.61	72	d	//
	20.3	78	4.0	1.222	0.66	0.80	16	d	//
	20.6	78	22.0	1.222	3.62	4.42	88	d	//
	21.6	78	24.0	1.222	3.94	4.82	96	d	//
	21.8	78	4.0	1.222	0.66	0.80	16	d	//
	22.6	78	20.0	1.222	3.29	4.02	80	d	//
	23.1	78	16.0	1.222	2.63	3.21	64	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	13	13
Minimum	0.40	8
Average	2.52	50
Maximum	4.82	96
Standard Dev.	1.76	35
Upper 95% Confidence Limit	5.97	119.38
Lower 95% Confidence Limit	-0.93	-18.69

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Appendix 10

Exploratory Hole Location Plans


25000-2 NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue
Exploratory Hole Location Plan - DWG01
Legend
Cable Percussion Borehole
Trial Pit w/Soakaway Test (to BRE365)
Rotary Drillhole
Slit Trench Extremity
Slit Trench Extremity incorporating Foundation Inspection Pit (FP_)
Trial Pit
BH01
BH02
BH03
BH04
BH05
BH06
BH07
BH08
BH09
BH10
BH11
BH12
BH13
BH14
ST01-0
ST01-1
ST02-0/FP02
ST02-1
ST03-0/FP03
ST03-1
ST06-0
ST06-1
ST07-0
ST07-1
ST08-0
ST08-1
RC01
RC02
TP/SA01
TP02
TP03
TP04
TP05
TP/SA06
TP07
TP08
Google Earth
70 m
N


25000-2 NDFA Social Housing Bundles 4/5 - Lot 2 - Collins Avenue
Exploratory Hole Location Plan - DWG02
Legend
Cable Percussion Borehole
Trial Pit w/Soakaway Test (to BRE365)
Rotary Drillhole
Slit Trench Extremity
Slit Trench Extremity incorporating Foundation Inspection Pit (FP_)
Trial Pit
TP11
ST05-0/FP05
ST05-1
BH19
BH18
ST04-0/FP04
TP09
ST04-1
RC04
RC03
BH15
ST09-1
TP/SA10
BH16
ST09-0
BH17
BH14
TP08
ST08-1
ST08-0
N
Google Earth
70 m