



CAUSEWAY
— GEOTECH

NDFA Social Housing Lot 3 Balally – Interpretive Report

Client: NDFA on behalf of Dún Laoghaire-Rathdown
County Council (DLRCC)

Client's Representative: Malone O'Regan Consulting Engineers

Report No.: 23-0881C

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Prepared by:		Reviewed by:		Approved by:	
 Rachel White B.A. (Mod.) Geoscience		 Sean Ross BSc MSc PGeo MIEI		 Darren O'Mahony BSc MSc MIEI EurGeol PGeo	

The works were conducted in accordance with:

British Standards Institute (2015) BS 5930:2015+A1:2020, Code of practice for ground investigations.

BS EN 1997-2: 2007: Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing.

Geotechnical Society of Ireland (2016), Specification & Related Documents for Ground Investigation in Ireland

Laboratory testing was conducted in accordance with:

British Standards Institute BS 1377:1990 parts 2, 4, 5, 7 and 9

METHODS OF DESCRIBING SOILS AND ROCKS

Soil and rock descriptions are based on the guidance in BS5930:2015+A1:2020, The Code of Practice for Ground Investigation.

Abbreviations used on exploratory hole logs	
U	Nominal 100mm diameter undisturbed open tube sample (thick walled sampler).
UT	Nominal 100mm diameter undisturbed open tube sample (thin walled sampler).
P	Nominal 100mm diameter undisturbed piston sample.
B	Bulk disturbed sample.
LB	Large bulk disturbed sample.
SB	Sonic bulk disturbed sample.
D	Small disturbed sample.
C	Core sub-sample (displayed in the Field Records column on the logs).
L	Liner sample from dynamic sampled borehole.
W	Water sample.
ES / EW	Soil sample for environmental testing / Water sample for environmental testing.
SPT (s)	Standard penetration test using a split spoon sampler (small disturbed sample obtained).
SPT (c)	Standard penetration test using 60 degree solid cone.
(x,x/x,x,x,x)	Blows per increment during the standard penetration test. The initial two values relate to the seating drive (150mm) and the remaining four to the 75mm increments of the test length.
(Y for Z/ Y for Z)	Incomplete standard penetration test where the full test length was not achieved. The blows 'X' represent the total blows for the given seating or test length 'Z' (mm).
N=X	SPT blow count 'N' given by the summation of the blows 'X' required to drive the full test length (300mm).
HVP / HVR	In situ hand vane test result (HVP) and vane test residual result (HVR). Results presented in kPa.
V	Shear vane test (borehole). Shear strength stated in kPa.
VR	V: undisturbed vane shear strength VR: remoulded vane shear strength
Soil consistency description	In cohesive soils, where samples are disturbed and there are no suitable laboratory tests, N values may be used to indicate consistency on borehole logs – a median relationship of $N \times 5 = C_u$ is used (as set out in Stroud & Butler 1975).
dd-mm-yyyy	Date at the end and start of shifts, shown at the relevant borehole depth. Corresponding casing and water depths shown in the adjacent columns.
▽	Water strike: initial depth of strike.
▼	Water strike: depth water rose to.
Abbreviations relating to rock core – reference Clause 36.4.4 of BS 5930: 2015+A1:2020	
TCR (%)	Total Core Recovery: Ratio of rock/soil core recovered (both solid and non-intact) to the total length of core run.
SCR (%)	Solid Core Recovery: Ratio of solid core to the total length of core run. Solid core has a full diameter, uninterrupted by natural discontinuities, but not necessarily a full circumference and is measured along the core axis between natural fractures.
RQD (%)	Rock Quality Designation: Ratio of total length of solid core pieces greater than 100mm to the total length of core run.
FI	Fracture Index: Number of natural discontinuities per metre over an indicated length of core of similar intensity of fracturing.
NI	Non Intact: Used where the rock material was recovered fragmented, for example as fine to coarse gravel size particles.
AZCL	Assessed zone of core loss: The estimated depth range where core was not recovered.
DIF	Drilling induced fracture: A fracture of non-geological origin brought about by the rock coring.
(xxx/xxx/xxx)	Spacing between discontinuities (minimum/average/maximum) measured in millimetres.

NDFA Social Housing Lot 3 – Balally - Interpretive Report

1 AUTHORITY

On the instructions of Malone O'Regan Consulting Engineers, ("the Client's Representative"), acting on the behalf of NDFA and Dún Laoghaire-Rathdown County Council (DLRCC) ("the Client"), a ground investigation was undertaken at the above location to provide geotechnical and environmental information for input to the design and construction of a proposed residential development.

This report details the work carried out both on site and in the geotechnical and chemical testing laboratories; it contains a description of the site and the works undertaken, the exploratory hole logs and the laboratory test results.

All information given in this report is based upon the ground conditions encountered during the ground investigation works, and on the results of the laboratory and field tests performed. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes. It should be noted that groundwater levels usually vary due to seasonal and/or other effects and may at times differ to those recorded during the investigation. No responsibility can be taken for conditions not encountered through the scope of work commissioned, for example between exploratory hole points, or beneath the termination depths achieved.

This report was prepared by Causeway Geotech Ltd for the use of the Client and the Client's Representative in response to a particular set of instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

2 SCOPE

The extent of the investigation, as instructed by the Client's Representative, included boreholes, trial pits, slit trenches, soil and rock core sampling, environmental sampling, groundwater monitoring, in-situ and laboratory testing, and the preparation of a factual report on the findings.

3 DESCRIPTION OF SITE

As shown on the site location plan in Appendix A, the works were conducted on a greenfield site located in Balally, South Dublin. The site is bordered by Balally Shopping Centre to the west, Blackthorn Drive to the south, Maples Road to the north, and Drummartin Link Road to the east. Balally Family Resource Centre is located in the norther area of the site.

Elevations vary across the site, with a slight rise in elevation towards the south.

4 SITE OPERATIONS

4.1 Summary of site works

Site operations, which were conducted between the 24th of October and the 30th of November 2023, comprised:

- fourteen boreholes
 - twelve light cable percussion borehole
 - two boreholes by rotary drilling
- a standpipe installation in one borehole
- six machine dug trial pits
- nine machine dug slit trenches; and
- an infiltration test performed in two trial pits

The exploratory holes and in-situ tests were located as instructed by the Client's Representative, and as shown on the exploratory hole location plan in Appendix A.

4.2 Boreholes

A total of fourteen boreholes were put down in a minimum diameter of 150mm through soils and rock strata to their completion depths by a combination of methods, including light cable percussion boring by Dando 2000 rigs, and rotary drilling by a Comacchio 405 tracked rotary drilling rig.

The borehole logs state the methodology and plant used for each location, as well as the appropriate depth ranges.

A summary of the boreholes, subdivided by category in accordance with the methods employed for their completion, is presented in the following sub-sections.

4.2.1 Light cable percussion boreholes

Twelve boreholes (BH01-BH12) were put down to completion in minimum 200mm diameter using a Dando 2000 light cable percussion boring rig. All boreholes were terminated on encountering virtual refusal on obstructions, with the majority terminating within the hand pit of the borehole upon encountering weathered bedrock or granite boreholes.

Hand dug inspection pits were carried out between ground level and various depths up to 1.20m depth to ensure boreholes were put down at locations clear of services or subsurface obstructions.

Disturbed (bulk and small bag) samples were taken within the encountered strata. Environmental samples were taken at standard intervals, as directed by the Client's Representative.

Standard penetration tests were carried out in accordance with BS EN 22476-3:2005+A1:2011 at standard depth intervals using the split spoon sampler (SPT_(s)) or solid cone attachment (SPT_(c)). The penetrations are stated for those tests for which the full 150mm seating drive or 300mm test drive was not possible. The N-values provided on the borehole logs are uncorrected and no allowance has been made for energy ratio corrections. The SPT hammer energy measurement report is provided in Appendix K.

Any water strikes encountered during boring were recorded along with any changes in their levels as the borehole proceeded.

Where water was added to assist with boring, a note has been added to the log to account for same.

Appendix B presents the borehole logs.

4.2.2 Rotary drilled boreholes

Two boreholes (RC01 and RC02) were put to their completion by rotary drilling techniques only. The boreholes were completed using a low ground bearing tracked Comacchio 405 drilling rig.

Symmetrix-cased full hole rotary percussive drilling techniques were employed to advance the boreholes to bedrock, after which rotary coring was employed to recover core samples of the bedrock. SPTs were carried out at standard intervals throughout the overburden in accordance with BS EN 22476-3:2005+A1:2011 at standard depth intervals using the split spoon sampler (SPT_(s)) or solid cone attachment (SPT_(c)). The penetrations are stated for those tests for which the full 150mm seating drive or 300mm test drive was not possible. The N-values provided on the borehole logs are uncorrected and no allowance has been made for energy ratio corrections. The SPT hammer energy measurement report is provided in Appendix K.

Where coring was carried out within bedrock strata, Geobor S Coring was used. The core was extracted in up to 1.5m lengths using an SK6L core barrel, which produced core of nominal 102mm diameter, and was placed in single channel wooden core boxes.

The core was subsequently photographed and examined by a qualified and experienced Engineering Geologist, thus enabling the production of an engineering log in accordance with *BS 5930: 2015+A1:2020: Code of practice for ground investigations*.

Appendix B presents the borehole logs, with core photographs presented in Appendix C.

4.3 Standpipe installation

A groundwater monitoring standpipe was installed in RC02.

Details of the installation, including the depth range of the response zone, are provided in Appendix B on the individual borehole logs.

4.4 Trial Pits

Six trial pits (TP01-TP06) were excavated using an 8t tracked excavator fitted with a 500mm wide bucket, to depths ranging between 1.10m and 2.30m.

Environmental samples were taken at depths of 0.50m and 1.00m in each trial pit.

Disturbed (small jar and bulk bag) samples were taken at standard depth intervals and at change of strata.

Any water strikes encountered during excavation were recorded along with any changes in their levels as the excavation proceeded. The stability of the trial pit walls was noted on completion.

Appendix D presents the trial pit logs with photographs of the pits and arising provided in Appendix E.

4.5 Slit trenches

Nine slit trenches (ST01, ST02, ST02A and ST03-ST08) were excavated by a combination of hand digging and mechanical excavation using a compact 3t tracked excavator fitted with a 600mm wide toothless bucket, to locate and identify buried services at the site.

Drawing of the trenches and the locations of services encountered during excavation are shown along with the slit trench logs in Appendix F, with photographs presented in Appendix G.

4.6 Infiltration tests

Two infiltration/soakaway tests (IT01A-IT02) were carried out in accordance with BRE Digest 365 - Soakaways (BRE, 2016). The infiltration/soakaway test was not conducted IT01 due to the presence of services in the pit.

Appendix H presents the soakaway pit logs followed by the results and analysis of the infiltration test. Photographs of the pits are presented in Appendix E.

4.7 Surveying

The as-built exploratory hole positions were surveyed following completion of site operations by a Site Engineer from Causeway Geotech. Surveying was carried out using a Trimble R10 GPS system employing VRS and real time kinetic (RTK) techniques.

The plan coordinates (Irish Transverse Mercator) and ground elevation (mOD Malin) at each location are recorded on the individual exploratory hole logs. The exploratory hole location plan presented in Appendix A shows these as-built positions.

4.8 Groundwater monitoring

Following completion of site works, groundwater monitoring was conducted over several rounds. Groundwater monitoring was carried out using a water interface probe.

The monitoring records are presented in Section 6.3.

5 LABORATORY WORK

Upon their receipt in the laboratory, all disturbed samples were carefully examined and accurately described, and their descriptions incorporated into the borehole logs.

5.1 Geotechnical laboratory testing of soils

Laboratory testing of soils comprised:

- **soil classification:** moisture content measurement, Atterberg Limit tests and particle size distribution analysis
- **compaction related:** California bearing ratio tests
- **soil chemistry:** pH and water soluble sulphate content

Laboratory testing of soils samples was carried out in accordance with British Standards Institute: *BS 1377, Methods of test for soils for civil engineering purposes; Part 1 (2016), and Parts 2-9 (1990)*.

The test results are presented in Appendix I.

5.2 Geotechnical laboratory testing of rock

Laboratory testing of rock sub-samples comprised:

- point load index
- unconfined compressive strength (UCS) tests

Test	Test carried out in accordance with
Point load index	ISRM Suggested Methods (1985) Suggested method for determining point-load strength. Int. J. Rock Mech. Min. Sci. Geomech. Abstr. 22, pp. 53–60
Uniaxial compression strength tests	ISRM Suggested Methods (1981) Suggested method for determining deformability of rock materials in uniaxial compression, Part 2 and ISRM (2007) Ulusay R, Hudson JA (eds) The complete ISRM suggested methods

	for rock characterization, testing and monitoring, 2007
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The test results are presented in Appendix I.

5.3 Environmental laboratory testing of soils

Environmental testing, as specified by the Client's Representative was conducted on selected soil samples by Derwentside Environmental Testing Services in Consett, Durham.

Rilta suite of analysis was carried out on several samples for landfill disposal criteria. This included testing for a range of determinants, including:

- Metals
- Speciated total petroleum hydrocarbons (TPH)
- Speciated polycyclic aromatic hydrocarbons (PAH)
- BTEX compounds
- Phenols
- Organic matter
- Cyanides
- Asbestos screen
- Sulphate and sulphide
- pH

Results of environmental laboratory testing are presented in Appendix J.

A waste classification report was compiled analysing the result of the above testing. The report is presented in Appendix L and discussed in Section 7.5.

6 GROUND CONDITIONS

6.1 General geology of the area

Published geological mapping indicate the superficial deposits underlying the site comprise glacial till. These deposits are underlain by pale grey fine to coarse grained granite of the Northern and Upper Liffey Valley Plutons.

6.2 Ground types encountered during investigation of the site

A summary of the ground types encountered in the exploratory holes is listed below, in approximate stratigraphic order:

- **Topsoil:** encountered typically in 100mm to 300mm thickness across the site.

- **Made Ground (fill):** reworked sandy gravelly clay fill with varying fragments of concrete, wire, metal, plastic and red brick extending to a depth of 0.30m-1.00m across the site.
- **Glacial Till:** generally firm sandy gravelly clay encountered across the site overlying granite bedrock.
- **Bedrock (Granite):** Medium strong to strong grey granite rockhead was encountered at depths ranging from 2.00m in RC02 to 2.10m in RC01, although rock was not cored until the right length of casing was safely installed, in this instance 2.50m in both holes. GSI mapping indicated bedrock outcropping to the east of the site. Based on this and the depths of confirmed bedrock in RC01 and RC02, it is highly likely that all boreholes and trial pits terminated on weathered bedrock.

6.3 Groundwater

Details of the individual groundwater strikes, along with any relative changes in levels as works proceeded, are presented on the exploratory hole logs for each location.

Groundwater was encountered during the ground investigation as water strikes during excavations at depths as shown in Table 1, below.

Table 1 Groundwater strikes encountered during the ground investigation

Location	Depth (mbgl)	Comments
ST08	1.10	Slow seepage at 1.10m
TP01	2.10	-

Groundwater was not noted during drilling at any of the borehole locations. However, it should be noted that the casing used in supporting the borehole walls during drilling may have sealed out any groundwater strikes and the possibility of encountering groundwater during excavation works should not be ruled out.

It should be noted that any groundwater strikes within bedrock may have been masked by the fluid used as the drilling flush medium.

Table 2 Groundwater monitoring

Date	Depth (mbgl)
	RC02
01/12/2023	1.82
23/01/2024	2.45

Continued monitoring of the installed standpipe will give an indication of the seasonal variation in groundwater level which should be factored into design considerations.

7 DISCUSSION

7.1 Proposed construction

It is proposed to construct a new residential development on the site with associated infrastructure.

7.2 Recommendations for construction

7.2.1 Summary

Based on the presence on form to stiff glacial till or weathered bedrock at relatively shallow depths across the footprint of the proposed development, the implementation of traditional shallow (spread) foundations (strip/pad and trench fill) are considered suitable.

7.2.2 Soil strength parameters

When estimating the shear strength of fine soils (silt/clay), reference is made to the results of Standard Penetration Tests (SPT's) carried out within the boreholes. The undrained shear strength of fine soils can be estimated using the correlation developed by Stroud & Butler:

$$C_u = f_1 \times N$$

where f_1 is typically in the range 4 to 6. A median f_1 value of 5 is adopted for this report.

For granular soils (sand/gravel), a graphical relationship between SPT "N" value and angle of shearing resistance, ϕ , has been developed by Peck, Hanson and Thorburn. This is published in *Foundation Design and Construction* (Tomlinson, 2001) and is referenced in this report when deriving angles of shearing resistance for the gravel soils.

7.2.3 Foundations and ground floor construction

Foundations should transfer loading to below any Made Ground or subsoil. The recommended foundation construction and allowable bearing pressure (ABP) at the borehole locations are presented in Table 3.

Table 3: Construction recommendations

Borehole	Depth below EGL* to suitable bearing stratum	Estimated ABP (kPa)	Stratum description	Foundation type	Ground floor construction	Groundwater
BH01	1.20m	200	Stiff CLAY	Strip & pad	Suspended	Not encountered
BH02	1.20m	200	Stiff CLAY	Strip & pad	Suspended	Not encountered

Borehole	Depth below EGL* to suitable bearing stratum	Estimated ABP (kPa)	Stratum description	Foundation type	Ground floor construction	Groundwater
BH03	1.20m	180	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
BH04	1.20m	200	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
BH05	1.30m	200	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
BH06	1.20m	200	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
BH07	1.20m	180	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
BH08	0.80m	200	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
BH09	1.10m	200	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
BH10	1.00m	200	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
BH11	0.90m	200	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
BH12	1.20m	200	Stiff CLAY	Strip & pad	Ground bearing	Not encountered
RC01	1.20m	200	Stiff CLAY	Strip & pad	Ground bearing	Monitored to 1.82m
RC02	1.20m	200	Stiff CLAY	Strip & pad	Ground bearing	Not encountered

*Existing Ground Level

Based on the findings of the ground investigation, spread foundations (strip/pad) are considered suitable with estimated allowable bearing pressures between 180kPa and 200kPa at depths between 0.80m and 1.20m on stiff clay. However, drillers noted weathered bedrock in the base of each borehole, so it is possible that the boreholes terminated on weathered bedrock. During trial pit excavations, with a bit of additional effort, depths of up to 2.30m were achieved, so although weathered bedrock is possibly at a shallow depth across the site it should be relatively easily to excavate using a reasonably sized excavator. Please refer to Section 7.2.6 for more details.

The base of foundation excavations should be thoroughly inspected in accordance with the Earthworks Specification; and any soft or loose soils removed with the resultant void backfilled with ST1 concrete or engineered backfill. A consistent bearing stratum should be provided for any building unit to limit differential settlements.

Given the generally fine grained/cohesive nature of the soils throughout the proposed formation levels, excavations for foundations are likely to be relatively stable. However, any instability can be minimised by battering the side slopes at 1 vertical to 2 horizontal and by limiting the duration that the excavation is open. Groundwater control, where required, will be possible by pumping from sumps formed in the base of excavations.

7.2.4 Floor slabs

Floor slabs should not bear directly onto Made Ground or soft soils. Consequently, the use of ground bearing floor slabs is considered appropriate following the removal of any surface Made Ground and soft clay layers and their replacement using well-graded well-compacted granular fill. However, a suspended floor slab should be adopted where the difference in levels of the proposed floor and the base of Made Ground/soft soils is greater than 600mm.

Therefore, given the depth to the base of Made Ground in places, a suspended floor slab may be required over parts of the site. The use of intermediate lines of support stub walls would reduce the spans required for flooring units.

7.2.5 Excavations for services

For the installation of services ducts/trenches, it is suggested that open trenching will be the most practicable construction method. Generally speaking, the ground conditions should render the use of open trenching by backhoe excavator possible, with the possibility for some localised breaking based on the varying depth to weathered bedrock/bedrock.

Where working in open trenches, it is thought that trench support systems, by way of a trench box (or possibly sheet piles), will be required to maintain trench stability and safe working conditions. Groundwater control at these locations should be possible by means of sump pumping.

To preclude the eventuality of differential settlements in pipes, they should be laid on a consistent stratum of appropriate allowable bearing capacity and protected with appropriate fill cover.

Where ducts and chambers must be installed in areas where localised soft spots are encountered, the use of geogrid reinforcement along the base of the excavation is recommended. This will stiffen the base of the trench and help control longitudinal differential settlement.

Backfilling of trenches may be completed by using compacted Cl 804 granular fill and reinstated as appropriate.

7.2.6 Bedrock summary

Cable Percussion boreholes, rotary boreholes, trial pit excavations and slit trench excavations indicated that depth to weathered bedrock and competent bedrock varied across the site, with depths shown in Table 4 below.

It should be noted that only rotary borehole conclusively prove depth to bedrock, as this method recovers core from the ground. Cable Percussion boreholes and trial pit/slit trench excavations terminations could possibly be boulders or other obstructions mistaken for bedrock.

Table 4 Depth to rockhead

Exploratory method	Weathered bedrock depth (mbgl)	Bedrock depth (mbgl)
Cable Percussion boreholes	0.80-1.80	n/a
Rotary boreholes	1.20-1.40	2.00-2.10
Trial Pit excavations	1.20-2.30	n/a
Slit Trench excavations	Varies across the trench	n/a

Based on the depths shown in Table 4, the depth to (weathered) bedrock varies across the site from 0.80-2.30m. Therefore, it is reasonable to expect weathered bedrock in any excavation undertaken on site. Competent bedrock was proven in RC01 and RC02 >2.00m. Any weathered bedrock above this will likely be relatively easy to excavate using standard excavation techniques, with some localised breaking a possibility.

Where hydraulic breaking of rock is required, a plan for control of noise and vibration should be produced in advance of construction activities. This should outline the extent and type of monitoring required for the duration of site works, as well as the requirement for respite periods to punctuate breaking activities.

7.2.7 Slit trench summary/existing services

Eight slit trenches were completed across the site to identify any services present on site. Summary of services found are shown below in Table 5.

Table 5 Summary of slit trench findings

Slit Trench	Services present	Comments
ST01	-150mm Watermain	Encountered closer to the western boundary than shown on GPR
ST02	-25mm black pvc duct	
ST02A	-150mm Watermain	Encountered closer to the western boundary than shown on GPR
ST03	-150mm Watermain -100mm orange duct (possible ESB)	

ST04	-100mm orange duct (possible ESB)	
ST05	None	
ST06	None	
ST07	None	
ST08	-100mm black pvc duct	

7.2.8 Soil aggressivity

An assessment of the Aggressive Chemical Environment for Concrete (ACEC) was undertaken through reference to the Building Research Establishment (BRE) Special Digest 1 (2017).

As noted by BRE Special Digest 1, sulphates in the soil and groundwater are the chemical agents most likely to attack concrete. The extent to which sulphates affect concrete is linked to their concentrations, the type of ground, the presence of groundwater, the type of concrete and the form of construction in which concrete is used.

BRE Special Digest 1 identifies four different categories of site which require specific procedures for investigation for aggressive ground conditions:

- Sites not subjected to previous industrial development and not perceived as containing pyrite;
- Sites not subjected to previous industrial development and perceived as containing pyrite;
- Brownfield sites not perceived as containing pyrite;
- Brownfield sites perceived as containing pyrite.

For the purposes of this report the site was classified as not having been subject to previous industrial development and not perceived as containing pyrite.

The results of chemical tests (pH and water soluble sulphate contents) on soil samples indicate Design Sulphate Class DS-1 and ACEC Class AC-1s – reference Table C1 of BRE Special Digest 1 (Building Research Establishment, 2005). The selection of the concrete Design Chemical (DC) Class and Additional Protective Measures (APMs) should be based on the ACEC Class of the ground, taking into account a number of factors including the type of concrete element, its mode of exposure to the aggressive ground and the required durability. The options for limiting values of concrete required to satisfy various DC Classes are presented in Section D5 of BRE Special Digest 1 (2005).

7.3 Infiltration drainage

Infiltration test/Soakaway tests undertaken on site yielded results as shown below in Table 6.

Table 6 Soakaway test results

GI Ref	Test	Infiltration Rate (m/h)	Strata tested	Comments
IT01A	1	0.05	Weathered bedrock	
	2	0.06		

IT02	1	n/a	Gravelly silty SAND	Test did not soakaway
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IT01A indicated infiltration rates of 0.05 and 0.06 m/h respectively. The rates of infiltration coupled with the soil descriptions imply that the subsoil may be considered suitable media for an infiltration drainage system.

Reference should be made the Sustainable Drainage Systems (SuDS) design guidance, taking into account meteorological conditions and a hydrogeological assessment.

7.4 Material re-use

In assessing the reusability of soil several approaches may be considered. Most commonly, the following parameters are used:

- a) moisture content and the plastic limit / moisture content ratio of potential Cohesive Fill: an upper bound ratio of 1.2 is often adopted.
- b) undrained shear strength (undisturbed and remoulded) of potential Cohesive Fill: a lower bound strength of 40kPa is often adopted.
- c) Moisture Condition Value (MCV) of potential Cohesive Fill: a lower bound MCV of 8 is often adopted.
- d) California Bearing Ratio (CBR) of potential Cohesive Fill: a lower bound CBR of 2% is often adopted.
- e) measured SPT *N*value of potential Cohesive Fill: a lower bound value of 12 is often adopted, using the published relationships between *N*value and c_u , Clayton (1995). However, the individual blow counts need to be examined to allow assessment of whether *N*values have been elevated by the presence of coarse gravel or cobbles.
- f) particle size distribution, in particular the fines content, of potential Granular Fill.
- g) moisture content of potential Granular Fill as reflected by laboratory test results and the records of groundwater strikes in coarse grained soils
- h) coefficient of uniformity, C_u , of granular material.

Allowance will also have to be made of construction expedients and their impact on the proportion of reusable soil, including:

- the effects of weathering of the near surface soils
- the presence of moisture susceptible soils

- the difficulties of separating layers and lenses of potential Granular and Cohesive Fill
- the presence of groundwater in lenses and layers of coarse grained soils.

Note that not all the aforementioned parameters are applicable in each case, more so a combination of those most applicable.

In assessing its suitability for use as fill, reference is made to the insitu test results and the laboratory testing conducted on representative disturbed samples obtained from the trial pits and boreholes during the ground investigation.

PSD results have been compared against gradings outlined in Table 6/2 of the TII publication "*Specification for Road Works Series 600 – Earthworks*", for acceptable earthworks materials. Test results indicated that the material tested can be classified as either Class 1 *General Granular Fill* or Class 2 *General Cohesive Fill* subject to further testing.

Sixteen (16) single point CBR tests were completed on samples from within the upper 1m, as it is assumed any earthworks across the site will not go beyond this depth. As can be seen from the tests results, all results indicated values below a CBR of 2% across various moisture content ranges. Therefore, it is likely given the high natural moisture content of the upper soils, coupled with the low CBR value that these soils will not be suitable for re-use as fill.

It is possible that processing of the cohesive material prior to re-use may increase its strength such as decreasing moisture content, however further laboratory testing would be required to confirm. It should be noted that seasonal variations in the groundwater table will affect the natural moisture content of these soils and as such will affect their suitability for re-use.

It should be noted that the field logs make note of low cobble content across the area in concern; these would have tended not to have been included in the samples taken for testing and as such have not been considered in the above assessment. Certain pockets of coarse soils encountered may fall under classification of starter layers.

The above assessment is based on the information gleaned from the investigation points. When carrying out excavation works, further on-site testing should be conducted to verify the type/classification and suitability of fill material.

7.5 Waste Classification

Material excavated from site during clearance works and foundation construction would be considered a waste under the Waste Framework Directive 2008 (WFD) where this material is to be disposed off site. Without prejudice to the provisions of Article 7(3) of Directive 2008/98/EC, if a waste has a non-hazardous entry, it is non-hazardous without further assessment. If a waste has a hazardous entry, it is hazardous without further assessment. If it has a mirror entry in the LoW it must be dealt with in accordance with Section 1.2. of the WFD where it can be classified via a process of analysis against standard criteria set out in the WFD. The assessment process is described in detail in guidance published by the Irish EPA (Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-Hazardous, July 2018) and UK regulatory authorities (Guidance on the Classification and Assessment of Waste: Technical Guidance WM3, Oct 2021). The assessment involves comparison of the concentration of various parameters against defined threshold values.

Due to the typical homogeneous nature of the material present during the ground investigation work the most appropriate List of Waste (LoW) code with 'mirror' entries (i.e. a waste can be either hazardous or non-hazardous) considered applicable to excavated material to be removed from site is:

1. 17-05-03* (soil and stone containing dangerous substances, classified as hazardous) or 17-05-04 (soil and stone other than those mentioned in 17-05-03, not hazardous).

For consideration of material to be removed from site, a waste classification of the solid soil laboratory result was completed using the web-based HazWasteOnline™ software. This tool was used to determine whether the samples results are classified as hazardous or non-hazardous. It is noted however that the environmental regulator (in this case the Irish EPA) and the waste facilitator (for example a landfill operator or treatment facility) have final authority on the decision whether a waste is hazardous or non-hazardous and what the appropriate disposal route is.

7.5.1 Hazwasteonline™ Classification Results

Nineteen (19 no.) samples were assessed using the HazWasteOnline™ software. All samples were classified as being non-hazardous as presented in the HazWasteOnline™ reports included in Appendix L.

The specific LoW code applied to the material at each sample location is summarised in Table 7. The assigning of the LoW code is based on observations recorded in exploratory hole during the investigation work, an estimation of the percentage of anthropogenic material present at each location and the results of the HazWasteOnline™ assessment. The final LoW codes applied at the time of disposal may vary depending on the percentage of anthropogenic material observed in the excavation phase. Where there is in excess of 2% anthropogenic material observed the LoW code 17 09 04 may be applied¹.

¹ EPA (2020) Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities

Table 7: Applied LoW Codes

EH location	Depth (m)	Classification	Asbestos Type (if present)	LoW Code
TP01	0.50	Non-Hazardous	NAD [#]	17 05 04
TP02	0.50	Non-Hazardous	NAD	17 05 04
TP03	0.50	Non-Hazardous	NAD	17 05 04
TP04	0.50	Non-Hazardous	NAD	17 05 04
TP05	0.50	Non-Hazardous	NAD	17 05 04
TP06	0.50	Non-Hazardous	NAD	17 05 04
ST01	0.50	Non-Hazardous	NAD	17 05 04
ST02	0.50	Non-Hazardous	NAD	17 05 04
ST03	0.50	Non-Hazardous	NAD	17 05 04
ST05	0.50	Non-Hazardous	NAD	17 05 04
ST06	0.50	Non-Hazardous	NAD	17 05 04
ST07	0.50	Non-Hazardous	NAD	17 05 04
IT01A	0.50	Non-Hazardous	NAD	17 05 04
IT02	0.50	Non-Hazardous	NAD	17 05 04
BH01	0.50	Non-Hazardous	NAD	17 05 04
BH02	0.50	Non-Hazardous	NAD	17 05 04
BH06	0.50	Non-Hazardous	NAD	17 05 04
BH04	0.50	Non-Hazardous	NAD	17 05 04
BH11	0.50	Non-Hazardous	NAD	17 05 04

[#] No asbestos detected

7.5.2 Landfill Waste Acceptance Criteria

WAC limits and the associated laboratory analysis are not suitable for use in the determination of whether a waste is hazardous or non-hazardous. Waste Acceptance Criteria (WAC) have been agreed by the EU (Council Decision 2003/33/EC) and are only applicable to material if it is to be disposed of as a waste at a landfill facility while each individual member state and licensed operator of landfill facilities may apply more stringent WAC.

The laboratory data have been compared to the WAC limits set out in Council Decision 2003/33/EC as well as the specific WAC which the EPA have applied to the Integrated Materials Solutions (IMS) Landfill in north County Dublin. The IMS landfill has higher limits for a range of parameters while still operating under an inert landfill licence. The WAC data considered in combination with the waste classification outlined in Section 7.5.1 allows the most suitable waste category to be applied to the samples tested. The applicable waste category criteria are summarised in Table 8 along with potential outlets for the various waste categories. Note that this list is not exhaustive and applicable at the time of the writing this report. The WAC data is presented in the Appendix L.

Table 8: Waste Category for off-site Disposal/Recovery

Waste Category	Classification Criteria	Potential disposal facilities
Category A Unlined Soil Recovery Facilities	Soil and Stone only which are free from ² anthropogenic materials such as concrete, brock timber. Soil must be free from "contamination" e.g. PAHs, Hydrocarbons ³ .	Soil Recovery Facilities, Waste Facility Permitted Sites, COR Sites or potential by-product if deemed not to be a waste and complying with requirements under Article 27 of European Waste Directive Regulations (2011) ⁴ .
Category B1 Inert Landfill	Reported concentrations within inert waste limits, which are set out by the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002). Results also found to be non-hazardous using the HWOL application.	Integrated Materials Solutions Limited Partnership (IMS), Naul, County Dublin W0129-02 Walshestown Landfill Walshestown, Blackhall, Tipperkevin & Bawnoge, Naas, Co. Kildare W0254-01
Category B2 Inert Landfill	Reported concentrations greater than Category B1 criteria but less than IMS Hollywood Landfill acceptance criteria, as set out in their Waste Licence W0129-02. Results also found to be non-hazardous using the HWOL application	Integrated Materials Solutions Limited Partnership (IMS), Naul, Co. Dublin W0129-02 Walshestown Landfill, Walshestown, Blackhall, Tipperkevin & Bawnoge, Naas, County Kildare W0254-01 ⁵
Category C Non-Haz Landfill	Reported concentrations greater than Category B2 criteria but within non-haz landfill waste acceptance limits set out by the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002).	Walshestown Landfill Walshestown, Blackhall, Tipperkevin & Bawnoge, Naas, Co. Kildare W0254-01 ⁶ Ballynagran Landfill, Co. Wicklow. W165-02 Drehid Landfill, Co. Kildare.

² Free from equates to <2%

³ Total BTEX 0.05mg/kg, Mineral Oil 50mg/kg, Total PAHs 1.0mg/kg, Total PCBs 0.05mg/kg and Asbestos No Asbestos Detected – EPA Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities, 2020.

⁴ S.I. No. 126/2011 - European Communities (Waste Directive) Regulations 2011 (Article 27).

⁵ Licenced to accept Category B2 material for recovery.

⁶ Licenced to accept Category C material for recovery

Waste Category	Classification Criteria	Potential disposal facilities
	Results also found to be non-hazardous using the HWOL application.	W0201-01 East Galway Landfill, Co. Galway. W0178-02 Knockharley Landfill, Co. Meath. W0146-02
Category C1 Non-Haz Landfill	As Category C but containing < 0.001% w/w asbestos fibres.	RILTA Environmental Ltd. W0192-03 Enva Portlaoise. W0184-02
Category C2 Non-Haz Landfill	As Category C but containing >0.001% and <0.01% w/w asbestos fibres	RILTA Environmental Ltd. W0192-03 Enva Portlaoise. W0184-02
Category C3 Non-Haz Landfill	As Category C but containing >0.01% and <0.1% w/w asbestos fibres.	RILTA Environmental Ltd. W0192-03 Enva Portlaoise. W0184-02
Category D Hazardous Treatment	Results found to be hazardous using HWOL Application.	RILTA Environmental Ltd. W0192-03 Enva Portlaoise. W0184-02
Category D1 Hazardous Treatment	Results found to be hazardous due to the presence of asbestos (>0.1%).	RILTA Environmental Ltd. W0192-03

The Waste Classification report shows that the material tested can be classified as non-hazardous material considering the List of Wastes (LoW) code 17 for Construction and Demolition Wastes (including soils excavated from contaminated sites), specifically 17 05 04.

On review of the laboratory results against the Calculated Maximum Concentrations and Soil Trigger Levels for Metals in the defined Geochemical Domains, as detailed in the EPA Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities (EPA, 2020), the results of the chemical analysis show a number of the laboratory results in excess of the trigger levels for Domain 6 where the site is located as detailed in Table 9.

Table 9: Laboratory results assessed against the Maximum Concentrations /or Trigger Levels Domain 6 (mg/kg unless states otherwise)

Determinant	Max. Concentration/ Trigger Level	TP01 0.50	TP02 0.50	TP03 0.50	TP04 0.50	TP05 0.50	TP06 0.50	ST01 0.50	ST02 0.50	ST03 0.50	ST05 0.50	ST06 0.50	ST07 0.50	IT01A 0.50	IT02 0.50	BH01 0.50	BH02 0.50	BH06 0.60
Arsenic	85.6	21	26	8	18	9.4	20	9.9	9.1	12	16	23	22	11	11	16	15	17
Cadmium	2.38	1.8	19	0.8	6.7	0.7	3.1	1.6	1.8	1.5	3.2	2.3	3.6	0.8	1.1	2.9	1.4	2.0
Chromium	54.0	34	34	15	27	21	25	15	13	14	18	19	27	20	25	16	15	18
Copper	40.0	120	120	23	54	18	48	29	22	23	40	59	63	19	25	50	28	42
Mercury	0.53	0.09	0.34	1.5	0.19	0.07	0.12	0.12	0.09	0.08	0.13	0.70	0.21	0.06	0.07	0.08	0.1	0.3
Nickel	28.2	23	20	20	29	22	44	22	22	22	37	41	71	21	35	51	27	35
Lead	108	200	290	42	110	18	54	35	23	24	50	120	58	19	22	25	29	69
Zinc	168	570	1500	260	510	84	230	92	91	84	160	120	170	77	120	130	89	110
TOC	3%	0.8	1.4	<0.5	0.8	0.6	0.6	2.9	1.9	1.6	1.9	4.5	1.8	1.6	0.7	0.7	0.9	2.5
Total BTEX	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Mineral Oil	50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total PAHs	1	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
Total PCBs	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Asbestos	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD

Determinant	Max. Concentration/ Trigger Level	BH04 0.50	BH11 0.50
Arsenic	85.6	13	22
Cadmium	2.38	2.9	1.4
Chromium	54.0	15	18
Copper	40.0	38	58
Mercury	0.53	0.08	1.9
Nickel	28.2	46	37
Lead	108	23	120
Zinc	168	100	110
TOC	3%	1.3	4.4
Total BTEX	0.05	<0.04	<0.04
Mineral Oil	50	<10	<10
Total PAHs	1	<1.6	<1.6
Total PCBs	0.05	<0.01	<0.01
Asbestos	NAD	NAD	NAD

All samples were assessed in terms of waste classification using the HazWasteOnline™ software, the WAC set out in Council Decision 2003/33/EC and in the IMS specific WAC and against the EPA maximum concentration values to give a final waste categorisation to determine the most appropriate disposal route for any waste generated. The final and most applicable waste category for each sample is summarised in Table 10. It is noted again that the environmental regulator (in this case the Irish EPA) and the waste facilitator (for example a landfill operator or treatment facility) have final authority on the decision the appropriate disposal route.

Table 10: Applicable Waste Category for stockpile samples

EH location	Depth (m)	Waste Category	LoW Code
TP01	0.50	Category C	17 05 04
TP02	0.50	Category C	17 05 04
TP03	0.50	Category C	17 05 04
TP04	0.50	Category C	17 05 04
TP05	0.50	Category A	17 05 04
TP06	0.50	Category C	17 05 04
ST01	0.50	Category A	17 05 04
ST02	0.50	Category B2 (elevated DOC)	17 05 04
ST03	0.50	Category A	17 05 04
ST05	0.50	Category B2 (elevated DOC)	17 05 04
ST06	0.50	Category C	17 05 04
ST07	0.50	Category C	17 05 04
IT01A	0.50	Category A	17 05 04
IT02	0.50	Category C	17 05 04
BH01	0.50	No WAC testing	17 05 04
BH02	0.50	No WAC testing	17 05 04
BH06	0.50	No WAC testing	17 05 04
BH04	0.50	No WAC testing	17 05 04
BH11	0.50	No WAC testing	17 05 04

It is noted that this waste classification assessment has been based solely on the available sample results and corresponding investigation findings. In making this assessment all due care and attention to available and relevant legislative and guidance frameworks has been taken in arriving at the conclusions. All results should be presented to a licenced waste carrier to identify a suitable disposal route.

8 REFERENCES

Geotechnical Society of Ireland (2016), Specification & Related Documents for Ground Investigation in Ireland.

IS EN 1997-2: 2007: Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing. National Standards Authority of Ireland.

BS 5930: 2015+A1:2020: Code of practice for ground investigations. British Standards Institution.

BS EN ISO 14688-1:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 1 Identification and description.

BS EN ISO 14688-2:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 2 Principles for a classification.

BS 1377: 1990: Methods of test for soils for civil engineering purposes. British Standards Institution.

BS EN ISO 14689-1:2018: Geotechnical investigation and testing. Identification and classification of rock. Identification and description.

BS EN ISO 22476-3:2005+A1:2011: Geotechnical investigation and testing. Field testing. Standard penetration test.

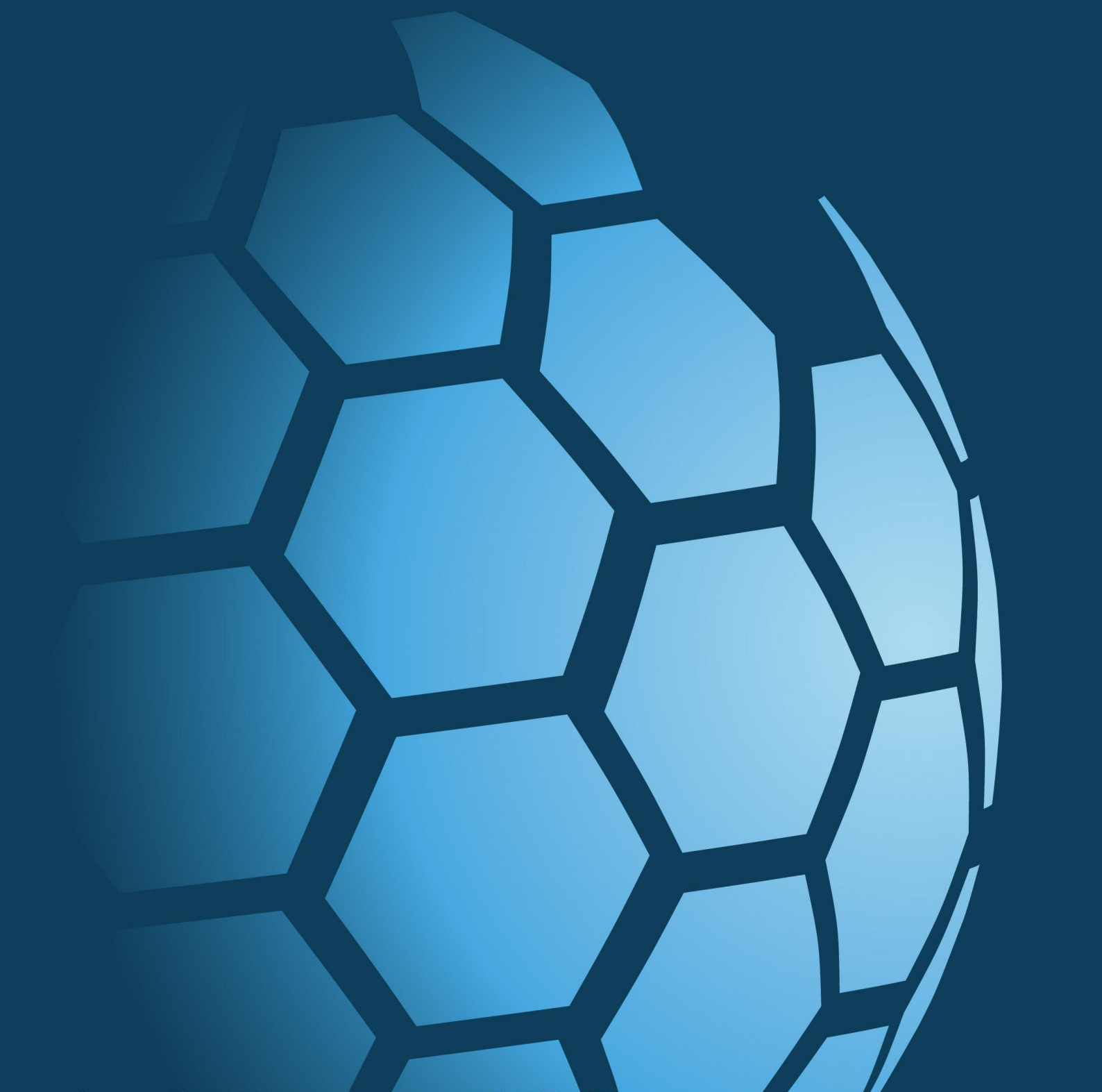
Building Research Establishment (2005) BRE Special Digest 1, Concrete in aggressive ground.

Building Research Establishment (2007), BRE Digest 365: Soakaways.



CAUSEWAY
— GEOTECH

APPENDIX A
SITE AND EXPLORATORY HOLE LOCATION PLANS





Project No.: 23-0881C

Client: NDFA

Project Name: NDFA Social Housing Lot 3 - Balally

Client's Representative: Malone O'Regan Consulting Engineers

Legend Key



Title:
Site Location Plan

Last Revised:
06/12/2023

Scale:
1:8000

 Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation






Project No.: 23-0881C

Client: NDFA

Project Name: NDFA Social Housing Lot 3 - Balally

Client's Representative: Malone O'Regan Consulting Engineers

Legend Key

-  Locations By Type - CP
-  Locations By Type - RC
-  Locations By Type - TP



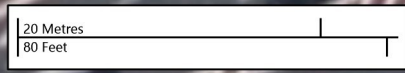
Title:
Exploratory Hole Location Plan

Last Revised:
20/12/2023

Scale:
1:500



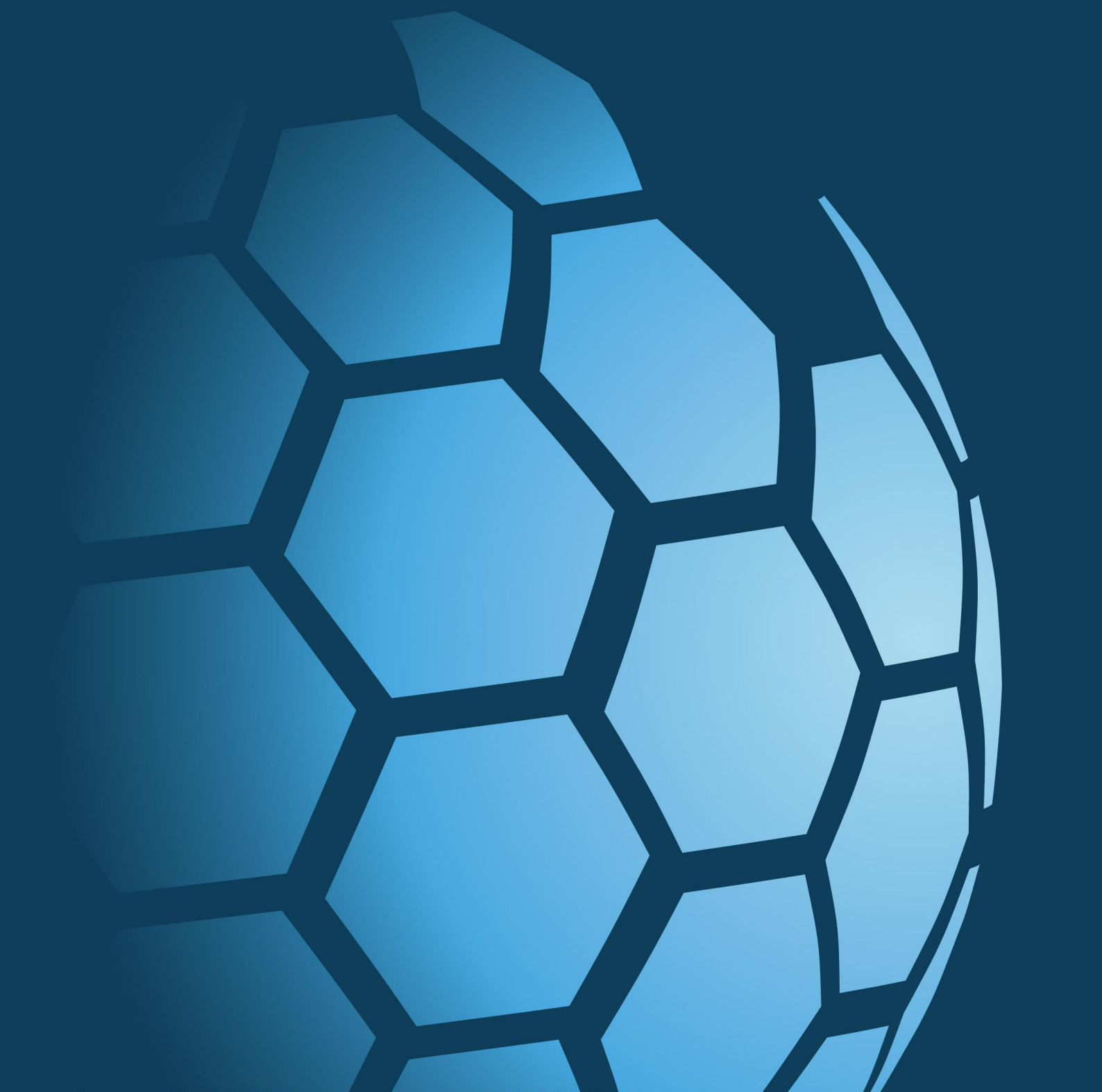
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CAUSEWAY
— GEOTECH

APPENDIX B
BOREHOLE LOGS





Method Cable Percussion	Plant Used Dando 2000	Top (m) 0.00	Base (m) 1.20	Coordinates 718511.78 E 726667.69 N	Final Depth: 1.20 m	Start Date: 13/11/2023	Driller: BE	Sheet 1 of 1 Scale: 1:40
					Elevation: 93.42 mOD	End Date: 13/11/2023	Logger: SR	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00 - 0.30	B4							TOPSOIL		
0.30 - 1.20	B5				93.12	0.30		MADE GROUND: Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse.		
0.50	ES1									
1.00	D3				92.42	1.00		Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse.		
1.00	ES2									
1.20 - 1.52	SPT (S)	50 (3,4/50 for 170mm)	0.00	Dry	92.22	1.20		End of Borehole at 1.20m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.20m. No groundwater encountered.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
Casing Details		Water Added					Termination Reason Terminated on weathered bedrock.
To (m)	Diameter	From (m)	To (m)				
							Last Updated 20/12/2023





Project No.
23-0881C

Project Name: NDFA Social Housing Lot 3 - Balally

Borehole ID
BH02

Client: NDFA

Client's Rep: Malone O'Regan Consulting Engineers

Method Cable Percussion	Plant Used Dando 2000	Top (m) 0.00	Base (m) 1.20	Coordinates 718488.25 E 726649.89 N	Final Depth: 1.10 m	Start Date: 13/11/2023	Driller: BE	Sheet 1 of 1 Scale: 1:40
					Elevation: 95.24 mOD	End Date: 13/11/2023	Logger: SR	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00 - 0.30	B4							TOPSOIL		
0.30 - 1.10	B5				94.94	0.30		MADE GROUND: Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse.		
0.50	ES1									
1.00	D3				94.14	1.10		Possible BEDROCK (recovered through percussive drilling as angular gravel of granite)		
1.00	ES2				94.14			End of Borehole at 1.10m		
1.10 - 1.44	SPT (C)	50 (3,2/50 for 195mm)	0.00	Dry						

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.10m. No groundwater encountered.	
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)		
Casing Details		Water Added						
To (m)	Diameter	From (m)	To (m)					
Termination Reason Terminated on weathered bedrock.							Last Updated 20/12/2023	



Project No.
23-0881C

Project Name: NDFA Social Housing Lot 3 - Balally

Borehole ID
BH03

Client: NDFA

Client's Rep: Malone O'Regan Consulting Engineers

Method Cable Percussion	Plant Used Dando 2000	Top (m) 0.00	Base (m) 1.80	Coordinates 718506.37 E 726651.29 N	Final Depth: 1.80 m	Start Date: 13/11/2023	Driller: KF	Sheet 1 of 1 Scale: 1:40
					Elevation: 94.45 mOD	End Date: 13/11/2023	Logger: SR	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.10	D2				94.35	0.10		TOPSOIL		
0.30	B3							Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
0.50	ES1									
1.00	B5									
1.00	ES4									
1.20	D6									
1.20 - 1.65	SPT (S)	N=18 (3,4/4,3,3,8)	0.00	Dry						
1.80 - 1.87	SPT (C)	50 (25 for 50mm/50 for 20mm)	0.00	Dry	92.65	1.80		End of Borehole at 1.80m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.20m. No groundwater encountered.	
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)		
Casing Details		Water Added						
To (m)	Diameter	From (m)	To (m)					
Termination Reason Terminated on weathered bedrock.							Last Updated 20/12/2023	



Project No.
23-0881C

Project Name: NDFA Social Housing Lot 3 - Balally

Borehole ID
BH04

Client: NDFA

Client's Rep: Malone O'Regan Consulting Engineers

Method Cable Percussion	Plant Used Dando 2000	Top (m) 0.00	Base (m) 1.50	Coordinates 718515.59 E 726643.41 N	Final Depth: 1.50 m	Start Date: 11/11/2023	Driller: KF	Sheet 1 of 1 Scale: 1:40
					Elevation: 94.43 mOD	End Date: 11/11/2023	Logger: SR	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50 0.50	B3 ES1				94.33	0.10		TOPSOIL Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
1.00 1.00 1.20 - 1.65	B4 ES2 SPT (S)	N=28 (5,5/4,3,4,17)	0.00	Dry	92.93	1.50		End of Borehole at 1.50m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.20m. No groundwater encountered.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
Casing Details		Water Added					Termination Reason Terminated on weathered bedrock.
To (m)	Diameter	From (m)	To (m)				
							Last Updated 20/12/2023





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 1.40 m	Start Date: 13/11/2023	Driller: KF	Sheet 1 of 1 Scale: 1:40
Cable Percussion	Dando 2000	0.00	1.40	718503.13 E 726631.85 N	Elevation: 95.73 mOD	End Date: 13/11/2023	Logger: SR	

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.10	D3				95.63	0.10		TOPSOIL Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
0.50	ES1									
0.80 - 1.30	B4									
1.00	ES2									
1.30 - 1.38	SPT (C)	50 (25 for 62mm/50 for 18mm)	0.00	Dry	94.43	1.30		Possible BEDROCK (recovered through percussive drilling as angular gravel of granite)		
1.40 - 1.42	SPT (C)	50 (25 for 20mm/50 for 5mm)	0.00	Dry	94.33	1.40		End of Borehole at 1.40m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.20m. No groundwater encountered.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
				1.30	1.40	01:00	
Casing Details		Water Added					
To (m)	Diameter	From (m)	To (m)				
Termination Reason							Last Updated
Terminated on weathered bedrock.							20/12/2023





Project No.
23-0881C

Project Name: NDFA Social Housing Lot 3 - Balally

Borehole ID
BH06

Client: NDFA

Client's Rep: Malone O'Regan Consulting Engineers

Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 1.20 m	Start Date: 12/11/2023	Driller: KF	Sheet 1 of 1 Scale: 1:40
Cable Percussion	Dando 2000	0.00	1.20	718515.65 E 726633.64 N	Elevation: 95.04 mOD	End Date: 12/11/2023	Logger: SR	

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50 0.50	B3 ES1				94.94	0.10		TOPSOIL Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
1.00 1.00 1.20 - 1.55	B4 ES2 SPT (S)	50 (3,13/50 for 200mm)	0.00	Dry	93.84	1.20		End of Borehole at 1.20m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.00m. No groundwater encountered.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
Casing Details		Water Added					
To (m)	Diameter	From (m)	To (m)				
Termination Reason							Last Updated
Terminated on weathered bedrock.							20/12/2023





Method Cable Percussion	Plant Used Dando 2000	Top (m) 0.00	Base (m) 1.50	Coordinates 718517.46 E 726620.52 N	Final Depth: 1.50 m	Start Date: 12/11/2023	Driller: BE	Sheet 1 of 1 Scale: 1:40
					Elevation: 95.42 mOD	End Date: 12/11/2023	Logger: SR	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50	B3					95.22	0.20	TOPSOIL		
0.50	ES1					94.82	0.60	MADE GROUND: Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
1.00	B4							Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
1.00	ES2									
1.20	D5									
1.20 - 1.65	SPT (C)	N=18 (5,6/3,3,4,8)	0.00	Dry						
1.50 - 1.61	SPT (C)	50 (25 for 65mm/50 for 45mm)	0.00	Dry	93.92	1.50		End of Borehole at 1.50m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.20m. No groundwater encountered.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
Casing Details		Water Added					
To (m)	Diameter	From (m)	To (m)				
Termination Reason Terminated on weathered bedrock.							Last Updated 20/12/2023





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 0.80 m	Start Date: 12/11/2023	Driller: BE	Sheet 1 of 1 Scale: 1:40
Cable Percussion	Dando 2000	0.00	0.80	718526.78 E 726618.62 N	Elevation: 95.17 mOD	End Date: 12/11/2023	Logger: SR	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.00 - 0.40	B3							MADE GROUND: TOPSOIL with fragments of red brick and plastic.		
0.40 - 0.80 0.50	B4 ES1				94.77	0.40		Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
0.75 0.80 0.80 - 0.87	ES2 B5 SPT (C)	50 (25 for 30mm/50 for 40mm)	0.00	Dry	94.37 94.37	0.80		Possible BEDROCK (recovered through percussive drilling as angular gravel of granite) End of Borehole at 0.80m		

Water Strikes				Chiselling Details			Remarks
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
Casing Details		Water Added					Termination Reason
To (m)	Diameter	From (m)	To (m)				
							Terminated on weathered bedrock.





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 1.10 m	Start Date: 13/11/2023	Driller: KF	Sheet 1 of 1 Scale: 1:40
Cable Percussion	Dando 2000	0.00	1.10	718506.17 E 726607.43 N	Elevation: 96.23 mOD	End Date: 13/11/2023	Logger: SR	

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.10	D3				96.13	0.10		TOPSOIL Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
0.50	ES1									
0.80 - 1.10	B4									
1.00	ES2									
1.10 - 1.15	SPT (C)	50 (25 for 30mm/50 for 20mm)	0.00	Dry	95.13	1.10		End of Borehole at 1.10m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.10m. No groundwater encountered.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
Casing Details		Water Added					Termination Reason Terminated on weathered bedrock.
To (m)	Diameter	From (m)	To (m)				
							Last Updated 20/12/2023





Project No.
23-0881C

Project Name: NDFA Social Housing Lot 3 - Balally

Borehole ID
BH10

Client: NDFA

Client's Rep: Malone O'Regan Consulting Engineers

Method Cable Percussion	Plant Used Dando 2000	Top (m) 0.00	Base (m) 1.00	Coordinates 718515.90 E 726601.90 N	Final Depth: 1.00 m	Start Date: 13/11/2023	Driller: KF	Sheet 1 of 1 Scale: 1:40
					Elevation: 96.10 mOD	End Date: 13/11/2023	Logger: SR	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.10	D3				96.00	0.10		TOPSOIL		
0.50	ES1							Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
0.80 - 1.00	B4									
1.00	ES2				95.10	1.00		End of Borehole at 1.00m		
1.00 - 1.42	SPT (C)	50 (3,3/50 for 275mm)	0.00	Dry						

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 1.00m. No groundwater encountered.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
Casing Details		Water Added					
To (m)	Diameter	From (m)	To (m)				
Termination Reason Terminated on weathered bedrock.							Last Updated 20/12/2023





Project No.
23-0881C

Project Name: NDFA Social Housing Lot 3 - Balally

Borehole ID
BH11

Client: NDFA

Client's Rep: Malone O'Regan Consulting Engineers

Method Cable Percussion	Plant Used Dando 2000	Top (m) 0.00	Base (m) 0.90	Coordinates 718532.25 E 726605.52 N	Final Depth: 0.90 m	Start Date: 12/11/2023	Driller: KF	Sheet 1 of 1 Scale: 1:40
					Elevation: 95.62 mOD	End Date: 12/11/2023	Logger: SR	FINAL

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.50	ES1				95.52	0.10		TOPSOIL Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
0.90 0.90 - 1.35	ES2 SPT (S)	N=50 (3,4/12,13,15,10)	0.00	Dry	94.72	0.90		End of Borehole at 0.90m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 0.90m. No groundwater encountered.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
Casing Details		Water Added					Termination Reason Terminated on weathered bedrock.
To (m)	Diameter	From (m)	To (m)				
							Last Updated 20/12/2023





Method	Plant Used	Top (m)	Base (m)	Coordinates	Final Depth: 1.20 m	Start Date: 13/11/2023	Driller: KF	Sheet 1 of 1 Scale: 1:40
Cable Percussion	Dando 2000	0.00	1.20	718512.33 E 726588.78 N	Elevation: 96.66 mOD	End Date: 13/11/2023	Logger: SR	

Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
0.10	D2				96.56	0.10		TOPSOIL		
0.30 - 0.90	B3							Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.		
0.50	ES1									
1.00	ES4									
1.20 - 1.38	SPT (C)	50 (12,15/50 for 25mm)	0.00	Dry	95.46	1.20		End of Borehole at 1.20m		

Water Strikes				Chiselling Details			Remarks Inspection pit hand dug to 0.20m. No groundwater encountered.
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	From (m)	To (m)	Time (hh:mm)	
Casing Details		Water Added					
To (m)	Diameter	From (m)	To (m)				
Termination Reason							Last Updated
Terminated on weathered bedrock.							20/12/2023





Method Rotary Percussion Rotary Coring	Plant Used Comacchio 405 Comacchio 405	Top (m) 0.00 2.50	Base (m) 2.50 5.20	Coordinates 718514.00 E 726658.47 N	Final Depth: 5.20 m	Start Date: 29/11/2023	Driller: SMCW	Sheet 1 of 1 Scale: 1:40
					Elevation: 93.88 mOD	End Date: 30/11/2023	Logger: EGA	FINAL

Depth (m)	Samples / Field Records	TCR	SCR	RQD	FI	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
1.20 - 1.65	SPT(C) N=49 (3,4/3,6,15,25)					0.00	Dry		93.58	0.30	TOPSOIL: Firm brown sandy CLAY. Sand is fine.		
									92.48	1.40	Very stiff brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to coarse.		
									91.78	2.10	Dense grey sandy GRAVEL. (Driller's description) (Possible weathered bedrock)		
2.99	C4				6						Grey GRANITE (Driller's description)		
3.20 - 3.70	C1	100	100	65							Strong whitish grey GRANITE. Slightly weathered: slightly reduced strength, closer fracture spacing, with occasional orangish brown discoloration on joint surfaces. Discontinuities: 1. 65-75 joints, medium spaced (30/280/600), undulating, rough, with orangish brown staining on joint surfaces. 2. 35-45 degree fractures, closely spaced (90/155/200), planar to undulating, rough, generally clean.		
3.70 - 4.00	C2				2								
3.70													
5.00 - 5.20	C3	100	95	75	5								
5.20								88.68	88.68	5.20	End of Borehole at 5.20m		

Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m. No groundwater encountered - water added during drilling.			
Casing Details		Core Barrel					
To (m)	Diam (mm)	SK6L					
2.50	200						
5.20	146						
		Flush Type	Termination Reason	Last Updated			
		Water	Terminated at scheduled depth.	20/12/2023			





Project No.
23-0881C

Project Name: NDFA Social Housing Lot 3 - Balally

Borehole ID
RC02

Client: NDFA

Client's Rep Malone O'Regan Consulting Engineers

Method Rotary Percussion Rotary Coring	Plant Used Comacchio 405 Comacchio 405	Top (m) 0.00 2.50	Base (m) 2.50 4.90	Coordinates 718526.62 E 726598.53 N	Final Depth: 4.90 m	Start Date: 28/11/2023	Driller: SMCW	Sheet 1 of 1 Scale: 1:40
					Elevation: 96.18 mOD	End Date: 29/11/2023	Logger: EGA	FINAL

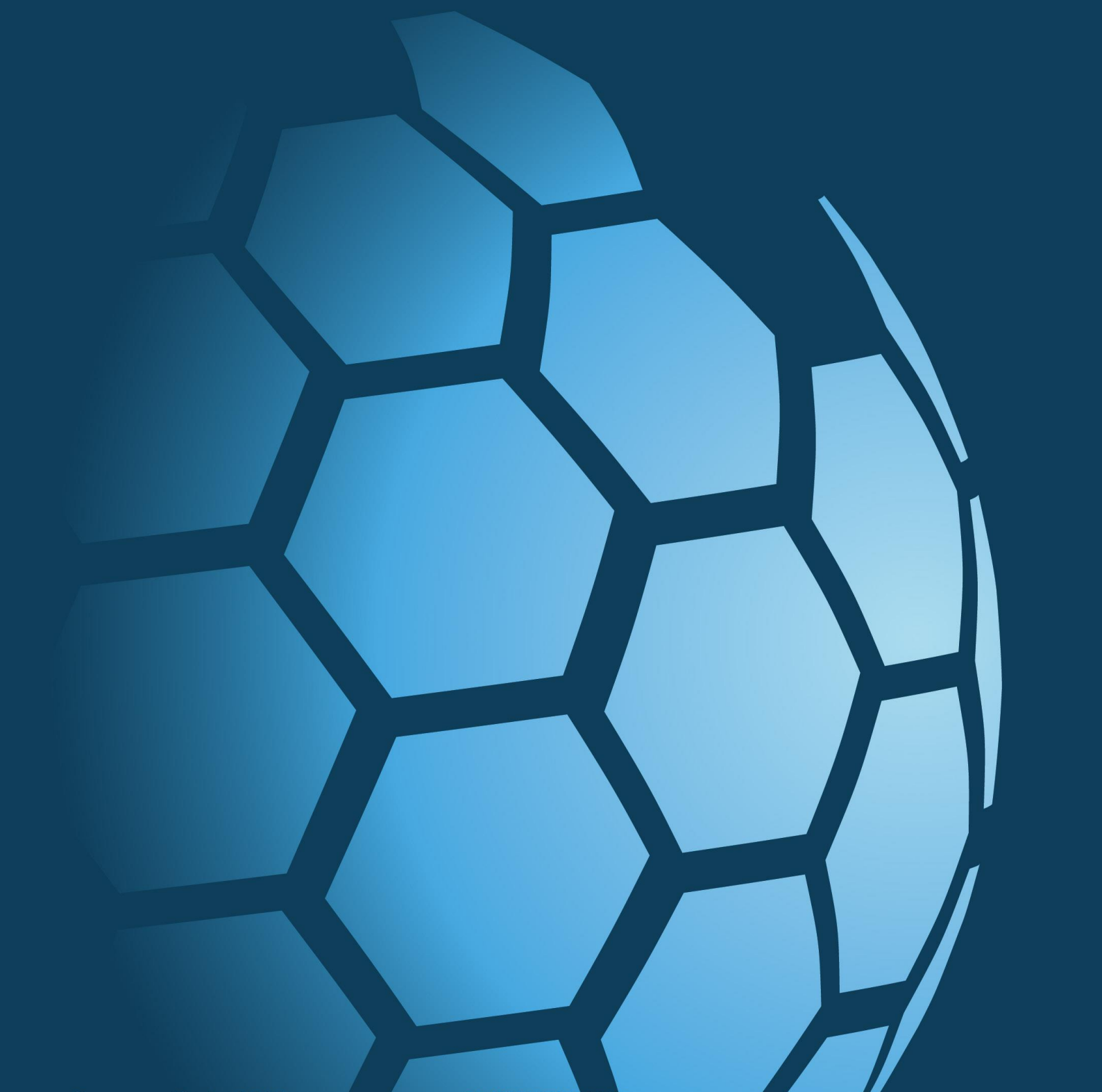
Depth (m)	Samples / Field Records	TCR	SCR	RQD	FI	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill
1.20 - 1.28	SPT(C) 50 (25 for 75mm/50 for 10mm)					1.20	Dry	94.98	1.20		TOPSOIL: Firm brown sandy CLAY. Sand is fine. Firm brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to coarse.		
3.20 - 3.55	C1	100	100	80	9			94.18	2.00		Dense sandy GRAVEL. (Driller's description) (Possible weathered bedrock)		
3.23	C4							93.68	2.50		Grey GRANITE. (Driller's description)		
3.55 - 3.70	C2							93.08	3.10		Strong whitish grey GRANITE. Slightly weathered: slightly reduced strength, closer fracture spacing, with occasional brown discoloration on joint surfaces. Discontinuities: 1. 50-60 joints, closely spaced (30/80/90), planar to undulating, rough, with brown staining on joint surfaces.		
3.70	C3										Strong pinkish grey GRANITE. Slightly weathered: slightly reduced strength, closer fracture spacing, with occasional light brown discoloration on joint surfaces. Discontinuities: 1. 0-5 degree joints, medium spaced (400/600/800), planar, rough, clean. 2. 2 no. 45 degree joints at 3.85m and 4.35m, planar, rough, with light brown staining on joint surfaces. 3. 1 no. sub-vertical joint from 4.60m-4.90m, undulating, rough, with brown staining on joint surface.		
3.84 - 4.16		100	95	75	3								
4.90					4			91.28	4.90		End of Borehole at 4.90m		

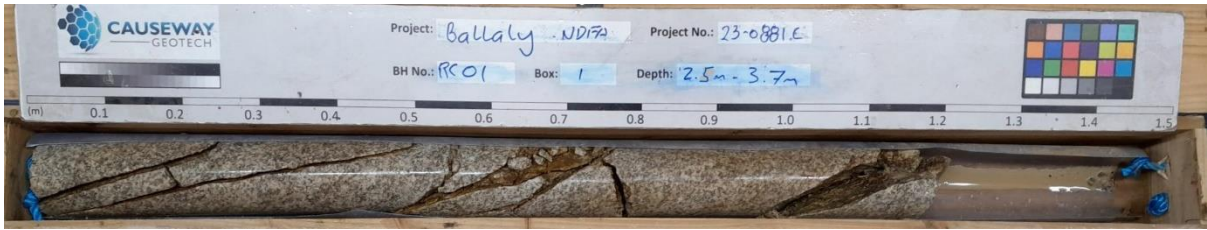
Water Strikes				Remarks			
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Inspection pit hand dug to 1.20m. No noticeable groundwater strikes - water added during drilling.			
Casing Details		Core Barrel					
To (m)	Diam (mm)	SK6L					
2.50	200						
4.90	146						
		Flush Type	Termination Reason	Last Updated			
		Water	Terminated at scheduled depth.	20/12/2023			



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APPENDIX C
CORE PHOTOGRAPHS





RC01 Box 1 (2.50-3.70m)



RC01 Box 2 (3.70-5.20m)



RC02 Box 1 (2.50-3.70m)

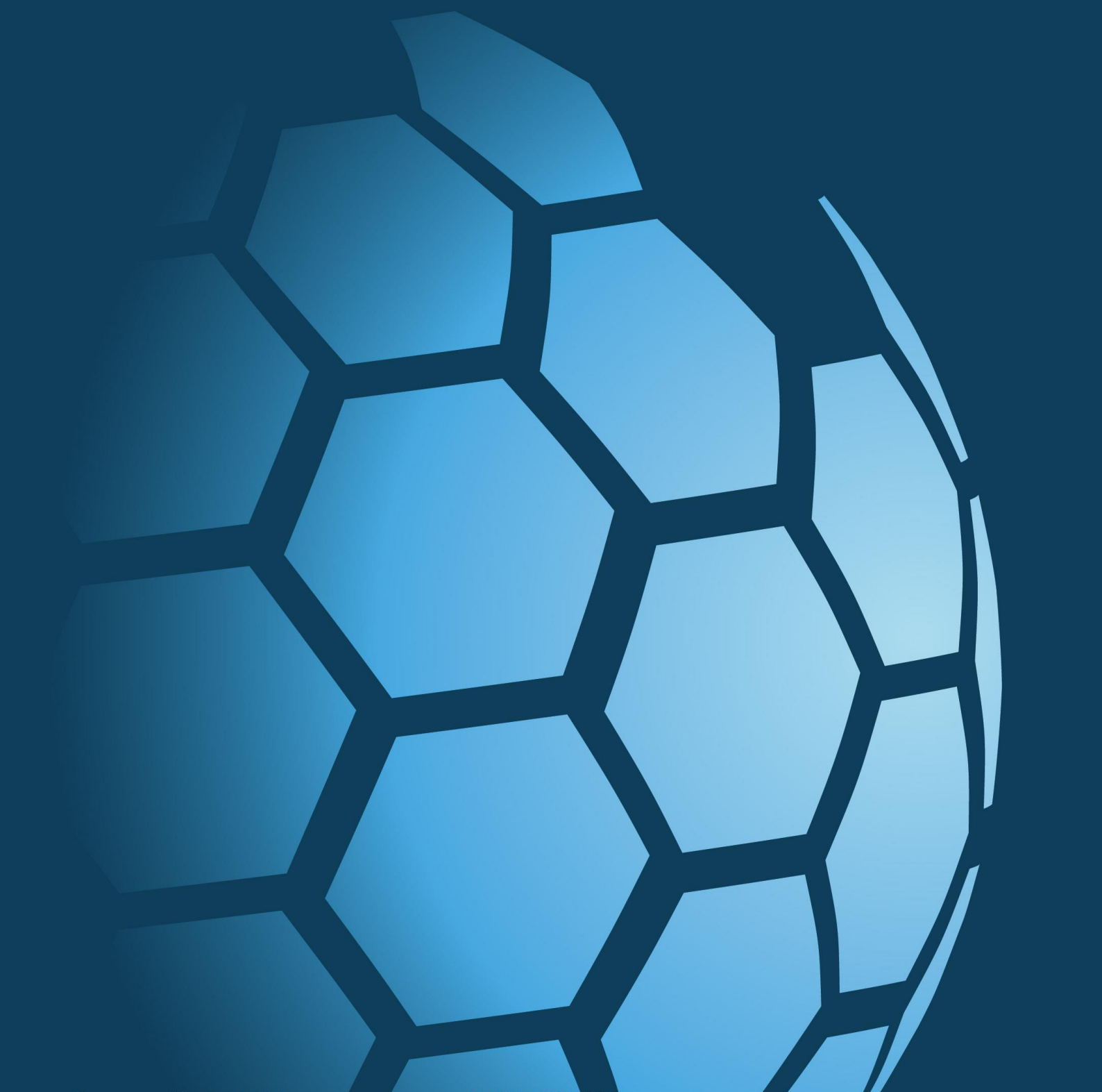


RC02 Box 2 (3.70-4.90m)



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APPENDIX D
TRIAL PIT LOGS





Project No. 23-0881C	Project Name: NDFA Social Housing Lot 3 - Balally	Trial Pit ID TP01
Coordinates 718503.95 E 726655.66 N	Client: NDFA	
Method: Trial Pitting	Client's Representative: Malone O'Regan Consulting Engineers	Sheet 1 of 1 Scale: 1:25
Plant: 8T Tracked Excavator	Elevation 93.95 mOD	Date: 24/10/2023
		Logger: MMC
		FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
			93.85	0.10		TOPSOIL	
0.50 - 0.50 0.50 - 0.50	B3 ES1		93.50	0.45		MADE GROUND: Firm dark brown slightly sandy slightly gravelly CLAY with fragments of plastic. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse.	
1.00 1.00	B4 ES2		93.15	0.80		MADE GROUND: Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to coarse.	
1.70	B5					Firm dark brown slightly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies.	
		Water strike at 2.10m	91.95	2.00		Firm dark brown slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse. Cobbles are angular to subangular.	▼
			91.65	2.30		End of trial pit at 2.30m	

Water Strikes		Depth: 2.30 Width: 0.50 Length: 3.50	Remarks:
Struck at (m)	Remarks		
2.10	Water strike at 2.10m		
Stability: Stable		Termination Reason Terminated on refusal on possible bedrock.	Last Updated 31/01/2024





Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

TP02

Coordinates
718519.78 E
726652.92 N

Client:
NDFA
Client's Representative:
Malone O'Regan Consulting Engineers

Sheet 1 of 1
Scale: 1:25

Method:
Trial Pitting

Plant:
8T Tracked Excavator

Elevation
93.81 mOD

Date:
24/10/2023

Logger:
MMC

FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50	B3		93.71	0.10		TOPSOIL: Firm brown sandy CLAY with rootlets. Sand is fine to coarse.	
0.50 - 0.50	ES1		93.31	0.50		MADE GROUND: Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse.	
1.00	B4		92.71	1.10		Firm dark brown slightly gravelly sandy SILT. Sand is fine to coarse. Gravel is subangular fine to medium of sandstone.	
1.00	ES2					End of trial pit at 1.10m	

Water Strikes		Depth: 1.10 Width: 0.50 Length: 3.00	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated on refusal on possible bedrock.
		Last Updated 31/01/2024	



Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

Coordinates
718508.21 E
726627.46 N

Client:
NDFA
Client's Representative:
Malone O'Regan Consulting Engineers

TP03

Method:
Trial Pitting

Sheet 1 of 1
Scale: 1:25

Plant:
8T Tracked Excavator

Elevation
95.71 mOD




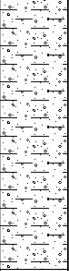

Date:
24/10/2023

Logger:
MMC

FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
						TOPSOIL	
0.50 - 0.50 0.50 - 0.50	B3 ES1		95.31	0.40		MADE GROUND: Firm light greyish brown slightly sandy gravelly CLAY with fragments of plastic. Sand is fine to coarse. Gravel is subrounded fine to coarse.	0.5
1.00 1.00	B4 ES2		95.01	0.70		Firm light brown slightly sandy gravelly SILT with low cobble content. Sand is fine to coarse. Gravel is subrounded fine to coarse of limestone. Cobbles are subrounded.	1.0
1.80	B5		94.01	1.70		Grey gravelly fine to coarse SAND. Gravel is angular fine to coarse of granite. (Possible weathered bedrock)	1.5
			93.61	2.10		End of trial pit at 2.10m	2.0
							2.5
							3.0
							3.5
							4.0
							4.5

Water Strikes		Depth: 2.10 Width: 0.50 Length: 3.00	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated on refusal on possible bedrock.
		Last Updated 31/01/2024	



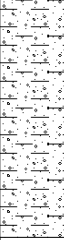

		Project No. 23-0881C	Project Name: NDFA Social Housing Lot 3 - Balally		Trial Pit ID TP04		
Method: Trial Pitting		Coordinates 718523.81 E 726628.15 N	Client: NDFA		Client's Representative: Malone O'Regan Consulting Engineers		
Plant: 8T Tracked Excavator		Elevation 94.93 mOD	Date: 24/10/2023		Logger: MMC	FINAL	
Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50 0.50 - 0.50	B3 ES1		94.63	0.30		MADE GROUND: Firm dark brown slightly sandy slightly gravelly CLAY with rootlets and fragments of plastic. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse.	
			94.23	0.70		MADE GROUND: Firm light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to coarse.	
1.00 1.00	B4 ES2					Firm greyish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular fine to medium of granite.	
			93.33	1.60		End of trial pit at 1.60m	
Water Strikes Struck at (m) Remarks		Depth: 1.60 Width: 0.50 Length: 3.00 Stability: Stable	Remarks: No groundwater encountered Termination Reason Terminated on refusal on possible bedrock.		Last Updated 31/01/2024		



Project No. 23-0881C	Project Name: NDFA Social Housing Lot 3 - Balally	Trial Pit ID TP05
Coordinates 718509.06 E 726601.18 N	Client: NDFA	
Method: Trial Pitting	Client's Representative: Malone O'Regan Consulting Engineers	Sheet 1 of 1 Scale: 1:25
Plant: 8T Tracked Excavator	Elevation 96.31 mOD	Date: 27/10/2023
		Logger: MMC
		FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50 0.50 - 0.50	B3 ES1		96.11	0.20		TOPSOIL	
						MADE GROUND: Firm greyish brown slightly sandy slightly gravelly CLAY with a fragments of plastic and concrete. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse.	0.5
1.00 1.00	B4 ES2		95.51	0.80		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to medium.	1.0
			94.61	1.70		End of trial pit at 1.70m	1.5 2.0 2.5 3.0 3.5 4.0 4.5

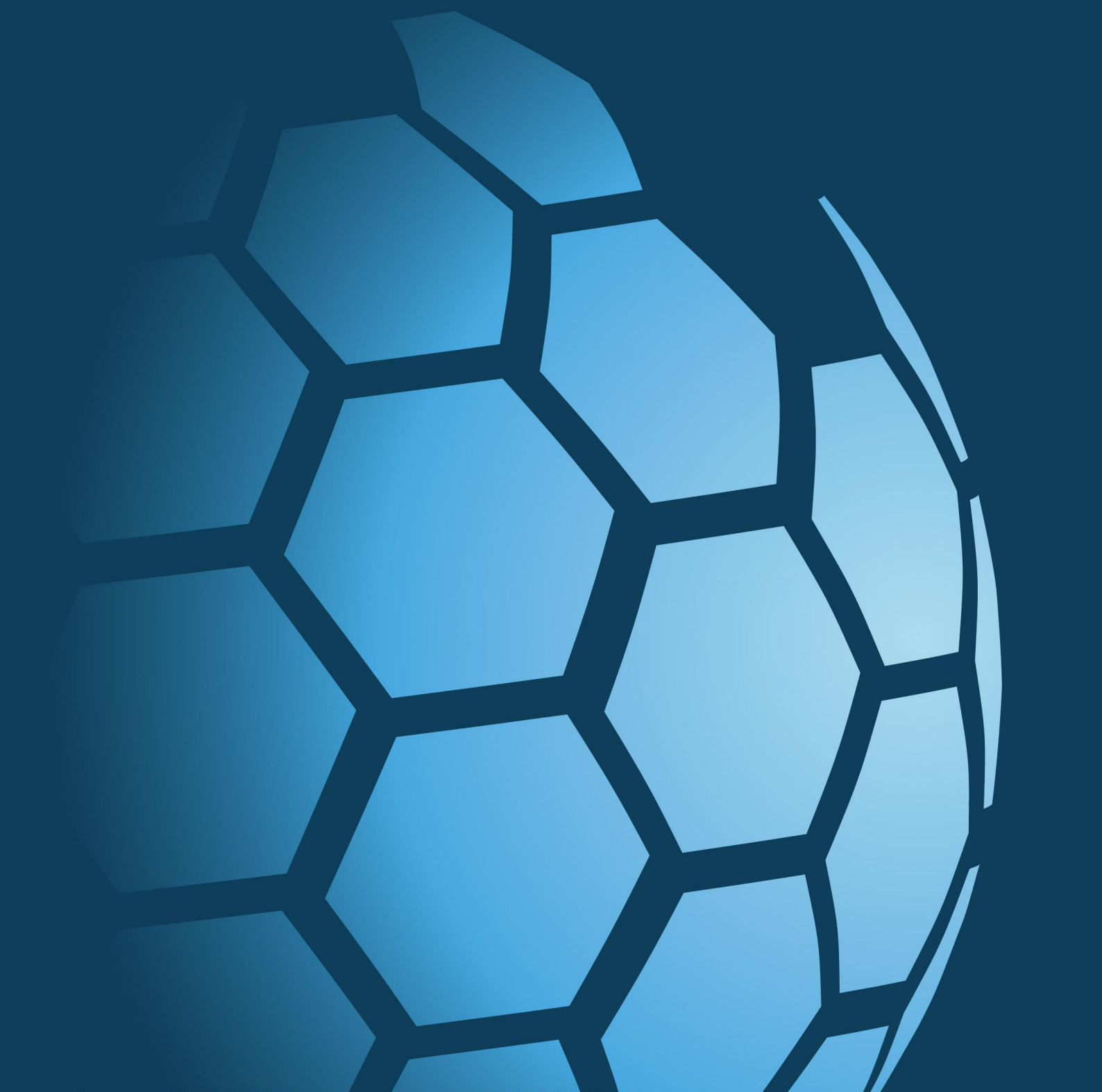
Water Strikes		Depth: 1.70 Width: 0.50 Length: 3.00	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated on refusal on possible bedrock.
		Last Updated 31/01/2024	

		Project No. 23-0881C	Project Name: NDFA Social Housing Lot 3 - Balally		Trial Pit ID TP06		
Method: Trial Pitting		Coordinates 718535.28 E 726602.91 N	Client: NDFA		Client's Representative: Malone O'Regan Consulting Engineers		
Plant: 8T Tracked Excavator		Elevation 95.69 mOD	Date: 24/10/2023		Logger: MMC	Sheet 1 of 1 Scale: 1:25	
Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50 0.50 - 0.50	B3 ES1		95.29	0.40		MADE GROUND: F dark brown slightly sandy slightly gravelly CLAY with low cobble and boulder content, rootlets and fragments of plastic. Sand is fine to coarse. Gravel is subangular fine to coarse. Cobbles and boulders are angular of granite.	
1.00 1.00	B4 ES2		94.49	1.20		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to angular fine to medium of granite.	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5
						End of trial pit at 1.20m	
Water Strikes Struck at (m) Remarks		Depth: 1.20 Width: 0.60 Length: 3.00 Stability: Stable	Remarks: No groundwater encountered Termination Reason Terminated on refusal on possible bedrock.		Last Updated 31/01/2024		



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APPENDIX E
TRIAL PIT PHOTOGRAPHS





TP01



TP01



TP01



TP01



TP01



TP02



TP02



TP02



TP02



TP02



TP03



TP03



TP03



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TP03



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IT02



IT02



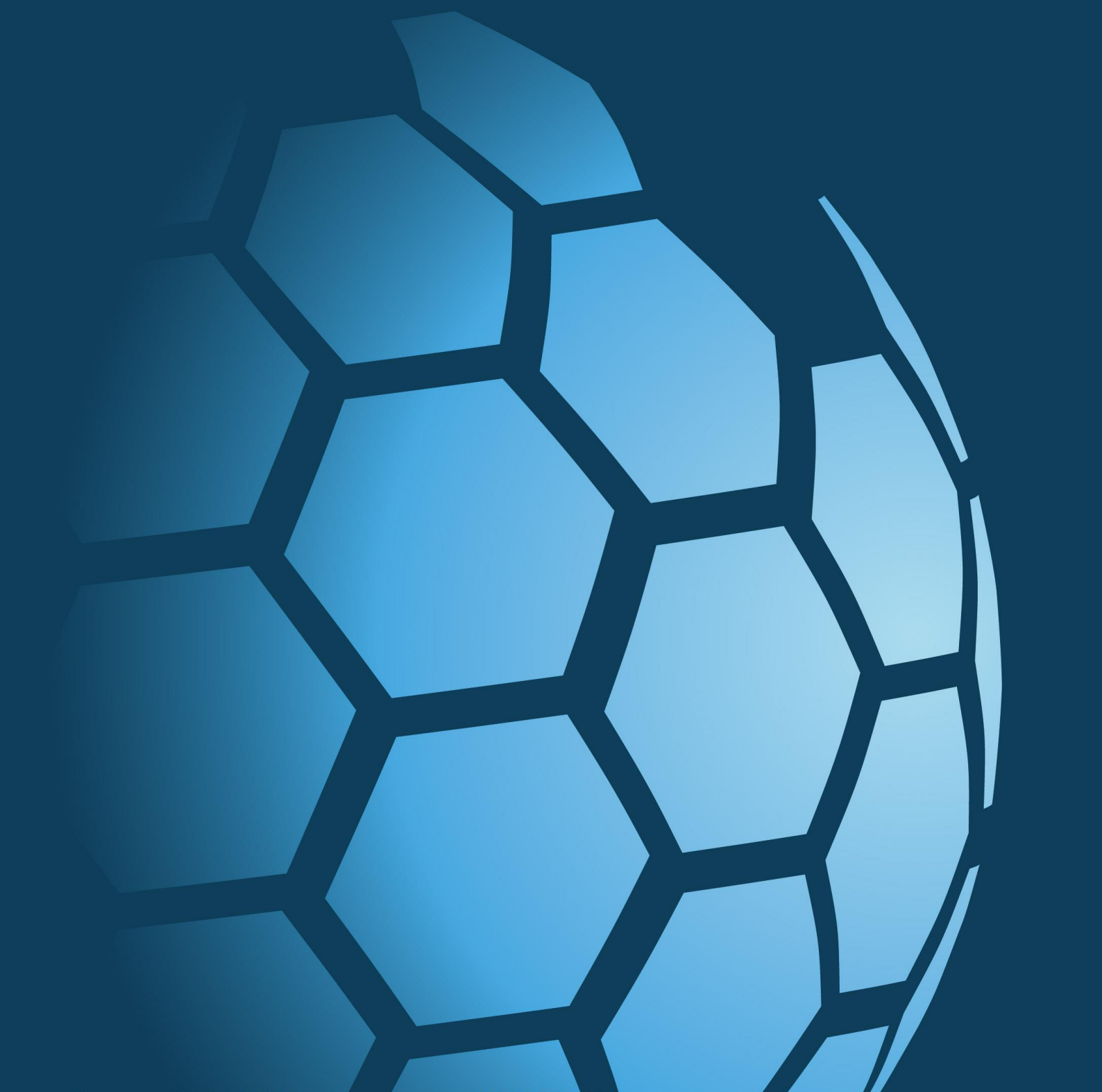
IT02



CAUSEWAY
— GEOTECH

APPENDIX F

SLIT TRENCH LOGS AND DRAWINGS





CAUSEWAY
GEOTECH

Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

ST01

Coordinates
718507.07 E
726592.65 N

Client:
NDFA
Client's Representative:
Malone O'Regan Consulting Engineers

Sheet 1 of 1
Scale: 1:25

Method:
Slit Trenching

Plant:
2T Tracked Excavator

Elevation
96.53 mOD

Date:
26/10/2023

Logger:
MMC

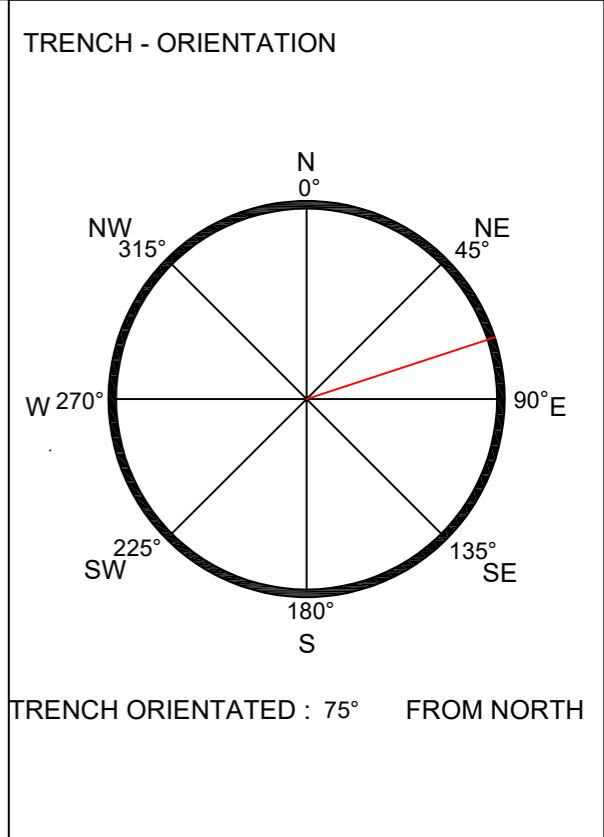
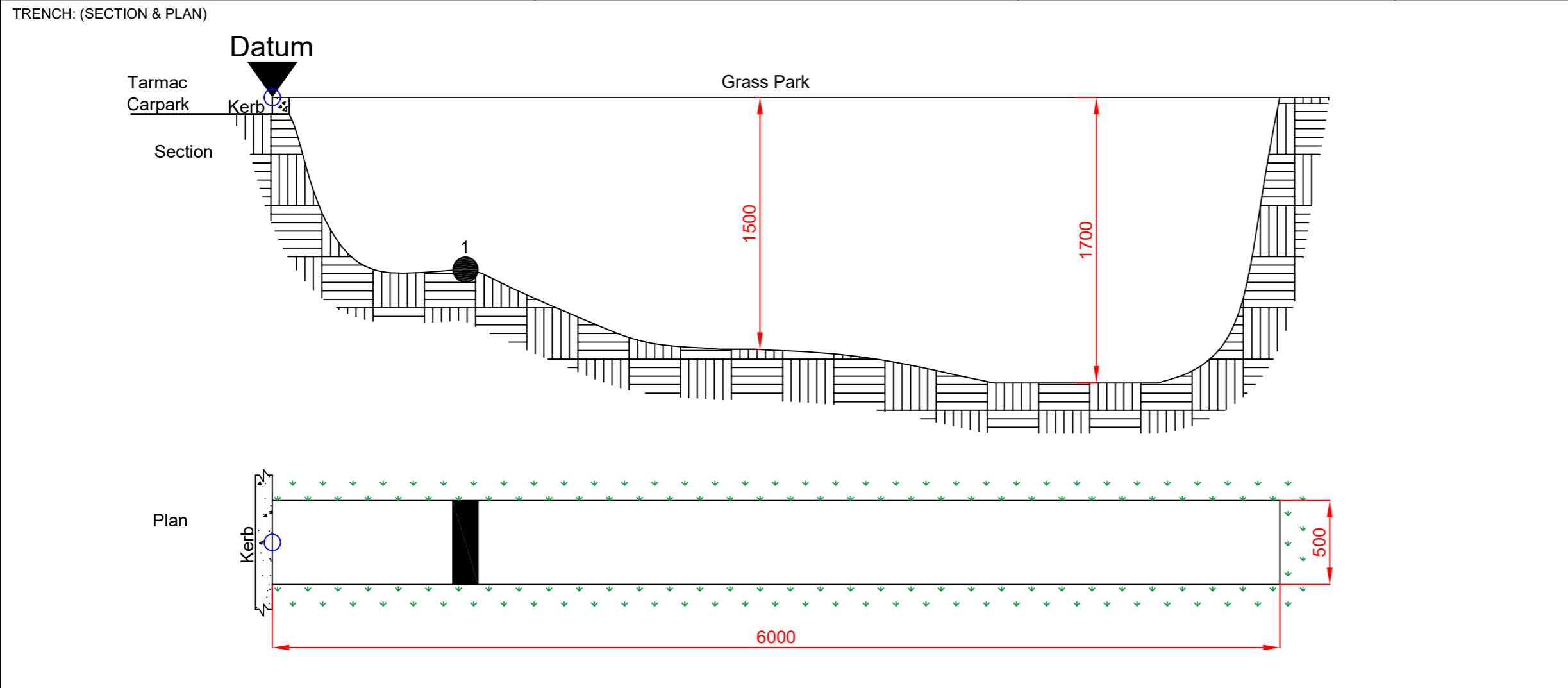
FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50 0.50 - 0.50	B3 ES1		96.43	0.10	TOPSOIL	MADE GROUND: Firm dark brownish grey mottled brown sandy gravelly CLAY with fragments of concrete, plastic and wire. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse.	
1.00 1.00	B4 ES2		95.73	0.80		Firm brown slightly sandy gravelly SILT. Sand is fine to coarse. Gravel is subangular fine to medium.	
			95.03	1.50		Firm brown slightly sandy slightly gravelly CLAY low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse. Cobbles are angular.	
			94.83	1.70		End of trial pit at 1.70m	

Water Strikes		Depth: 1.70 Width: 0.50 Length: 6.00	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated on refusal on possible bedrock.
		Last Updated 06/12/2023	

JOB NUMBER: 23-0881C JOB NAME: NDFA Social Housing Lot 3 – Balally LOCATION: ST01

CLIENT: NDFA CLIENTS REPRESENTATIVE: Malone O'Regan Consulting Engineers CREW: MMS PLANT & EQUIPMENT: 3 Tonne Excavator & Hand Tools



COORDINATES: DATUM

EASTING: - 718507.07
 NORTHING: - 726592.65
 ELEVATION: - 96.53



TRENCH LENGTH (m): 6.00
 TRENCH DEPTH (m): 1.70
 TRENCH WIDTH (m): 0.50

STABILITY: STABLE
 GROUNDWATER: NONE

SCALE: NTS@A3
 DRAWN: JD
 CHECKED: SR
 DATE EXCAVATED: 26/10/2023

No:	Type of Service:	Diameter (in mm)	Depth to Top of Service (m)	Distance to Centre of Service (m)	Details/Comments
01	Water	150	0.95	1.15	150mm Water Main Black PVC Pipe
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					



		Project No. 23-0881C	Project Name: NDFA Social Housing Lot 3 - Balally		Trial Pit ID ST02		
Method: Slit Trenching		Coordinates 718502.61 E 726613.98 N	Client: NDFA		Client's Representative: Malone O'Regan Consulting Engineers		
Plant: 2T Tracked Excavator		Elevation 96.36 mOD	Date: 25/10/2023		Logger: MMC	FINAL	
Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50 0.50 - 0.50	B3 ES1		96.26	0.10	TOPSOIL		
						MADE GROUND: Firm greyish brown slightly sandy slightly gravelly CLAY with fragments of plastic, ducting, concrete and wire. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse.	
1.00 1.00	B4 ES2		95.86	0.50		Firm light brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Sand is fine to coarse. Gravel is subangular to angular fine to medium of limestone.	0.5
1.50	B5						1.0
							1.5
			94.36	2.00		End of trial pit at 2.00m	2.0
							2.5
							3.0
							3.5
							4.0
							4.5
Water Strikes Struck at (m) Remarks		Depth: 2.00 Width: 0.50 Length: 10.00 Stability: Stable	Remarks: No groundwater encountered Termination Reason Services exposed.		Last Updated 06/12/2023		

JOB NUMBER: 23-0881C

JOB NAME: NDFA Social Housing Lot 3 – Balally

LOCATION: ST02

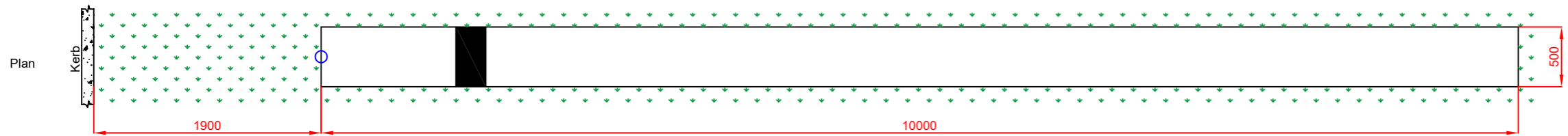
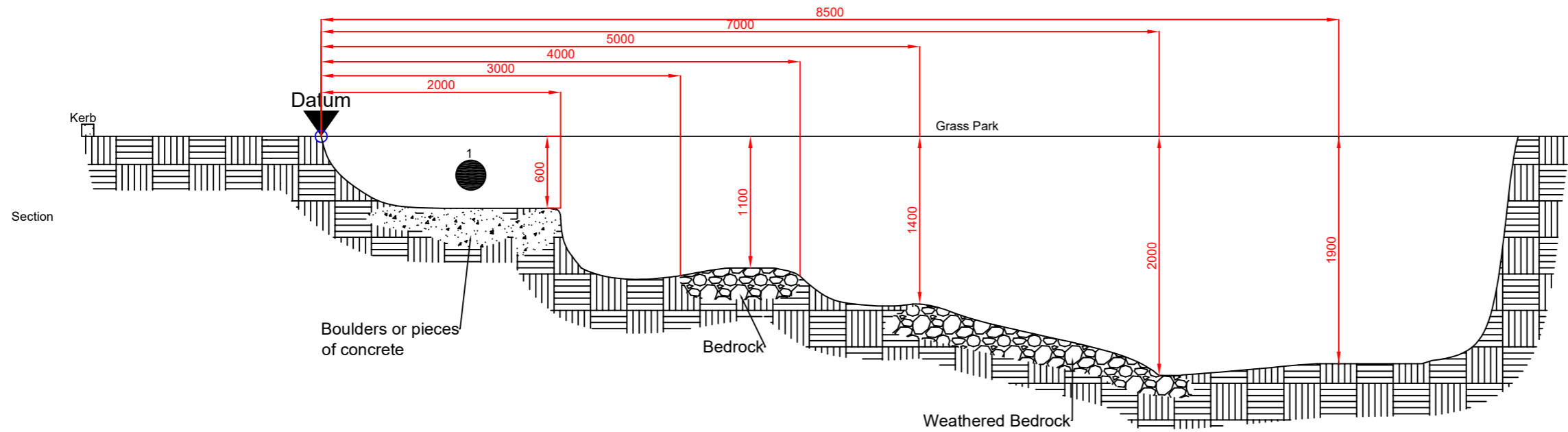
CLIENT: NDFA

CLIENTS REPRESENTATIVE: Malone O'Regan Consulting Engineers

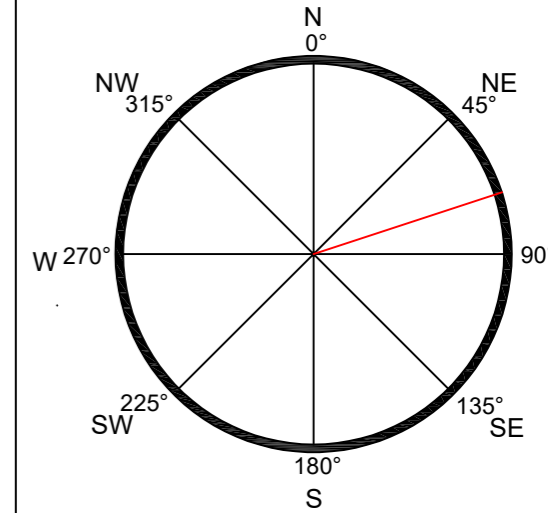
CREW: MMS

PLANT & EQUIPMENT: 3 Tonne Excavator & Hand Tools

TRENCH: (SECTION & PLAN)



TRENCH - ORIENTATION



TRENCH ORIENTATED : 75° FROM NORTH

COORDINATES: DATUM

EASTING: - 718502.61
 NORTHING: - 726613.98
 ELEVATION: - 96.36

TRENCH LENGTH (m): 10.00
 TRENCH DEPTH (m): 2.00
 TRENCH WIDTH (m): 0.50

STABILITY: STABLE
 GROUNDWATER: NONE

SCALE: NTS@A3
 DRAWN: JD
 CHECKED: SR
 DATE EXCAVATED: 25/10/2023

No:	Type of Service:	Diameter (in mm)	Depth to Top of Service (m)	Distance to Centre of Service (m)	Details/Comments
01	Water	150	0.95	1.15	150mm Water Main Black PVC Pipe
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					





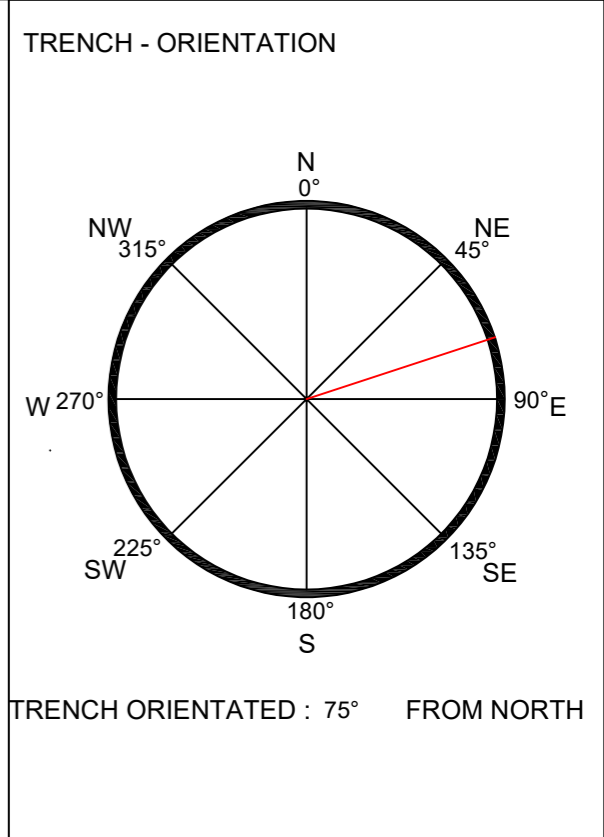
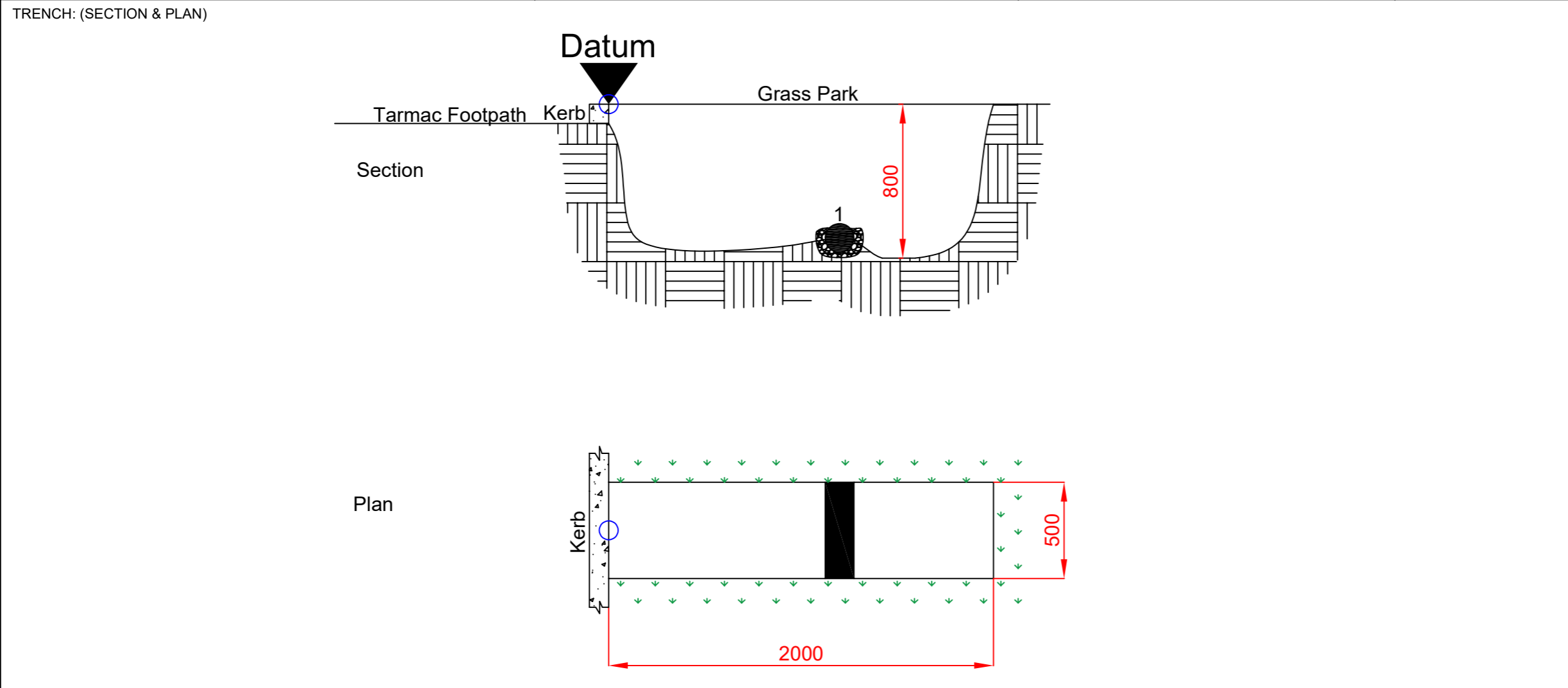
Project No. 23-0881C	Project Name: NDFA Social Housing Lot 3 - Balally	Trial Pit ID ST02A
Coordinates 718500.61 E 726613.35 N	Client: NDFA	
Method: Slit Trenching	Client's Representative: Malone O'Regan Consulting Engineers	Sheet 1 of 1 Scale: 1:25
Plant: 2T Tracked Excavator	Elevation 96.33 mOD	Date: 27/10/2023
		Logger: MMC
		FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
			96.13	0.20		TOPSOIL	
						MADE GROUND: Firm brown slightly sandy slightly gravelly CLAY with fragments of concrete, plastic and metal (up to 0.40m in length). Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse.	
			95.53	0.80		End of trial pit at 0.80m	

Water Strikes		Depth: 0.80 Width: 0.50 Length: 2.00	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Services exposed.
		Last Updated 06/12/2023	

JOB NUMBER: 23-0881C JOB NAME: NDFA Social Housing Lot 3 – Balally LOCATION: ST02A

CLIENT: NDFA CLIENTS REPRESENTATIVE: Malone O'Regan Consulting Engineers CREW: MMS PLANT & EQUIPMENT: 3 Tonne Excavator & Hand Tools



COORDINATES: DATUM

EASTING: - 718502.61
 NORTHING: - 726613.35
 ELEVATION: - 96.33

TRENCH LENGTH (m): 2.00
 TRENCH DEPTH (m): 0.80
 TRENCH WIDTH (m): 0.50

STABILITY: STABLE
 GROUNDWATER: NONE

SCALE: NTS@A3
 DRAWN: JD
 CHECKED: SR
 DATE EXCAVATED: 27/10/2023

No:	Type of Service:	Diameter (in mm)	Depth to Top of Service (m)	Distance to Centre of Service (m)	Details/Comments
01	Water	150	0.62	1.20	150mm Water Main Black PVC Pipe surrounded by Pea Gravel
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					





Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

ST03

Coordinates
718490.63 E
726646.80 N

Client:
NDFA
Client's Representative:
Malone O'Regan Consulting Engineers

Sheet 1 of 1
Scale: 1:25

Method:
Slit Trenching

Plant:
2T Tracked Excavator

Elevation
95.56 mOD

Date:
27/10/2023

Logger:
MMC

FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50 0.50 - 0.50	B3 ES1		95.46	0.10		TOPSOIL	
						MADE GROUND: Firm brown slightly sandy slightly gravelly CLAY with fragments of red brick, concrete and plastic Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse.	
1.00 1.00	B4 ES2		94.76	0.80		Firm to stiff light brown slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is angular to subangular fine to medium of limestone.	
			93.96	1.60		End of trial pit at 1.60m	

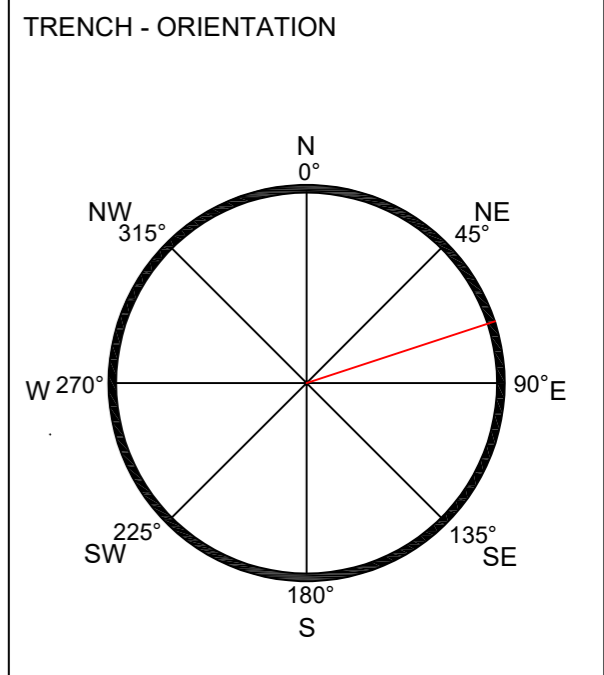
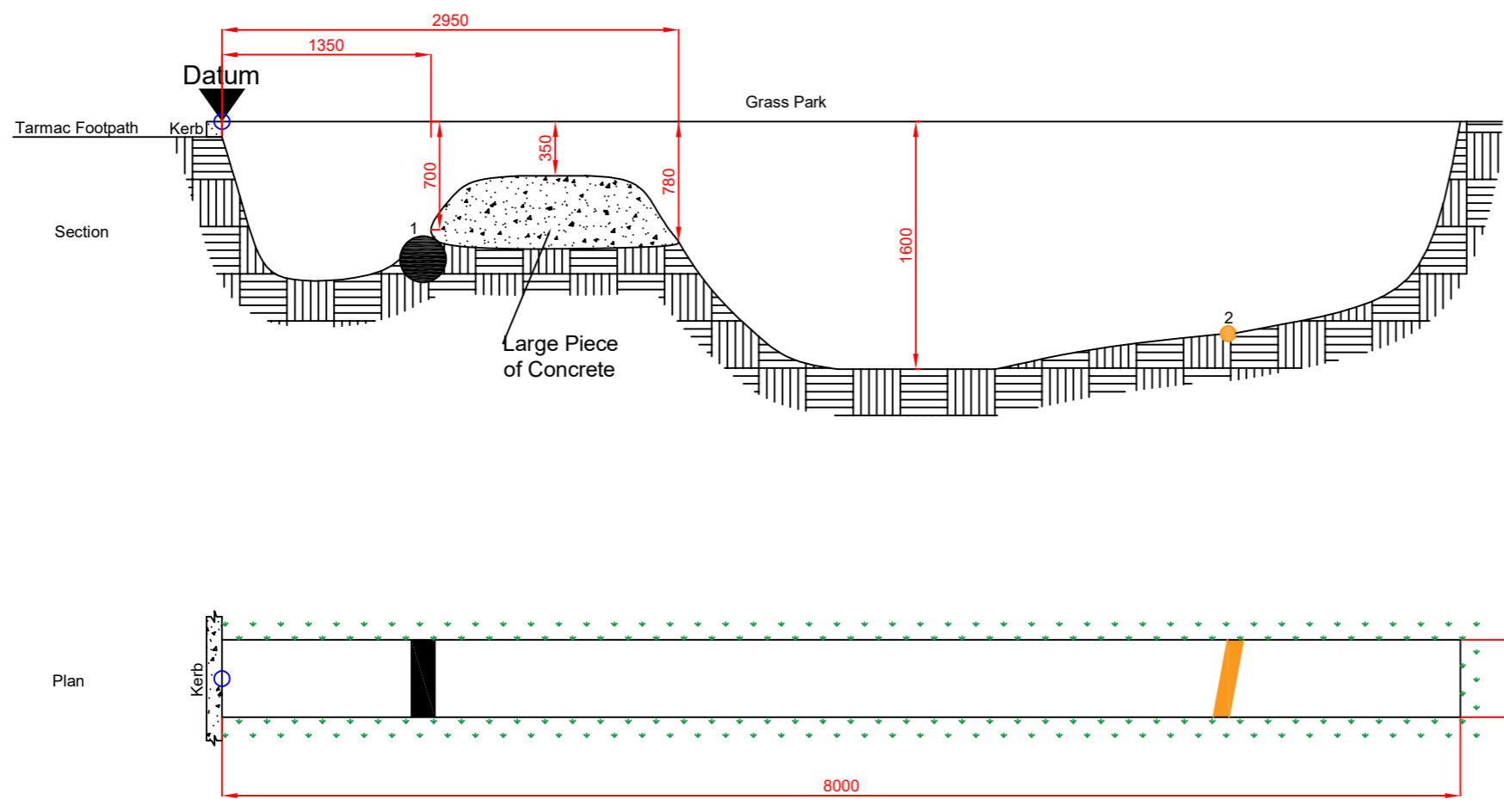
Water Strikes		Depth: 1.60 Width: 0.50 Length: 8.00	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Services exposed.
			Last Updated 06/12/2023



JOB NUMBER: 23-0881C JOB NAME: NDFA Social Housing Lot 3 – Balally LOCATION: ST03

CLIENT: NDFA CLIENTS REPRESENTATIVE: Malone O'Regan Consulting Engineers CREW: MMS PLANT & EQUIPMENT: 3 Tonne Excavator & Hand Tools

TRENCH: (SECTION & PLAN)



TRENCH ORIENTATED : 75° FROM NORTH

COORDINATES: DATUM

EASTING: - 718490.63
 NORTHING: - 726646.80
 ELEVATION: - 95.56

TRENCH LENGTH (m): 8.00
 TRENCH DEPTH (m): 1.60
 TRENCH WIDTH (m): 0.50

STABILITY: STABLE
 GROUNDWATER: NONE

SCALE: NTS@A3
 DRAWN: JD
 CHECKED: SR
 DATE EXCAVATED: 27/10/2023

No:	Type of Service:	Diameter (in mm)	Depth to Top of Service (m)	Distance to Centre of Service (m)	Details/Comments
01	Water	150	0.74	1.30	150mm Water Main Black PVC Pipe (with a little yellow writing on it)
02	Unknown	100	1.32	6.50	100mm Unknown Orange (faded) Pipe. Possible ESB Duct.
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					





Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

ST04

Coordinates
718496.63 E
726662.58 N

Client:
NDFA
Client's Representative:
Malone O'Regan Consulting Engineers

Sheet 1 of 1
Scale: 1:25

Method:
Slit Trenching

Plant:
2T Tracked Excavator

Elevation
94.48 mOD

Date:
27/10/2023

Logger:
MMC

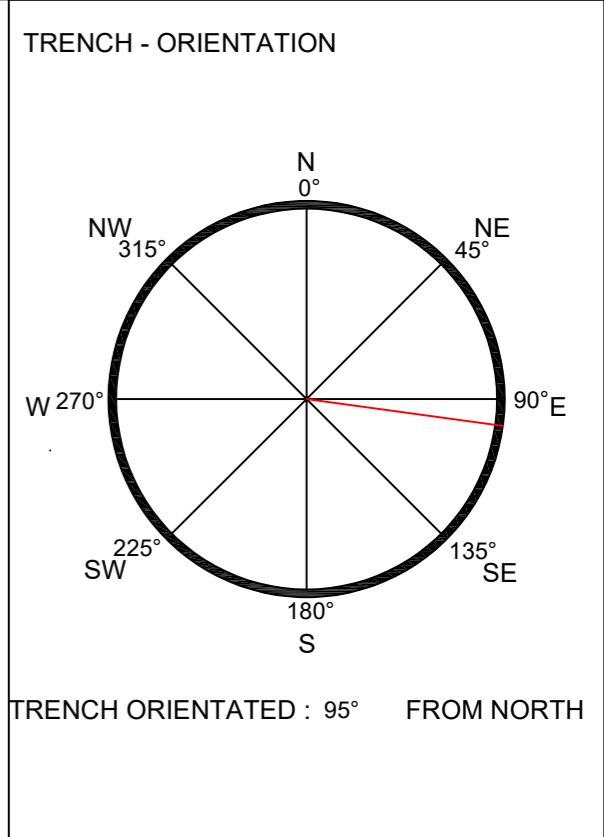
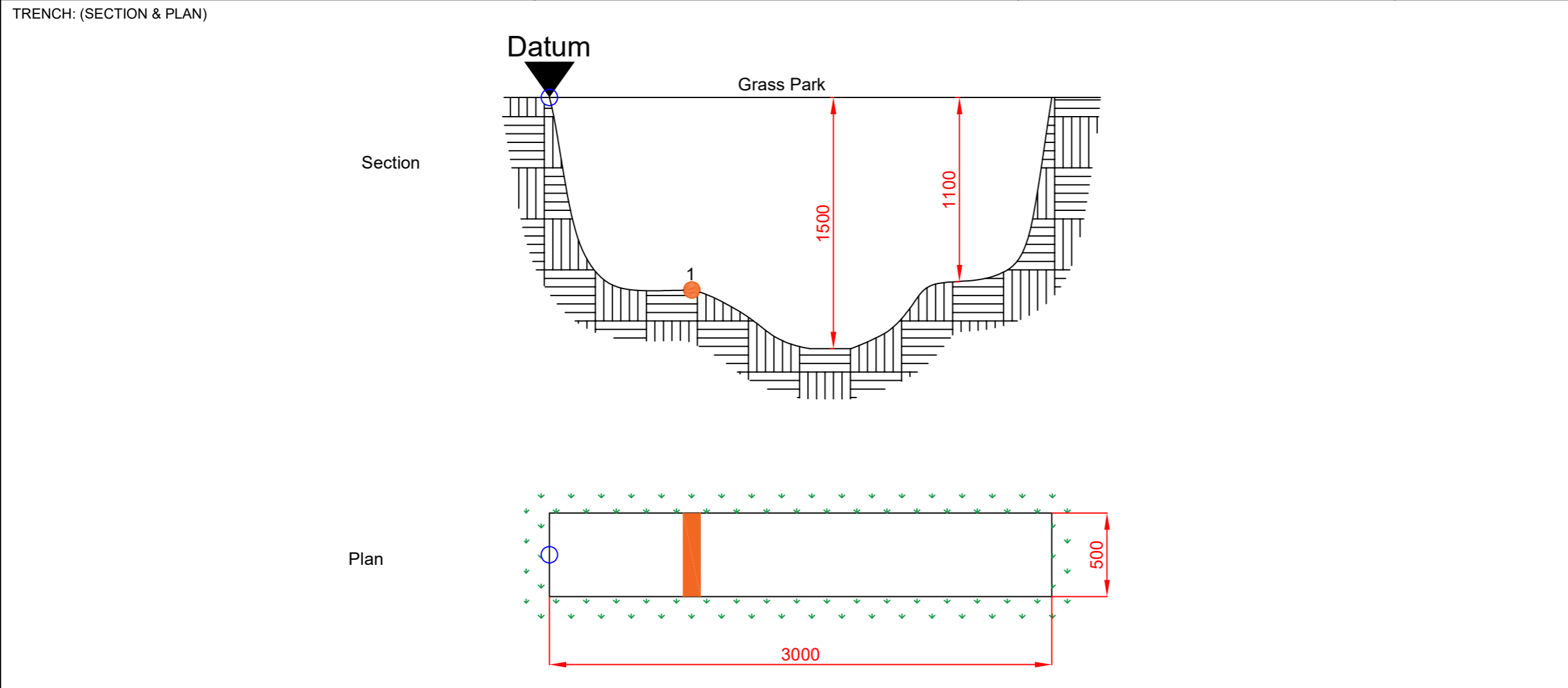
FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
			94.28	0.20		TOPSOIL	
0.50 0.50 - 0.50	ES3 B1		93.98	0.50		MADE GROUND: Firm dark brown slightly sandy slightly gravelly CLAY with fragments of plastic. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse.	0.5
1.00 1.00	B2 ES4					Firm brown slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is subrounded fine to medium.	1.0
			92.98	1.50		End of trial pit at 1.50m	1.5
							2.0
							2.5
							3.0
							3.5
							4.0
							4.5

Water Strikes		Depth: 1.50 Width: 0.50 Length: 3.00	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Services exposed.
		Last Updated 06/12/2023	

JOB NUMBER: 23-0881C JOB NAME: NDFA Social Housing Lot 3 – Balally LOCATION: ST04

CLIENT: NDFA CLIENTS REPRESENTATIVE: Malone O'Regan Consulting Engineers CREW: MMS PLANT & EQUIPMENT: 3 Tonne Excavator & Hand Tools



COORDINATES: DATUM

EASTING: - 718496.63
 NORTHING: - 726646.80
 ELEVATION: - 94.448

No:	Type of Service:	Diameter (in mm)	Depth to Top of Service (m)	Distance to Centre of Service (m)	Details/Comments
01	Water	100	1.38	0.85	100mm Unknown Orange Pipe (Possibly ESB Duct, C.A.T signal detected(not from ground level).
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					

TRENCH LENGTH (m): 3.00
 TRENCH DEPTH (m): 1.00
 TRENCH WIDTH (m): 0.50

STABILITY: STABLE
 GROUNDWATER: NONE

SCALE: NTS@A3
 DRAWN: JD
 CHECKED: SR
 DATE EXCAVATED: 27/10/2023





CAUSEWAY
GEOTECH

Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

ST05

Coordinates
718514.97 E
726596.12 N

Client:
NDFA
Client's Representative:
Malone O'Regan Consulting Engineers

Sheet 1 of 1
Scale: 1:25

Method:
Slit Trenching

Plant:
2T Tracked Excavator

Elevation
96.38 mOD

Date:
31/10/2023

Logger:
MW

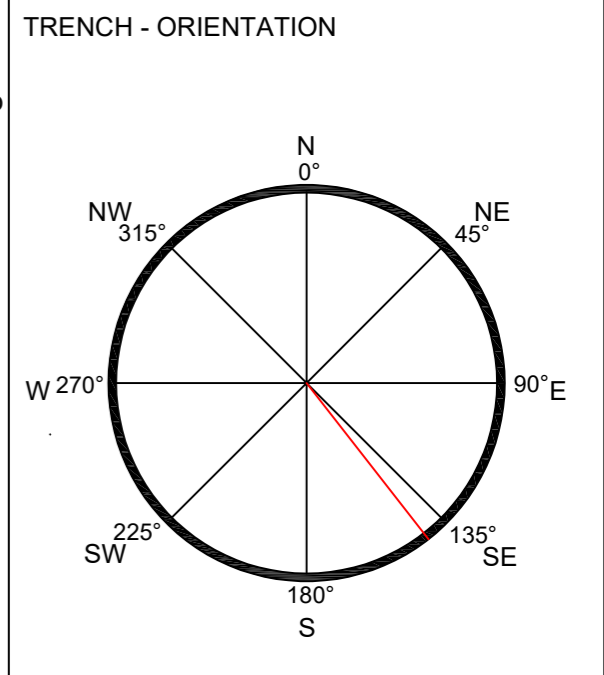
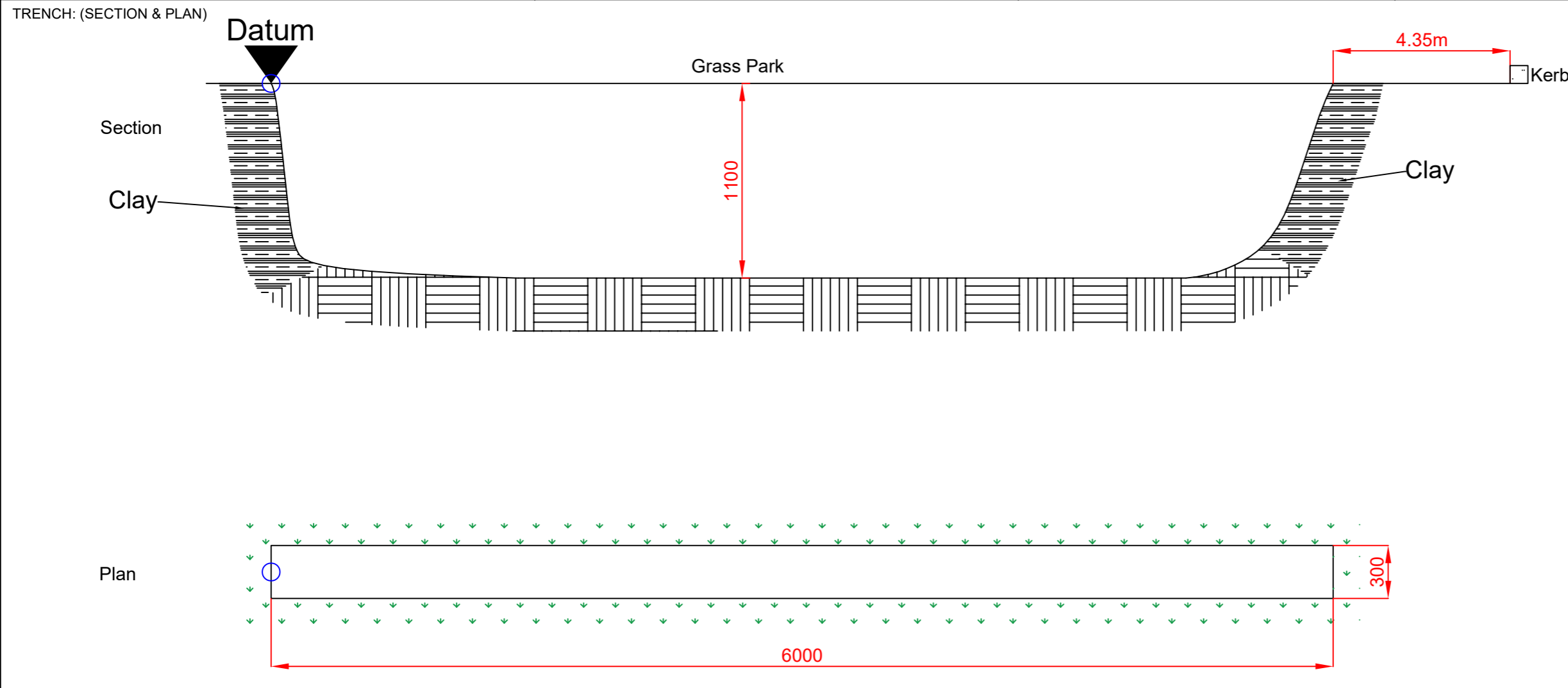
FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50 0.50 - 0.50	B3 ES1		96.08	0.30	TOPSOIL		
0.75 0.75	B4 ES2		95.28	1.10		MADE GROUND: Soft brown slightly sandy slightly gravelly SILT with fragments of concrete and household rubbish. Sand is fine to coarse. Gravel is subangular fine to medium.	
						End of trial pit at 1.10m	

Water Strikes		Depth: 1.10 Width: 0.30 Length: 6.00	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated on refusal on possible bedrock.
		Last Updated 06/12/2023	

JOB NUMBER: 23-0881C JOB NAME: NDFA Social Housing Lot 3 – Balally LOCATION: ST05

CLIENT: NDFA CLIENTS REPRESENTATIVE: Malone O'Regan Consulting Engineers CREW: MW PLANT & EQUIPMENT: 3 Tonne Excavator & Hand Tools



TRENCH ORIENTATED : 140° FROM NORTH

COORDINATES: DATUM

EASTING: - 718514.97
 NORTHING: - 726596.12
 ELEVATION: - 96.38

TRENCH LENGTH (m): 6.00
 TRENCH DEPTH (m): 1.10
 TRENCH WIDTH (m): 0.30

STABILITY: STABLE
 GROUNDWATER: NONE

SCALE: NTS@A3
 DRAWN: JD
 CHECKED: SR
 DATE EXCAVATED: 31/10/2023

No:	Type of Service:	Diameter (in mm)	Depth to Top of Service (m)	Distance to Centre of Service (m)	Details/Comments
01					No Services Found
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					





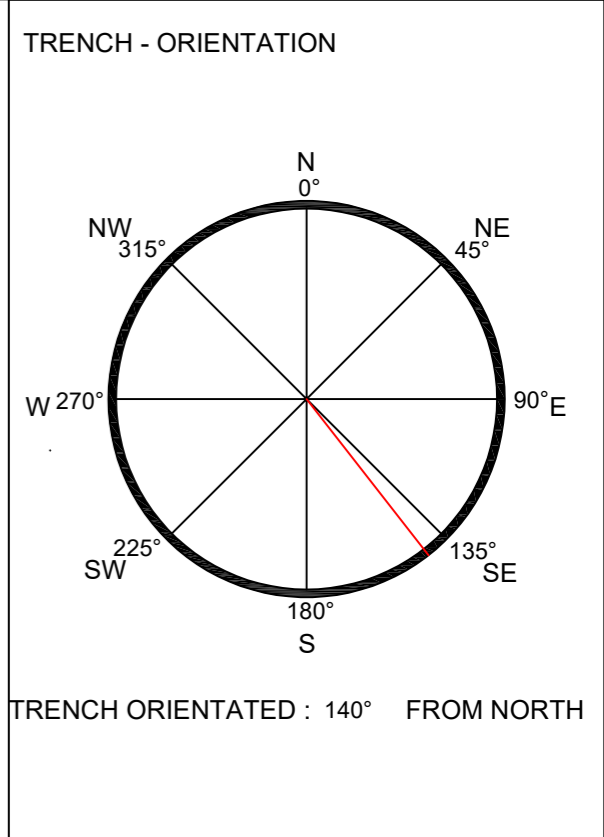
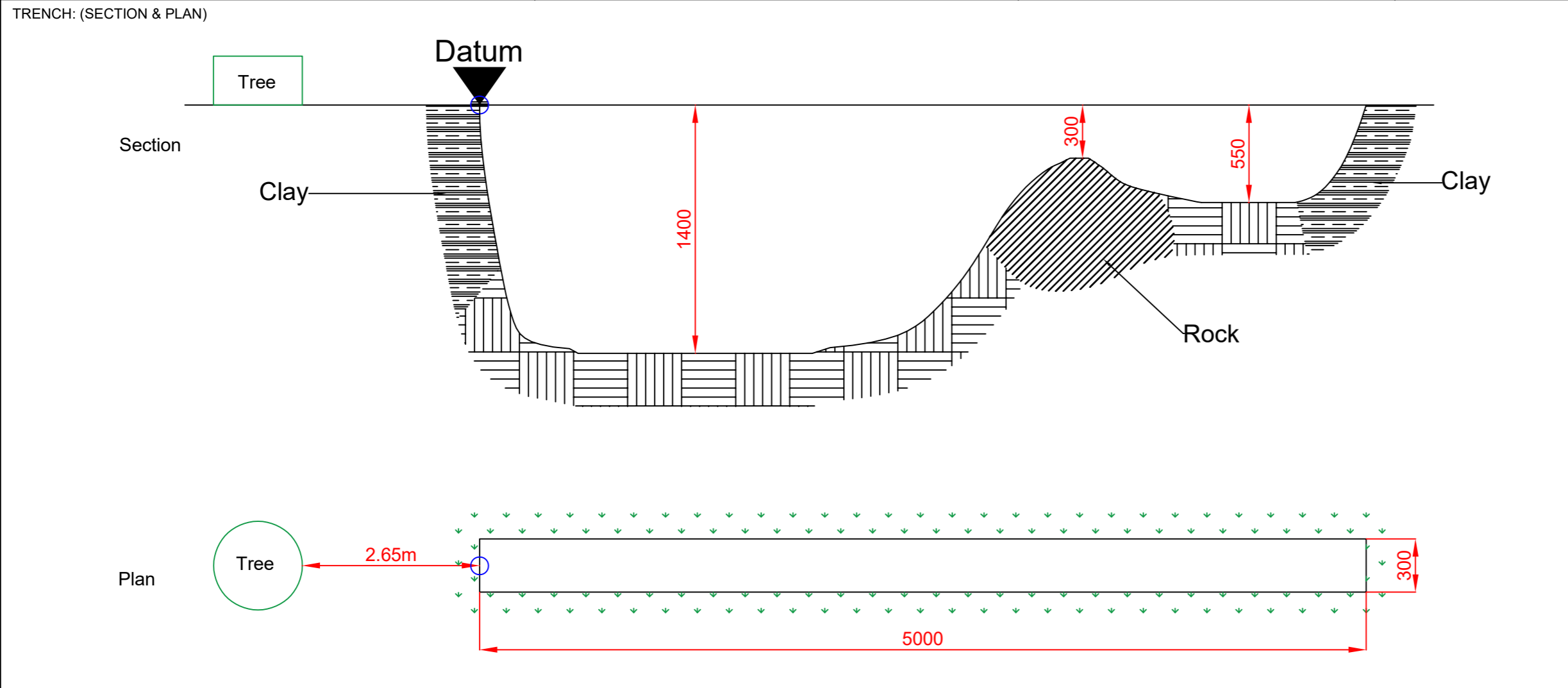
Project No. 23-0881C	Project Name: NDFA Social Housing Lot 3 - Balally	Trial Pit ID ST06
Coordinates 718525.27 E 726600.96 N	Client: NDFA	
Method: Slit Trenching	Client's Representative: Malone O'Regan Consulting Engineers	Sheet 1 of 1 Scale: 1:25
Plant: 2T Tracked Excavator	Elevation 96.02 mOD	Date: 31/10/2023
		Logger: MW
		FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50 0.50 - 0.50	B1 ES3		95.82	0.20		TOPSOIL	
						MADE GROUND: Soft light brown slightly sandy slightly gravelly SILT with fragments of concrete and household rubbish. Sand is fine to coarse. Gravel is subangular fine to medium.	
1.20 1.20	B2 ES4		94.82	1.20		Firm dark brown sandy gravelly CLAY with high cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse. Cobbles are subangular.	
			94.62	1.40		End of trial pit at 1.40m	

Water Strikes		Depth: 1.40 Width: 0.30 Length: 5.00	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated on refusal on possible bedrock.
		Last Updated 06/12/2023	

JOB NUMBER: 23-0881C JOB NAME: NDFA Social Housing Lot 3 – Balally LOCATION: ST06

CLIENT: NDFA CLIENTS REPRESENTATIVE: Malone O'Regan Consulting Engineers CREW: MW PLANT & EQUIPMENT: 3 Tonne Excavator & Hand Tools



COORDINATES: DATUM

EASTING: - 718525.27
 NORTHING: - 726600.96
 ELEVATION: - 96.02

TRENCH LENGTH (m): 6.00
 TRENCH DEPTH (m): 1.10
 TRENCH WIDTH (m): 0.30

STABILITY: STABLE
 GROUNDWATER: NONE

SCALE: NTS@A3
 DRAWN: JD
 CHECKED: SR
 DATE EXCAVATED: 31/10/2023

No:	Type of Service:	Diameter (in mm)	Depth to Top of Service (m)	Distance to Centre of Service (m)	Details/Comments
01					No Services Found
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					





CAUSEWAY
GEOTECH

Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

ST07

Coordinates
718528.54 E
726608.62 N

Client:
NDFA
Client's Representative:
Malone O'Regan Consulting Engineers

Sheet 1 of 1
Scale: 1:25

Method:
Slit Trenching

Plant:
2T Tracked Excavator

Elevation
95.52 mOD

Date:
31/10/2023

Logger:
MW

FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 - 0.50 0.50 - 0.50	B1 ES2		95.22	0.30	TOPSOIL	Soft brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to medium.	
			94.27	1.25		End of trial pit at 1.25m	

Water Strikes

Struck at (m) Remarks

Depth: 1.25
Width: 0.30
Length: 6.00

Remarks:
No groundwater encountered

Stability:
Stable

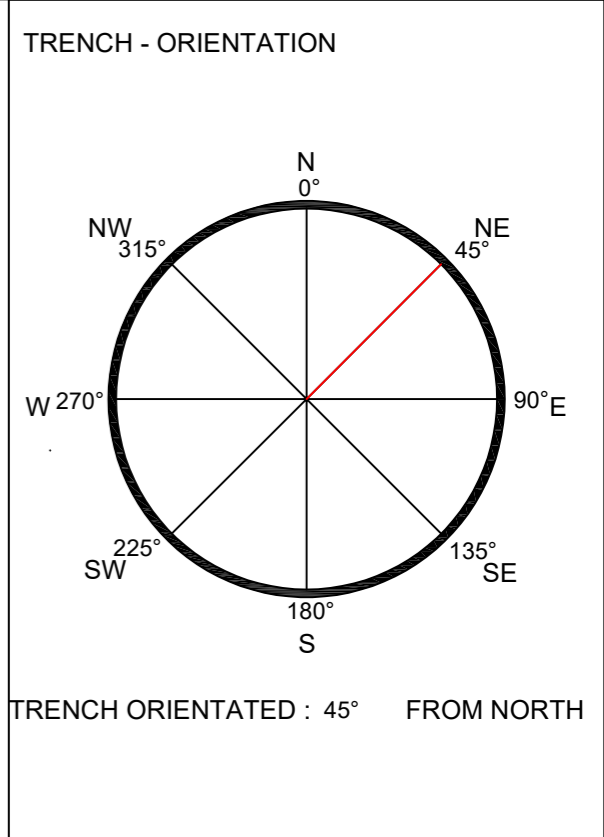
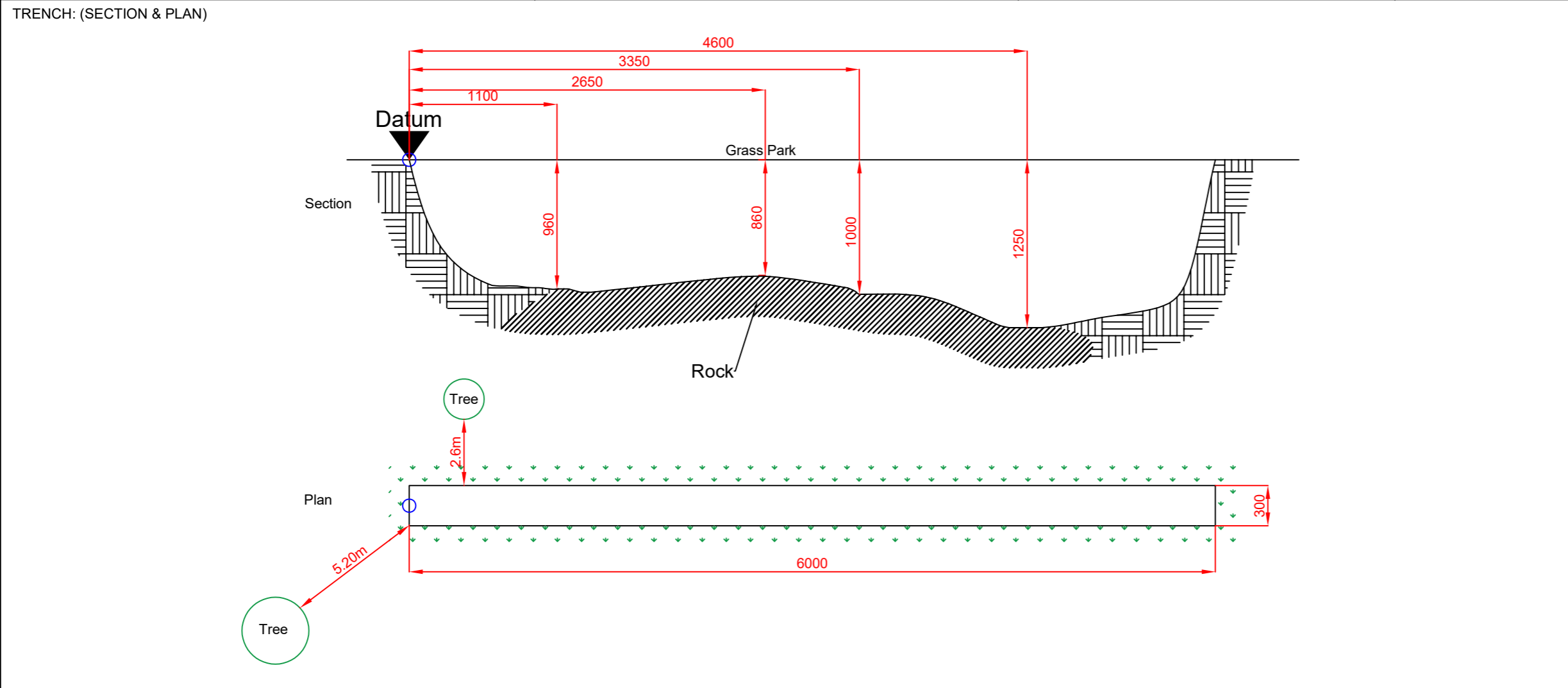
Termination Reason
Terminated on refusal on possible bedrock.

Last Updated
06/12/2023



JOB NUMBER: 23-0881C JOB NAME: NDFA Social Housing Lot 3 – Balally LOCATION: ST07

CLIENT: NDFA CLIENTS REPRESENTATIVE: Malone O'Regan Consulting Engineers CREW: MW PLANT & EQUIPMENT: 3 Tonne Excavator & Hand Tools



COORDINATES: DATUM

EASTING: - 718528.54
 NORTHING: - 726608.62
 ELEVATION: - 95.52

TRENCH LENGTH (m): 6.00
 TRENCH DEPTH (m): 1.25
 TRENCH WIDTH (m): 0.30

STABILITY: STABLE
 GROUNDWATER: NONE

SCALE: NTS@A3
 DRAWN: JD
 CHECKED: SR
 DATE EXCAVATED: 31/10/2023

No:	Type of Service:	Diameter (in mm)	Depth to Top of Service (m)	Distance to Centre of Service (m)	Details/Comments
01					No Services Found
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					





Project No.

23-0881C

Project Name:

NDA Social Housing Lot 3 - Balally

Trial Pit ID

ST08

Coordinates

718504.06 E
726667.07 N

Client:

NDA

Client's Representative:

Malone O'Regan Consulting Engineers

Sheet 1 of 1
Scale: 1:25

Method:

Slit Trenching

Plant:

2T Tracked Excavator

Elevation

93.68 mOD

Date:

26/10/2023

Logger:

MMC

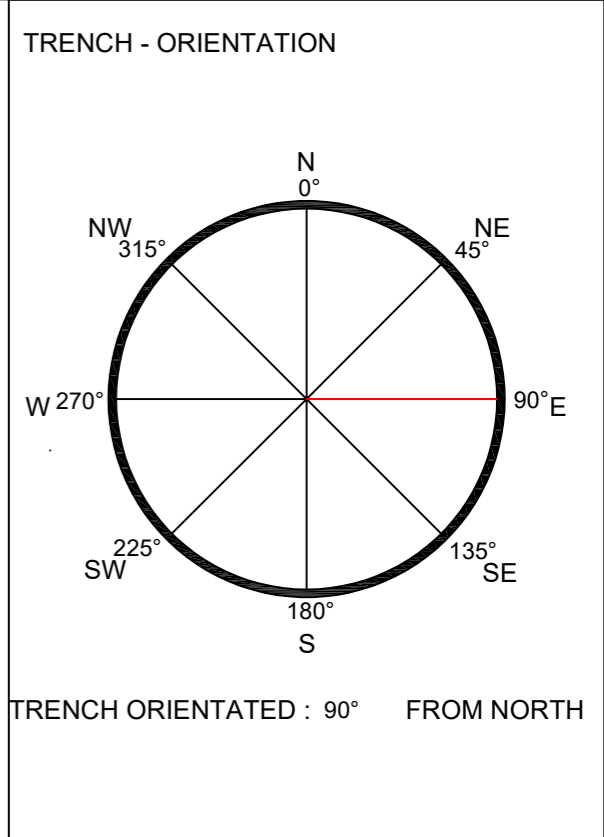
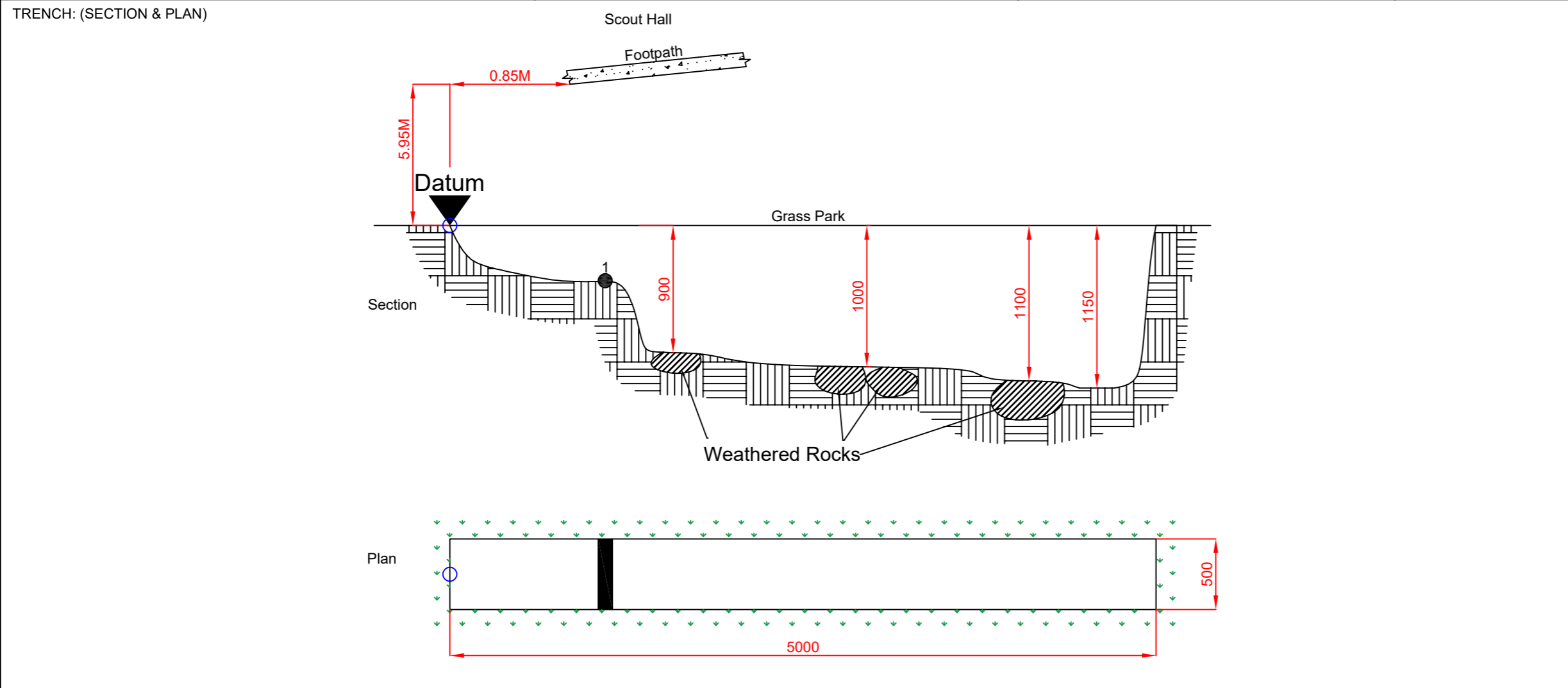
FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
0.50 0.50 - 0.50	ES1 B3		93.48	0.20		TOPSOIL	
						Firm brown slightly gravelly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of limestone and sandstone. Cobbles are subangular of limestone.	
0.90 0.90	B4 ES2		92.88	0.80		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to medium of granite.	
		Slow seepage at 1.10m	92.58	1.10		End of trial pit at 1.10m	▼

Water Strikes		Depth: 1.10 Width: 0.50 Length: 5.00	Remarks:
Struck at (m)	Remarks		
1.10	Slow seepage at 1.10m	Stability: Stable	Termination Reason Terminated on refusal on possible bedrock.
		Last Updated 06/12/2023	

JOB NUMBER: 23-0881C JOB NAME: NDFA Social Housing Lot 3 – Balally LOCATION: ST08

CLIENT: NDFA CLIENTS REPRESENTATIVE: Malone O'Regan Consulting Engineers CREW: MW PLANT & EQUIPMENT: 3 Tonne Excavator & Hand Tools



COORDINATES: DATUM

EASTING: - 718504.06
 NORTHING: - 726667.07
 ELEVATION: - 93.68

TRENCH LENGTH (m): 5.00
 TRENCH DEPTH (m): 1.15
 TRENCH WIDTH (m): 0.50

STABILITY: STABLE
 GROUNDWATER: NONE

SCALE: NTS@A3
 DRAWN: JD
 CHECKED: SR
 DATE EXCAVATED: 26/10/2023

No:	Type of Service:	Diameter (in mm)	Depth to Top of Service (m)	Distance to Centre of Service (m)	Details/Comments
01	Unknown	100	0.34	1.10	100mm Unknown Black PVC Pipe
02					
03					Possible Weathered Granite Rocks along entire Slit Trench.
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					

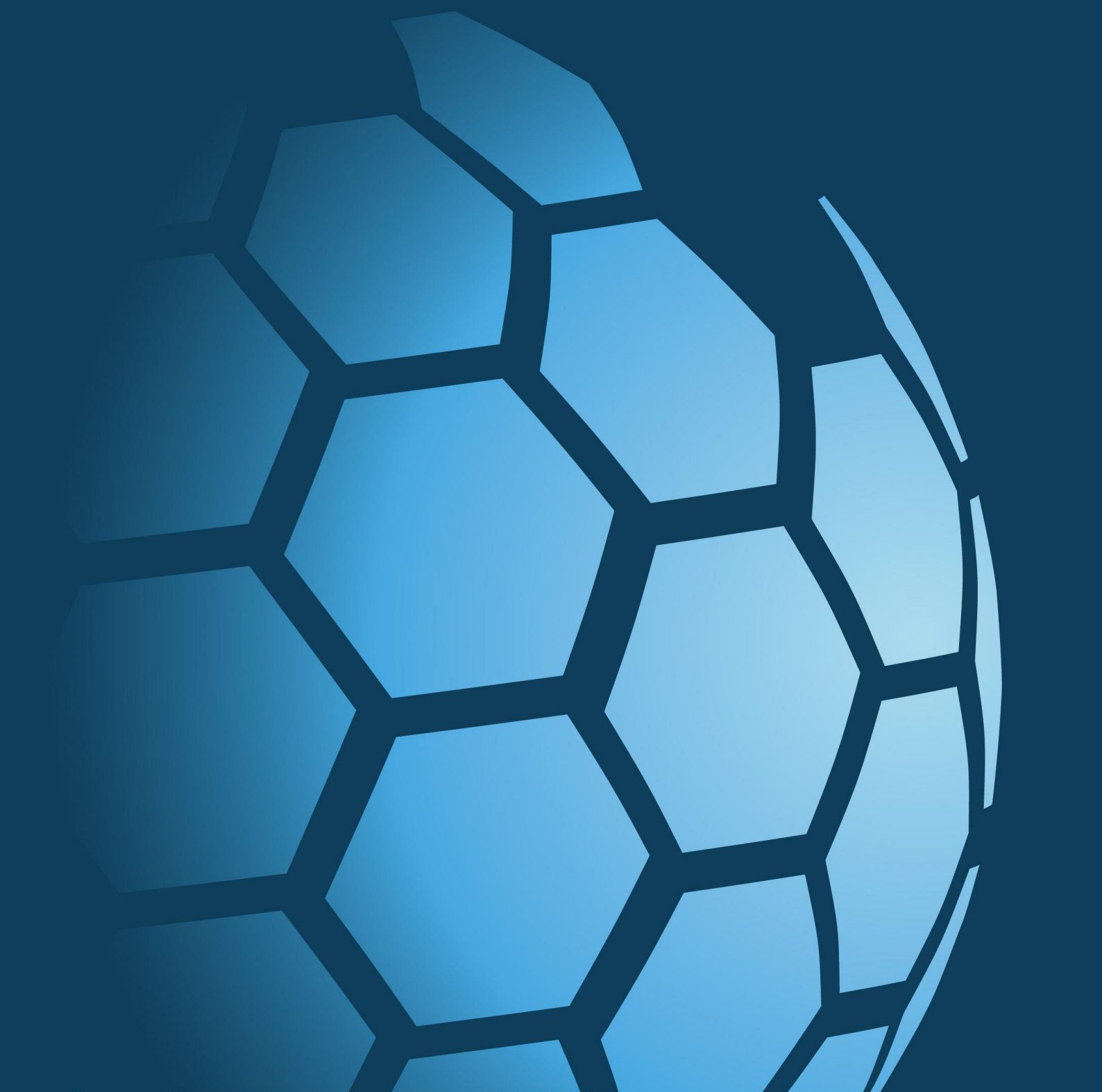




CAUSEWAY
— GEOTECH

APPENDIX G

SLIT TRENCH PHOTOGRAPHS





ST01



ST01



ST01



ST01



ST01



ST01



ST02



ST02



ST02



ST02



ST02



ST02



ST02



ST02



ST02



ST02A



ST02A



ST02A



ST02A



ST02A



ST03



ST03



ST03



ST03



ST03



ST03



ST03



ST03



ST04



ST04



ST04



ST04



ST04



ST05



ST05



ST05



ST05



ST06



ST06



ST06



ST06



ST06



ST06



ST07



ST07



ST07



ST07



ST08



ST08



ST08



ST08



ST08



ST08



ST08



ST08

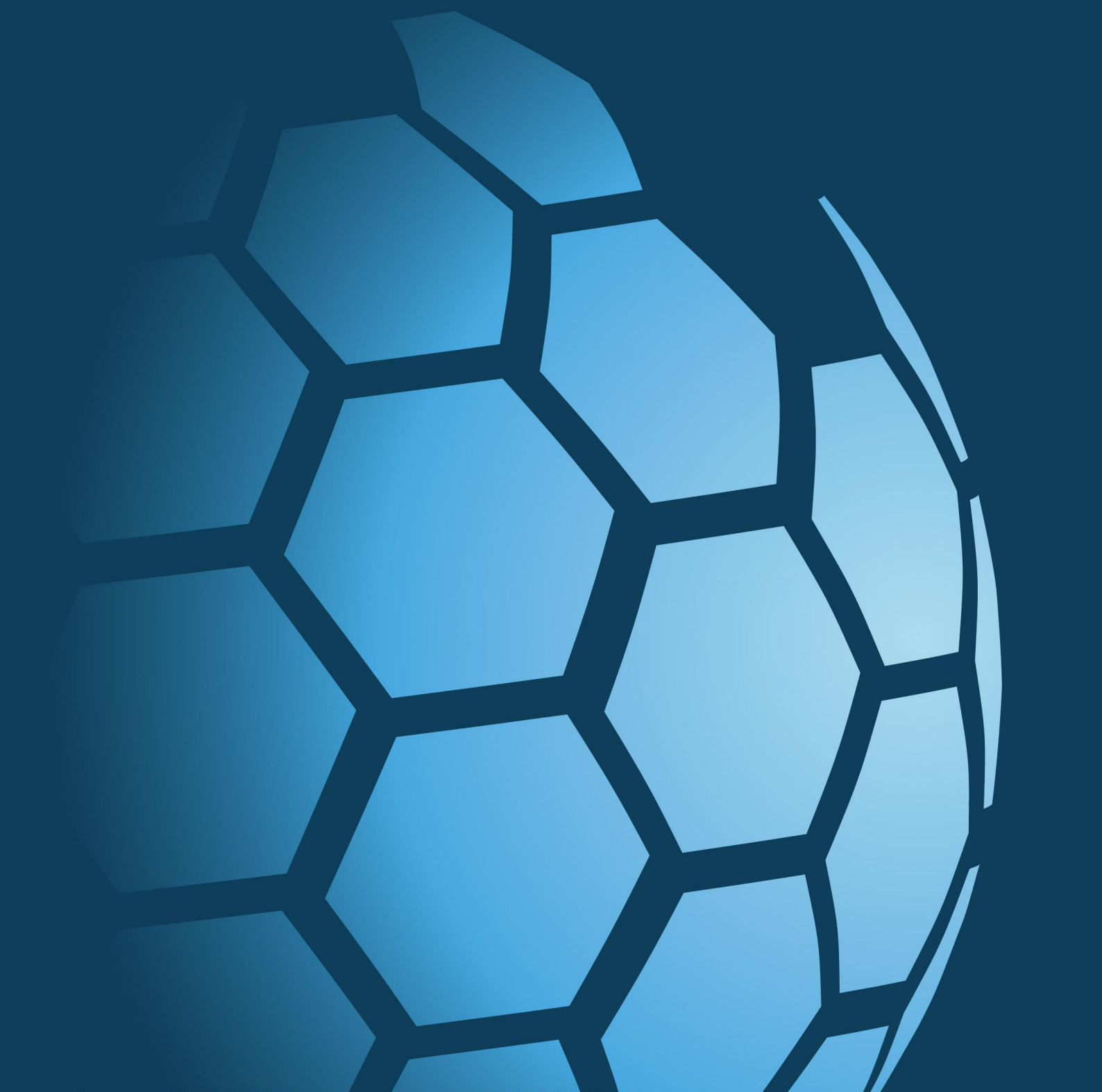


ST08



CAUSEWAY
— GEOTECH

APPENDIX H
INFILTRATION TEST RESULTS





CAUSEWAY
GEOTECH

Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

IT01

Coordinates

Client:

NDFA

718504.35 E

Client's Representative:

Malone O'Regan Consulting Engineers

726664.12 N

Sheet 1 of 1

Scale: 1:25

Method:

Soakaway Pit

Plant:

2T Tracked Excavator

Elevation

93.52 mOD

Date:

26/10/2023

Logger:

MMC

FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
			93.22	0.30		TOPSOIL	
						End of trial pit at 0.30m	
							0.5
							1.0
							1.5
							2.0
							2.5
							3.0
							3.5
							4.0
							4.5

Water Strikes

Struck at (m)

Remarks

Depth: 0.30

Width: 0.30

Length: 1.10

Stability:

Stable

Remarks:

No groundwater encountered

Termination Reason

Terminated due to services encountered and moved to IT01A.

Last Updated

06/12/2023





CAUSEWAY
GEOTECH

Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

Coordinates
718506.98 E
726662.45 N

Client:
NDFA
Client's Representative:
Malone O'Regan Consulting Engineers

IT01A

Sheet 1 of 1
Scale: 1:25

Method:
Soakaway Pit

Plant:
2T Tracked Excavator

Elevation
93.47 mOD

Date:
26/11/2023

Logger:
MMC

FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
			93.27	0.20		TOPSOIL	
0.50 - 0.50 0.50 - 0.50	B3 ES1					MADE GROUND: Firm brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded.	0.5
1.00 1.00	B4 ES2		92.67	0.80		Firm dark brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to medium of sandstone and limestone.	1.0
1.30	B5		92.27	1.20		Grey angular COBBLES of granite (Weathered bedrock).	1.5
			92.07	1.40		End of trial pit at 1.40m	2.0 2.5 3.0 3.5 4.0 4.5

Water Strikes		Depth: 1.40 Width: 0.30 Length: 1.30	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated on refusal on possible bedrock.
		Last Updated 06/12/2023	

Soakaway Infiltration Test

Project No.: 23-0881C
Site: Ballaly
Test Location: IT01A Test 1
Test Date: 26 October 2023



	width (m)	length (m)
test pit top dimensions	0.30	1.20
test pit base dimensions	0.30	0.90
test pit depth (m)	1.40	

Analysis using method as described in BRE Digest 365 and CIRIA Report C697-The SUDS Manual

depth to groundwater before adding water (m) = Dry

Time (mins)	Depth to water surface (m)	Head of water in pit (m)
0	0.27	1.13
1	0.29	1.11
2	0.32	1.08
3	0.34	1.06
4	0.37	1.03
5	0.40	1.00
10	0.49	0.91
15	0.57	0.83
20	0.63	0.77
25	0.68	0.72
30	0.73	0.67
40	0.83	0.57
50	0.85	0.55
60	0.90	0.50
90	1.02	0.38
120	1.14	0.26

RESULTS (FROM GRAPH BELOW)

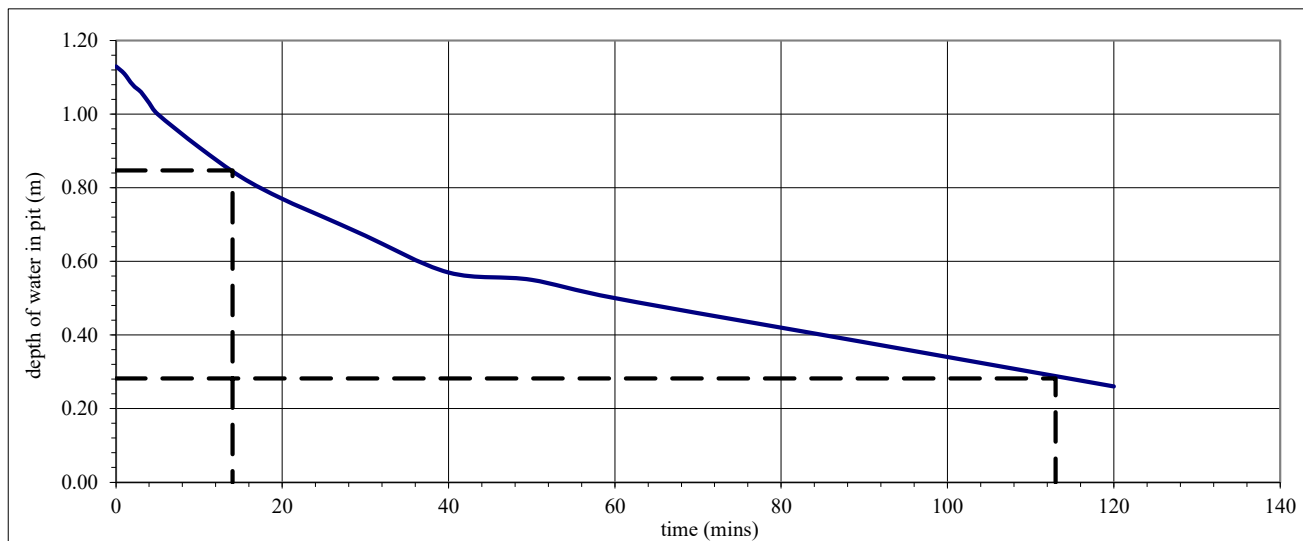
Test start
 75% head of water at 0.85 m
 depth to water surface (target) 0.55 m
 time to reach target depth 14.0 mins

Test end
 25% head of water at 0.28 m
 depth to water surface (target) 1.12 m
 time to reach target depth 113.0 mins

test infiltration rate (q) = 0.06 m/h

TARGET DEPTHS AND CALCULATED VALUES

time (mins)	depth to water surface (m)	head of water in pit (m)	time elapsed (mins)	volume of water lost (m ³)	Area of walls and base at 50% drop (m ²)	q (m/min)	q (m/h)
14	0.55	0.85	99	0.17	1.71	1.0E-03	0.061
113	1.12	0.28					



Soakaway Infiltration Test

Project No.: 23-0881C
Site: Ballaly
Test Location: IT01A Test 2
Test Date: 26 October 2023



	width (m)	length (m)
test pit top dimensions	0.30	1.20
test pit base dimensions	0.30	0.90
test pit depth (m)	1.40	

Analysis using method as described in BRE Digest 365 and CIRIA Report C697-The SUDS Manual

depth to groundwater before adding water (m) = Dry

Time (mins)	Depth to water surface (m)	Head of water in pit (m)
0	0.30	1.10
1	0.32	1.08
2	0.33	1.07
3	0.35	1.05
4	0.37	1.03
5	0.37	1.03
10	0.48	0.92
15	0.55	0.85
20	0.61	0.79
25	0.65	0.75
30	0.69	0.71
40	0.76	0.64
50	0.80	0.60
60	0.84	0.56
90	0.95	0.45
120	1.06	0.34
150	1.18	0.22

RESULTS (FROM GRAPH BELOW)

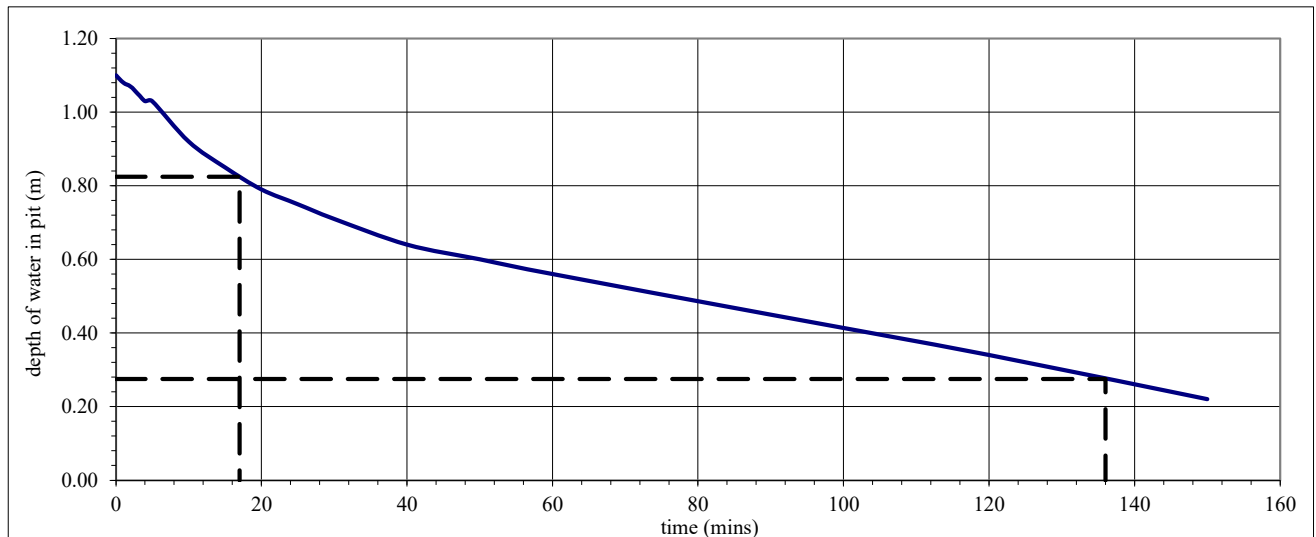
Test start
 75% head of water at 0.83 m
 depth to water surface (target) 0.58 m
 time to reach target depth 17.0 mins

Test end
 25% head of water at 0.28 m
 depth to water surface (target) 1.13 m
 time to reach target depth 136.0 mins

test infiltration rate (q) = 0.05 m/h

TARGET DEPTHS AND CALCULATED VALUES

time (mins)	depth to water surface (m)	head of water in pit (m)	time elapsed (mins)	volume of water lost (m ³)	Area of walls and base at 50% drop (m ²)	q (m/min)	q (m/h)
17	0.58	0.83	119	0.17	1.67	8.4E-04	0.051
136	1.13	0.28					





Project No.
23-0881C

Project Name:
NDFA Social Housing Lot 3 - Balally

Trial Pit ID

IT02

Coordinates
718502.80 E
726646.65 N

Client:
NDFA
Client's Representative:
Malone O'Regan Consulting Engineers

Sheet 1 of 1
Scale: 1:25

Method:
Soakaway Pit

Plant:
2T Tracked Excavator

Elevation
94.69 mOD

Date:
26/10/2023

Logger:
MMC

FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
			94.49	0.20		TOPSOIL	
0.50 - 0.50 0.50 - 0.50	B3 ES1					MADE GROUND: Firm light brown sandy gravelly CLAY with fragments of plastic. Sand is fine to coarse. Gravel is subrounded fine to coarse.	0.5
1.00 1.00	B4 ES2		93.69	1.00		Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone.	1.0
			93.19	1.50		End of trial pit at 1.50m	1.5
							2.0
							2.5
							3.0
							3.5
							4.0
							4.5

Water Strikes		Depth: 1.50 Width: 0.30 Length: 1.50	Remarks: No groundwater encountered
Struck at (m)	Remarks		
		Stability: Stable	Termination Reason Terminated on refusal on possible bedrock.
		Last Updated 06/12/2023	

Soakaway Infiltration Test

Project No.: 23-0881C
Site: Ballaly
Test Location: IT02
Test Date: 26 October 2023



	width (m)	length (m)
test pit top dimensions	0.30	1.50
test pit base dimensions	0.30	1.30
test pit depth (m)	1.50	

Analysis using method as described in BRE Digest 365 and CIRIA Report C697-The SUDS Manual

depth to groundwater before adding water (m) = Dry

Time (mins)	Depth to water surface (m)	Head of water in pit (m)
0	0.33	1.17
1	0.33	1.17
3	0.34	1.16
4	0.34	1.16
5	0.35	1.15
10	0.36	1.14
15	0.37	1.13
20	0.39	1.11
25	0.41	1.09
30	0.43	1.07
40	0.46	1.04
50	0.49	1.01
60	0.52	0.98
120	0.63	0.87
180	0.75	0.75
240	0.85	0.65
300	0.90	0.60
360	0.96	0.54

RESULTS (FROM GRAPH BELOW)

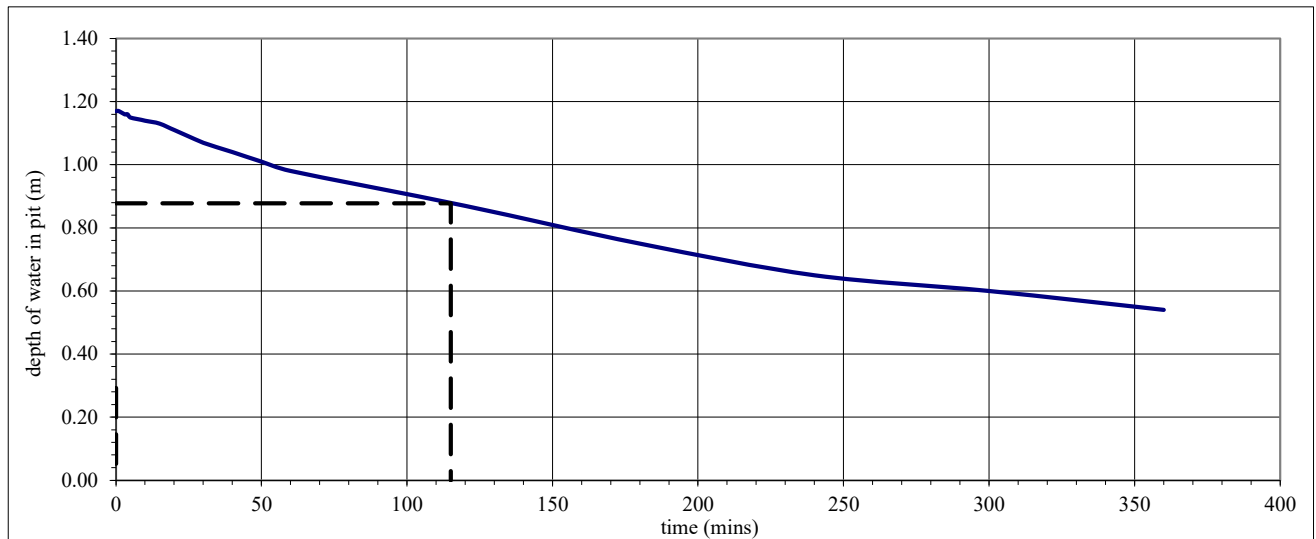
Test start
 75% head of water at 0.88 m
 depth to water surface (target) 0.62 m
 time to reach target depth 115.0 mins

Test end
 25% head of water at 0.29 m
 depth to water surface (target) 1.21 m
 time to reach target depth not reached

infiltration rate (q) is very low

TARGET DEPTHS AND CALCULATED VALUES

time (mins)	depth to water surface (m)	head of water in pit (m)	time elapsed (mins)	volume of water lost (m ³)	Area of walls and base at 50% drop (m ²)	q (m/min)	q (m/h)
115	0.62	0.88	N/A				
	1.21	0.29					

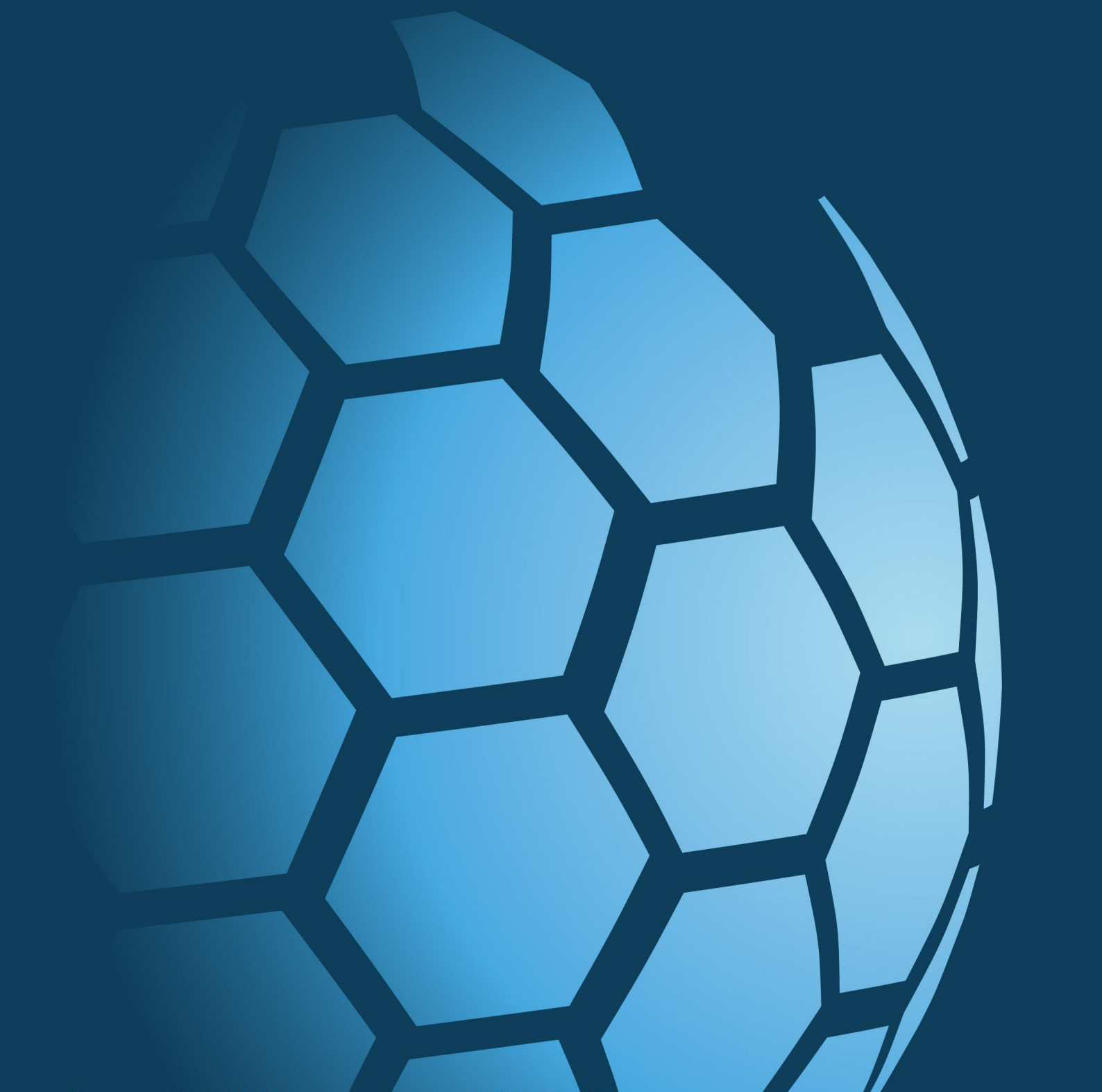




CAUSEWAY
— GEOTECH

APPENDIX I

GEOTECHNICAL LABORATORY TEST RESULTS





SOIL AND ROCK SAMPLE ANALYSIS LABORATORY TEST REPORT

30 November
2023

Project Name:	NDFa Social Housing Lot 3 – Balally
Project No.:	23-0881C
Client:	NDFa
Engineer:	Malone O'Regan Consulting Engineers

We are pleased to attach the results of laboratory testing carried out for the above project. This memo and its attachments constitute a report of the results of tests as detailed in the Contents page(s). This testing was performed between 10/11/2023 and 30/11/2023.

The attached results complete the testing requested and we would therefore wish to confirm that samples will be retained without charge for a period of 28 days from the above date after which they will be appropriately disposed of unless we receive written instructions to the contrary prior to that date.

We trust our report meets with your approval but if you have any queries or require additional information, please do not hesitate to contact the undersigned.

Stephen Watson

Laboratory Manager

Signed for and on behalf of Causeway Geotech Ltd



Project Name: NDFA Social Housing Lot 3 – Balally

Report Reference: Schedule 1

The table below details the tests carried out, the specifications used, and the number of tests included in this report. The results contained in this report relate to the sample(s) as received.

Tests marked with* in this report are not United Kingdom Accreditation Service (UKAS) accredited and are not included in Causeway Geotech Limited’s scope of UKAS Accreditation Schedule of Tests. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Material tested	Type of test/Properties measured/Range of measurement	Standard specifications	No. of results included in the report
SOIL	Moisture Content of Soil	BS 1377-2: 1990: Cl 3.2	16
SOIL	Liquid and Plastic Limits of soil-1 point cone penetrometer method	BS 1377-2: 1990: Cl 4.4, 5.3 & 5.4	16
SOIL	Particle size distribution - wet sieving	BS 1377-2: 1990: Cl 9.2	16
SOIL	Particle size distribution - sedimentation hydrometer method	BS 1377-2: 1990: Cl 9.5	14
SOIL	California Bearing Ratio (CBR)	BS 1377-4: 1990: Cl 7	16

SUB-CONTRACTED TESTS

In agreement with Client, the following tests were conducted by an approved sub-contractor. All sub-contracting laboratories used are UKAS accredited.


Material tested	Type of test/Properties measured/Range of measurement	Standard specifications	No. of results included in the report
SOIL – Subcontracted to Derwentside Environmental Testing Services Limited (UKAS 2139)	pH Value of Soil		16
SOIL – Subcontracted to Derwentside Environmental Testing Services Limited (UKAS 2139)	Sulphate Content water extract		16

Summary of Classification Test Results

Project No. 23-0881C		Project Name NDA Social Housing Lot 3 - Balally												
Hole No.	Sample				Specimen Description	Density		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Casagrande Classification
	Ref	Top	Base	Type		bulk	dry							
IT01A	4	1.00		B	Brown sandy slightly gravelly silty CLAY.			22	73	39 -1pt	22	17		CI
IT02	4	1.00		B	Brown sandy slightly gravelly silty CLAY.			26	78	45 -1pt	26	19		CI
ST01	4	1.00		B	Brown sandy slightly gravelly clayey SILT.			25	55	46 -1pt	33	13		MI
ST02	5	1.50		B	Brown sandy slightly gravelly silty CLAY.			23	68	38 -1pt	22	16		CI
ST03	4	1.00		B	Brown sandy slightly gravelly silty CLAY.			22	69	43 -1pt	26	17		MI/CI
ST04	2	1.00		B	Brown slightly gravelly clayey fine to coarse SAND.			15	52	31 -1pt	23	8		ML/CL
ST05	4	0.75		B	Brown slightly gravelly silty fine to coarse SAND.			26	79	45 -1pt	28	17		MI
ST06	1	0.50		B	Brown sandy gravelly clayey SILT.			33	71	48 -1pt	33	15		MI
ST07	1	0.50		B	Brown sandy slightly gravelly silty CLAY.			34	76	45 -1pt	25	20		CI
ST08	4	0.90		B	Brown sandy slightly gravelly silty CLAY.			24	65	39 -1pt	21	18		CI
TP01	4	1.00		B	Brown gravelly slightly clayey fine to coarse SAND.			13	46	33 -1pt	23	10		ML/CL
TP02	4	1.00		B	Brown slightly gravelly clayey fine to coarse SAND.			15	67	29 -1pt	22	7		ML/CL

All tests performed in accordance with BS1377:1990 unless specified otherwise

LAB 01R Version 6


Key Density test Liquid Limit Particle density Linear measurement unless : 4pt cone unless : sp - small pycnometer wd - water displacement cas - Casagrande method gj - gas jar wi - immersion in water 1pt - single point test	Date Printed <p style="text-align: center;">30/11/2023</p>	Approved By <p style="text-align: center;">Stephen Watson</p>	 10122
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Summary of Classification Test Results

Project No. 23-0881C	Project Name NDFA Social Housing Lot 3 - Balally
-------------------------	---

Hole No.	Sample				Specimen Description	Density		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Casagrande Classification
	Ref	Top	Base	Type		bulk	dry							
TP03	4	1.00		B	Brown slightly sandy slightly silty subangular fine to coarse GRAVEL.			9.4	21	43 -1pt	28	15		MI
TP04	4	1.00		B	Brown sandy slightly gravelly silty CLAY.			28	86	42 -1pt	23	19		CI
TP05	4	1.00		B	Brown sandy slightly gravelly silty CLAY.			27	82	50 -1pt	27	23		CI/CH
TP06	4	1.00		B	Brown sandy slightly gravelly silty CLAY.			28	77	46 -1pt	26	20		CI

All tests performed in accordance with BS1377:1990 unless specified otherwise
LAB 01R Version 6

Key Density test Liquid Limit Particle density Linear measurement unless : 4pt cone unless : sp - small pyknometer wd - water displacement cas - Casagrande method gj - gas jar wi - immersion in water 1pt - single point test	Date Printed 30/11/2023	Approved By Stephen Watson	 10122
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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. IT01A

Site Name NDFA Social Housing Lot 3 - Balally

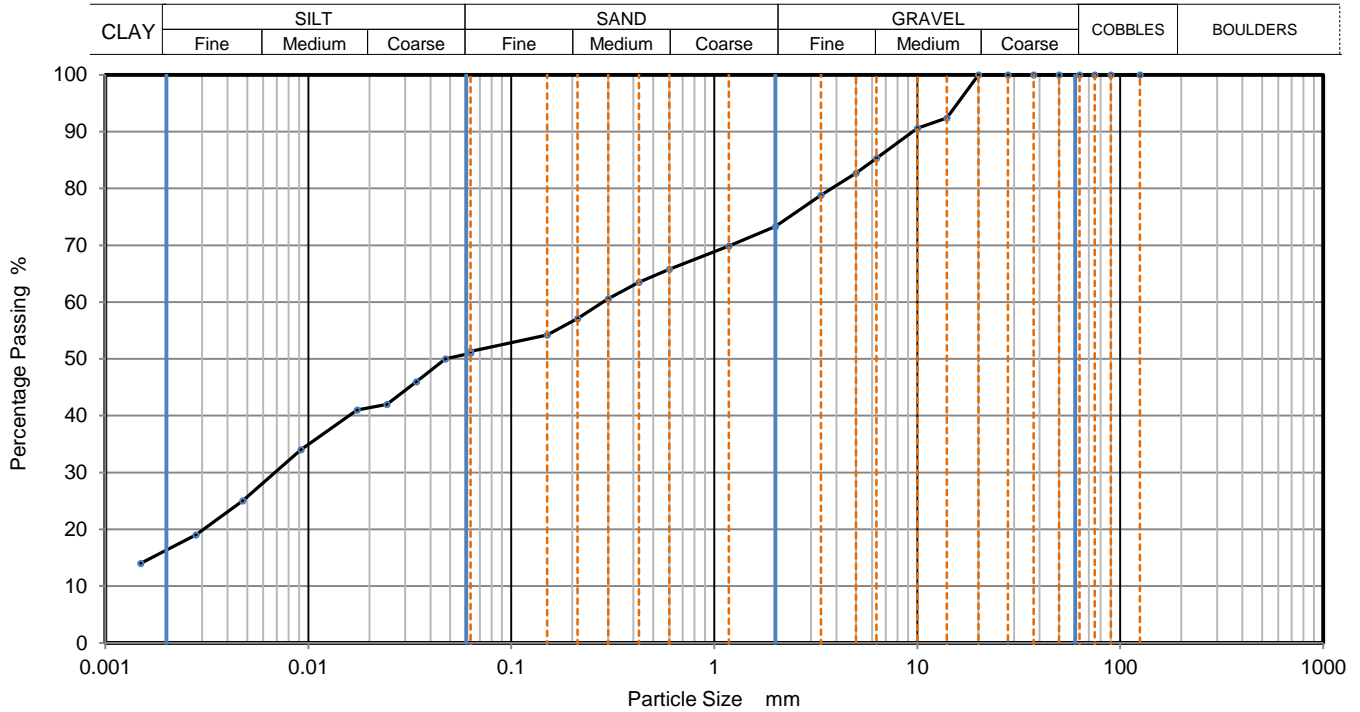
Sample No. 4

Specimen Description Brown sandy slightly gravelly silty CLAY.

Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m	Sample Type	B
--------------------	---	----------------	---	---	-------------	---

Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111046
-------------	---	-----------	----------------



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	51
90	100	0.04745	50
75	100	0.03403	46
63	100	0.02439	42
50	100	0.01737	41
37.5	100	0.00920	34
28	100	0.00475	25
20	100	0.00279	19
14	92	0.00149	14
10	91		
6.3	85		
5	83		
3.35	79		
2	73		
1.18	70		
0.6	66	Particle density (assumed) 2.65 Mg/m ³	
0.425	64		
0.3	61		
0.212	57		
0.15	54		
0.063	51		

Dry Mass of sample, g 516

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	26.7
Sand	22.0
Silt	34.7
Clay	16.6

Grading Analysis	
D100	mm
D60	mm 0.282
D30	mm 0.00702
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

Approved
Stephen Watson

LAB 05R - Version 6



10122



PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. IT02

Site Name NDFA Social Housing Lot 3 - Balally

Sample No. 4

Specimen Description Brown sandy slightly gravelly silty CLAY.

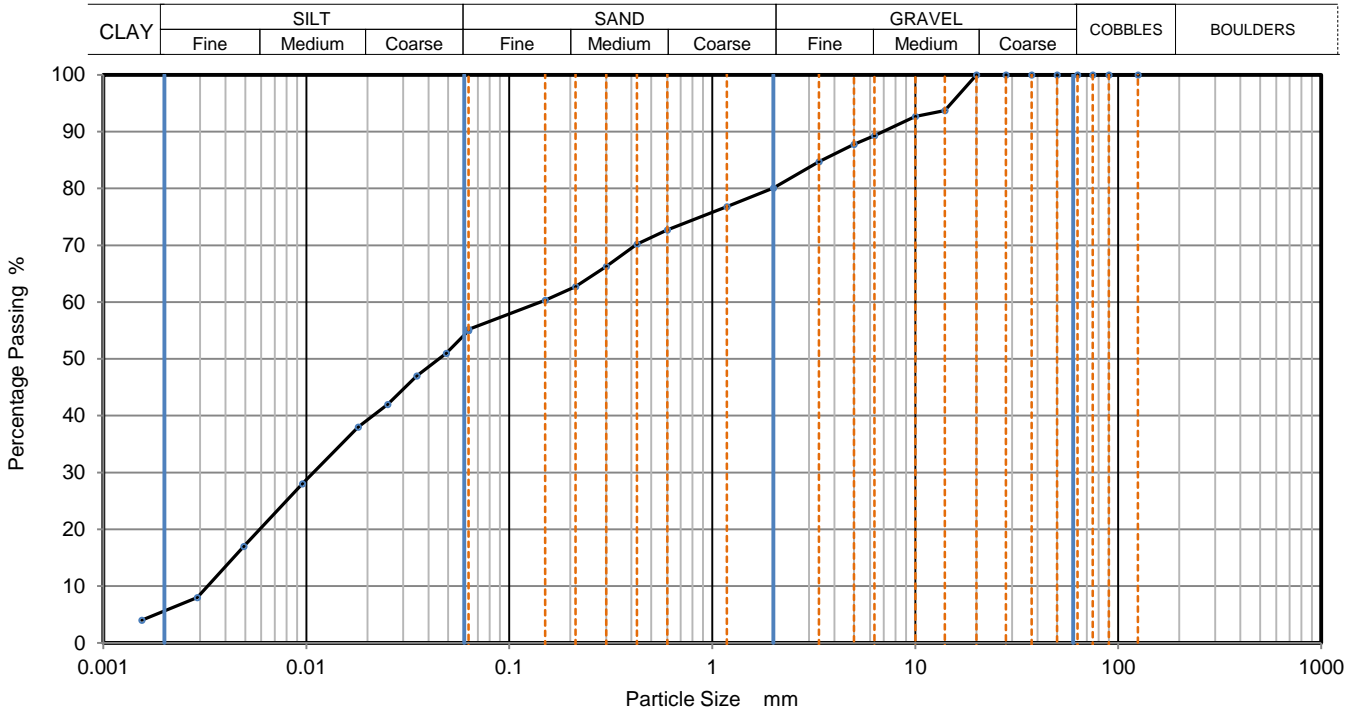
Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m
--------------------	---	----------------	---	---

Sample Type B

Test Method BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID Caus2023111048



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	55
90	100	0.04896	51
75	100	0.03508	47
63	100	0.02513	42
50	100	0.01800	38
37.5	100	0.00958	28
28	100	0.00493	17
20	100	0.00291	8
14	94	0.00155	4
10	93		
6.3	89		
5	88		
3.35	85		
2	80		
1.18	77		
0.6	73		
0.425	70	Particle density (assumed) 2.65 Mg/m ³	
0.3	66		
0.212	63		
0.15	60		
0.063	55		

Dry Mass of sample, g 506

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	19.9
Sand	24.9
Silt	49.2
Clay	6.0

Grading Analysis	
D100	mm
D60	mm 0.143
D30	mm 0.011
D10	mm 0.00319
Uniformity Coefficient	45
Curvature Coefficient	0.27

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below



LAB 05R - Version 6

10122

Approved

Stephen Watson



PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. **ST01**

Site Name **NDFA Social Housing Lot 3 - Balally**

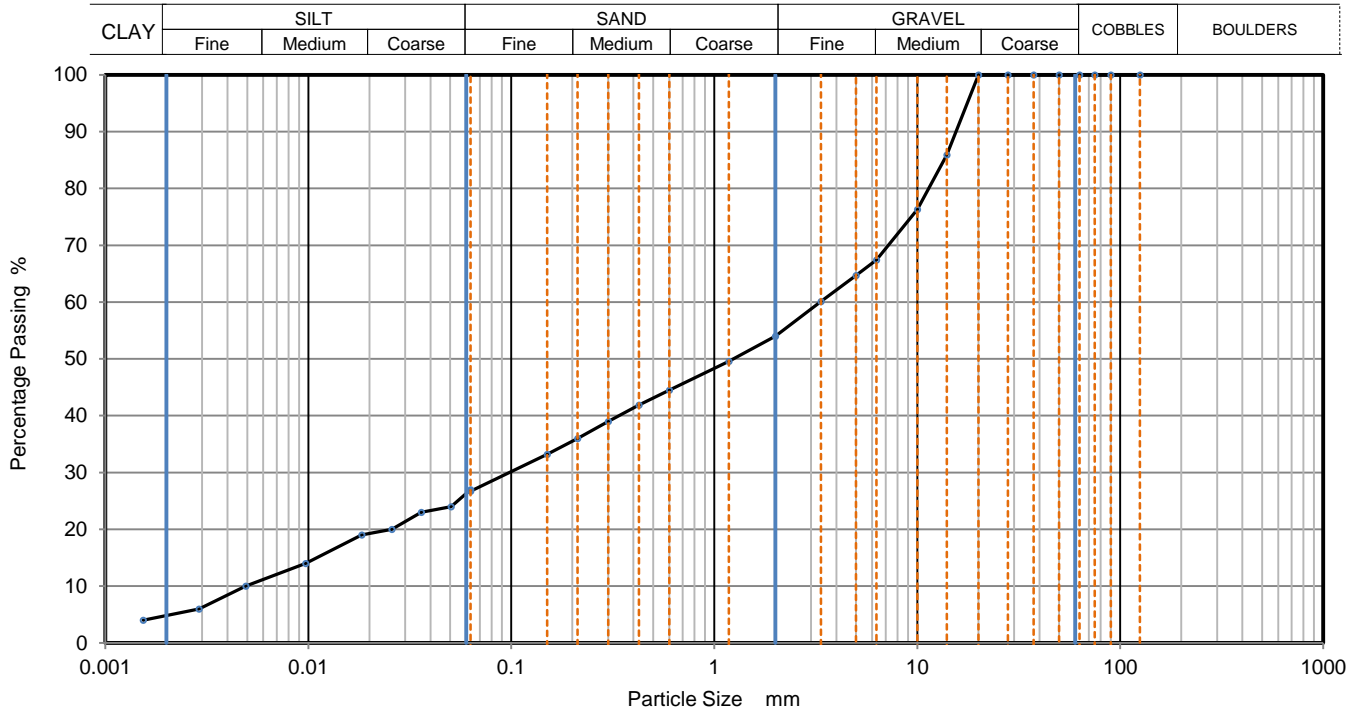
Sample No. **4**

Specimen Description **Brown sandy slightly gravelly clayey SILT.**

Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m	Sample Type	B
--------------------	---	----------------	---	---	-------------	---

Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111050
-------------	---	-----------	----------------



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	27
90	100	0.05058	24
75	100	0.03599	23
63	100	0.02577	20
50	100	0.01833	19
37.5	100	0.00969	14
28	100	0.00493	10
20	100	0.00289	6
14	86	0.00154	4
10	76		
6.3	67		
5	65		
3.35	60		
2	54		
1.18	50		
0.6	45	Particle density (assumed) 2.65 Mg/m ³	
0.425	42		
0.3	39		
0.212	36		
0.15	33		
0.063	27		

Dry Mass of sample, g 521

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	46.0
Sand	27.3
Silt	21.8
Clay	4.9

Grading Analysis	
D100	mm
D60	mm 3.33
D30	mm 0.0981
D10	mm 0.00481
Uniformity Coefficient	690
Curvature Coefficient	0.6

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

Approved
Stephen Watson

LAB 05R - Version 6



10122



PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. ST02

Site Name NDFA Social Housing Lot 3 - Balally

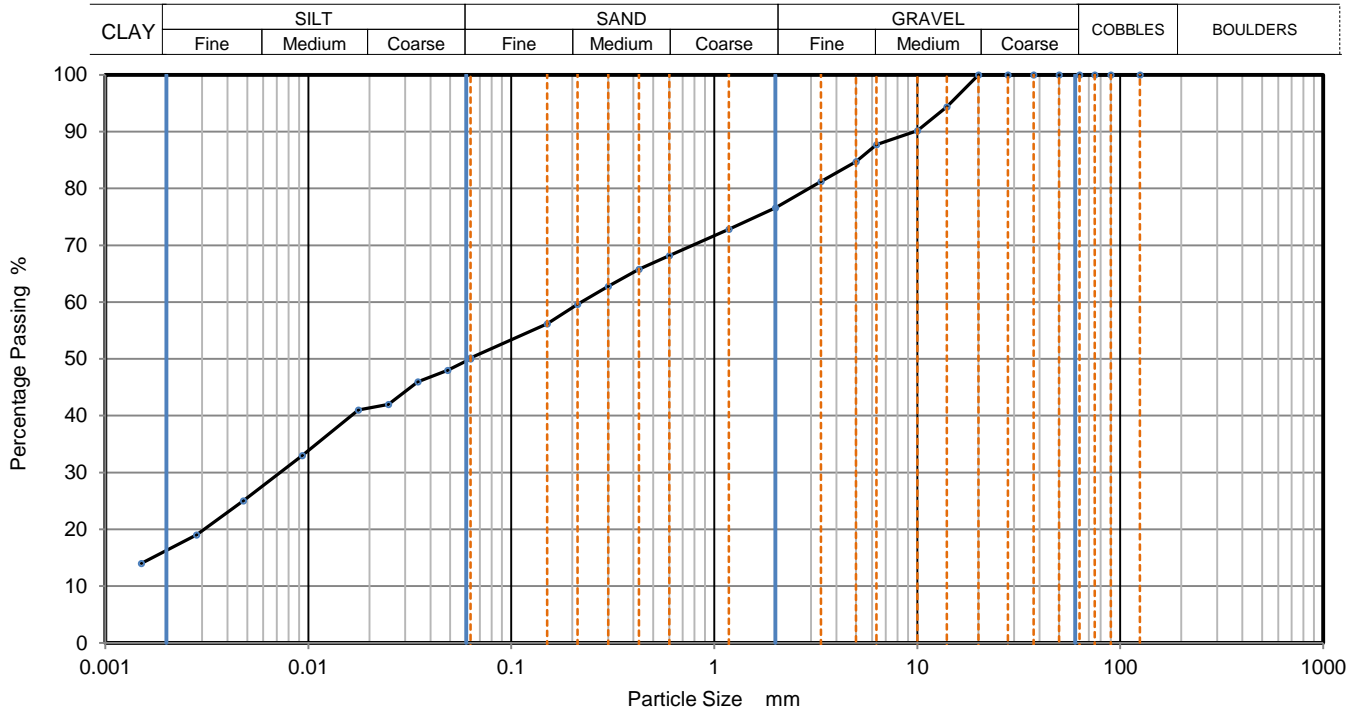
Sample No. 5

Specimen Description Brown sandy slightly gravelly silty CLAY.

Sample Depth (m)	Top	1.50
	Base	

Specimen Reference	6	Specimen Depth	1.5	m	Sample Type	B
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Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111052
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	50
90	100	0.04863	48
75	100	0.03462	46
63	100	0.02481	42
50	100	0.01766	41
37.5	100	0.00935	33
28	100	0.00479	25
20	100	0.00281	19
14	94	0.00151	14
10	90		
6.3	88		
5	85		
3.35	81		
2	77		
1.18	73		
0.6	68		
0.425	66	Particle density (assumed) 2.65 Mg/m3	
0.3	63		
0.212	60		
0.15	56		
0.063	50		

Dry Mass of sample, g 514

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	23.4
Sand	26.4
Silt	34.1
Clay	16.1

Grading Analysis	
D100	mm
D60	mm 0.222
D30	mm 0.00732
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. **ST03**

Site Name **NDA Social Housing Lot 3 - Balally**

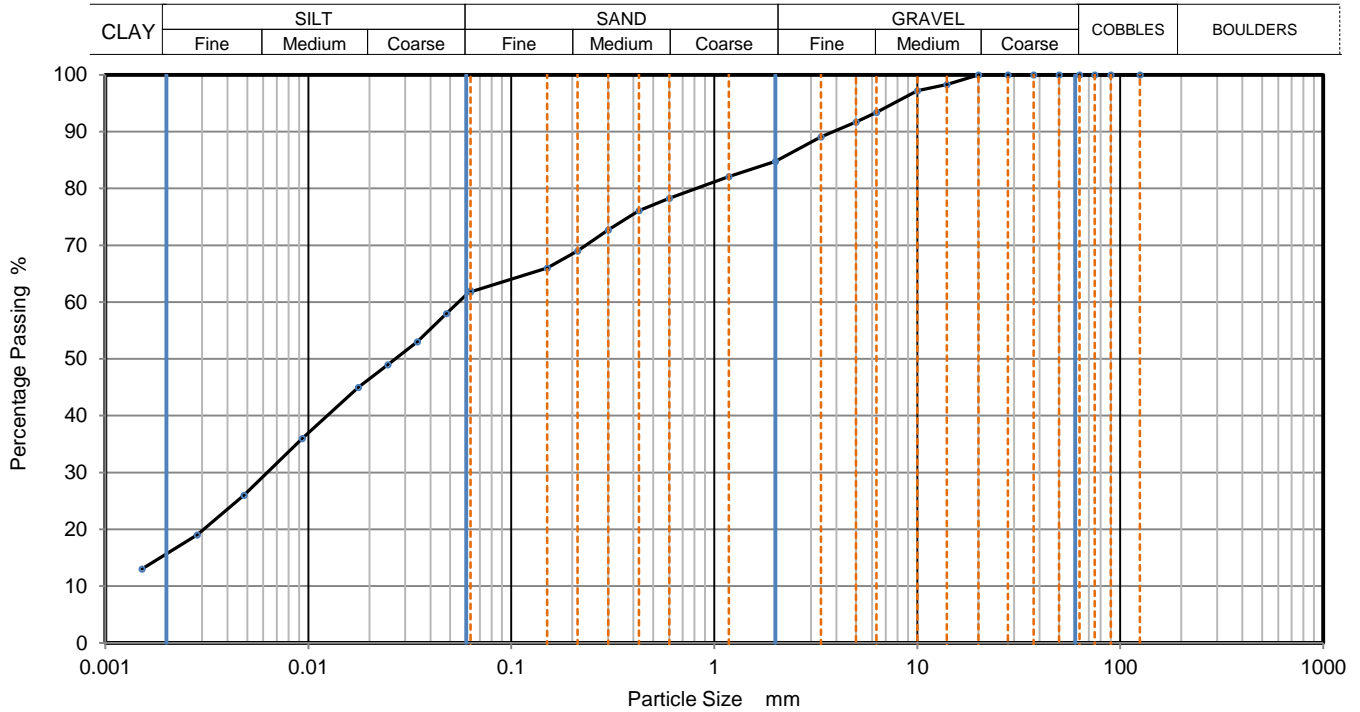
Sample No. **4**

Specimen Description **Brown sandy slightly gravelly silty CLAY.**

Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m	Sample Type	B
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Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111054
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	62
90	100	0.04796	58
75	100	0.03438	53
63	100	0.02464	49
50	100	0.01766	45
37.5	100	0.00935	36
28	100	0.00482	26
20	100	0.00283	19
14	98	0.00151	13
10	97		
6.3	93		
5	92		
3.35	89		
2	85		
1.18	82		
0.6	78	Particle density (assumed) 2.65 Mg/m ³	
0.425	76		
0.3	73		
0.212	69		
0.15	66		
0.063	62		

Dry Mass of sample, g 513

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	15.2
Sand	22.9
Silt	46.3
Clay	15.6

Grading Analysis	
D100	mm
D60	mm 0.056
D30	mm 0.00635
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. **ST04**

Site Name **NDFA Social Housing Lot 3 - Balally**

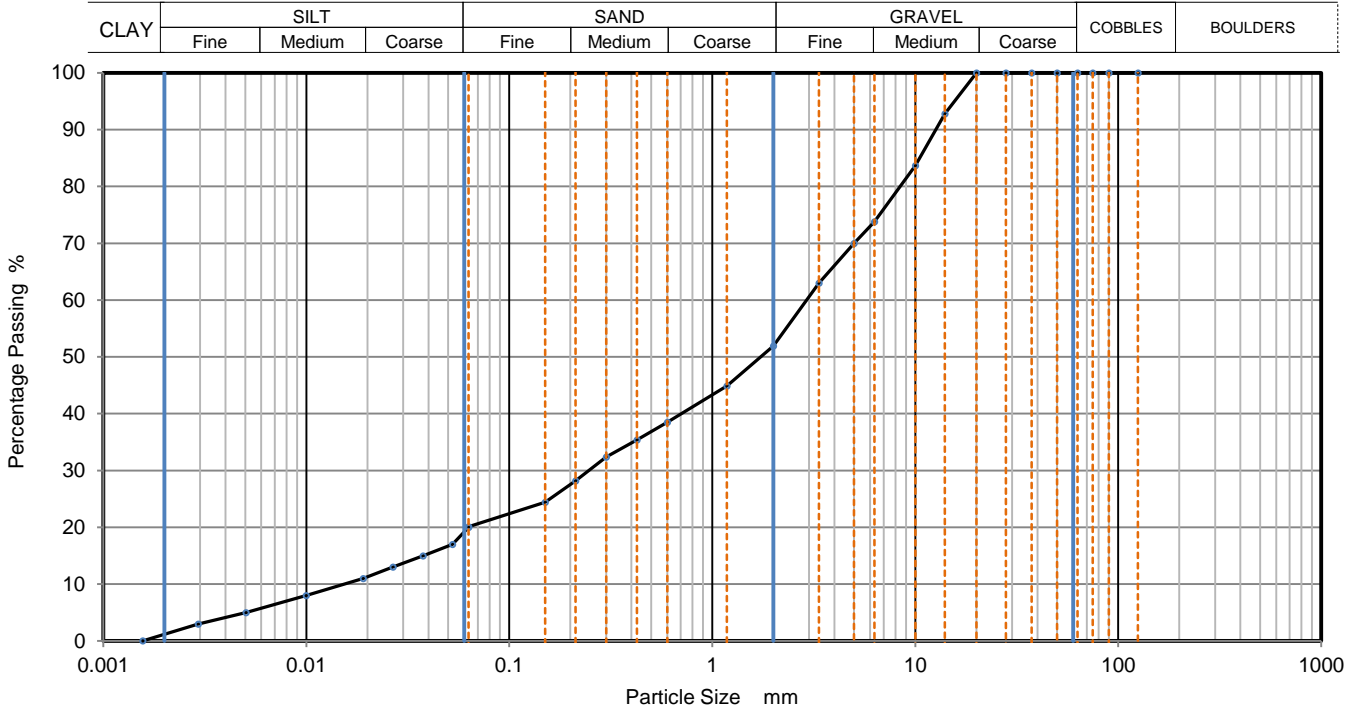
Sample No. **2**

Specimen Description **Brown slightly gravelly clayey fine to coarse SAND.**

Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m	Sample Type	B
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Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111056
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	20
90	100	0.05246	17
75	100	0.03753	15
63	100	0.02669	13
50	100	0.01908	11
37.5	100	0.00996	8
28	100	0.00504	5
20	100	0.00294	3
14	93	0.00156	0
10	84		
6.3	74		
5	70		
3.35	63		
2	52		
1.18	45		
0.6	39	Particle density (assumed) 2.65 Mg/m ³	
0.425	35		
0.3	32		
0.212	28		
0.15	24		
0.063	20		

Dry Mass of sample, g 522

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	48.1
Sand	31.8
Silt	19.1
Clay	1.0

Grading Analysis	
D100	mm
D60	mm 2.92
D30	mm 0.246
D10	mm 0.016
Uniformity Coefficient	180
Curvature Coefficient	1.3

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below



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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. ST05

Site Name NDFA Social Housing Lot 3 - Balally

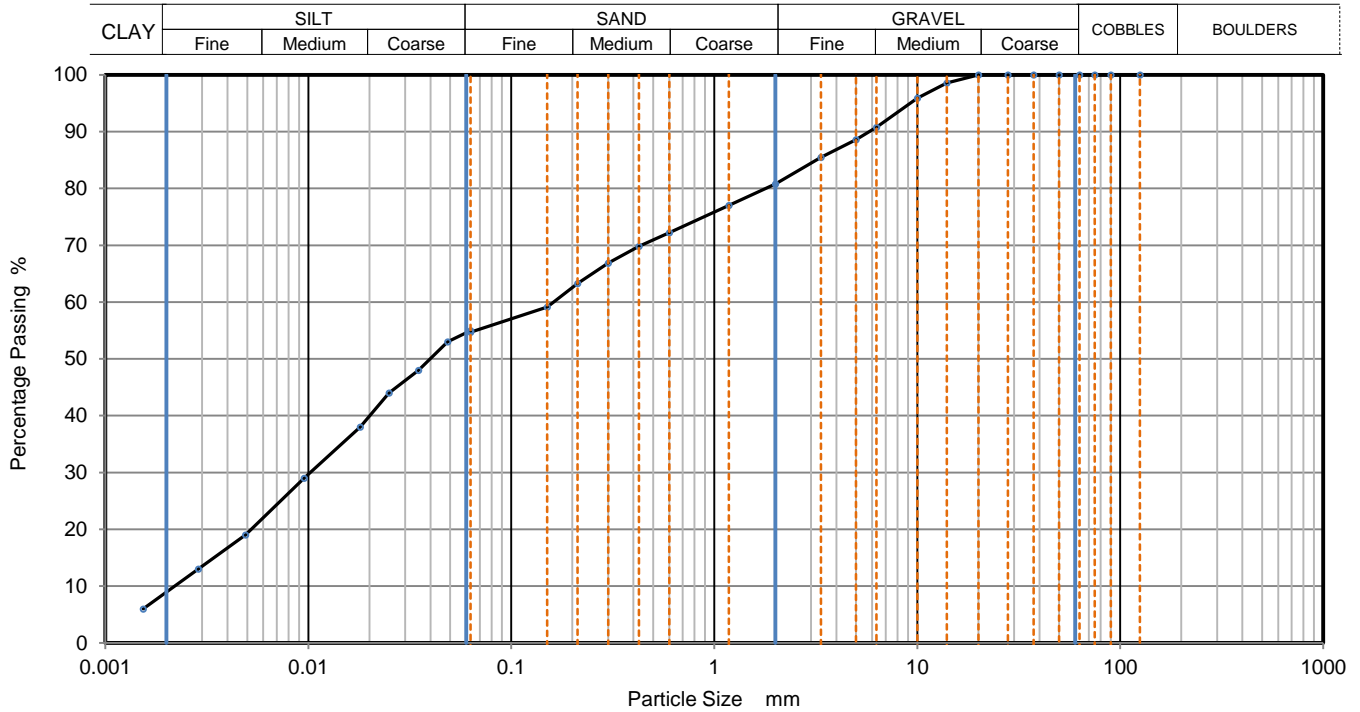
Sample No. 4

Specimen Description Brown slightly gravelly silty fine to coarse SAND.

Sample Depth (m)	Top	0.75
	Base	

Specimen Reference	6	Specimen Depth	0.75	m	Sample Type	B
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Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111058
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	55
90	100	0.04863	53
75	100	0.03485	48
63	100	0.02497	44
50	100	0.01800	38
37.5	100	0.00952	29
28	100	0.00490	19
20	100	0.00288	13
14	99	0.00154	6
10	96		
6.3	91		
5	89		
3.35	86		
2	81		
1.18	77		
0.6	72		
0.425	70	Particle density (assumed) 2.65 Mg/m3	
0.3	67		
0.212	63		
0.15	59		
0.063	55		

Dry Mass of sample, g 477

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	19.2
Sand	26.1
Silt	45.7
Clay	9.0

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	73
Curvature Coefficient	0.27

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. **ST06**

Site Name **NDFA Social Housing Lot 3 - Balally**

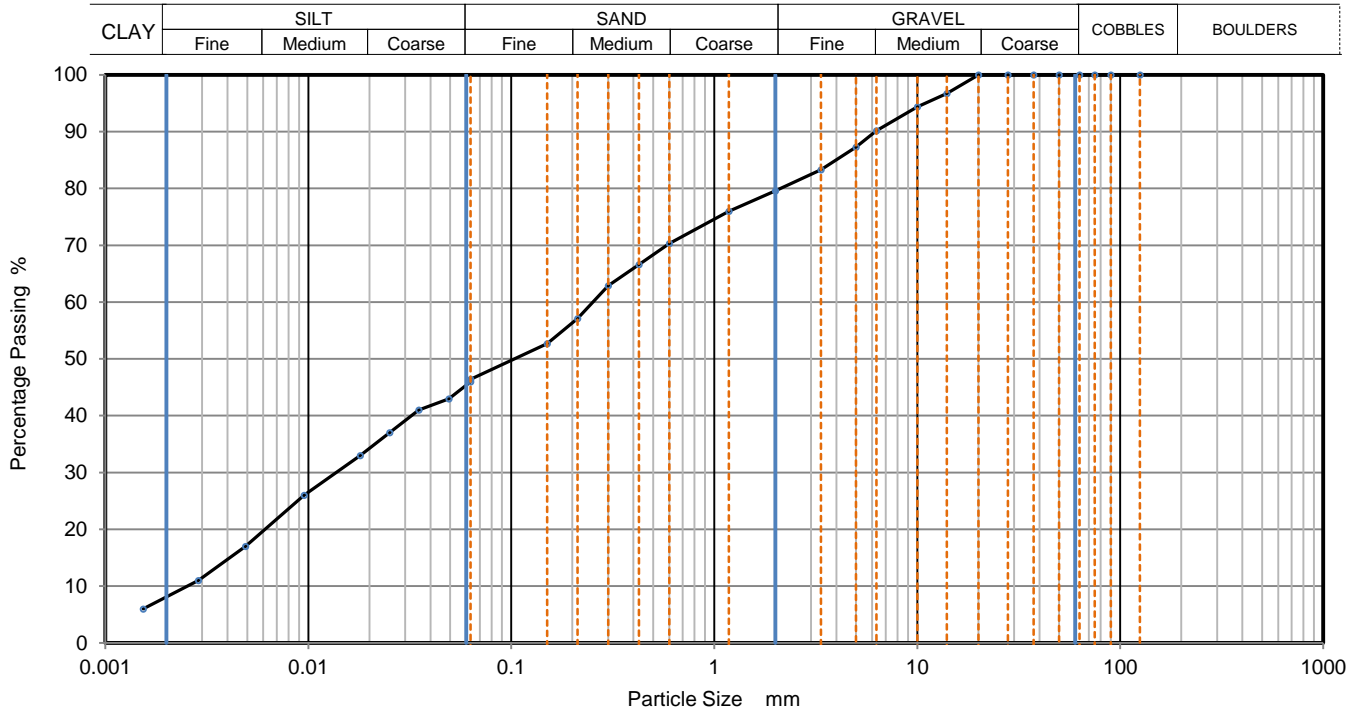
Sample No. **1**

Specimen Description **Brown sandy gravelly clayey SILT.**

Sample Depth (m)	Top	0.50
	Base	

Specimen Reference	8	Specimen Depth	0.5	m	Sample Type	B
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Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111059
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	46
90	100	0.04929	43
75	100	0.03508	41
63	100	0.02513	37
50	100	0.01800	33
37.5	100	0.00952	26
28	100	0.00490	17
20	100	0.00288	11
14	97	0.00154	6
10	94		
6.3	90		
5	87		
3.35	83		
2	80		
1.18	76		
0.6	70		
0.425	67	Particle density (assumed)	
0.3	63	2.65 Mg/m3	
0.212	57		
0.15	53		
0.063	46		

Dry Mass of sample, g 439

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	20.4
Sand	33.2
Silt	38.5
Clay	7.9

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	100
Curvature Coefficient	0.28

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. **ST07**

Site Name **NDFA Social Housing Lot 3 - Balally**

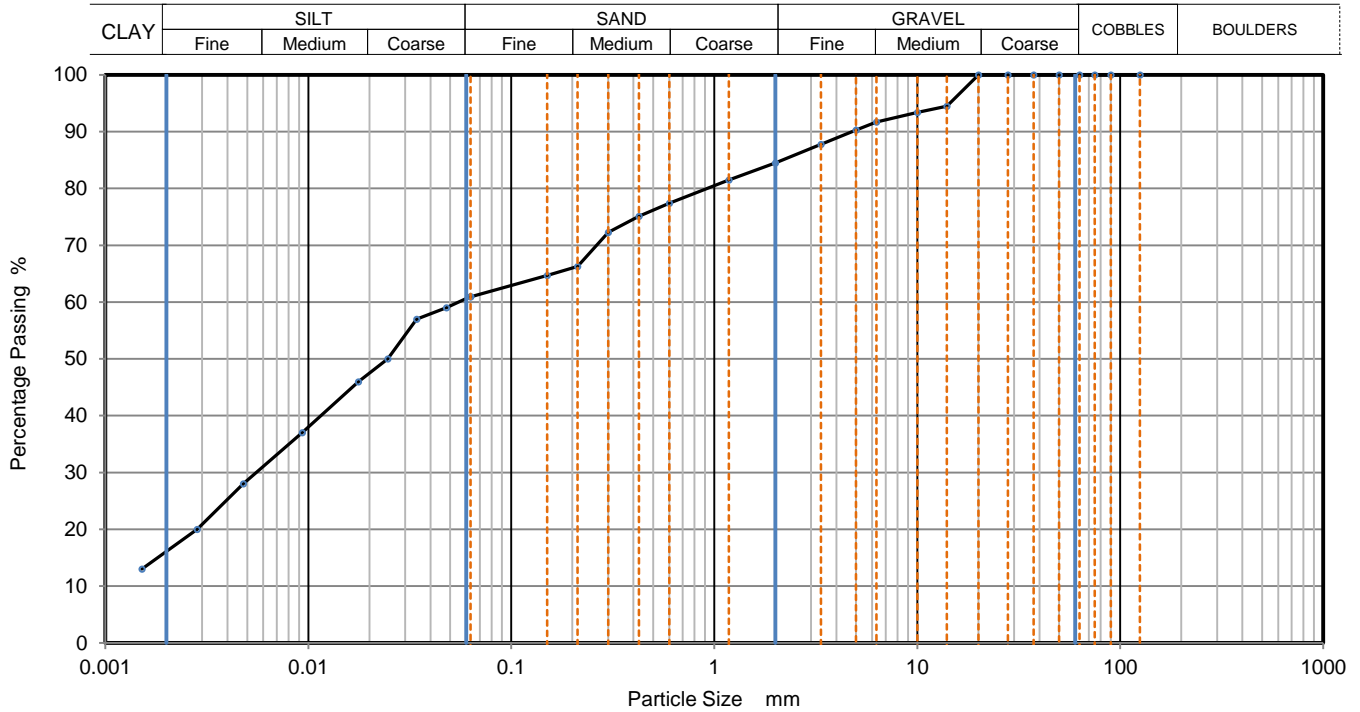
Sample No. **1**

Specimen Description **Brown sandy slightly gravelly silty CLAY.**

Sample Depth (m)	Top	0.50
	Base	

Specimen Reference	8	Specimen Depth	0.5	m	Sample Type	B
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Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111060
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	61
90	100	0.04796	59
75	100	0.03415	57
63	100	0.02464	50
50	100	0.01766	46
37.5	100	0.00935	37
28	100	0.00479	28
20	100	0.00283	20
14	95	0.00151	13
10	93		
6.3	92		
5	90		
3.35	88		
2	85		
1.18	82		
0.6	77	Particle density (assumed) 2.65 Mg/m ³	
0.425	75		
0.3	72		
0.212	66		
0.15	65		
0.063	61		

Dry Mass of sample, g **517**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	15.5
Sand	23.5
Silt	45.0
Clay	16.0

Grading Analysis	
D100	mm
D60	mm 0.0562
D30	mm 0.00547
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. **ST08**

Site Name **NDFA Social Housing Lot 3 - Balally**

Sample No. **4**

Specimen Description **Brown sandy slightly gravelly silty CLAY.**

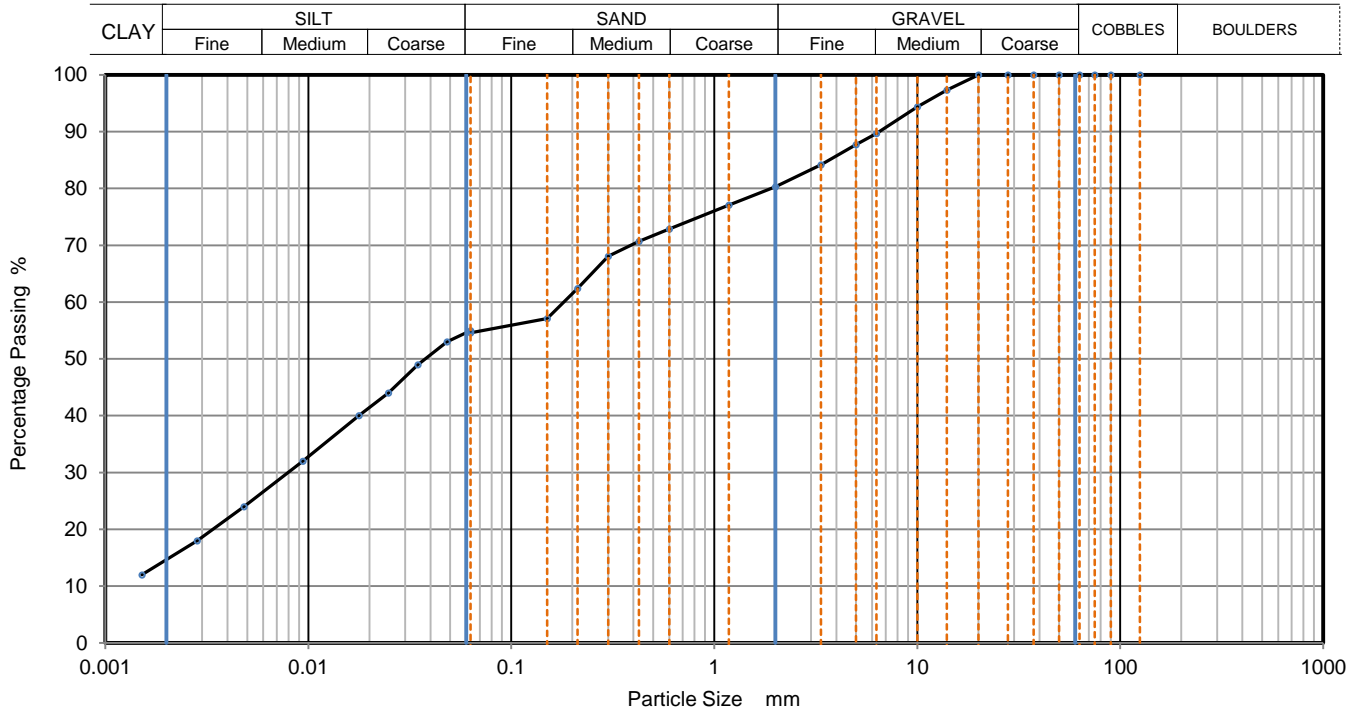
Sample Depth (m)	Top	0.90
	Base	

Specimen Reference	6	Specimen Depth	0.9	m
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Sample Type **B**

Test Method **BS1377:Part 2:1990, clauses 9.2 and 9.5**

KeyLAB ID **Caus2023111062**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	55
90	100	0.04829	53
75	100	0.03462	49
63	100	0.02481	44
50	100	0.01777	40
37.5	100	0.00941	32
28	100	0.00482	24
20	100	0.00283	18
14	97	0.00151	12
10	94		
6.3	90		
5	88		
3.35	84		
2	80		
1.18	77		
0.6	73		
0.425	71	Particle density (assumed) 2.65 Mg/m ³	
0.3	68		
0.212	62		
0.15	57		
0.063	55		

Dry Mass of sample, g **506**

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	19.7
Sand	25.6
Silt	39.9
Clay	14.8

Grading Analysis	
D100	mm
D60	mm 0.181
D30	mm 0.00774
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. TP01

Site Name NDFA Social Housing Lot 3 - Balally

Sample No. 4

Specimen Description Brown gravelly slightly clayey fine to coarse SAND.

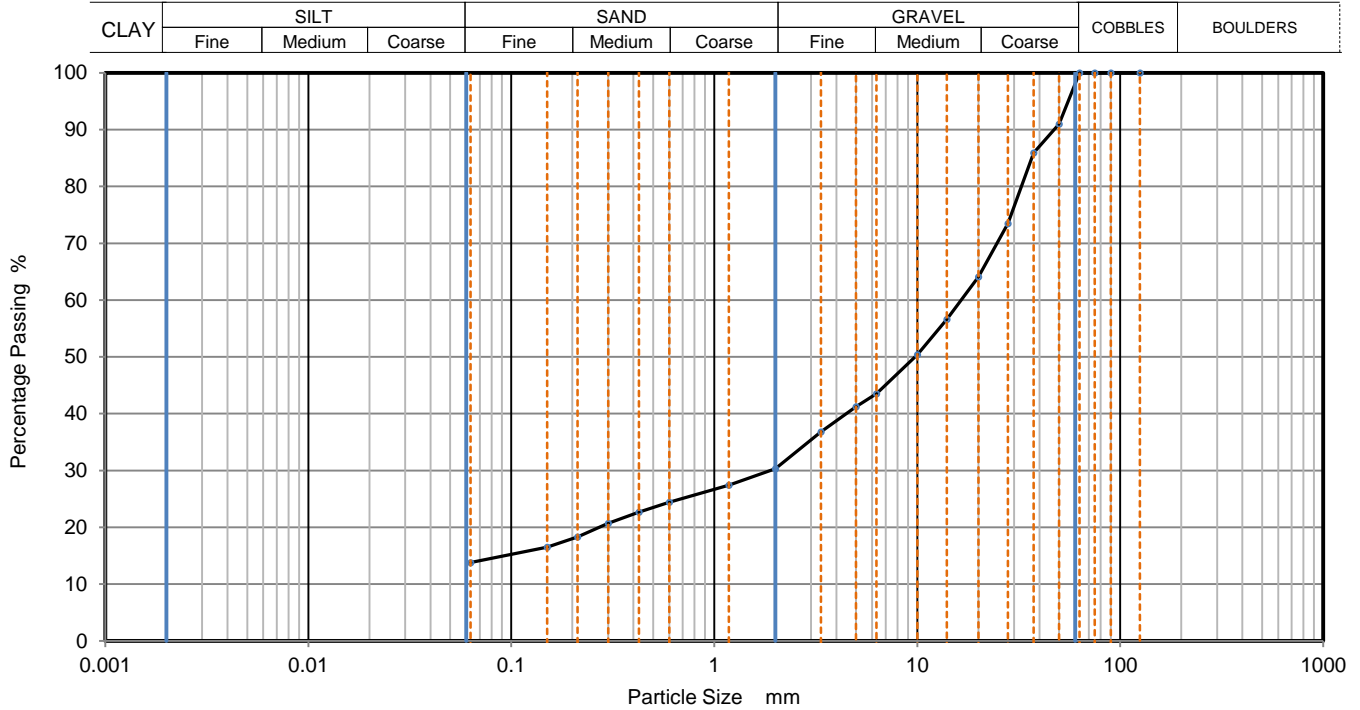
Sample Depth (m) Top 1.00
Base

Specimen Reference 6 Specimen Depth 1 m

Sample Type B

Test Method BS1377:Part 2:1990, clause 9.2

KeyLAB ID Caus2023111064



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	91		
37.5	86		
28	74		
20	64		
14	57		
10	50		
6.3	44		
5	41		
3.35	37		
2	30		
1.18	27		
0.6	24		
0.425	23		
0.3	21		
0.212	18		
0.15	17		
0.063	14		

Dry Mass of sample, g 3967

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	69.7
Sand	16.6
Fines <0.063mm	14.0

Grading Analysis	
D100	mm
D60	mm 16.5
D30	mm 1.89
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. TP02

Site Name NDFA Social Housing Lot 3 - Balally

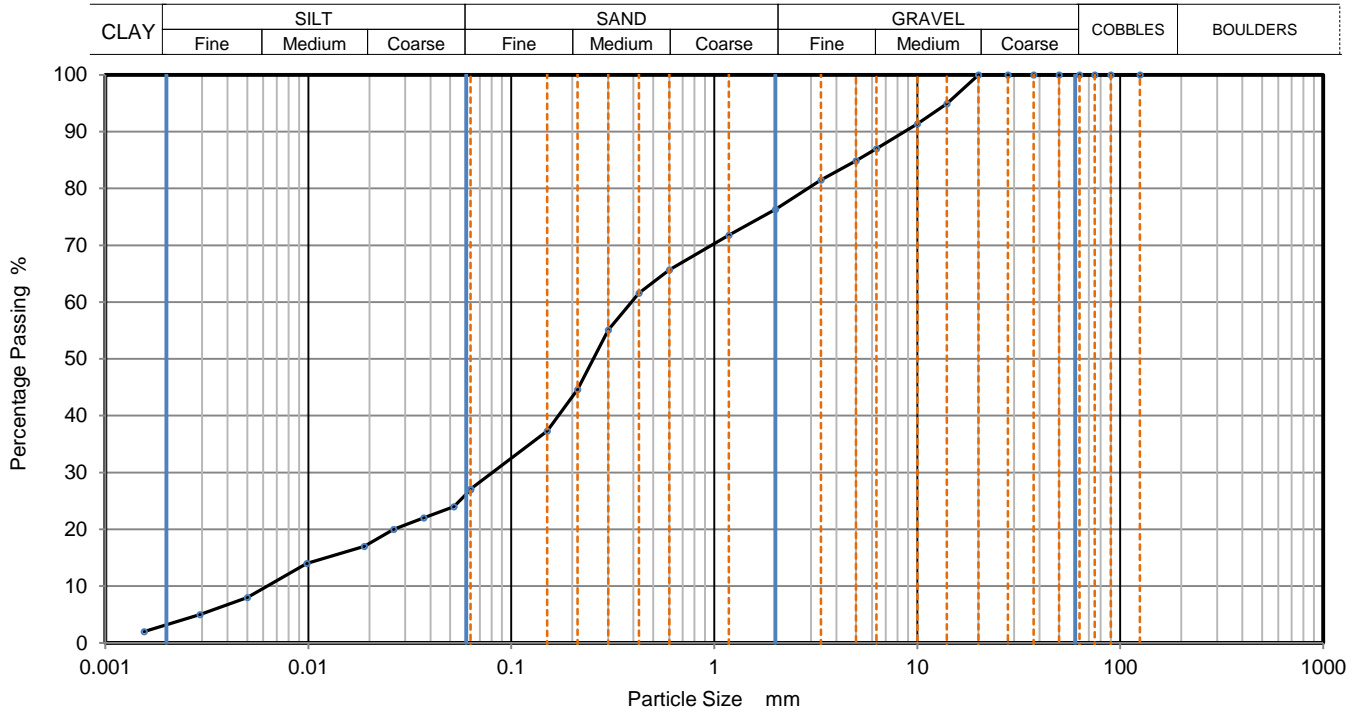
Sample No. 4

Specimen Description Brown slightly gravelly clayey fine to coarse SAND.

Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m	Sample Type	B
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Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111066
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	27
90	100	0.05215	24
75	100	0.03710	22
63	100	0.02638	20
50	100	0.01887	17
37.5	100	0.00986	14
28	100	0.00501	8
20	100	0.00292	5
14	95	0.00155	2
10	91		
6.3	87		
5	85		
3.35	82		
2	76		
1.18	72		
0.6	66	Particle density (assumed) 2.65 Mg/m3	
0.425	62		
0.3	55		
0.212	45		
0.15	37		
0.063	27		

Dry Mass of sample, g 549

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	23.7
Sand	49.2
Silt	24.1
Clay	3.0

Grading Analysis	
D100	mm
D60	mm 0.39
D30	mm 0.0804
D10	mm 0.00614
Uniformity Coefficient	63
Curvature Coefficient	2.7

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. TP03

Site Name NDFA Social Housing Lot 3 - Balally

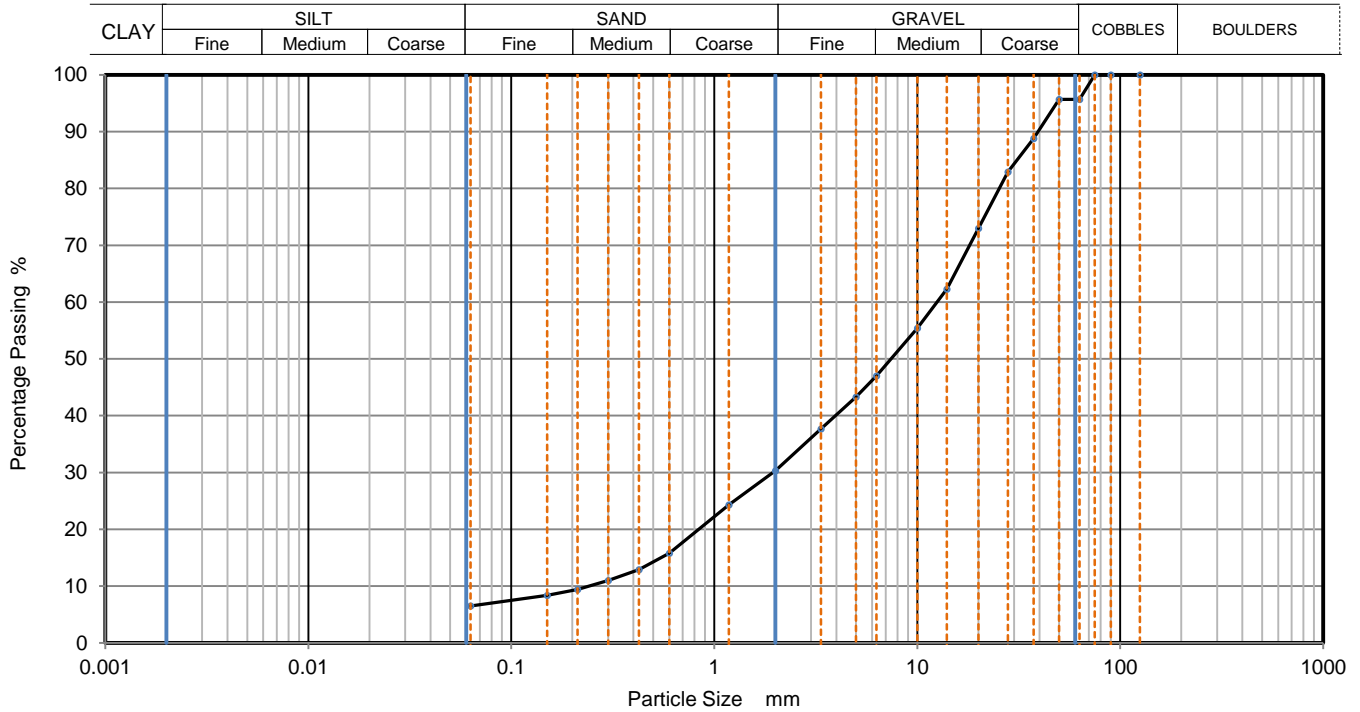
Sample No. 4

Specimen Description Brown slightly sandy slightly silty subangular fine to coarse GRAVEL.

Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m	Sample Type	B
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Test Method	BS1377:Part 2:1990, clause 9.2	KeyLAB ID	Caus2023111068
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	96		
50	96		
37.5	89		
28	83		
20	73		
14	62		
10	55		
6.3	47		
5	43		
3.35	38		
2	30		
1.18	24		
0.6	16		
0.425	13		
0.3	11		
0.212	9		
0.15	8		
0.063	7		

Dry Mass of sample, g 13661

Sample Proportions	% dry mass
Cobbles	4.3
Gravel	65.4
Sand	23.8
Fines <0.063mm	7.0

Grading Analysis	
D100	mm
D60	mm 12.5
D30	mm 1.95
D10	mm 0.243
Uniformity Coefficient	52
Curvature Coefficient	1.3

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. **TP04**

Site Name **NDFA Social Housing Lot 3 - Balally**

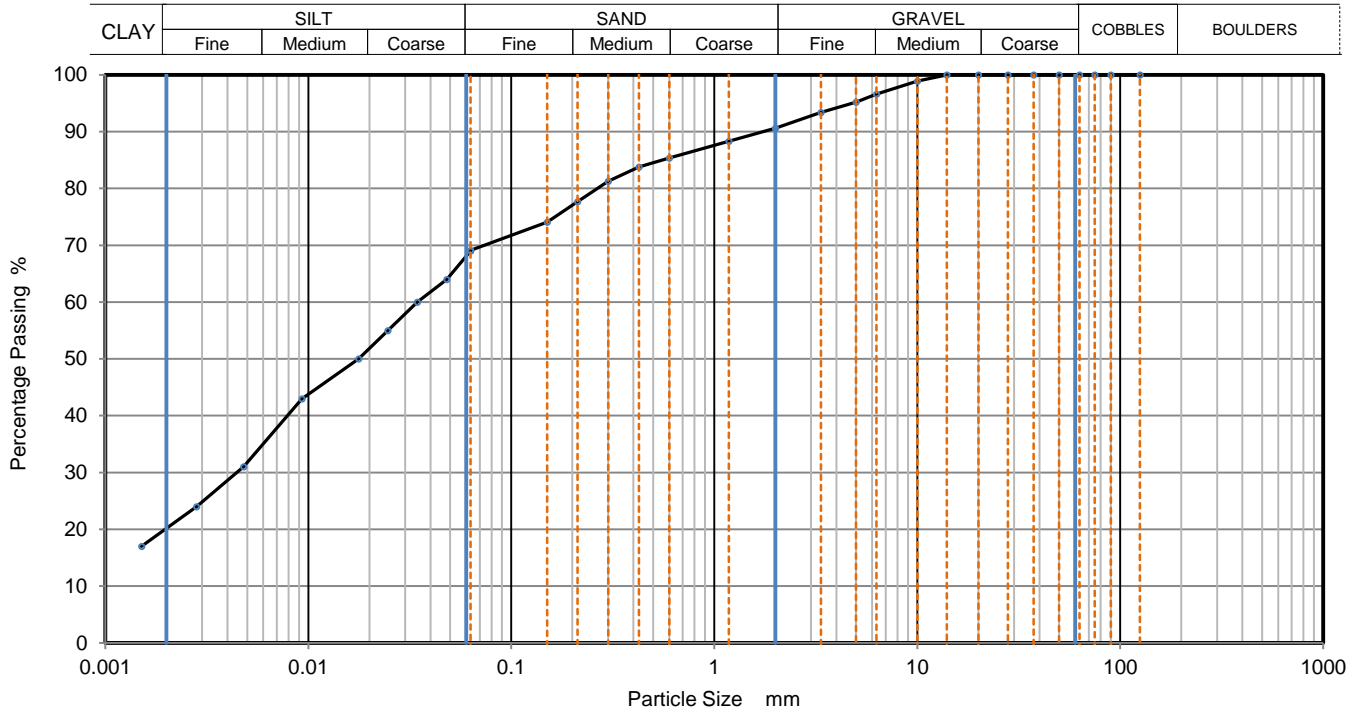
Sample No. **4**

Specimen Description **Brown sandy slightly gravelly silty CLAY.**

Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m	Sample Type	B
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Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.5	KeyLAB ID	Caus2023111070
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Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	69
90	100	0.04803	64
75	100	0.03443	60
63	100	0.02468	55
50	100	0.01768	50
37.5	100	0.00930	43
28	100	0.00479	31
20	100	0.00282	24
14	100	0.00151	17
10	99		
6.3	97		
5	95		
3.35	93		
2	91		
1.18	88		
0.6	85		
0.425	84	Particle density (assumed) 2.65 Mg/m ³	
0.3	81		
0.212	78		
0.15	74		
0.063	69		

Dry Mass of sample, g 505

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	9.4
Sand	21.5
Silt	49.2
Clay	19.9

Grading Analysis	
D100	mm
D60	mm 0.0355
D30	mm 0.00446
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. TP05

Site Name NDFA Social Housing Lot 3 - Balally

Sample No. 4

Specimen Description Brown sandy slightly gravelly silty CLAY.

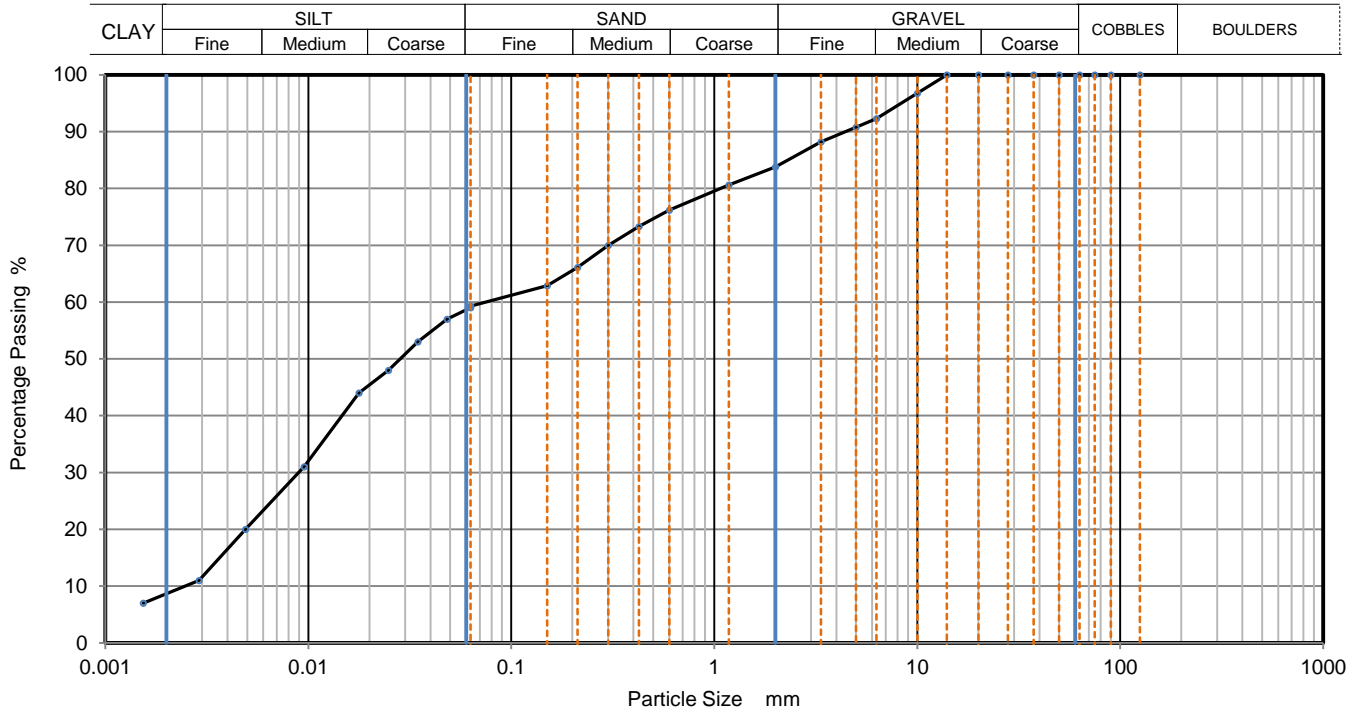
Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m
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Sample Type B

Test Method BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID Caus2023111072



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.06300	59
90	100	0.04829	57
75	100	0.03462	53
63	100	0.02481	48
50	100	0.01777	44
37.5	100	0.00952	31
28	100	0.00490	20
20	100	0.00289	11
14	100	0.00154	7
10	97		
6.3	92		
5	91		
3.35	88		
2	84		
1.18	81		
0.6	76		
0.425	73	Particle density (assumed) 2.65 Mg/m3	
0.3	70		
0.212	66		
0.15	63		
0.063	59		

Dry Mass of sample, g 460

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	16.2
Sand	24.5
Silt	50.9
Clay	8.4

Grading Analysis	
D100	mm
D60	mm 0.0745
D30	mm 0.0091
D10	mm 0.00251
Uniformity Coefficient	30
Curvature Coefficient	0.44

Remarks
Preparation and testing in accordance with BS1377-2 :1990 unless noted below

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PARTICLE SIZE DISTRIBUTION

Job Ref **23-0881C**

Borehole/Pit No. TP06

Site Name NDFA Social Housing Lot 3 - Balally

Sample No. 4

Specimen Description Brown sandy slightly gravelly silty CLAY.

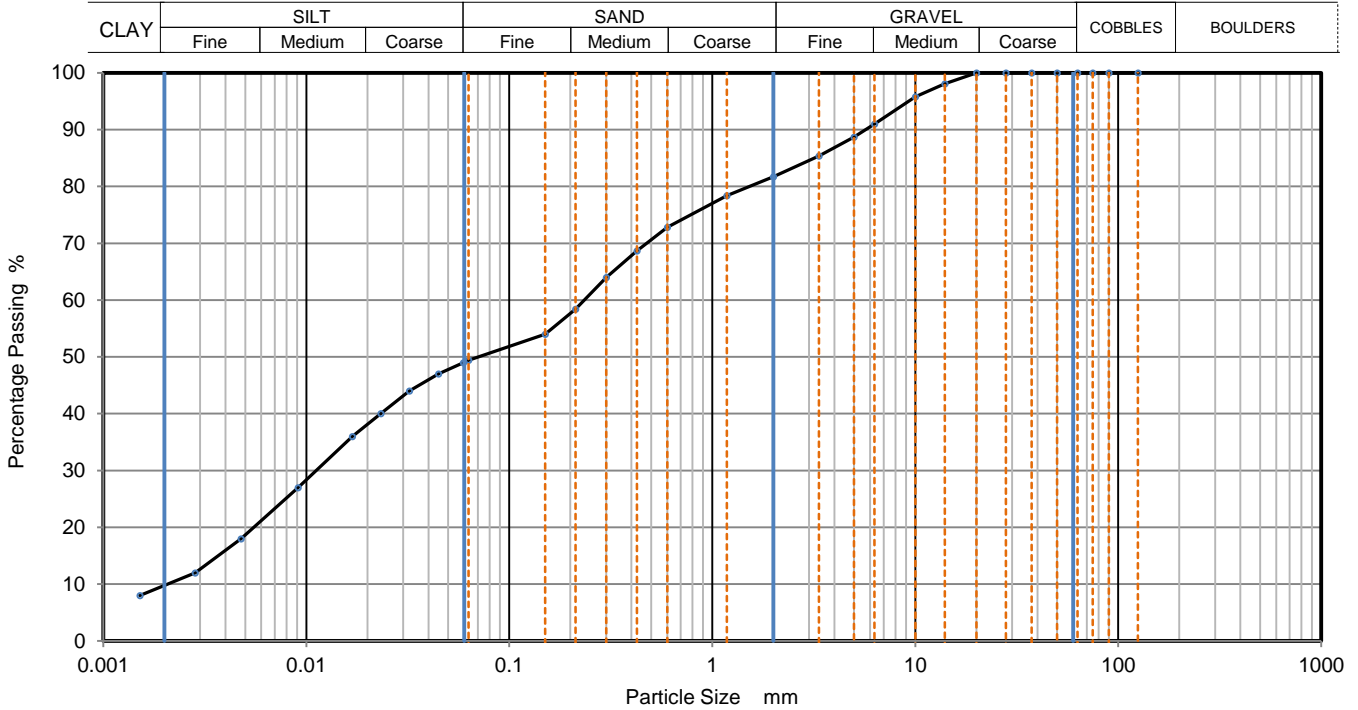
Sample Depth (m)	Top	1.00
	Base	

Specimen Reference	6	Specimen Depth	1	m
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Sample Type B

Test Method BS1377:Part 2:1990, clauses 9.2 and 9.5

KeyLAB ID Caus2023111074



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.05931	49
90	100	0.04482	47
75	100	0.03220	44
63	100	0.02330	40
50	100	0.01684	36
37.5	100	0.00912	27
28	100	0.00476	18
20	100	0.00283	12
14	98	0.00151	8
10	96		
6.3	91		
5	89		
3.35	85		
2	82		
1.18	78		
0.6	73		
0.425	69	Particle density (assumed) 2.65 Mg/m3	
0.3	64		
0.212	58		
0.15	54		
0.063	49		

Dry Mass of sample, g

447

Sample Proportions	% dry mass
Cobbles	0.0
Gravel	18.3
Sand	32.3
Silt	39.9
Clay	9.5

Grading Analysis	
D100	mm
D60	mm 0.234
D30	mm 0.0109
D10	mm 0.00215
Uniformity Coefficient	110
Curvature Coefficient	0.24

Remarks

Preparation and testing in accordance with BS1377-2 :1990 unless noted below



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Approved

Stephen Watson



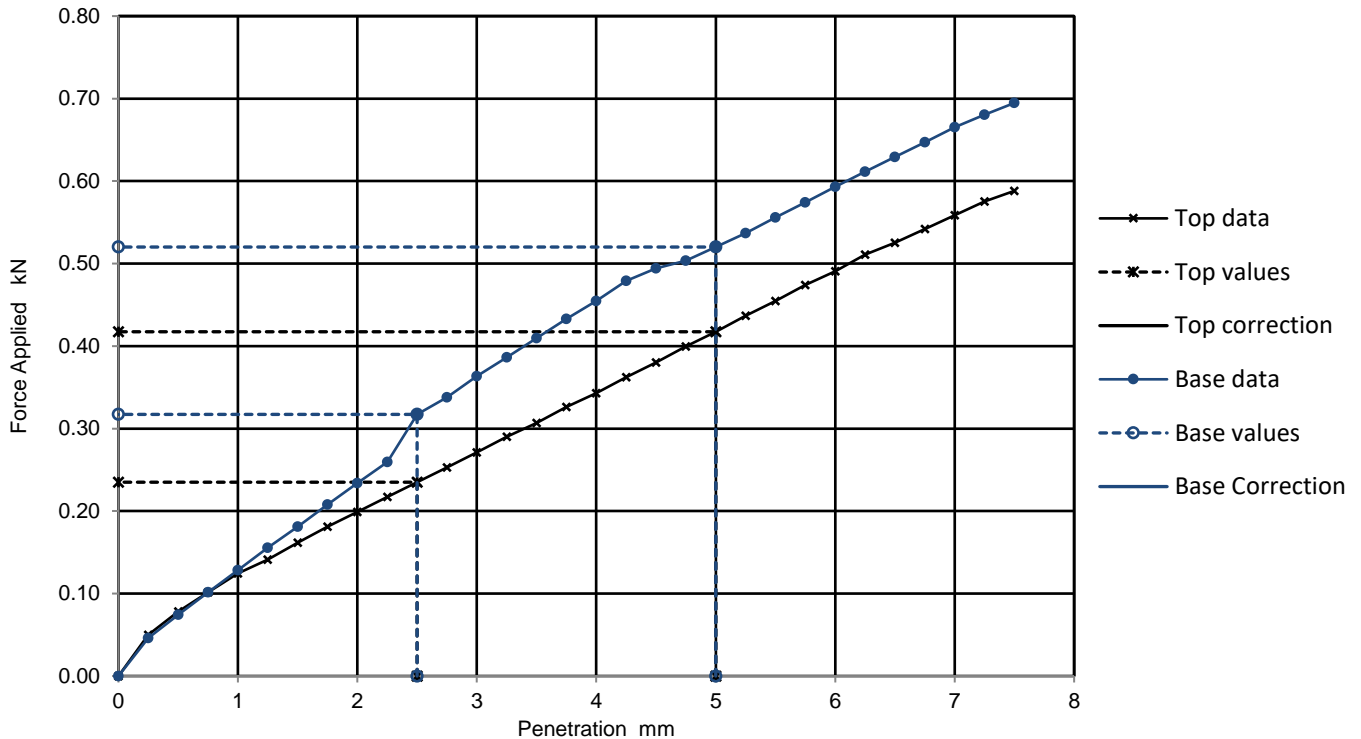
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	IT01A
Sample No.	3
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111045
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	5 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	1.91 Mg/m3	Surcharge applied
	Dry density	1.52 Mg/m3	4.5 kg
	Moisture content	25 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	1.8	2.1	2.1		25
BASE	No	2.4	2.6	2.6		25

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





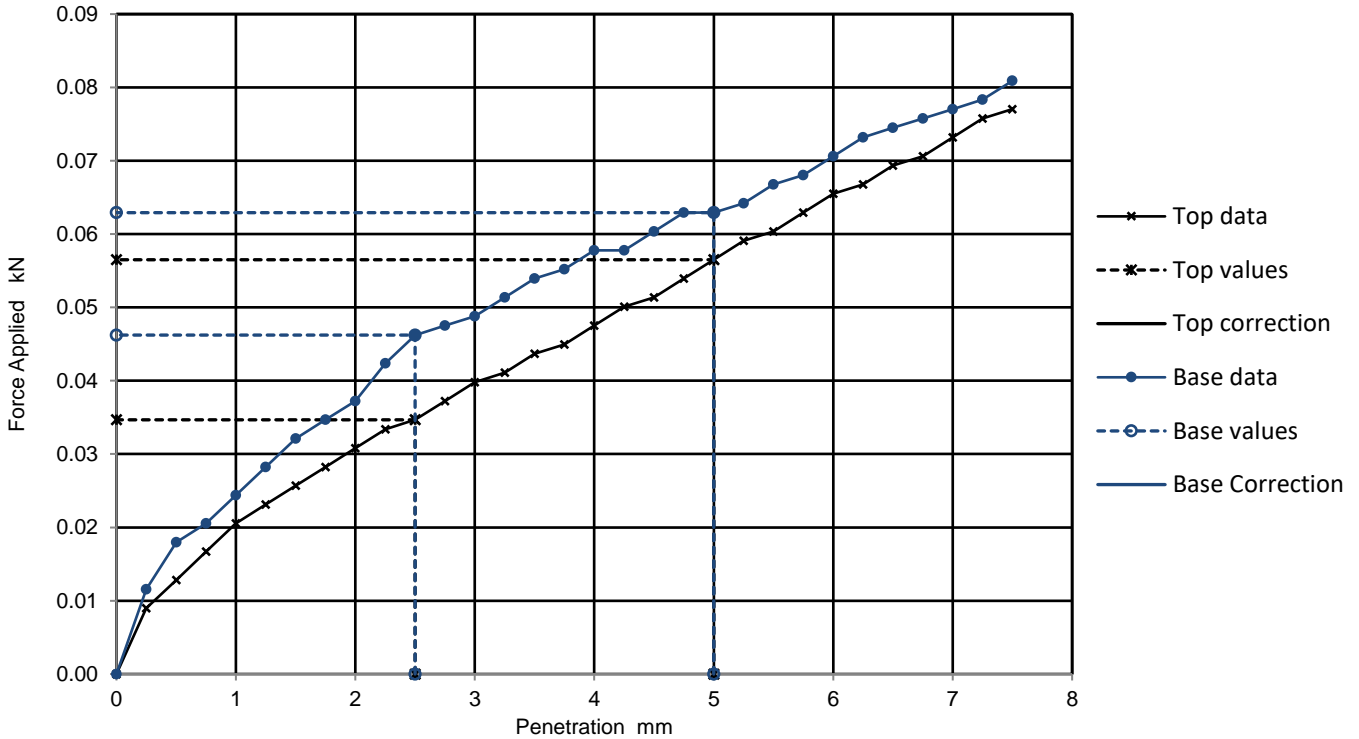
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	IT02
Site Name	NDA Social Housing Lot 3 - Balally
Sample No.	3
Soil Description	Brown sandy slightly gravelly silty CLAY.
Depth m	0.50
Specimen Reference	Specimen Depth m
Sample Type	B
Specimen Description	Brown sandy slightly gravelly silty CLAY.
KeyLAB ID	Caus2023111047
Test Method	BS1377 : Part 4 : 1990, clause 7
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	6 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 1.86 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.45 Mg/m3		3 kPa
	Moisture content 29 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.3	0.3	0.3	29	
BASE	No	0.4	0.3	0.4		

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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California Bearing Ratio (CBR)

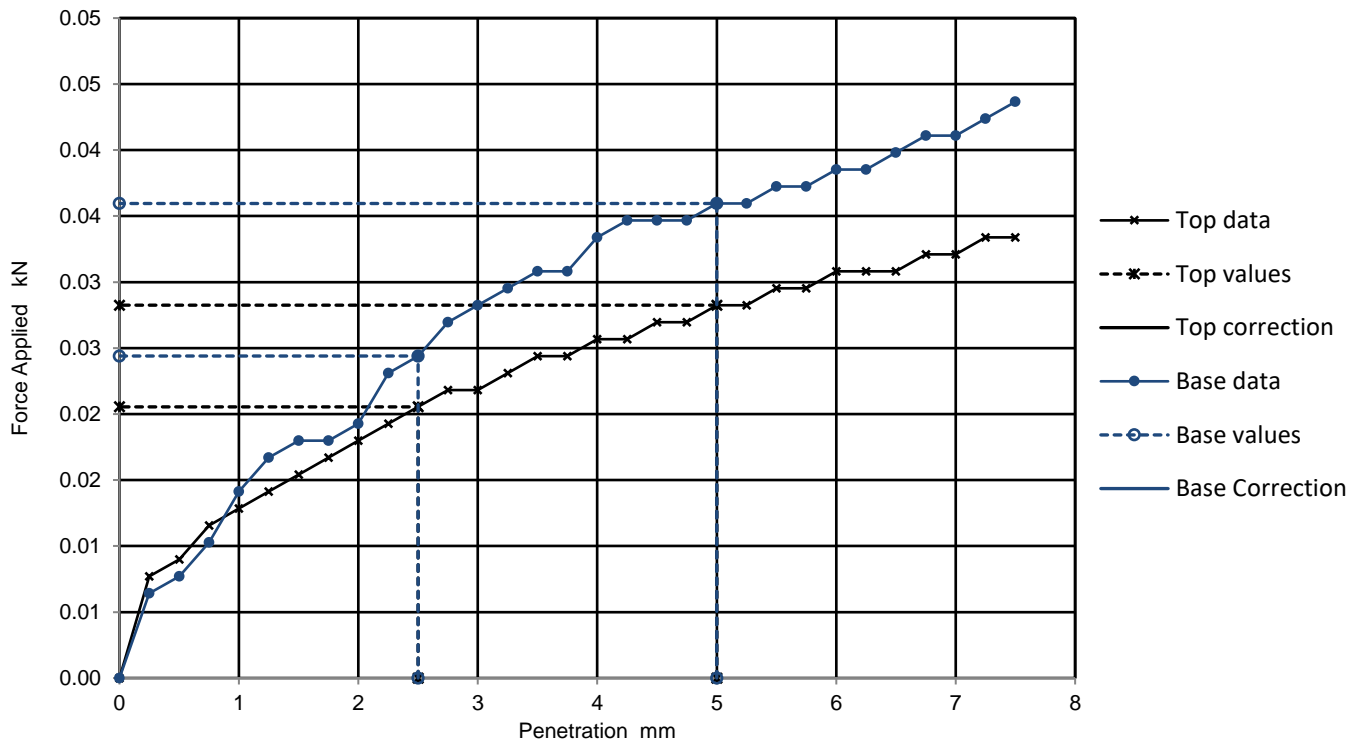
Job Ref	23-0881C
Borehole/Pit No.	ST01
Sample No.	3
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111049
CBR Test Number	1

Site Name	NDFA Social Housing Lot 3 - Balally	
Soil Description	Brown sandy slightly gravelly clayey SILT.	
Specimen Reference	Specimen Depth	m
Specimen Description	Brown sandy slightly gravelly clayey SILT.	
Test Method	BS1377 : Part 4 : 1990, clause 7	

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	34 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	1.93 Mg/m3	Surcharge applied
	Dry density	1.56 Mg/m3	4.5 kg
	Moisture content	24 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.2	0.1	0.2	0.2	24
BASE	No	0.2	0.2	0.2		25

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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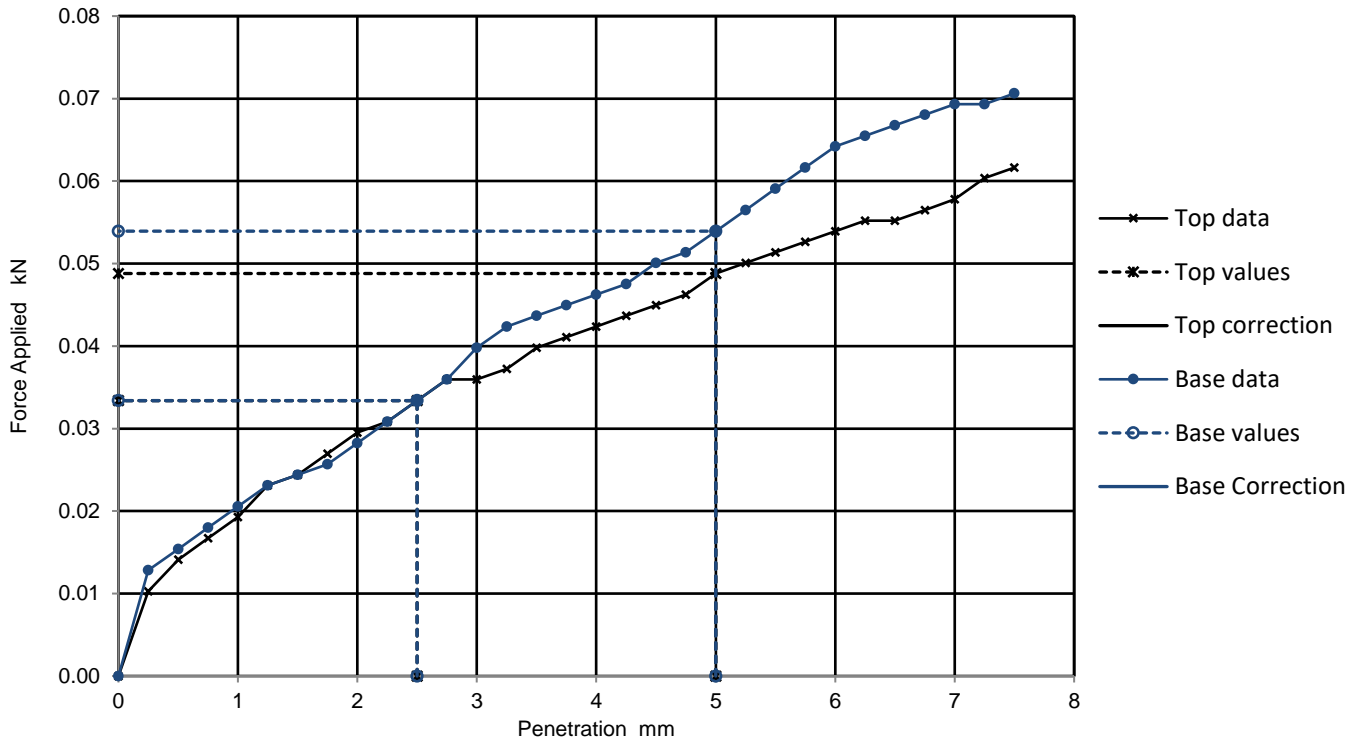
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	ST02
Site Name	NDA Social Housing Lot 3 - Balally
Sample No.	3
Soil Description	Brown gravelly clayey fine to coarse SAND.
Depth m	0.50
Specimen Reference	Specimen Depth m
Sample Type	B
Specimen Description	Brown gravelly clayey fine to coarse SAND.
KeyLAB ID	Caus2023111051
Test Method	BS1377 : Part 4 : 1990, clause 7
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	16 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 2.12 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.85 Mg/m3		3 kPa
	Moisture content 15 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.3	0.2	0.3	0.3	15
BASE	No	0.3	0.3	0.3		17

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





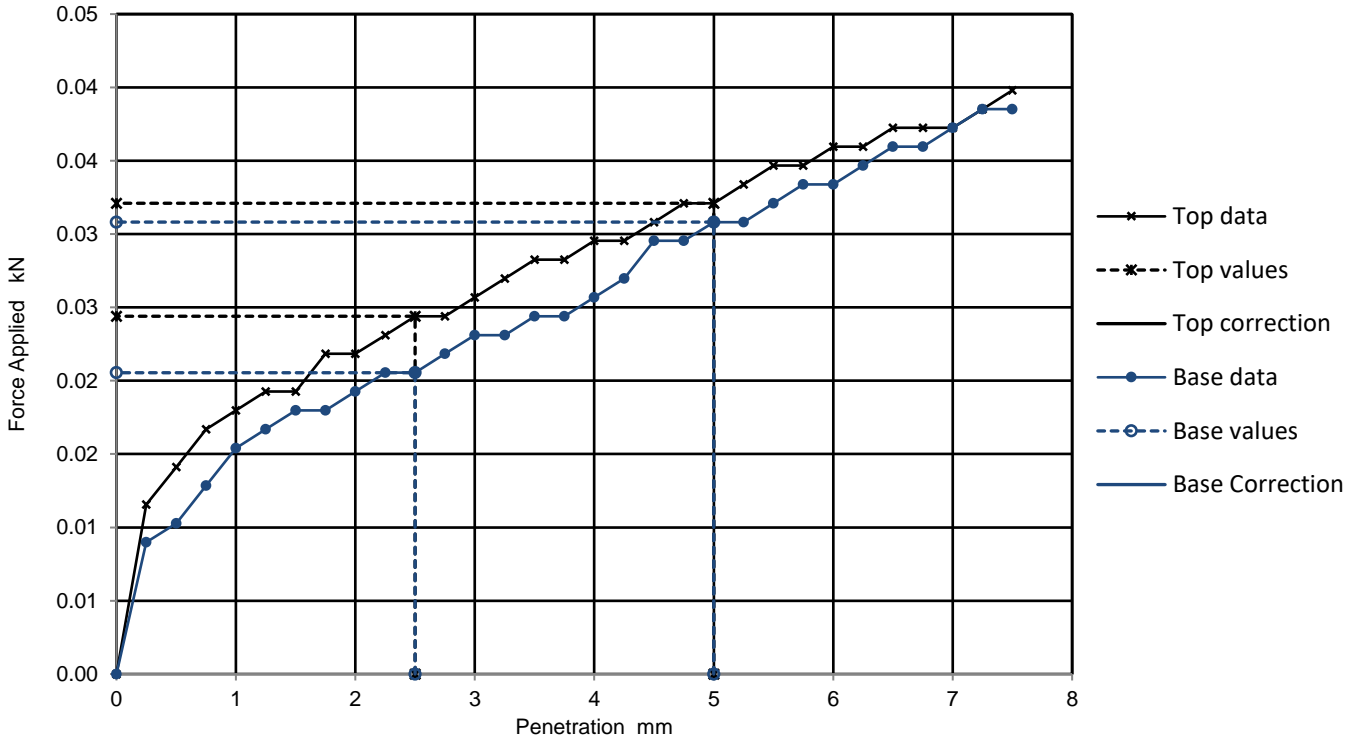
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	ST03
Site Name	NDA Social Housing Lot 3 - Balally
Sample No.	3
Soil Description	Brown sandy gravelly silty CLAY.
Depth m	0.50
Specimen Reference	Specimen Depth m
Sample Type	B
Specimen Description	Brown sandy gravelly silty CLAY.
KeyLAB ID	Caus2023111053
Test Method	BS1377 : Part 4 : 1990, clause 7
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	21 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 2.01 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.67 Mg/m3		3 kPa
	Moisture content 21 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.2	0.2	0.2	0.2	21
BASE	No	0.2	0.2	0.2		21

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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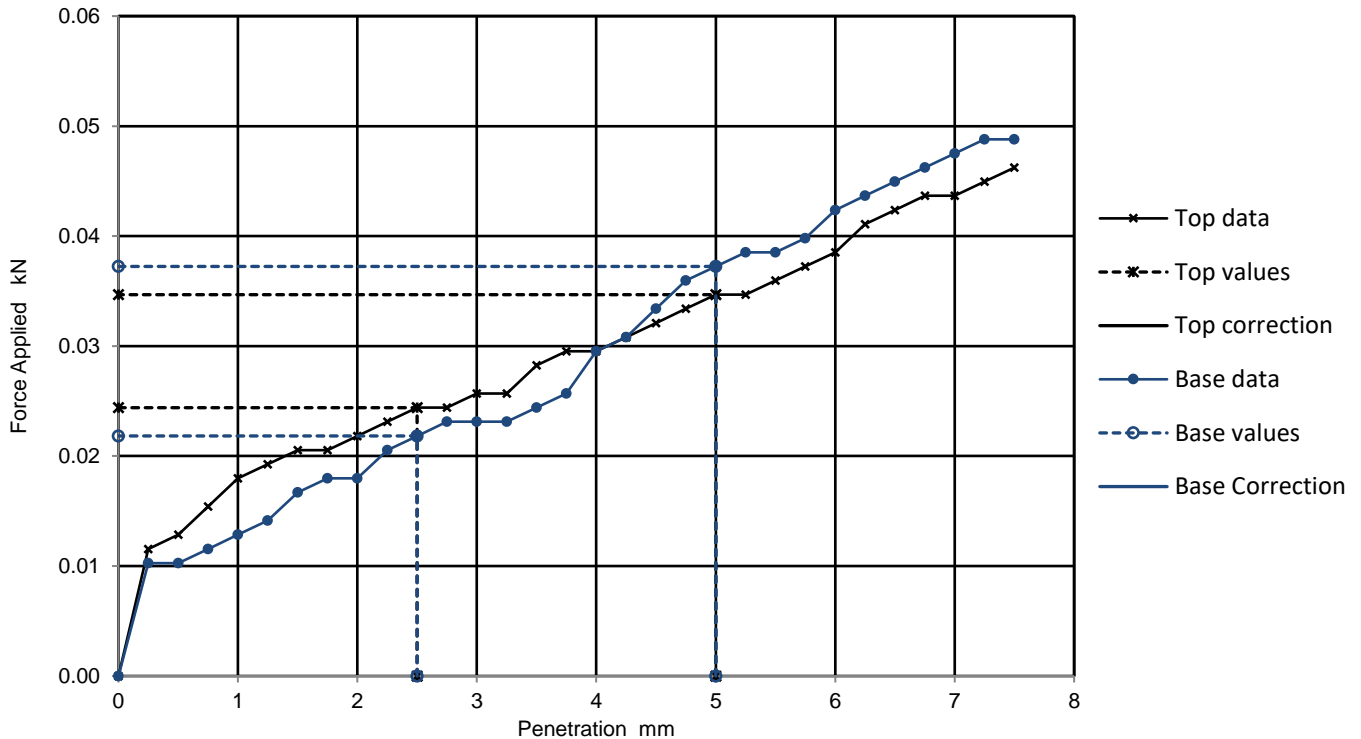
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	ST04
Sample No.	1
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111055
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	11 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	2.12 Mg/m3	Surcharge applied
	Dry density	1.82 Mg/m3	4.5 kg
	Moisture content	16 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.2	0.2	0.2	0.2	16
BASE	No	0.2	0.2	0.2		16

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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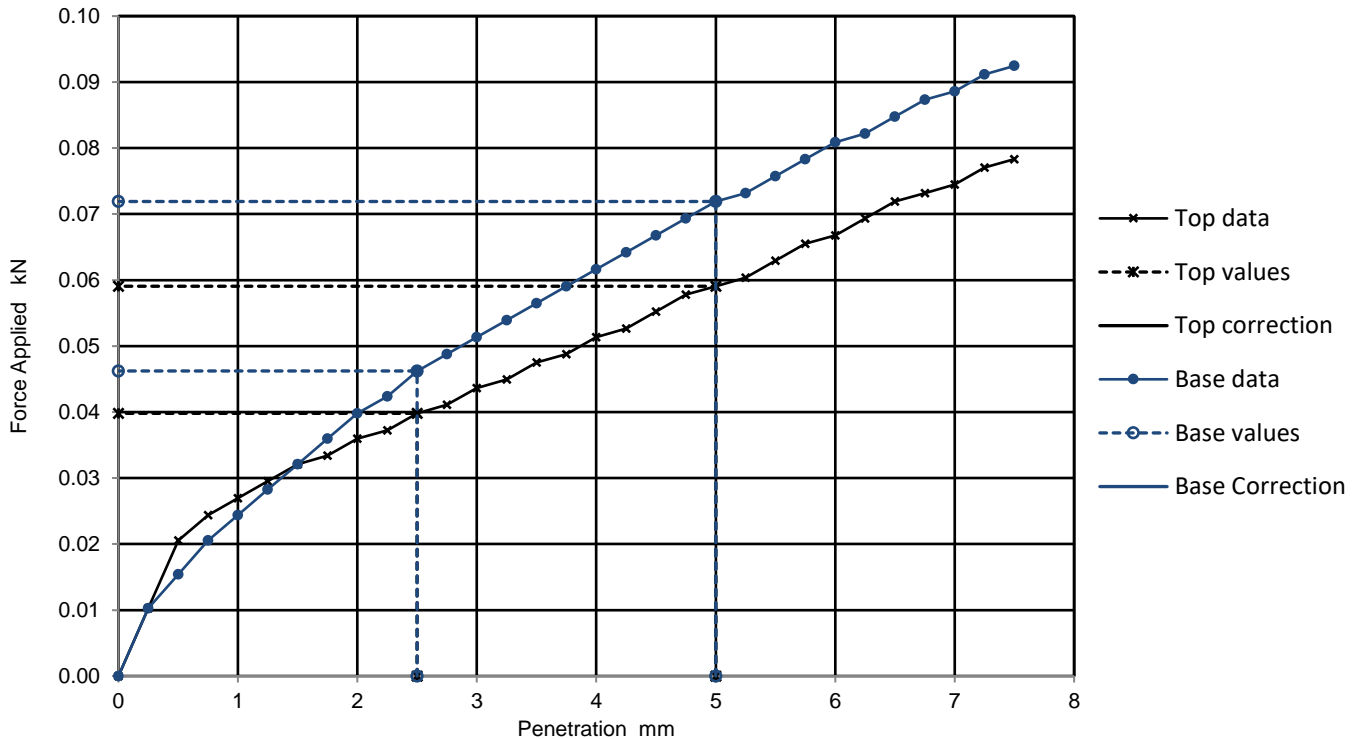
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	ST05
Sample No.	3
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111057
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	5 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 1.84 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.41 Mg/m3		3 kPa
	Moisture content 30 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.3	0.3	0.3	0.3	30
BASE	No	0.4	0.4	0.4		30

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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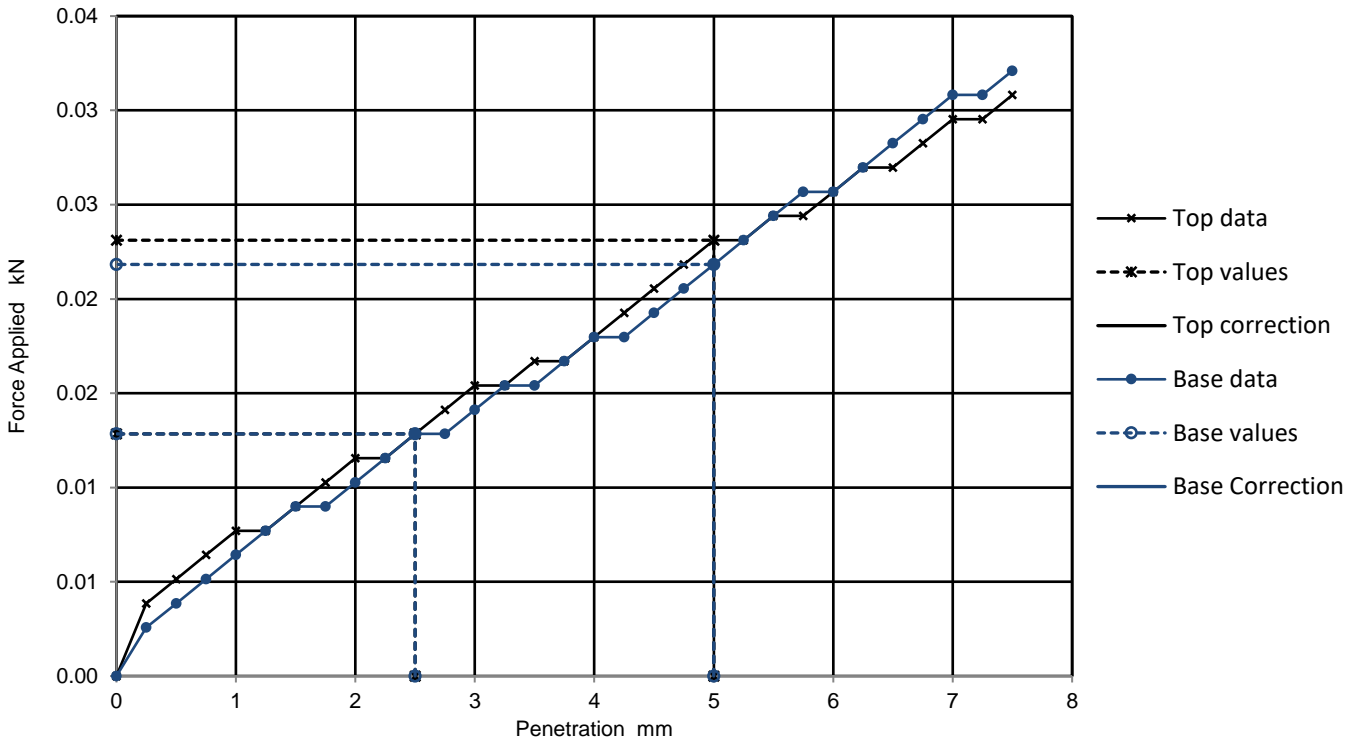
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	ST06
Site Name	NDA Social Housing Lot 3 - Balally
Sample No.	1
Soil Description	Brown sandy gravelly clayey SILT.
Depth m	0.50
Specimen Reference	Specimen Depth m
Sample Type	B
Specimen Description	Brown sandy gravelly clayey SILT.
KeyLAB ID	Caus2023111059
Test Method	BS1377 : Part 4 : 1990, clause 7
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	17 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 1.78 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.34 Mg/m3		3 kPa
	Moisture content 33 %		

Force v Penetration Plots



Results

Curve correction applied	CBR Values, %				Moisture Content %
	2.5mm	5mm	Highest	Average	
TOP	No	0.1	0.1	0.1	33
BASE	No	0.1	0.1	0.1	
					34

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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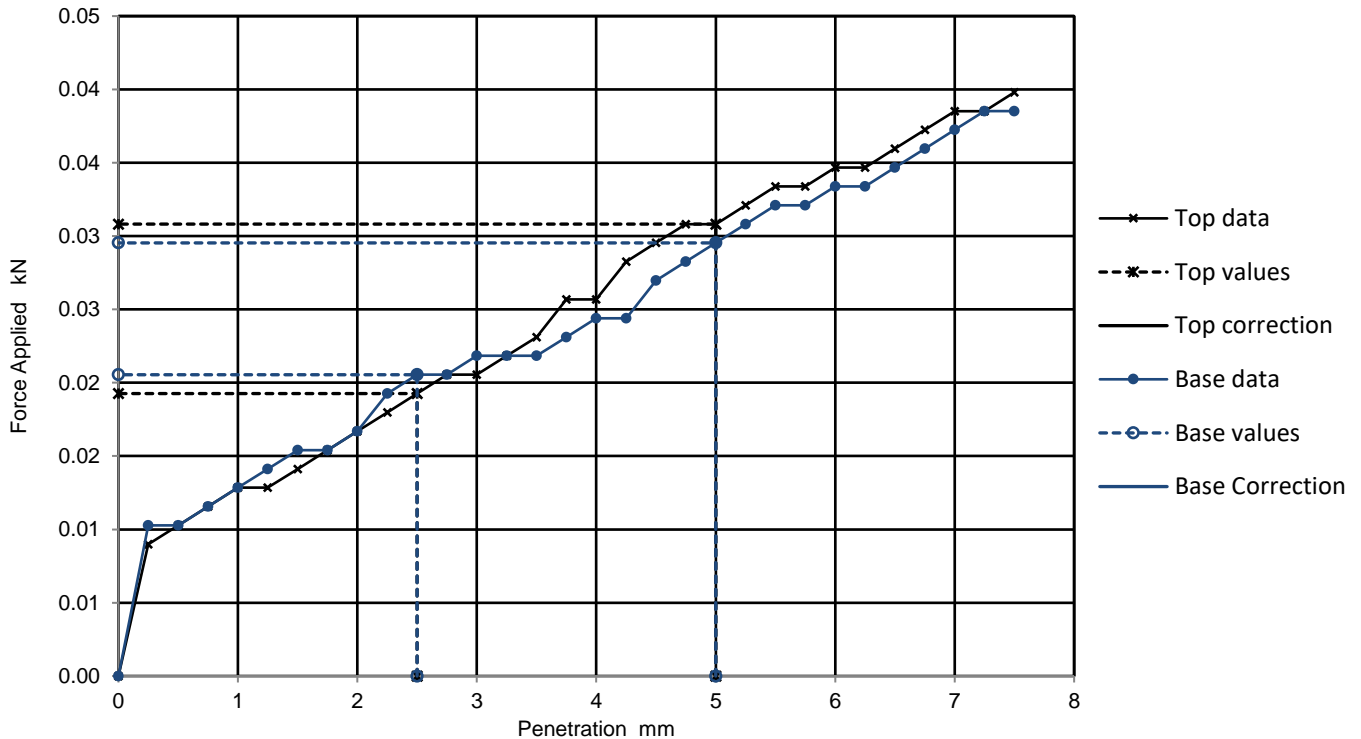
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	ST07
Sample No.	1
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111060
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	6 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	1.81 Mg/m3	Surcharge applied
	Dry density	1.37 Mg/m3	4.5 kg
	Moisture content	32 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.2	0.2	0.2	0.2	32
BASE	No	0.2	0.2	0.2		35

General remarks

Test specific remarks

Approved

Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson
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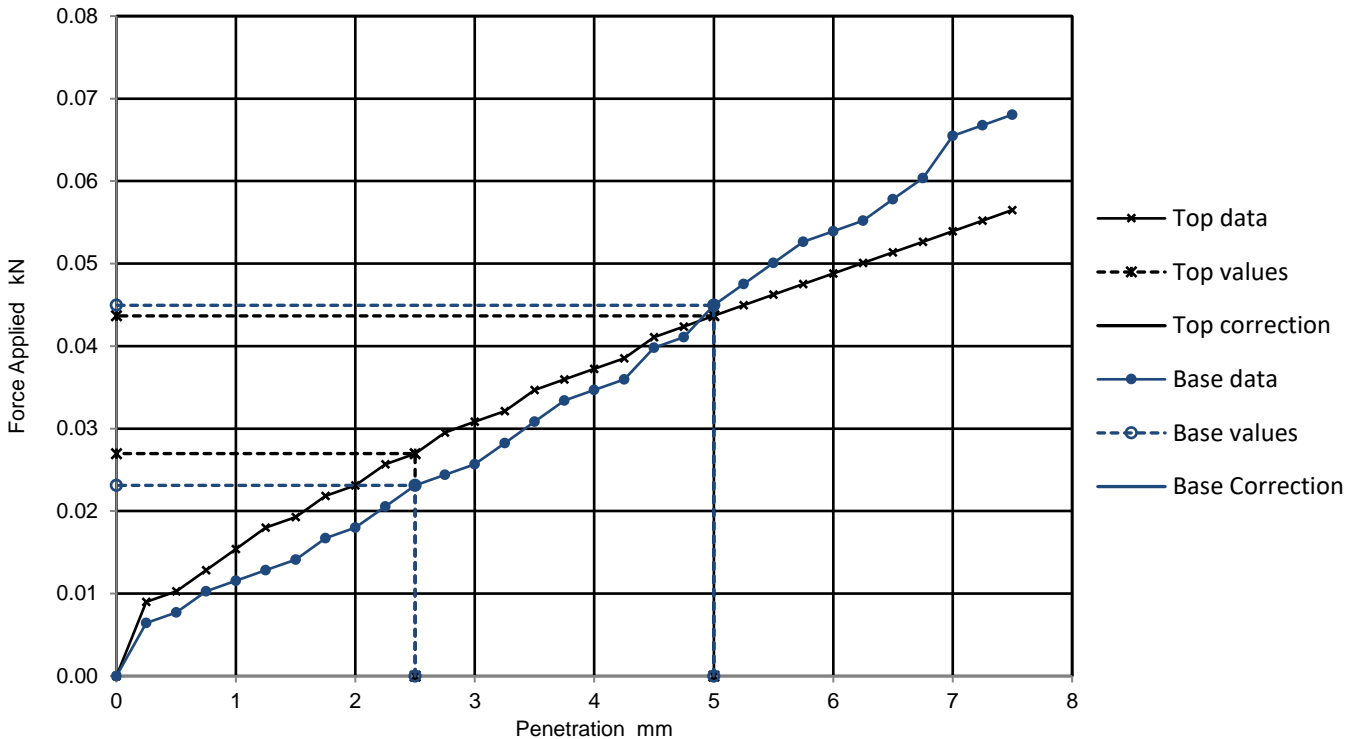
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	ST08
Sample No.	3
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111061
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	13 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 1.97 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.59 Mg/m3		3 kPa
	Moisture content 24 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.2	0.2	0.2	0.2	24
BASE	No	0.2	0.2	0.2		22

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





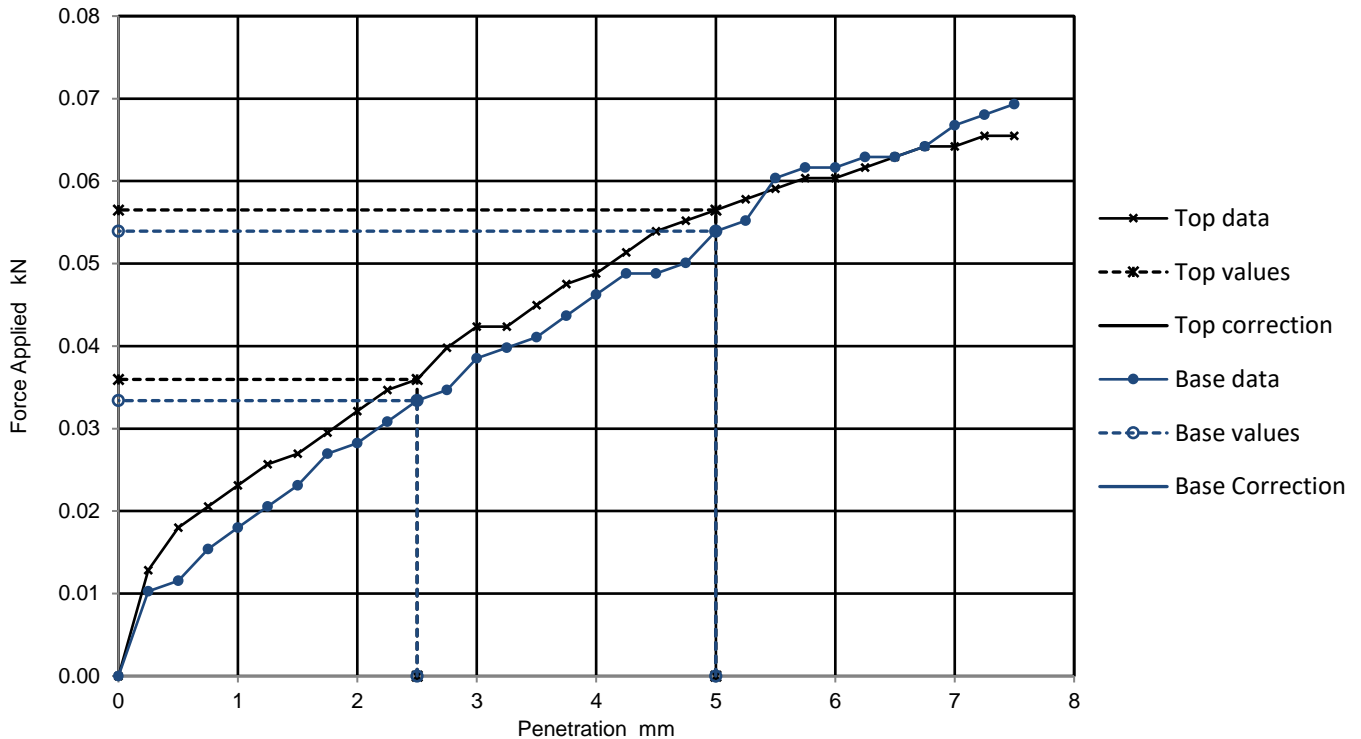
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	TP01
Sample No.	3
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111063
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	24 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	2.00 Mg/m3	Surcharge applied
	Dry density	1.65 Mg/m3	4.5 kg
	Moisture content	21 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.3	0.3	0.3	0.3	21
BASE	No	0.3	0.3	0.3		21

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





California Bearing Ratio (CBR)

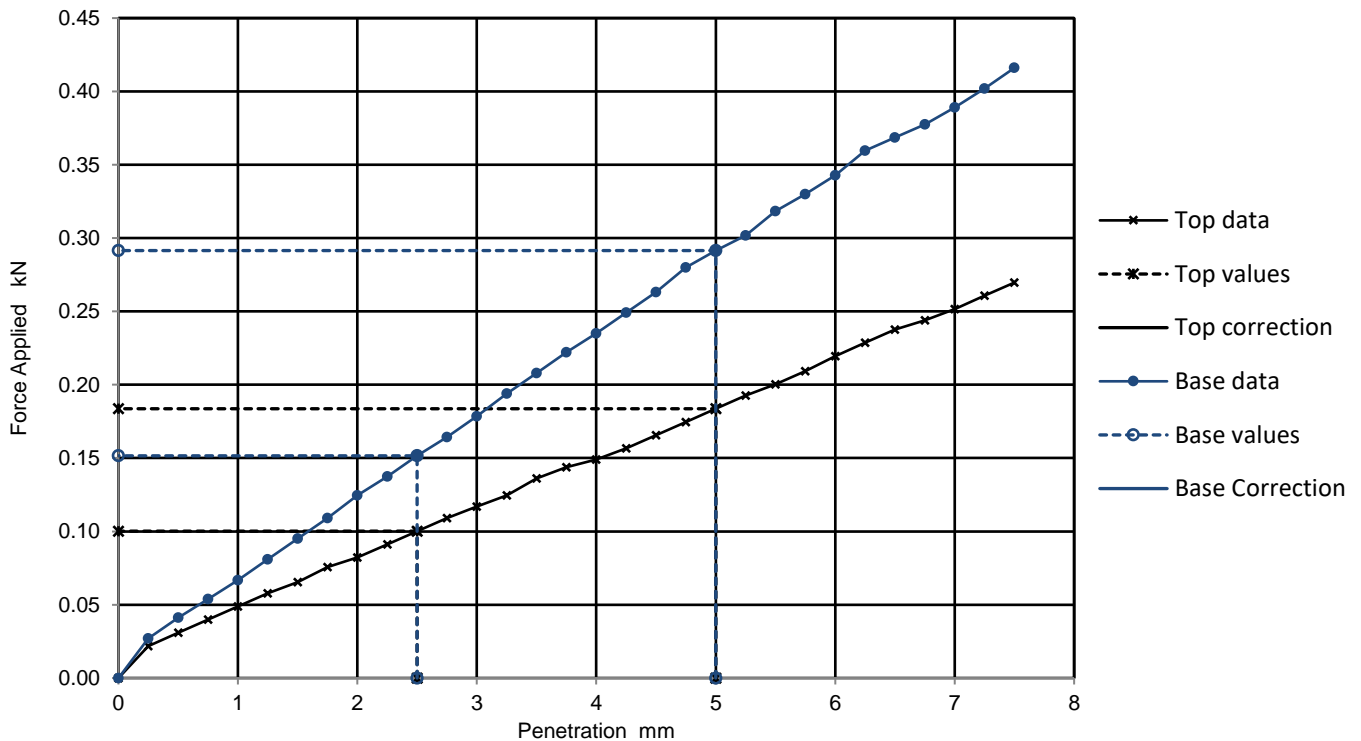
Job Ref	23-0881C
Borehole/Pit No.	TP02
Sample No.	3
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111065
CBR Test Number	1

Site Name	NDFA Social Housing Lot 3 - Balally	
Soil Description	Brown sandy gravelly silty CLAY.	
Specimen Reference	Specimen Depth	m
Specimen Description	Brown sandy gravelly silty CLAY.	
Test Method	BS1377 : Part 4 : 1990, clause 7	

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	16 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	2.17 Mg/m3	Surcharge applied
	Dry density	1.91 Mg/m3	4.5 kg
	Moisture content	13 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.8	0.9	0.9		13
BASE	No	1.1	1.5	1.5		13

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





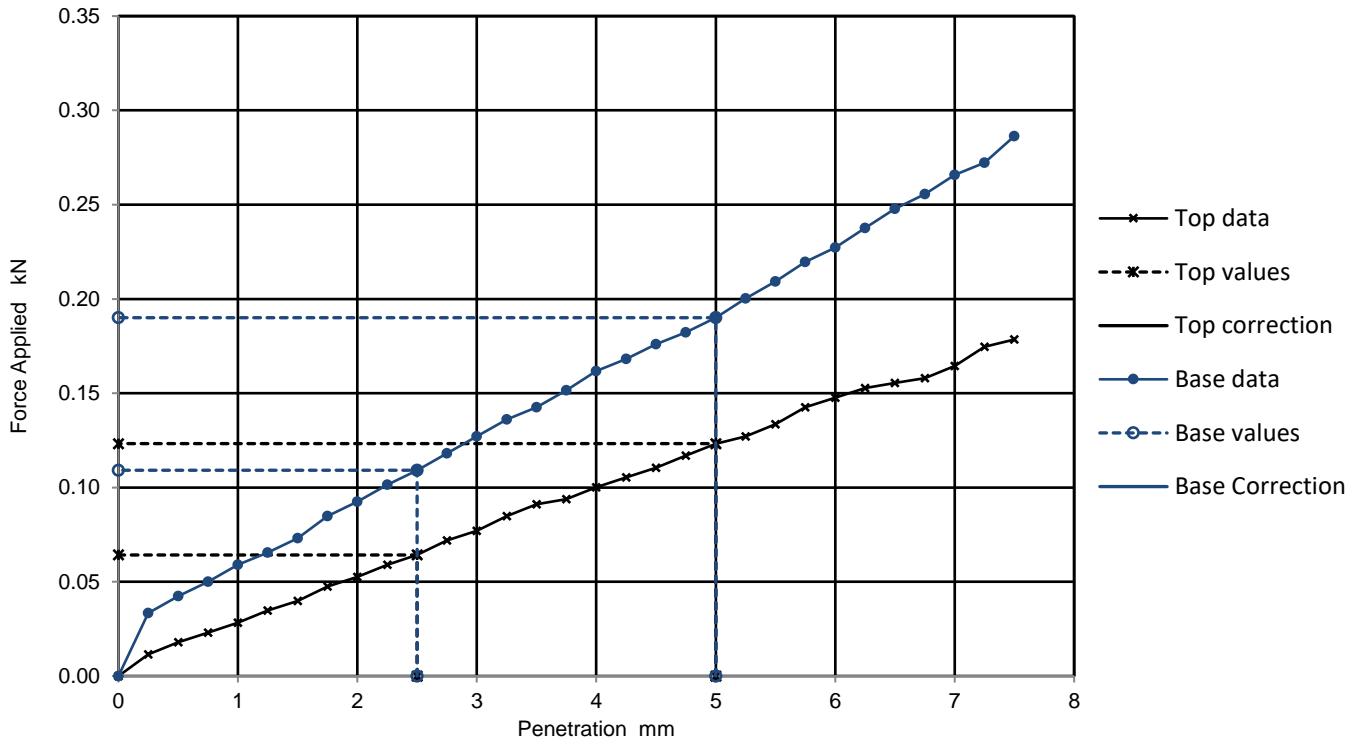
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	TP03
Sample No.	3
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111067
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	21 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	2.10 Mg/m3	Surcharge applied
	Dry density	1.82 Mg/m3	4.5 kg
	Moisture content	16 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.5	0.6	0.6		16
BASE	No	0.8	1.0	1.0		16

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





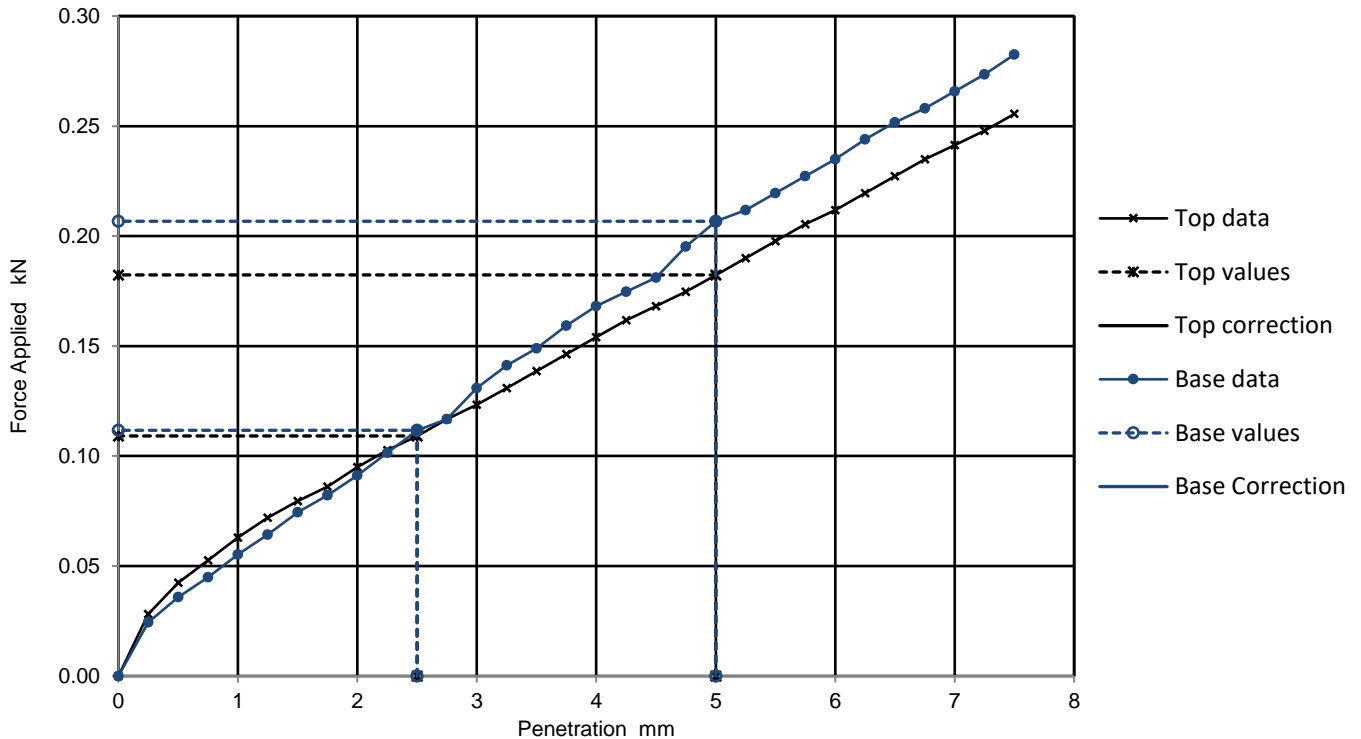
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	TP04
Sample No.	3
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111069
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	3 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 1.90 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.51 Mg/m3		3 kPa
	Moisture content 26 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.8	0.9	0.9	1.0	26
BASE	No	0.9	1.0	1.0		26

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





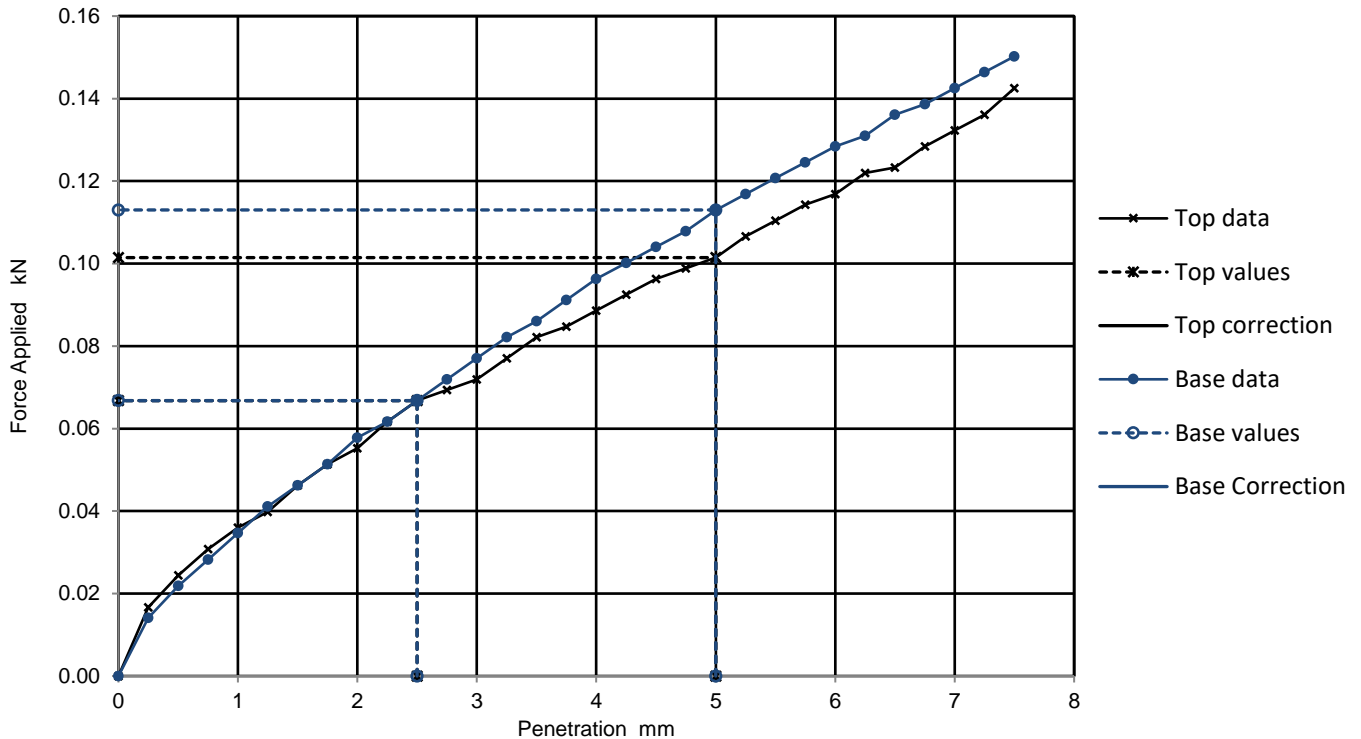
California Bearing Ratio (CBR)

Job Ref	23-0881C
Borehole/Pit No.	TP05
Site Name	NDA Social Housing Lot 3 - Balally
Sample No.	3
Soil Description	Brown sandy slightly gravelly silty CLAY.
Depth m	0.50
Specimen Reference	Specimen Depth m
Sample Type	B
Specimen Description	Brown sandy slightly gravelly silty CLAY.
KeyLAB ID	Caus2023111071
Test Method	BS1377 : Part 4 : 1990, clause 7
CBR Test Number	1

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	7 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density 1.87 Mg/m3	Surcharge applied	4.5 kg
	Dry density 1.47 Mg/m3		3 kPa
	Moisture content 27 %		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.5	0.5	0.5	0.5	27
BASE	No	0.5	0.6	0.6		27

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





California Bearing Ratio (CBR)

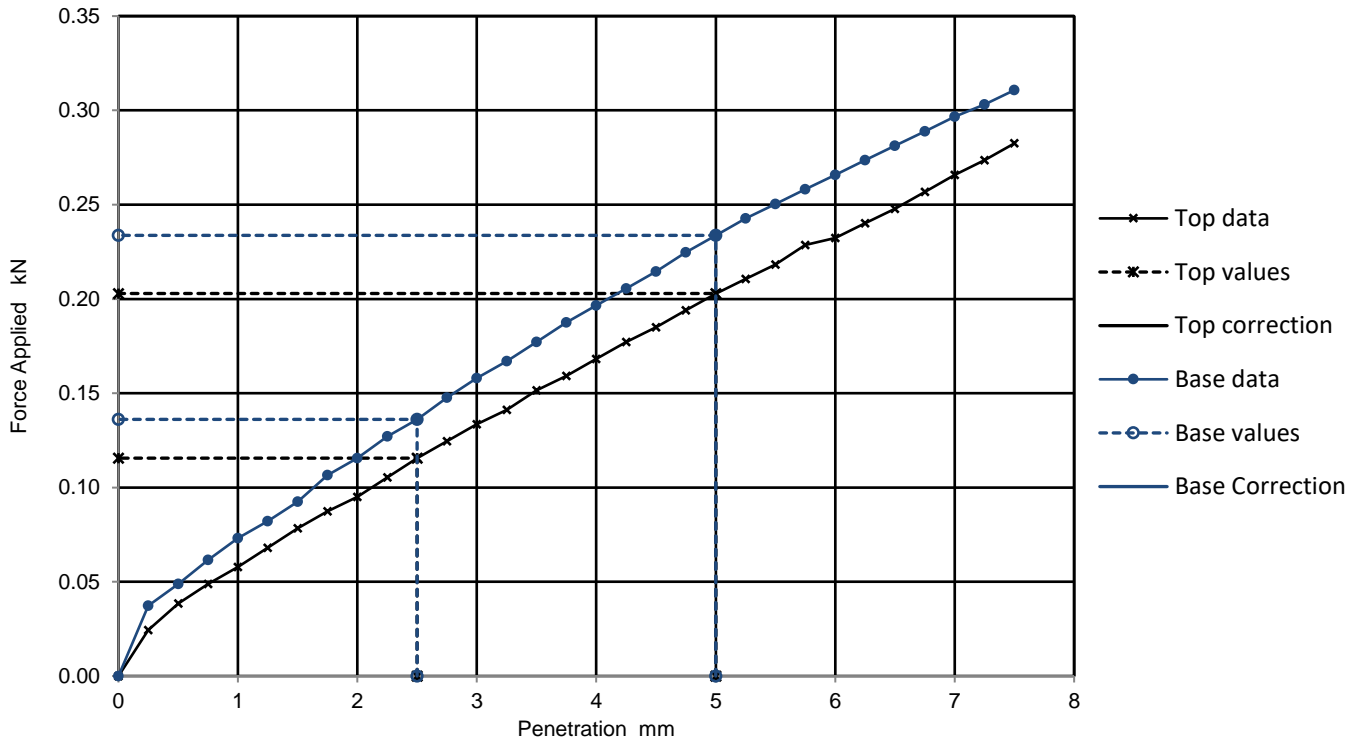
Job Ref	23-0881C
Borehole/Pit No.	TP06
Sample No.	3
Depth m	0.50
Sample Type	B
KeyLAB ID	Caus2023111073
CBR Test Number	1

Site Name	NDFA Social Housing Lot 3 - Balally	
Soil Description	Brown sandy slightly gravelly silty CLAY.	
Specimen Reference	Specimen Depth	m
Specimen Description	Brown sandy slightly gravelly silty CLAY.	
Test Method	BS1377 : Part 4 : 1990, clause 7	

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	8 %	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	1.90 Mg/m3	Surcharge applied
	Dry density	1.54 Mg/m3	4.5 kg
	Moisture content	24 %	3 kPa

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.9	1.0	1.0	1.1	24
BASE	No	1.0	1.2	1.2		24

General remarks	Test specific remarks	Approved
Tested at natural moisture content.	Average result may be reported if within 10% of the mean CBR value of top and base.	Stephen Watson





DETS

Certificate of Analysis

Certificate Number 23-27575

Issued: 27-Nov-23

Client Causeway Geotech
8 Drumahiskey Road
Ballymoney
County Antrim
BT53 7QL

Our Reference 23-27575

Client Reference 23-0881C

Order No (not supplied)

Contract Title Ballaly

Description 16 Soil samples.

Date Received 22-Nov-23

Date Started 23-Nov-23

Date Completed 27-Nov-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 23-27575

Client Ref 23-0881C

Contract Title Ballaly

Lab No	2266582	2266583	2266584	2266585	2266586	2266587	2266588	2266589	2266590	2266591	2266592
Sample ID	IT01A	IT02	ST01	ST02	ST03	ST04	ST05	ST06	ST07	ST08	TP01
Depth	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Other ID	3	3	3	3	3	1	3	1	1	3	3
Sample Type	B	B	B	B	B	B	B	B	B	B	B
Sampling Date	21/11/2023	21/11/2023	21/11/2023	21/11/2023	21/11/2023	21/11/2023	21/11/2023	21/11/2023	21/11/2023	21/11/2023	21/11/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units											
Inorganics														
pH	DETSC 2008#		pH	7.9	8.1	8.4	7.7	8.4	8.1	7.9	7.8	7.9	8.3	8.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	39	33	15	30	40	27	17	16	20	12	19

Summary of Chemical Analysis

Soil Samples

Our Ref 23-27575

Client Ref 23-0881C

Contract Title Ballaly

Lab No	2266593	2266594	2266595	2266596	2266597
Sample ID	TP02	TP03	TP04	TP05	TP06
Depth	0.50	0.50	0.50	0.50	0.50
Other ID	3	3	3	3	3
Sample Type	B	B	B	B	B
Sampling Date	21/11/2023	21/11/2023	21/11/2023	21/11/2023	21/11/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Inorganics								
pH	DETSC 2008#		pH	8.1	7.5	7.8	7.9	7.8
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	15	14	< 10	12	70

Information in Support of the Analytical Results

Our Ref 23-27575
 Client Ref 23-0881C
 Contract Ballaly

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2266582	IT01A 0.50 SOIL	21/11/23	PT 500ml		
2266583	IT02 0.50 SOIL	21/11/23	PT 500ml		
2266584	ST01 0.50 SOIL	21/11/23	PT 500ml		
2266585	ST02 0.50 SOIL	21/11/23	PT 500ml		
2266586	ST03 0.50 SOIL	21/11/23	PT 500ml		
2266587	ST04 0.50 SOIL	21/11/23	PT 500ml		
2266588	ST05 0.50 SOIL	21/11/23	PT 500ml		
2266589	ST06 0.50 SOIL	21/11/23	PT 500ml		
2266590	ST07 0.50 SOIL	21/11/23	PT 500ml		
2266591	ST08 0.50 SOIL	21/11/23	PT 500ml		
2266592	TP01 0.50 SOIL	21/11/23	PT 500ml		
2266593	TP02 0.50 SOIL	21/11/23	PT 500ml		
2266594	TP03 0.50 SOIL	21/11/23	PT 500ml		
2266595	TP04 0.50 SOIL	21/11/23	PT 500ml		
2266596	TP05 0.50 SOIL	21/11/23	PT 500ml		
2266597	TP06 0.50 SOIL	21/11/23	PT 500ml		

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

**SOIL AND ROCK SAMPLE ANALYSIS
LABORATORY TEST REPORT**

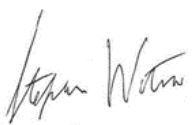
20 December
2023

Project Name:	NDFa Social Housing Lot 3 – Balally
Project No.:	23-0881C
Client:	NDFa
Engineer:	Malone O'Regan Consulting Engineers

We are pleased to attach the results of laboratory testing carried out for the above project. This memo and its attachments constitute a report of the results of tests as detailed in the Contents page(s). This testing was performed between 05/12/2023 and 20/12/2023.

The attached results complete the testing requested and we would therefore wish to confirm that samples will be retained without charge for a period of 28 days from the above date after which they will be appropriately disposed of unless we receive written instructions to the contrary prior to that date.

We trust our report meets with your approval but if you have any queries or require additional information, please do not hesitate to contact the undersigned.



Stephen Watson

Laboratory Manager

Signed for and on behalf of Causeway Geotech Ltd

Project Name: NDFA Social Housing Lot 3 – Balally

Report Reference: Schedule 2 - ROCK

The table below details the tests carried out, the specifications used, and the number of tests included in this report. The results contained in this report relate to the sample(s) as received.

Tests marked with* in this report are not United Kingdom Accreditation Service (UKAS) accredited and are not included in Causeway Geotech Limited's scope of UKAS Accreditation Schedule of Tests. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

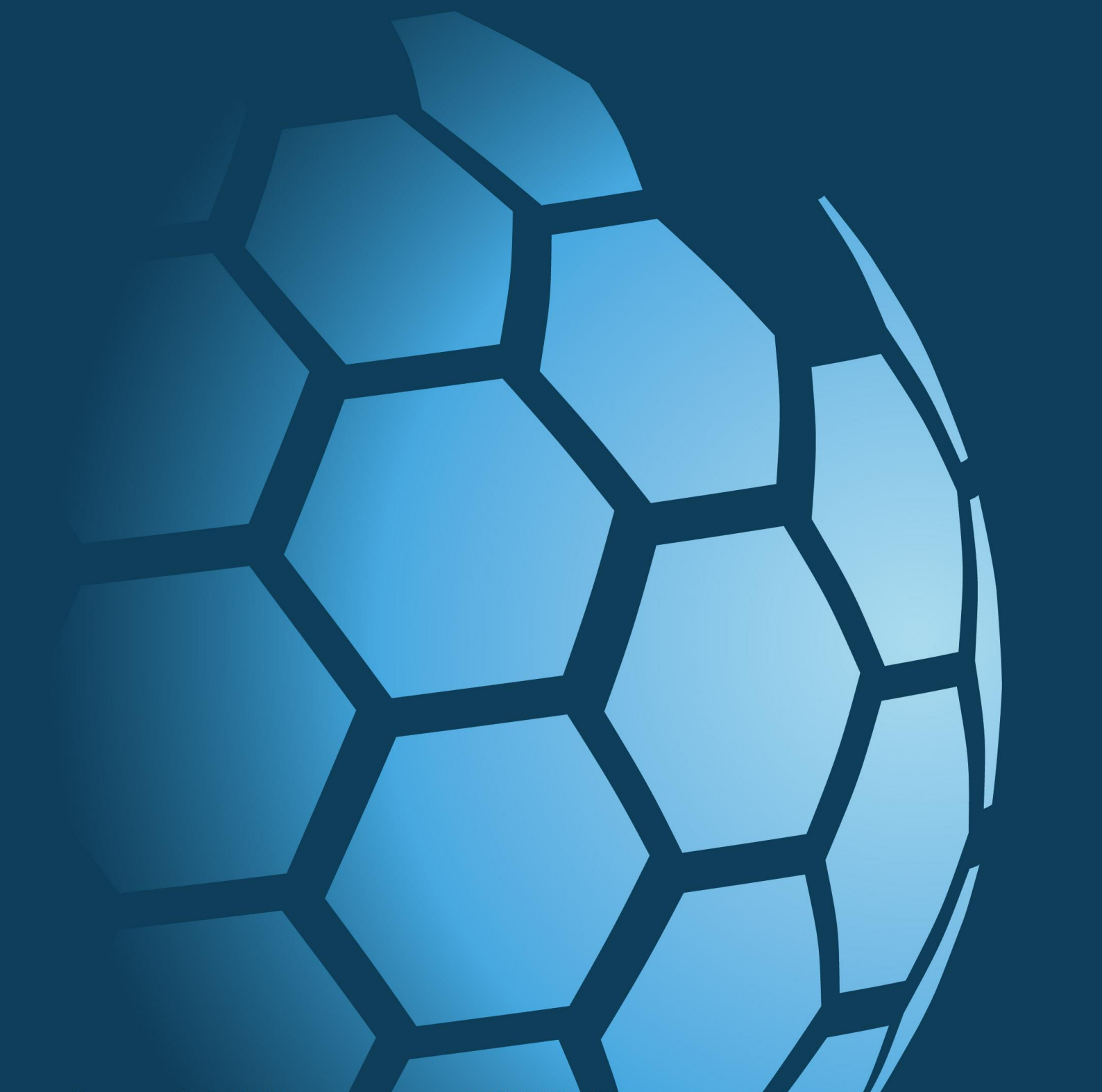
Material tested	Type of test/Properties measured/Range of measurement	Standard specifications	No. of results included in the report
ROCK	Point load index	ISRM Commission on Testing Methods. Suggested Method for Determining Point Load Strength 1985	3
ROCK	Uniaxial Compressive Strength (UCS)*	ISRM Suggested Methods -Rock Characterization Testing and Monitoring, Ed. E T Brown - 1981	3



CAUSEWAY
— GEOTECH

APPENDIX J

ENVIRONMENTAL LABORATORY TEST RESULTS





DETS

Certificate of Analysis

Certificate Number 23-28041

Issued: 18-Dec-23

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 23-28041

Client Reference 23-0881C

Order No (not supplied)

Contract Title BALLALY

Description 5 Soil samples, 5 Leachate prepared by DETS samples.

Date Received 29-Nov-23

Date Started 29-Nov-23

Date Completed 18-Dec-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 23-28041

Client Ref 23-0881C

Contract Title BALLALY

Lab No	2269131	2269133	2269136	2269137	2269138
Sample ID	BH01	BH02	BH06	BH04	BH11
Depth	0.50	0.50	0.50	0.50	0.50
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/11/2023	13/11/2023	11/11/2023	11/11/2023	13/11/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Moisture Content	DETSC 1004	0.1	%	16	12	20	15	20
Metals								
Antimony	DETSC 2301*	1	mg/kg	2.2	1.1	1.6	1.8	2.1
Arsenic	DETSC 2301#	0.2	mg/kg	16	15	17	13	22
Barium	DETSC 2301#	1.5	mg/kg	60	61	75	48	74
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	0.3	0.3	< 0.2	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	2.9	1.4	2.0	2.6	1.5
Chromium	DETSC 2301#	0.15	mg/kg	16	15	18	15	18
Chromium III	DETSC 2301*	0.15	mg/kg	16	15	18	15	18
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	50	28	42	38	58
Lead	DETSC 2301#	0.3	mg/kg	25	29	69	23	120
Mercury	DETSC 2325#	0.05	mg/kg	0.08	0.10	0.30	0.08	1.9
Molybdenum	DETSC 2301#	0.4	mg/kg	4.0	1.8	25	3.7	3.7
Nickel	DETSC 2301#	1	mg/kg	51	27	35	46	37
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	130	89	110	100	110
Inorganics								
pH	DETSC 2008#		pH	7.9	8.3	7.7	8.0	7.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.1	0.2	< 0.1	0.2
Total Organic Carbon	DETSC 2084#	0.5	%	0.7	0.9	2.5	1.3	4.4
Sulphide	DETSC 2024*	10	mg/kg	20	96	< 10	52	60
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.09	0.10	0.09	0.06	0.09
Petroleum Hydrocarbons								
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC35-EC40: EH_2D_AL	DETSC 3521*	3.4	mg/kg	5.12	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC40-EC44: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic C5-C44: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	3.06	< 0.60	< 0.60	< 0.60	< 0.60

Summary of Chemical Analysis

Soil Samples

Our Ref 23-28041
 Client Ref 23-0881C
 Contract Title BALLALY

Lab No	2269131	2269133	2269136	2269137	2269138
.Sample ID	BH01	BH02	BH06	BH04	BH11
Depth	0.50	0.50	0.50	0.50	0.50
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/11/2023	13/11/2023	11/11/2023	11/11/2023	13/11/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	4.26	2.99	5.16	3.59	3.57
Aromatic >EC35-EC40: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC40-EC44: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C44: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
TPH Ali/Aro C5-C44: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C24-C40 Lube Oil Range Organics (LORO): EH_1D_Total	DETSC 3311#	10	mg/kg	< 10	< 10	< 10	< 10	< 10
PAHs								
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1	0.2
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Coronene	DETSC 3301*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
PCBs								
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 23-28041
 Client Ref 23-0881C
 Contract Title BALLALY

Lab No	2269131	2269133	2269136	2269137	2269138
Sample ID	BH01	BH02	BH06	BH04	BH11
Depth	0.50	0.50	0.50	0.50	0.50
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/11/2023	13/11/2023	11/11/2023	11/11/2023	13/11/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.3	0.6	< 0.3	0.6

Summary of Chemical Analysis

Leachate Samples

Our Ref 23-28041

Client Ref 23-0881C

Contract Title BALLALY

Lab No	2269141	2269143	2269146	2269147	2269148
Sample ID	BH01	BH02	BH06	BH04	BH11
Depth	0.50	0.50	0.50	0.50	0.50
Other ID					
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	12/11/2023	12/11/2023	13/11/2023	13/11/2023	12/11/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y	Y	Y
Inorganics								
Un-Ionised Ammonia	*	0.02	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ammoniacal Nitrogen as NH4	DETSC 2207	0.0193	mg/l	0.71	0.13	0.09	0.13	0.07

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-28041

Client Ref 23-0881C

Contract Title BALLALY

Sample Id BH01 0.50

Sample Numbers 2269131 2269141

Date Analysed 15/12/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.7	3	5	6
DETSC 2003# Loss On Ignition	%	3.1	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	7.9	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.4	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	4.4	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	0.071	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.67	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.1	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	0.012	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	4.2	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	0.75	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.72	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.19	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	1.3	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	11	0.11	4	50	200
DETSC 2055 Chloride as Cl	560	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1000	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	29000	290	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2800	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.4
DETSC 2009 Conductivity uS/cm	41.0
* Temperature*	16.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.101
Stage 1	
Volume of Leachant L2*	0.99
Volume of Eluate VE1*	0.944

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-28041
 Client Ref 23-0881C
 Contract Title BALLALY
 Sample Id BH02 0.50

Sample Numbers 2269133 2269143
 Date Analysed 15/12/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.9	3	5	6
DETSC 2003# Loss On Ignition	%	2.9	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	8.3	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.91	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	2.9	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.37	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.3	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	1.5	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.28	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.59	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	2.8	0.028	4	50	200
DETSC 2055 Chloride as Cl	610	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1500	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	31000	310	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	3500	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	44.5
* Temperature*	16.0

Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.097
Stage 1	
Volume of Leachant L2*	0.952
Volume of Eluate VE1*	0.9

TBE - To Be Evaluated
 SNRHW - Stable Non-Reactive
 Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-28041

Client Ref 23-0881C

Contract Title BALLALY

Sample Id BH06 0.50

Sample Numbers 2269136 2269146

Date Analysed 15/12/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	2.5	3	5	6
DETSC 2003# Loss On Ignition	%	6.4	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	7.7	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.31	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	3.6	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.3	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.4	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.45	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.35	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	4.8	0.048	4	50	200
DETSC 2055 Chloride as Cl	1200	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	110	1.1	10	150	500
DETSC 2055 Sulphate as SO4	2100	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	38000	380	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	3200	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.6
DETSC 2009 Conductivity uS/cm	54.5
* Temperature*	16.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.097
Stage 1	
Volume of Leachant L2*	0.943
Volume of Eluate VE1*	0.89

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-28041

Client Ref 23-0881C

Contract Title BALLALY

Sample Id BH04 0.50

Sample Numbers 2269137 2269147

Date Analysed 15/12/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.3	3	5	6
DETSC 2003# Loss On Ignition	%	3.0	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	8.0	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.16	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	2.4	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.58	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.11	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	620	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1200	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	22000	220	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	30.7
* Temperature*	16.0

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.101
Stage 1	
Volume of Leachant L2*	0.996
Volume of Eluate VE1*	0.945

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-28041

Client Ref 23-0881C

Contract Title BALLALY

Sample Id BH11 0.50

Sample Numbers 2269138 2269148

Date Analysed 15/12/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	4.4	3	5	6
DETSC 2003# Loss On Ignition	%	7.8	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	7.6	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.28	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	2.8	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.2	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.27	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.4	0.014	4	50	200
DETSC 2055 Chloride as Cl	670	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	730	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	27000	270	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2500	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.6
DETSC 2009 Conductivity uS/cm	39.1
* Temperature*	16.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.936
Volume of Eluate VE1*	0.885

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

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Summary of Asbestos Analysis

Soil Samples

Our Ref 23-28041

Client Ref 23-0881C

Contract Title BALLALY

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2269131	BH01 0.50	SOIL	NAD	none	Keith Wilson
2269133	BH02 0.50	SOIL	NAD	none	Keith Wilson
2269136	BH06 0.50	SOIL	NAD	none	Keith Wilson
2269137	BH04 0.50	SOIL	NAD	none	Keith Wilson
2269138	BH11 0.50	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 23-28041
 Client Ref 23-0881C
 Contract BALLALY

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2269131	BH01 0.50 SOIL	13/11/23	GJ 250ml, GJ 60ml, PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2269132	BH01 1.00 SOIL	13/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269133	BH02 0.50 SOIL	13/11/23	GJ 250ml, GJ 60ml, PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2269134	BH02 1.00 SOIL	13/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269135	BH11 0.90 SOIL	12/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269136	BH06 0.50 SOIL	11/11/23	GJ 250ml, GJ 60ml, PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2269137	BH04 0.50 SOIL	11/11/23	GJ 250ml, GJ 60ml, PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2269138	BH11 0.50 SOIL	13/11/23	GJ 250ml, GJ 60ml, PT 1L	BTEX / C5-C10 (14 days), Sulphur (free) (7 days), EPH/Aliphatic/Aromatic (14 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2269139	BH04 1.00 SOIL	13/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269140	BH06 1.00 SOIL	12/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269141	BH01 0.50 LEACHATE	12/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269142	BH01 1.00 LEACHATE	12/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269143	BH02 0.50 LEACHATE	12/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269144	BH02 1.00 LEACHATE	13/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269145	BH11 0.90 LEACHATE	13/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269146	BH06 0.50 LEACHATE	13/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269147	BH04 0.50 LEACHATE	13/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269148	BH11 0.50 LEACHATE	12/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269149	BH04 1.00 LEACHATE	12/11/23	GJ 250ml, GJ 60ml, PT 1L		
2269150	BH06 1.00 LEACHATE	12/11/23	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 23-28041
Client Ref 23-0881C
Contract BALLALY

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425 μ m sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic >EC35-EC40	EH_2D_AL
Aliphatic >EC40-EC44	EH_2D_AL
Aliphatic C5-C44	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic >EC35-EC40	EH_2D_AR
Aromatic >EC40-EC44	EH_2D_AR
Aromatic C5-C44	EH_2D+HS_1D_AR
TPH Ali/Aro C5-C44	EH_2D+HS_1D_Total
TPH (C10-C40)	EH_1D_Total
C24-C40 Lube Oil Range Organics (LO)	EH_1D_Total

End of Report



DETS

Certificate of Analysis

Certificate Number 23-26465

Issued: 21-Nov-23

Client Causeway Geotech
Unit 1 Fingal House
Stephenstown Industrial Estate
Balbriggan
Co. Dublin
K32 VR66

Our Reference 23-26465

Client Reference 23-0881C

Order No (not supplied)

Contract Title Ballaly

Description 14 Soil samples, 14 Leachate samples.

Date Received 10-Nov-23

Date Started 10-Nov-23

Date Completed 21-Nov-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 23-26465
 Client Ref 23-0881C
 Contract Title Ballaly

Lab No	2260331	2260332	2260333	2260334	2260335	2260336
Sample ID	TP01	TP02	TP03	TP04	TP05	TP06
Depth	0.50	0.50	0.50	0.50	0.50	0.50
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	24/10/2023	24/10/2023	24/10/2023	24/10/2023	27/10/2023	24/10/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	17	12	9.1	13	15	16
Metals									
Antimony	DETSC 2301*	1	mg/kg	7.3	47	1.6	16	1.3	5.4
Arsenic	DETSC 2301#	0.2	mg/kg	21	26	8.0	18	9.4	20
Barium	DETSC 2301#	1.5	mg/kg	210	120	89	67	69	78
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.9	1.7	0.8	1.5	0.3	0.9
Cadmium	DETSC 2301#	0.1	mg/kg	1.8	19	0.8	6.7	0.7	3.1
Chromium	DETSC 2301#	0.15	mg/kg	34	34	15	27	21	25
Chromium III	DETSC 2301*	0.15	mg/kg	34	34	15	27	21	25
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	120	120	23	54	18	48
Lead	DETSC 2301#	0.3	mg/kg	200	290	42	110	18	54
Mercury	DETSC 2325#	0.05	mg/kg	0.09	0.34	1.5	0.19	0.07	0.12
Molybdenum	DETSC 2301#	0.4	mg/kg	1.9	1.7	1.6	2.7	1.4	3.0
Nickel	DETSC 2301#	1	mg/kg	23	20	20	29	22	44
Selenium	DETSC 2301#	0.5	mg/kg	0.9	< 0.5	< 0.5	0.8	< 0.5	1.2
Zinc	DETSC 2301#	1	mg/kg	570	1500	260	510	84	230
Inorganics									
pH	DETSC 2008#		pH	10.2	11.1	8.5	9.4	8.6	7.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	0.8	1.4	< 0.5	0.8	0.6	0.6
Sulphide	DETSC 2024*	10	mg/kg	32	< 10	20	< 10	< 10	< 10
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.0	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.41	1.0	0.09	0.32	0.04	0.11
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Lab No	2260331	2260332	2260333	2260334	2260335	2260336
Sample ID	TP01	TP02	TP03	TP04	TP05	TP06
Depth	0.50	0.50	0.50	0.50	0.50	0.50
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	24/10/2023	24/10/2023	24/10/2023	24/10/2023	27/10/2023	24/10/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C24-C40 Lube Oil Range Organics (LORO): EH_1D_Total	DETSC 3311#	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Coronene	DETSC 3301*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Lab No	2260337	2260338	2260339	2260340	2260341	2260342
Sample ID	ST01	ST02	ST03	ST05	ST06	ST07
Depth	0.50	0.50	0.50	0.50	0.50	0.50
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	26/10/2023	25/10/2023	27/10/2023	31/10/2023	31/10/2023	31/10/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	11	7.9	12	18	21	19
Metals									
Antimony	DETSC 2301*	1	mg/kg	1.1	1.7	< 1.0	3.0	2.2	3.5
Arsenic	DETSC 2301#	0.2	mg/kg	9.9	9.1	12	16	23	22
Barium	DETSC 2301#	1.5	mg/kg	67	45	57	80	100	93
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4	0.3	0.3	0.5	0.3	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	1.6	1.8	1.5	3.2	2.3	3.6
Chromium	DETSC 2301#	0.15	mg/kg	15	13	14	18	19	27
Chromium III	DETSC 2301*	0.15	mg/kg	15	13	14	18	19	27
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	29	22	23	40	59	63
Lead	DETSC 2301#	0.3	mg/kg	35	23	24	50	120	58
Mercury	DETSC 2325#	0.05	mg/kg	0.12	0.09	0.08	0.13	0.70	0.21
Molybdenum	DETSC 2301#	0.4	mg/kg	2.3	1.4	1.5	3.4	4.4	5.9
Nickel	DETSC 2301#	1	mg/kg	22	22	22	37	41	71
Selenium	DETSC 2301#	0.5	mg/kg	0.7	0.7	0.6	0.9	1.2	0.8
Zinc	DETSC 2301#	1	mg/kg	92	91	84	160	120	170
Inorganics									
pH	DETSC 2008#		pH	8.0	8.4	8.3	7.9	7.6	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	< 0.1	0.2	0.3	0.2
Total Organic Carbon	DETSC 2084#	0.5	%	2.9	1.9	1.6	1.9	4.5	1.8
Sulphide	DETSC 2024*	10	mg/kg	92	< 10	48	< 10	< 10	< 10
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.07	0.19	0.06	0.09	0.07	0.08
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	23	< 1.4	< 1.4	< 1.4	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 23-26465
 Client Ref 23-0881C
 Contract Title Ballaly

Lab No	2260337	2260338	2260339	2260340	2260341	2260342
Sample ID	ST01	ST02	ST03	ST05	ST06	ST07
Depth	0.50	0.50	0.50	0.50	0.50	0.50
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	26/10/2023	25/10/2023	27/10/2023	31/10/2023	31/10/2023	31/10/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	12	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	< 10	35	< 10	< 10	< 10	< 10
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	< 10	35	< 10	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C24-C40 Lube Oil Range Organics (LORO): EH_1D_Total	DETSC 3311#	10	mg/kg	< 10	< 10	< 10	13	< 10	< 10
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.7	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.7	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	4.2	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.6	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	3.6	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	0.1	3.4	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.7	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.2	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.6	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.5	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.0	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.0	< 0.1	< 0.1
Coronene	DETSC 3301*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	22	< 1.6	< 1.6
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 23-26465
 Client Ref 23-0881C
 Contract Title Ballaly

Lab No	2260343	2260344
Sample ID	IT01A	IT02
Depth	0.50	0.50
Other ID		
Sample Type	ES	ES
Sampling Date	26/10/2023	26/10/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Preparation					
Moisture Content	DETSC 1004	0.1	%	18	13
Metals					
Antimony	DETSC 2301*	1	mg/kg	< 1.0	2.4
Arsenic	DETSC 2301#	0.2	mg/kg	11	11
Barium	DETSC 2301#	1.5	mg/kg	56	53
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.8	1.1
Chromium	DETSC 2301#	0.15	mg/kg	20	25
Chromium III	DETSC 2301*	0.15	mg/kg	20	25
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	19	25
Lead	DETSC 2301#	0.3	mg/kg	19	22
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.07
Molybdenum	DETSC 2301#	0.4	mg/kg	1.2	1.4
Nickel	DETSC 2301#	1	mg/kg	21	35
Selenium	DETSC 2301#	0.5	mg/kg	0.7	< 0.5
Zinc	DETSC 2301#	1	mg/kg	77	120
Inorganics					
pH	DETSC 2008#		pH	6.9	7.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.1
Total Organic Carbon	DETSC 2084#	0.5	%	1.6	0.7
Sulphide	DETSC 2024*	10	mg/kg	< 10	< 10
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.06	0.04
Petroleum Hydrocarbons					
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4

Summary of Chemical Analysis

Soil Samples

Our Ref 23-26465
 Client Ref 23-0881C
 Contract Title Ballaly

Lab No	2260343	2260344
Sample ID	IT01A	IT02
Depth	0.50	0.50
Other ID		
Sample Type	ES	ES
Sampling Date	26/10/2023	26/10/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	< 10	< 10
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01
C24-C40 Lube Oil Range Organics (LORO): EH_1D_Total	DETSC 3311#	10	mg/kg	< 10	< 10
PAHs					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Coronene	DETSC 3301*	0.1	mg/kg	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6
PCBs					
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Lab No	2260345	2260346	2260347	2260348	2260349	2260350	2260351	2260352	2260353	2260354	2260355
Sample ID	TP01	TP02	TP03	TP04	TP05	TP06	ST01	ST02	ST03	ST05	ST06
Depth	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Other ID											
Sample Type	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Sampling Date	24/10/2023	24/10/2023	24/10/2023	24/10/2023	27/10/2023	24/10/2023	26/10/2023	25/10/2023	27/10/2023	31/10/2023	31/10/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units											
Preparation														
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Inorganics														
Un-Ionised Ammonia	*	0.02	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ammoniacal Nitrogen as NH4	DETSC 2207	0.0193	mg/l	0.04	< 0.02	0.04	< 0.02	0.03	0.02	0.04	0.05	0.04	0.04	0.06

Summary of Chemical Analysis

Leachate Samples

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Lab No	2260356	2260357	2260358
Sample ID	ST07	IT01A	IT02
Depth	0.50	0.50	0.50
Other ID			
Sample Type	ES	ES	ES
Sampling Date	31/10/2023	26/10/2023	26/10/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Preparation						
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y
Inorganics						
Un-Ionised Ammonia	*	0.02	mg/l	< 0.02	< 0.02	< 0.02
Ammoniacal Nitrogen as NH4	DETSC 2207	0.0193	mg/l	0.04	0.03	0.06

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id TP01 0.50

Sample Numbers 2260331 2260345

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.8	3	5	6
DETSC 2003# Loss On Ignition	%	2.8	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	10.2	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.4	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	2.4	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.33	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.89	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	0.72	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.15	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.3	0.013	4	50	200
DETSC 2055 Chloride as Cl	1000	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	120	1.2	10	150	500
DETSC 2055 Sulphate as SO4	3000	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	25000	250	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2700	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.6
DETSC 2009 Conductivity uS/cm	36.1
* Temperature*	17.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.100
Stage 1	
Volume of Leachant L2*	0.982
Volume of Eluate VE1*	0.93

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id TP02 0.50

Sample Numbers 2260332 2260346

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.4	3	5	6
DETSC 2003# Loss On Ignition	%	4.8	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	11.1	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.94	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	3.1	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.36	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.93	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.22	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	2	0.02	4	50	200
DETSC 2055 Chloride as Cl	1200	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1700	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	33000	330	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2500	< 50	500	800	1000

Additional Information

DETSC 2008 pH	6.9
DETSC 2009 Conductivity uS/cm	46.5
* Temperature*	17.0

Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.097

Stage 1

Volume of Leachant L2*	0.955
Volume of Eluate VE1*	0.9

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id TP03 0.50

Sample Numbers 2260333 2260347

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	< 0.5	3	5	6
DETSC 2003# Loss On Ignition	%	1.4	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	8.5	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.26	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	1.7	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.75	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	< 0.090	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	700	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	110	1.1	10	150	500
DETSC 2055 Sulphate as SO4	1300	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	24000	240	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	3000	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.8
DETSC 2009 Conductivity uS/cm	34.4
* Temperature*	17.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.100
Stage 1	
Volume of Leachant L2*	0.99
Volume of Eluate VE1*	0.94

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id TP04 0.50

Sample Numbers 2260334 2260348

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.8	3	5	6
DETSC 2003# Loss On Ignition	%	2.9	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	9.4	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.21	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	1.8	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.64	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.55	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.6	0.016	4	50	200
DETSC 2055 Chloride as Cl	910	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1400	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	14000	140	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2300	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Additional Information	
DETSC 2008 pH	6.8
DETSC 2009 Conductivity uS/cm	20.3
* Temperature*	17.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.943
Volume of Eluate VE1*	0.89

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id TP05 0.50

Sample Numbers 2260335 2260349

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.6	3	5	6
DETSC 2003# Loss On Ignition	%	2.2	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	8.6	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	< 0.16	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	1.2	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.43	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	< 0.090	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	1200	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1700	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	10000	100	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2100	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.6
DETSC 2009 Conductivity uS/cm	14.4
* Temperature*	18.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.093
Stage 1	
Volume of Leachant L2*	0.917
Volume of Eluate VE1*	0.86

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id TP06 0.50

Sample Numbers 2260336 2260350

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.6	3	5	6
DETSC 2003# Loss On Ignition	%	2.7	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	7.4	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	< 0.16	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	0.68	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.49	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	0.55	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	< 0.090	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	2.3	0.023	4	50	200
DETSC 2055 Chloride as Cl	630	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1400	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	5900	59	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2200	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.8
DETSC 2009 Conductivity uS/cm	8.4
* Temperature*	18.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.101
Stage 1	
Volume of Leachant L2*	0.991
Volume of Eluate VE1*	0.94

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id ST01 0.50

Sample Numbers 2260337 2260351

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	2.9	3	5	6
DETSC 2003# Loss On Ignition	%	3.9	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	8.0	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.57	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	4.9	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	2	0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	0.61	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.36	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	2.3	0.023	4	50	200
DETSC 2055 Chloride as Cl	680	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	100	1	10	150	500
DETSC 2055 Sulphate as SO4	1700	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	36000	360	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2700	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Additional Information	
DETSC 2008 pH	6.6
DETSC 2009 Conductivity uS/cm	51.5
* Temperature*	17.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.098
Stage 1	
Volume of Leachant L2*	0.963
Volume of Eluate VE1*	0.91

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id ST02 0.50

Sample Numbers 2260338 2260352

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.9	3	5	6
DETSC 2003# Loss On Ignition	%	2.1	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	8.4	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.8	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	8.5	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.1	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.22	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	640	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	3400	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	38000	380	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	360000	3600	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Additional Information	
DETSC 2008 pH	7.4
DETSC 2009 Conductivity uS/cm	54.7
* Temperature*	17.0
Mass of Sample Kg*	0.100
Mass of dry Sample Kg*	0.092
Stage 1	
Volume of Leachant L2*	0.914
Volume of Eluate VE1*	0.86

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id ST03 0.50

Sample Numbers 2260339 2260353

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.6	3	5	6
DETSC 2003# Loss On Ignition	%	2.8	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	8.3	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	3.6	0.036	0.5	2	25
DETSC 2306 Barium as Ba	3	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.83	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	2	0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	0.58	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.44	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.47	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	2.1	0.021	4	50	200
DETSC 2055 Chloride as Cl	850	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	220	2.2	10	150	500
DETSC 2055 Sulphate as SO4	1900	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	42000	420	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	4900	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	7.5
DETSC 2009 Conductivity uS/cm	60.1
* Temperature*	17.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.097
Stage 1	
Volume of Leachant L2*	0.957
Volume of Eluate VE1*	0.9

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id ST05 0.50

Sample Numbers 2260340 2260354

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.9	3	5	6
DETSC 2003# Loss On Ignition	%	4.9	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	41.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	22.0	100	n/a	n/a
DETSC 2008# pH	pH Units	7.9	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.65	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	2.1	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	0.039	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.1	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.22	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.6	0.016	4	50	200
DETSC 2055 Chloride as Cl	580	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	140	1.4	10	150	500
DETSC 2055 Sulphate as SO4	1600	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	31000	310	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	150000	1500	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Additional Information	
DETSC 2008 pH	7.3
DETSC 2009 Conductivity uS/cm	44.2
* Temperature*	17.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.098
Stage 1	
Volume of Leachant L2*	0.96
Volume of Eluate VE1*	0.91

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id ST06 0.50

Sample Numbers 2260341 2260355

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	4.5	3	5	6
DETSC 2003# Loss On Ignition	%	8.5	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	7.6	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.43	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	3.5	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	0.061	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.5	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.5	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	0.016	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	3.6	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	0.95	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.72	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.21	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	1.1	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	2.1	0.021	4	50	200
DETSC 2055 Chloride as Cl	610	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1000	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	19000	190	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	49000	490	500	800	1000

Additional Information

DETSC 2008 pH	7.2
DETSC 2009 Conductivity uS/cm	26.9
* Temperature*	17.0
Mass of Sample Kg*	0.130
Mass of dry Sample Kg*	0.102
Stage 1	
Volume of Leachant L2*	0.994
Volume of Eluate VE1*	0.94

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id ST07 0.50

Sample Numbers 2260342 2260356

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.8	3	5	6
DETSC 2003# Loss On Ignition	%	4.7	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	8.3	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.6	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	1.8	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.87	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.18	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.49	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.5	0.015	4	50	200
DETSC 2055 Chloride as Cl	720	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1200	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	20000	200	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2500	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	7.0
DETSC 2009 Conductivity uS/cm	28.7
* Temperature*	17.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.097
Stage 1	
Volume of Leachant L2*	0.948
Volume of Eluate VE1*	0.89

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id IT01A 0.50

Sample Numbers 2260343 2260357

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.6	3	5	6
DETSC 2003# Loss On Ignition	%	4.3	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	6.9	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.6	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	3.4	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.1	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.22	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.33	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.7	0.017	4	50	200
DETSC 2055 Chloride as Cl	760	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1600	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	28000	280	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2900	< 50	500	800	1000

Additional Information	
DETSC 2008 pH	6.8
DETSC 2009 Conductivity uS/cm	40.3
* Temperature*	17.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.098
Stage 1	
Volume of Leachant L2*	0.96
Volume of Eluate VE1*	0.91

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Sample Id IT02 0.50

Sample Numbers 2260344 2260358

Date Analysed 21/11/2023

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.7	3	5	6
DETSC 2003# Loss On Ignition	%	2.4	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	7.3	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.18	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	0.86	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.5	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	< 0.090	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	530	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1000	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	9200	92	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2700	< 50	500	800	1000

Additional Information

DETSC 2008 pH	6.9
DETSC 2009 Conductivity uS/cm	13.1
* Temperature*	17.0

Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.096

Stage 1

Volume of Leachant L2*	0.944
Volume of Eluate VE1*	0.89

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 23-26465

Client Ref 23-0881C

Contract Title Ballaly

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2260331	TP01 0.50	SOIL	NAD	none	Robertas Ciparis
2260332	TP02 0.50	SOIL	NAD	none	Robertas Ciparis
2260333	TP03 0.50	SOIL	NAD	none	Robertas Ciparis
2260334	TP04 0.50	SOIL	NAD	none	Robertas Ciparis
2260335	TP05 0.50	SOIL	NAD	none	Robertas Ciparis
2260336	TP06 0.50	SOIL	NAD	none	Robertas Ciparis
2260337	ST01 0.50	SOIL	NAD	none	Robertas Ciparis
2260338	ST02 0.50	SOIL	NAD	none	Robertas Ciparis
2260339	ST03 0.50	SOIL	NAD	none	Robertas Ciparis
2260340	ST05 0.50	SOIL	NAD	none	Robertas Ciparis
2260341	ST06 0.50	SOIL	NAD	none	Robertas Ciparis
2260342	ST07 0.50	SOIL	NAD	none	Robertas Ciparis
2260343	IT01A 0.50	SOIL	NAD	none	Robertas Ciparis
2260344	IT02 0.50	SOIL	NAD	none	Robertas Ciparis

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 23-26465
 Client Ref 23-0881C
 Contract Ballaly

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2260331	TP01 0.50 SOIL	24/10/23	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2260332	TP02 0.50 SOIL	24/10/23	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2260333	TP03 0.50 SOIL	24/10/23	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2260334	TP04 0.50 SOIL	24/10/23	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2260335	TP05 0.50 SOIL	27/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2260336	TP06 0.50 SOIL	24/10/23	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2260337	ST01 0.50 SOIL	26/10/23	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2260338	ST02 0.50 SOIL	25/10/23	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2260339	ST03 0.50 SOIL	27/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2260340	ST05 0.50 SOIL	31/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2260341	ST06 0.50 SOIL	31/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2260342	ST07 0.50 SOIL	31/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2260343	IT01A 0.50 SOIL	26/10/23	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	

Information in Support of the Analytical Results

Our Ref 23-26465
 Client Ref 23-0881C
 Contract Ballaly

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
2260344	IT02 0.50 SOIL	26/10/23		GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
2260345	TP01 0.50 LEACHATE	24/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260346	TP02 0.50 LEACHATE	24/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260347	TP03 0.50 LEACHATE	24/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260348	TP04 0.50 LEACHATE	24/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260349	TP05 0.50 LEACHATE	27/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260350	TP06 0.50 LEACHATE	24/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260351	ST01 0.50 LEACHATE	26/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260352	ST02 0.50 LEACHATE	25/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260353	ST03 0.50 LEACHATE	27/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260354	ST05 0.50 LEACHATE	31/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260355	ST06 0.50 LEACHATE	31/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260356	ST07 0.50 LEACHATE	31/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260357	IT01A 0.50 LEACHATE	26/10/23		GJ 250ml, GJ 60ml, PT 1L		
2260358	IT02 0.50 LEACHATE	26/10/23		GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C44	EH_CU_1D_AR
Aromatic C10-C44	EH_CU_1D_AR
Ali/Aro C10-C44	EH_CU_1D_Total
TPH (C10-C40)	EH_1D_Total
C24-C40 Lube Oil Range Organics (LO)	EH_1D_Total

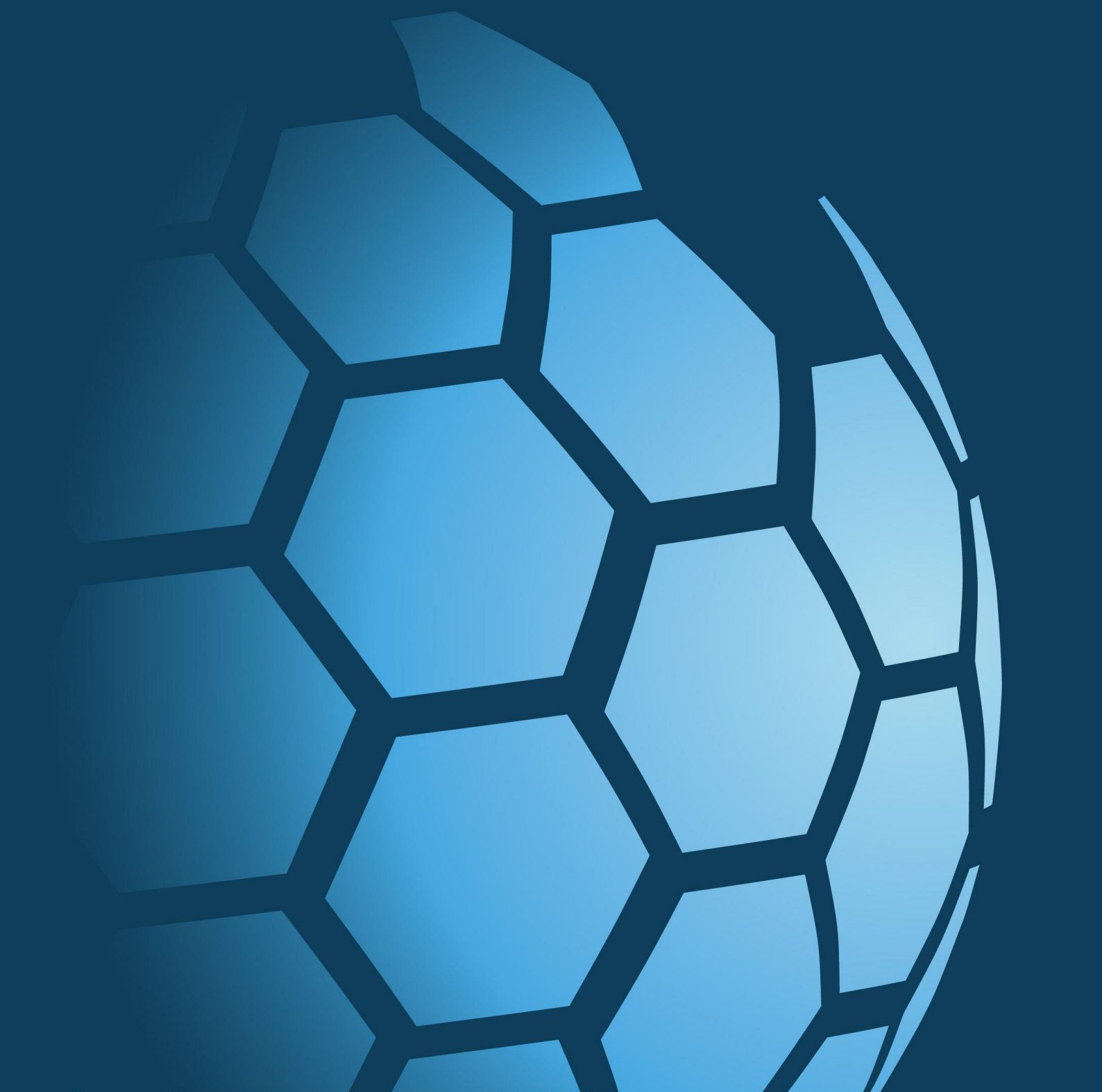
End of Report



CAUSEWAY
— GEOTECH

APPENDIX K

SPT HAMMER ENERGY MEASUREMENT REPORT



SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwoods Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref: 0895.
Test Date: 18/02/2023
Report Date: 20/02/2023
File Name: 0895..spt
Test Operator: RWS

Instrumented Rod Data

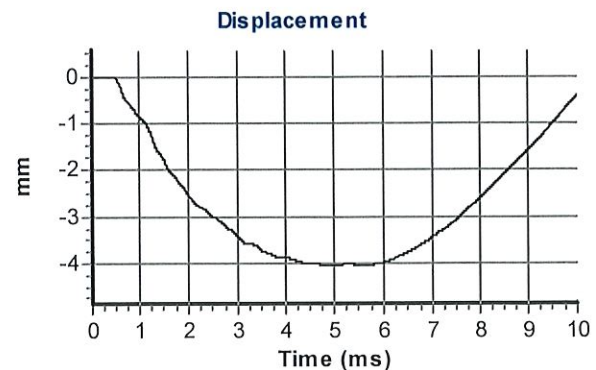
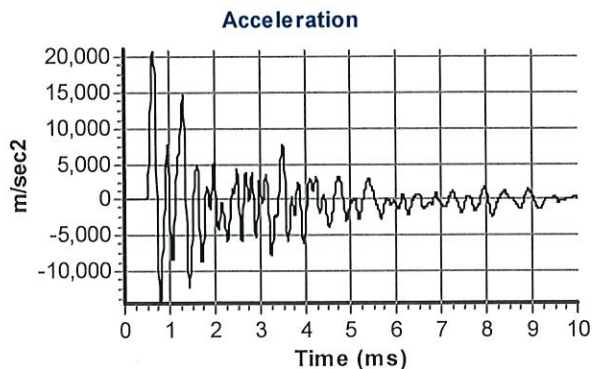
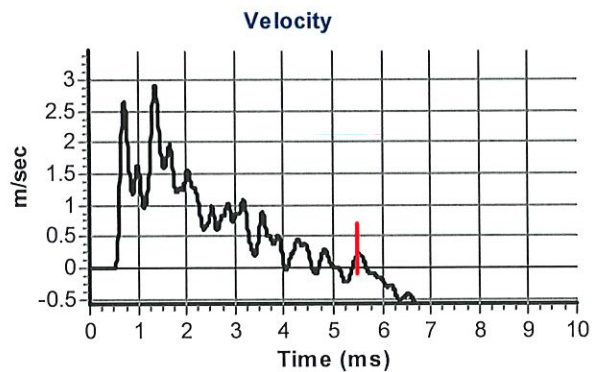
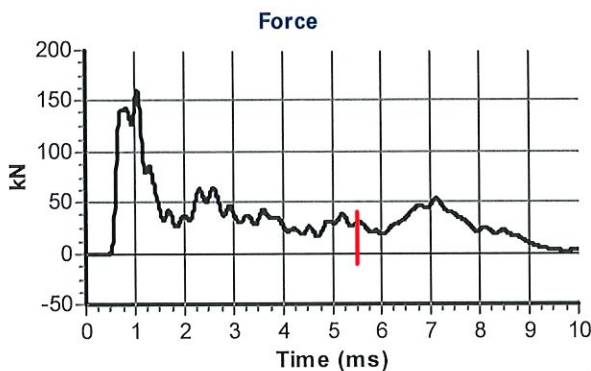
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 64786
Accelerometer No.2: 64789

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

CAUSEWAY



Calculations

Area of Rod A (mm^2): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 309

Energy Ratio E_r (%): 65

Signed: Bob Stewart

Title: Technician

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwoods Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref: 1387.
Test Date: 18/02/2023
Report Date: 20/02/2023
File Name: 1387..spt
Test Operator: RWS

Instrumented Rod Data

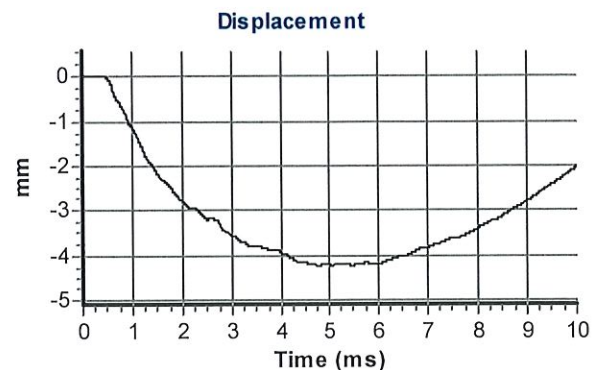
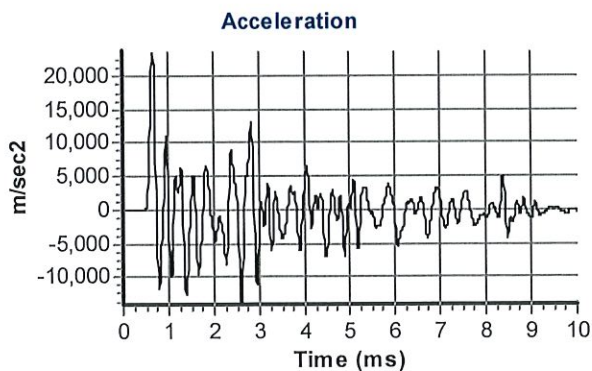
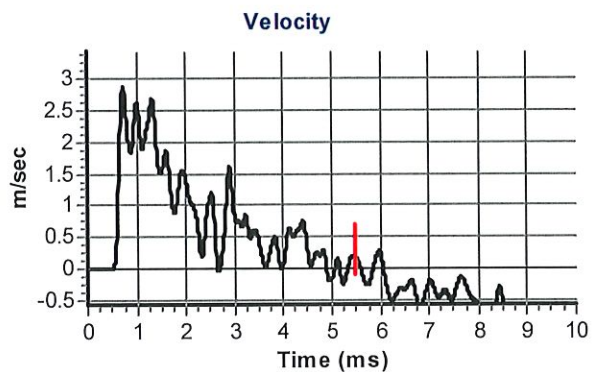
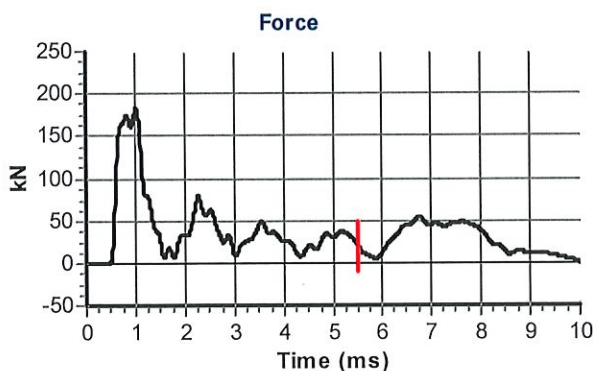
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.7
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 64786
Accelerometer No.2: 64789

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

CAUSEWAY



Calculations

Area of Rod A (mm^2): 996
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 322

Energy Ratio E_r (%): **68**

Signed: Bob Stewart

Title: Technician

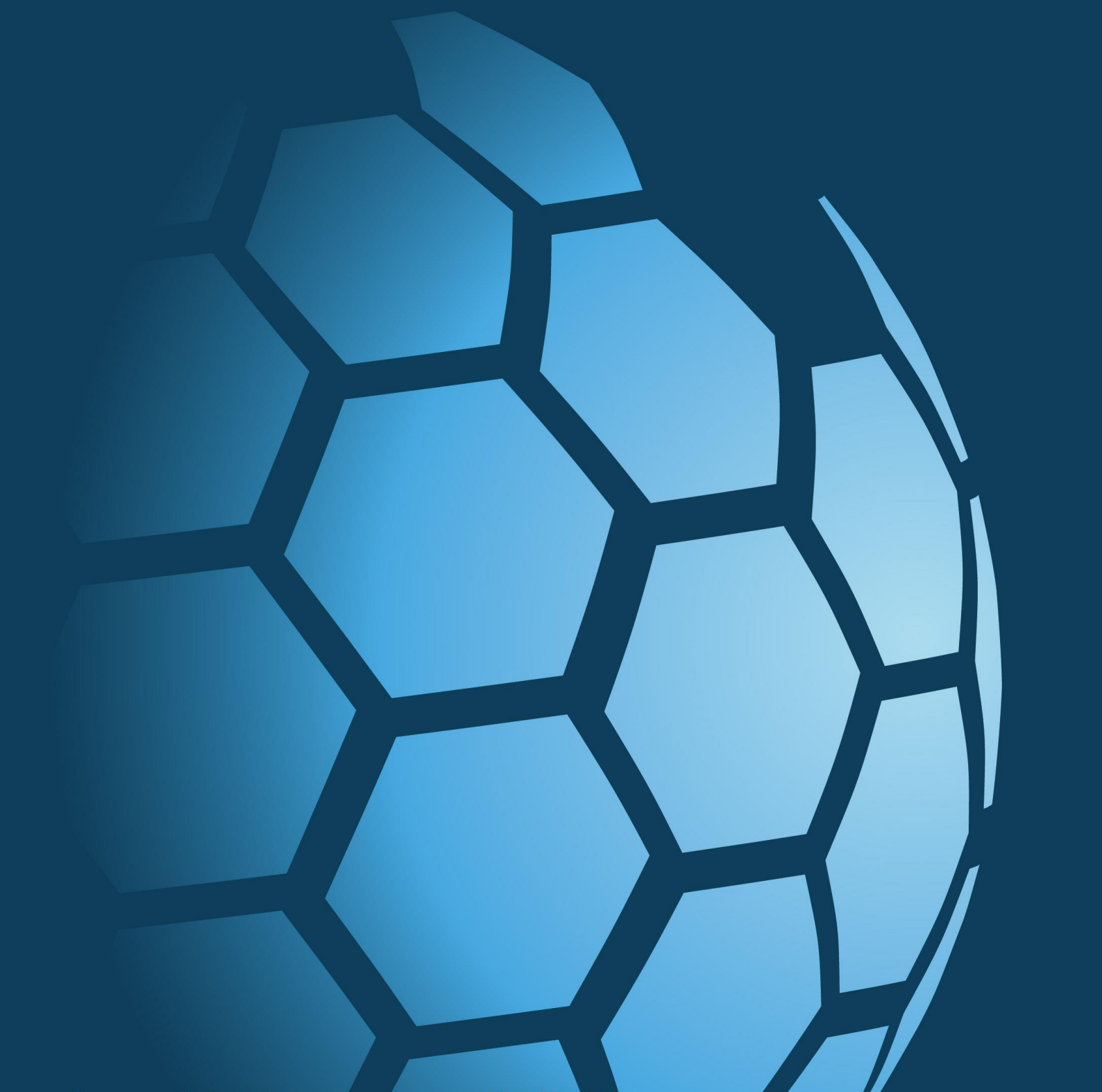
The recommended calibration interval is 12 months



CAUSEWAY
— GEOTECH

APPENDIX L

WASTE CLASSIFICATION REPORT



Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



TJDH6-1C6Y9-8YYL7

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

Job name

23-0881C Ballaly

Description/Comments

Assessment of soil samples collected during October 2023 ground investigation

Project

23-0881C

Site

Ballaly

Classified by

Name: Stephen Franey	Company: Causeway Geotech Ltd
Date: 08 Jul 2024 09:28 GMT	8 Drumahiskey Road
Telephone: 028 2766 6640	Ballymoney
	BT53 7QL

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course
 Hazardous Waste Classification
 Most recent 3 year Refresher

Date
 06 Aug 2020
 01 Aug 2023

Next 3 year Refresher due by Aug 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Ballaly, Co. Dublin

Post Code N/A

Description of industry/producer giving rise to the waste

Social housing development

Description of the specific process, sub-process and/or activity that created the waste

Waste created during foundation excavations

Description of the waste

Glacial till and reworked glacial till (made ground)

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results		Page
					Inert	Non Haz	
1	TP01/0.50/2023-10-24		Non Hazardous		Pass	Pass	3
2	TP02/0.50/2023-10-24		Non Hazardous		Pass	Pass	7
3	TP03/0.50/2023-10-24		Non Hazardous		Pass	Pass	11
4	TP04/0.50/2023-10-24		Non Hazardous		Pass	Pass	15
5	TP05/0.50/2023-10-27		Non Hazardous		Pass	Pass	19
6	TP06/0.50/2023-10-24		Non Hazardous		Pass	Pass	23
7	ST01/0.50/2023-10-26		Non Hazardous		Pass	Pass	27
8	ST02/0.50/2023-10-25		Non Hazardous		Fail	Fail	31
9	ST03/0.50/2023-10-27		Non Hazardous		Pass	Pass	35
10	ST05/0.50/2023-10-31		Non Hazardous		Fail	Fail	39
11	ST06/0.50/2023-10-31		Non Hazardous		Fail	Pass	43
12	ST07/0.50/2023-10-31		Non Hazardous		Pass	Pass	47
13	IT01A/0.50/2023-10-26		Non Hazardous		Pass	Pass	51
14	IT02/0.50/2023-10-26		Non Hazardous		Pass	Pass	55
15	BH01/0.50/2023-11-13		Non Hazardous		-	-	59
16	BH02/0.50/2023-11-13		Non Hazardous		-	-	63
17	BH06/0.50/2023-11-11		Non Hazardous		-	-	67
18	BH04/0.50/2023-11-11		Non Hazardous		-	-	71
19	BH11/0.50/2023-11-13		Non Hazardous		-	-	75

Related documents

#	Name	Description
1	23-26465.batch	DETS North .batch file used to populate the Job
2	23-26465.hwol	DETS North .hwol file used to populate the Job
3	23-28041.hwol	DETS North .hwol file used to populate the Job
4	Example waste stream template for contaminated soils	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate the samples in this Job: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

Report

Created by: Stephen Franey

Created date: 08 Jul 2024 09:28 GMT

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Classification of sample: TP01/0.50/2023-10-24

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: TP01/0.50/2023-10-24	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 17% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

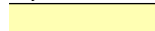



Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				7.3	mg/kg	1.197	7.253	mg/kg	0.000725 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				21	mg/kg	1.32	23.013	mg/kg	0.0023 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				210	mg/kg	1.233	214.998	mg/kg	0.0215 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	2.9	mg/kg	3.22	7.75	mg/kg	0.000775 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				1.8	mg/kg	1.142	1.707	mg/kg	0.000171 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				34	mg/kg	1.462	41.245	mg/kg	0.00412 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				120	mg/kg	1.126	112.138	mg/kg	0.0112 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	200	mg/kg		166	mg/kg	0.0166 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.09	mg/kg	1.353	0.101	mg/kg	0.0000101 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				1.9	mg/kg	1.5	2.366	mg/kg	0.000237 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				23	mg/kg	2.637	50.334	mg/kg	0.00503 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				0.9	mg/kg	2.554	1.908	mg/kg	0.000191 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				570	mg/kg	1.245	588.874	mg/kg	0.0589 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
17	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
18	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
19	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
20	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.1 mg/kg	1.884	0.156 mg/kg	0.0000156 %	✓	
	006-007-00-5									
22	pH		PH		10.2 pH		10.2 pH	10.2 pH		
23	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
24	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
25	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
26	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
27	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
28	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
29	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
30	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
31	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
32	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
33	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
34	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
35	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
36	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
37	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
38	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
39	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
40	polychlorobiphenyls; PCB				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
41	monohydric phenols		P1186		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.123 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP01/0.50/2023-10-24

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 0.8	3	5
2	LOI (loss on ignition)	% 2.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 10.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.013	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg 1.2	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 250	4,000	60,000

Key

User supplied data

Classification of sample: TP02/0.50/2023-10-24

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP02/0.50/2023-10-24	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12% (wet weight correction)		

Hazard properties

None identified





Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				47	mg/kg	1.197	49.512	mg/kg	0.00495 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				26	mg/kg	1.32	30.209	mg/kg	0.00302 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				120	mg/kg	1.233	130.257	mg/kg	0.013 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	1.7	mg/kg	3.22	4.817	mg/kg	0.000482 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				19	mg/kg	1.142	19.1	mg/kg	0.00191 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				34	mg/kg	1.462	43.73	mg/kg	0.00437 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				120	mg/kg	1.126	118.894	mg/kg	0.0119 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	290	mg/kg		255.2	mg/kg	0.0255 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.34	mg/kg	1.353	0.405	mg/kg	0.0000405 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				1.7	mg/kg	1.5	2.244	mg/kg	0.000224 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				20	mg/kg	2.637	46.406	mg/kg	0.00464 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				1500	mg/kg	1.245	1643.022	mg/kg	0.164 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.1 mg/kg	1.884	0.166 mg/kg	0.0000166 %	✓	
22	pH PH				11.1 pH		11.1 pH	11.1 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene 204-927-3 129-00-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.236 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP02/0.50/2023-10-24

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 1.4	3	5
2	LOI (loss on ignition)	% 4.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 11.1	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.02	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg <0.1	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 330	4,000	60,000

Key

User supplied data

Classification of sample: TP03/0.50/2023-10-24

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP03/0.50/2023-10-24	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
9.1%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

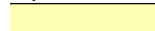



Determinands

Moisture content: 9.1% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.6	mg/kg	1.197	1.741	mg/kg	0.000174 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				8	mg/kg	1.32	9.601	mg/kg	0.00096 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				89	mg/kg	1.233	99.791	mg/kg	0.00998 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.8	mg/kg	3.22	2.341	mg/kg	0.000234 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.8	mg/kg	1.142	0.831	mg/kg	0.0000831 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15	mg/kg	1.462	19.928	mg/kg	0.00199 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				23	mg/kg	1.126	23.539	mg/kg	0.00235 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	42	mg/kg		38.178	mg/kg	0.00382 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				1.5	mg/kg	1.353	1.845	mg/kg	0.000185 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				1.6	mg/kg	1.5	2.182	mg/kg	0.000218 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				20	mg/kg	2.637	47.935	mg/kg	0.00479 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				260	mg/kg	1.245	294.176	mg/kg	0.0294 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
22	pH PH				8.5 pH		8.5 pH	8.5 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene 204-927-3 129-00-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0558 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP03/0.50/2023-10-24

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	<0.5	3
2	LOI (loss on ignition)	%	1.4	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1
5	Mineral oil (C10 to C40)	mg/kg	<10	500
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1.6	100
7	pH	pH	8.5	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	>6
Eluate Analysis 10:1				
9	arsenic	mg/kg	<0.01	0.5
10	barium	mg/kg	<0.1	20
11	cadmium	mg/kg	<0.02	0.04
12	chromium	mg/kg	<0.1	10
13	copper	mg/kg	<0.02	2
14	mercury	mg/kg	<0.002	0.01
15	molybdenum	mg/kg	<0.1	0.5
16	nickel	mg/kg	<0.1	0.4
17	lead	mg/kg	<0.05	0.5
18	antimony	mg/kg	<0.05	0.06
19	selenium	mg/kg	<0.03	0.1
20	zinc	mg/kg	<0.01	4
21	chloride	mg/kg	<100	800
22	fluoride	mg/kg	1.1	10
23	sulphate	mg/kg	<100	1,000
24	phenol index	mg/kg	<1	1
25	DOC (dissolved organic carbon)	mg/kg	<50	500
26	TDS (total dissolved solids)	mg/kg	240	4,000

Key

User supplied data

Classification of sample: TP04/0.50/2023-10-24

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP04/0.50/2023-10-24	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13% (wet weight correction)		

Hazard properties

None identified





Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				16	mg/kg	1.197	16.664	mg/kg	0.00167 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				18	mg/kg	1.32	20.676	mg/kg	0.00207 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				67	mg/kg	1.233	71.9	mg/kg	0.00719 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	1.5	mg/kg	3.22	4.202	mg/kg	0.00042 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				6.7	mg/kg	1.142	6.659	mg/kg	0.000666 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27	mg/kg	1.462	34.332	mg/kg	0.00343 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				54	mg/kg	1.126	52.894	mg/kg	0.00529 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	110	mg/kg		95.7	mg/kg	0.00957 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.19	mg/kg	1.353	0.224	mg/kg	0.0000224 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				2.7	mg/kg	1.5	3.524	mg/kg	0.000352 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				29	mg/kg	2.637	66.524	mg/kg	0.00665 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				0.8	mg/kg	2.554	1.777	mg/kg	0.000178 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				510	mg/kg	1.245	552.28	mg/kg	0.0552 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
17	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
18	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
19	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
20	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
	006-007-00-5									
22	pH		PH		9.4 pH		9.4 pH	9.4 pH		
23	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
24	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
25	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
26	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
27	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
28	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
29	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
30	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
31	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
32	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
33	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
34	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
35	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
36	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
37	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
38	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
39	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
40	polychlorobiphenyls; PCB				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
41	monohydric phenols		P1186		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0942 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP04/0.50/2023-10-24

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 0.8	3	5
2	LOI (loss on ignition)	% 2.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 9.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.016	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg <0.1	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 140	4,000	60,000

Key

User supplied data

Classification of sample: TP05/0.50/2023-10-27

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP05/0.50/2023-10-27	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15% (wet weight correction)		

Hazard properties

None identified

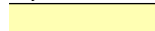



Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.3	mg/kg	1.197	1.323	mg/kg	0.000132 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				9.4	mg/kg	1.32	10.549	mg/kg	0.00105 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				69	mg/kg	1.233	72.344	mg/kg	0.00723 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.3	mg/kg	3.22	0.821	mg/kg	0.0000821 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.7	mg/kg	1.142	0.68	mg/kg	0.000068 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21	mg/kg	1.462	26.089	mg/kg	0.00261 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				18	mg/kg	1.126	17.226	mg/kg	0.00172 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	18	mg/kg		15.3	mg/kg	0.00153 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.07	mg/kg	1.353	0.0805	mg/kg	0.0000805 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				1.4	mg/kg	1.5	1.785	mg/kg	0.000179 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				22	mg/kg	2.637	49.306	mg/kg	0.00493 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				84	mg/kg	1.245	88.873	mg/kg	0.00889 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
22	pH PH				8.6 pH		8.6 pH	8.6 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene 204-927-3 129-00-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.03 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP05/0.50/2023-10-27

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 0.6	3	5
2	LOI (loss on ignition)	% 2.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg <0.01	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg <0.1	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 100	4,000	60,000

Key

User supplied data

Classification of sample: TP06/0.50/2023-10-24

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP06/0.50/2023-10-24	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
16% (wet weight correction)	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified





Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				5.4	mg/kg	1.197	5.43	mg/kg	0.000543 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				20	mg/kg	1.32	22.181	mg/kg	0.00222 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				78	mg/kg	1.233	80.819	mg/kg	0.00808 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.9	mg/kg	3.22	2.434	mg/kg	0.000243 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				3.1	mg/kg	1.142	2.975	mg/kg	0.000297 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				25	mg/kg	1.462	30.693	mg/kg	0.00307 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				48	mg/kg	1.126	45.396	mg/kg	0.00454 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	54	mg/kg		45.36	mg/kg	0.00454 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.12	mg/kg	1.353	0.136	mg/kg	0.0000136 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				3	mg/kg	1.5	3.78	mg/kg	0.000378 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				44	mg/kg	2.637	97.452	mg/kg	0.00975 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				1.2	mg/kg	2.554	2.574	mg/kg	0.000257 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				230	mg/kg	1.245	240.479	mg/kg	0.024 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
22	pH PH				7.4 pH		7.4 pH	7.4 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene 204-927-3 129-00-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0594 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP06/0.50/2023-10-24

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 0.6	3	5
2	LOI (loss on ignition)	% 2.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 7.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.023	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg <0.1	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 59	4,000	60,000

Key

User supplied data

Classification of sample: ST01/0.50/2023-10-26

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: ST01/0.50/2023-10-26	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 11% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

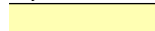



Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				1.1 mg/kg	1.197	1.172 mg/kg	0.000117 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				9.9 mg/kg	1.32	11.633 mg/kg	0.00116 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	barium { barium sulphide }				67 mg/kg	1.233	73.553 mg/kg	0.00736 %	✓	
	016-002-00-X	244-214-4	21109-95-5							
4	boron { diboron trioxide }			11	0.4 mg/kg	3.22	1.146 mg/kg	0.000115 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	cadmium { cadmium oxide }				1.6 mg/kg	1.142	1.627 mg/kg	0.000163 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15 mg/kg	1.462	19.512 mg/kg	0.00195 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				29 mg/kg	1.126	29.059 mg/kg	0.00291 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	35 mg/kg		31.15 mg/kg	0.00311 %	✓	
	082-001-00-6									
10	mercury { mercury dichloride }				0.12 mg/kg	1.353	0.145 mg/kg	0.0000145 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
11	molybdenum { molybdenum(VI) oxide }				2.3 mg/kg	1.5	3.071 mg/kg	0.000307 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
12	nickel { nickel sulfate }				22 mg/kg	2.637	51.626 mg/kg	0.00516 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
13	selenium { nickel selenate }				0.7 mg/kg	2.554	1.591 mg/kg	0.000159 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
14	zinc { zinc oxide }				92 mg/kg	1.245	101.917 mg/kg	0.0102 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
17	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
18	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
19	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
20	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.1 mg/kg	1.884	0.168 mg/kg	0.0000168 %	✓	
	006-007-00-5									
22	pH		PH		8 pH		8 pH	8pH		
23	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
24	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
25	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
26	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
27	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
28	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
29	fluoranthene				0.2 mg/kg		0.178 mg/kg	0.0000178 %	✓	
		205-912-4	206-44-0							
30	pyrene				0.2 mg/kg		0.178 mg/kg	0.0000178 %	✓	
		204-927-3	129-00-0							
31	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
32	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
33	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
34	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
35	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
36	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
37	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
38	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
39	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
40	polychlorobiphenyls; PCB				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
41	monohydric phenols		P1186		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0342 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: ST01/0.50/2023-10-26

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 2.9	3	5
2	LOI (loss on ignition)	% 3.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 8	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg 0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.023	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg 1	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 360	4,000	60,000

Key

User supplied data

Classification of sample: ST02/0.50/2023-10-25

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ST02/0.50/2023-10-25	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
7.9%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

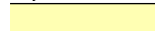



Determinands

Moisture content: 7.9% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.7	mg/kg	1.197	1.874	mg/kg	0.000187 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				9.1	mg/kg	1.32	11.066	mg/kg	0.00111 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				45	mg/kg	1.233	51.122	mg/kg	0.00511 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.3	mg/kg	3.22	0.89	mg/kg	0.000089 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				1.8	mg/kg	1.142	1.894	mg/kg	0.000189 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13	mg/kg	1.462	17.499	mg/kg	0.00175 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				22	mg/kg	1.126	22.813	mg/kg	0.00228 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	23	mg/kg		21.183	mg/kg	0.00212 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.09	mg/kg	1.353	0.112	mg/kg	0.0000112 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				1.4	mg/kg	1.5	1.934	mg/kg	0.000193 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				22	mg/kg	2.637	53.425	mg/kg	0.00534 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				0.7	mg/kg	2.554	1.646	mg/kg	0.000165 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				91	mg/kg	1.245	104.321	mg/kg	0.0104 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
22	pH PH				8.4 pH		8.4 pH	8.4 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene 204-927-3 129-00-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0304 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: ST02/0.50/2023-10-25

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.9	3	5
2	LOI (loss on ignition)	%	2.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1.6	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.01	0.5	2
10	barium	mg/kg	<0.1	20	100
11	cadmium	mg/kg	<0.02	0.04	1
12	chromium	mg/kg	<0.1	0.5	10
13	copper	mg/kg	<0.02	2	50
14	mercury	mg/kg	<0.002	0.01	0.2
15	molybdenum	mg/kg	<0.1	0.5	10
16	nickel	mg/kg	<0.1	0.4	10
17	lead	mg/kg	<0.05	0.5	10
18	antimony	mg/kg	<0.05	0.06	0.7
19	selenium	mg/kg	<0.03	0.1	0.5
20	zinc	mg/kg	<0.01	4	50
21	chloride	mg/kg	<100	800	15,000
22	fluoride	mg/kg	<0.1	10	150
23	sulphate	mg/kg	<100	1,000	20,000
24	phenol index	mg/kg	<1	1	-
25	DOC (dissolved organic carbon)	mg/kg	3600	500	800
26	TDS (total dissolved solids)	mg/kg	380	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail
	Non Hazardous WAC criteria fail

Classification of sample: ST03/0.50/2023-10-27

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
ST03/0.50/2023-10-27	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12% (wet weight correction)		

Hazard properties

None identified

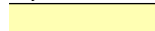



Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				12 mg/kg	1.32	13.943 mg/kg	0.00139 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	barium { barium sulphide }				57 mg/kg	1.233	61.872 mg/kg	0.00619 %	✓	
	016-002-00-X	244-214-4	21109-95-5							
4	boron { diboron trioxide }			11	0.3 mg/kg	3.22	0.85 mg/kg	0.000085 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	cadmium { cadmium oxide }				1.5 mg/kg	1.142	1.508 mg/kg	0.000151 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	18.006 mg/kg	0.0018 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				23 mg/kg	1.126	22.788 mg/kg	0.00228 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	24 mg/kg		21.12 mg/kg	0.00211 %	✓	
	082-001-00-6									
10	mercury { mercury dichloride }				0.08 mg/kg	1.353	0.0953 mg/kg	0.00000953 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
11	molybdenum { molybdenum(VI) oxide }				1.5 mg/kg	1.5	1.98 mg/kg	0.000198 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
12	nickel { nickel sulfate }				22 mg/kg	2.637	51.046 mg/kg	0.0051 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
13	selenium { nickel selenate }				0.6 mg/kg	2.554	1.348 mg/kg	0.000135 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
14	zinc { zinc oxide }				84 mg/kg	1.245	92.009 mg/kg	0.0092 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
17	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
18	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
19	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
20	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
	006-007-00-5									
22	pH		PH		8.3 pH		8.3 pH	8.3 pH		
23	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
24	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
25	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
26	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
27	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
28	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
29	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
30	pyrene				0.1 mg/kg		0.088 mg/kg	0.0000088 %	✓	
		204-927-3	129-00-0							
31	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
32	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
33	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
34	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
35	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
36	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
37	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
38	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
39	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
40	polychlorobiphenyls; PCB				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
41	monohydric phenols		P1186		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0302 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: ST03/0.50/2023-10-27

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 1.6	3	5
2	LOI (loss on ignition)	% 2.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg 0.036	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg 0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.021	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg 2.2	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 420	4,000	60,000

Key

User supplied data

Classification of sample: ST05/0.50/2023-10-31

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ST05/0.50/2023-10-31	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
18%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

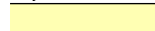



Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				3	mg/kg	1.197	2.945	mg/kg	0.000294 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				16	mg/kg	1.32	17.323	mg/kg	0.00173 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				80	mg/kg	1.233	80.917	mg/kg	0.00809 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.5	mg/kg	3.22	1.32	mg/kg	0.000132 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				3.2	mg/kg	1.142	2.997	mg/kg	0.0003 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18	mg/kg	1.462	21.573	mg/kg	0.00216 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				40	mg/kg	1.126	36.929	mg/kg	0.00369 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	50	mg/kg		41	mg/kg	0.0041 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.13	mg/kg	1.353	0.144	mg/kg	0.0000144 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				3.4	mg/kg	1.5	4.183	mg/kg	0.000418 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				37	mg/kg	2.637	79.997	mg/kg	0.008 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				0.9	mg/kg	2.554	1.885	mg/kg	0.000188 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				160	mg/kg	1.245	163.306	mg/kg	0.0163 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				13	mg/kg		10.66	mg/kg	0.00107 %	✓	
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
17	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
18	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
19	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
20	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.2 mg/kg	1.884	0.309 mg/kg	0.0000309 %	✓	
	006-007-00-5									
22	pH		PH		7.9 pH		7.9 pH	7.9 pH		
23	naphthalene				0.1 mg/kg		0.082 mg/kg	0.0000082 %	✓	
	601-052-00-2	202-049-5	91-20-3							
24	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
25	acenaphthene				0.7 mg/kg		0.574 mg/kg	0.0000574 %	✓	
		201-469-6	83-32-9							
26	fluorene				0.7 mg/kg		0.574 mg/kg	0.0000574 %	✓	
		201-695-5	86-73-7							
27	phenanthrene				4.2 mg/kg		3.444 mg/kg	0.000344 %	✓	
		201-581-5	85-01-8							
28	anthracene				0.6 mg/kg		0.492 mg/kg	0.0000492 %	✓	
		204-371-1	120-12-7							
29	fluoranthene				3.6 mg/kg		2.952 mg/kg	0.000295 %	✓	
		205-912-4	206-44-0							
30	pyrene				3.4 mg/kg		2.788 mg/kg	0.000279 %	✓	
		204-927-3	129-00-0							
31	benzo[a]anthracene				1.4 mg/kg		1.148 mg/kg	0.000115 %	✓	
	601-033-00-9	200-280-6	56-55-3							
32	chrysene				1.7 mg/kg		1.394 mg/kg	0.000139 %	✓	
	601-048-00-0	205-923-4	218-01-9							
33	benzo[b]fluoranthene				1.2 mg/kg		0.984 mg/kg	0.0000984 %	✓	
	601-034-00-4	205-911-9	205-99-2							
34	benzo[k]fluoranthene				0.6 mg/kg		0.492 mg/kg	0.0000492 %	✓	
	601-036-00-5	205-916-6	207-08-9							
35	benzo[a]pyrene; benzo[def]chrysene				1.5 mg/kg		1.23 mg/kg	0.000123 %	✓	
	601-032-00-3	200-028-5	50-32-8							
36	indeno[123-cd]pyrene				1 mg/kg		0.82 mg/kg	0.000082 %	✓	
		205-893-2	193-39-5							
37	dibenz[a,h]anthracene				0.2 mg/kg		0.164 mg/kg	0.0000164 %	✓	
	601-041-00-2	200-181-8	53-70-3							
38	benzo[ghi]perylene				1 mg/kg		0.82 mg/kg	0.000082 %	✓	
		205-883-8	191-24-2							
39	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
40	polychlorobiphenyls; PCB				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
41	monohydric phenols		P1186		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0486 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because **No free product present in soils during ground investigation works**

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00107%)

WAC results for sample: ST05/0.50/2023-10-31

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 1.9	3	5
2	LOI (loss on ignition)	% 4.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg 41	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg 22	100	-
7	pH	pH 7.9	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.016	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg 1.4	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg 1500	500	800
26	TDS (total dissolved solids)	mg/kg 310	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail
	Non Hazardous WAC criteria fail

Classification of sample: ST06/0.50/2023-10-31

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
ST06/0.50/2023-10-31	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
21% (wet weight correction)		

Hazard properties

None identified

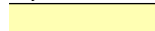



Determinands

Moisture content: 21% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				2.2 mg/kg	1.197	2.081 mg/kg	0.000208 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				23 mg/kg	1.32	23.99 mg/kg	0.0024 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	barium { barium sulphide }				100 mg/kg	1.233	97.446 mg/kg	0.00974 %	✓	
	016-002-00-X	244-214-4	21109-95-5							
4	boron { diboron trioxide }			11	0.3 mg/kg	3.22	0.763 mg/kg	0.0000763 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	cadmium { cadmium oxide }				2.3 mg/kg	1.142	2.076 mg/kg	0.000208 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19 mg/kg	1.462	21.938 mg/kg	0.00219 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				59 mg/kg	1.126	52.478 mg/kg	0.00525 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	120 mg/kg		94.8 mg/kg	0.00948 %	✓	
	082-001-00-6									
10	mercury { mercury dichloride }				0.7 mg/kg	1.353	0.748 mg/kg	0.0000748 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
11	molybdenum { molybdenum(VI) oxide }				4.4 mg/kg	1.5	5.215 mg/kg	0.000521 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
12	nickel { nickel sulfate }				41 mg/kg	2.637	85.402 mg/kg	0.00854 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
13	selenium { nickel selenate }				1.2 mg/kg	2.554	2.421 mg/kg	0.000242 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
14	zinc { zinc oxide }				120 mg/kg	1.245	117.999 mg/kg	0.0118 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.3 mg/kg	1.884	0.447 mg/kg	0.0000447 %	✓	
22	pH PH				7.6 pH		7.6 pH	7.6 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene 204-927-3 129-00-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0522 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: ST06/0.50/2023-10-31

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 4.5	3	5
2	LOI (loss on ignition)	% 8.5	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 7.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.021	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg <0.1	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg 490	500	800
26	TDS (total dissolved solids)	mg/kg 190	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: ST07/0.50/2023-10-31

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ST07/0.50/2023-10-31	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
19%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified





Determinands

Moisture content: 19% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				3.5	mg/kg	1.197	3.394	mg/kg	0.000339 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				22	mg/kg	1.32	23.528	mg/kg	0.00235 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				93	mg/kg	1.233	92.919	mg/kg	0.00929 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.4	mg/kg	3.22	1.043	mg/kg	0.000104 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				3.6	mg/kg	1.142	3.331	mg/kg	0.000333 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27	mg/kg	1.462	31.964	mg/kg	0.0032 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				63	mg/kg	1.126	57.454	mg/kg	0.00575 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	58	mg/kg		46.98	mg/kg	0.0047 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.21	mg/kg	1.353	0.23	mg/kg	0.000023 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				5.9	mg/kg	1.5	7.169	mg/kg	0.000717 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				71	mg/kg	2.637	151.636	mg/kg	0.0152 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				0.8	mg/kg	2.554	1.655	mg/kg	0.000165 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				170	mg/kg	1.245	171.397	mg/kg	0.0171 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
17	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
18	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
19	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
20	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.2 mg/kg	1.884	0.305 mg/kg	0.0000305 %	✓	
	006-007-00-5									
22	pH		PH		8.3 pH		8.3 pH	8.3 pH		
23	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
24	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
25	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
26	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
27	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
28	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
29	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
30	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
31	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
32	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
33	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
34	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
35	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
36	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
37	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
38	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
39	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
40	polychlorobiphenyls; PCB				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
41	monohydric phenols		P1186		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0607 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: ST07/0.50/2023-10-31

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 1.8	3	5
2	LOI (loss on ignition)	% 4.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.015	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg <0.1	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 200	4,000	60,000

Key

User supplied data

Classification of sample: IT01A/0.50/2023-10-26

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
IT01A/0.50/2023-10-26	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
18% (wet weight correction)		

Hazard properties

None identified





Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				11	mg/kg	1.32	11.909	mg/kg	0.00119 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				56	mg/kg	1.233	56.642	mg/kg	0.00566 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.5	mg/kg	3.22	1.32	mg/kg	0.000132 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.8	mg/kg	1.142	0.749	mg/kg	0.0000749 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				20	mg/kg	1.462	23.97	mg/kg	0.0024 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				19	mg/kg	1.126	17.541	mg/kg	0.00175 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	19	mg/kg		15.58	mg/kg	0.00156 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.06	mg/kg	1.353	0.0666	mg/kg	0.00000666 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				1.2	mg/kg	1.5	1.476	mg/kg	0.000148 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				21	mg/kg	2.637	45.404	mg/kg	0.00454 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				0.7	mg/kg	2.554	1.466	mg/kg	0.000147 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				77	mg/kg	1.245	78.591	mg/kg	0.00786 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.2 mg/kg	1.884	0.309 mg/kg	0.0000309 %	✓	
22	pH PH				6.9 pH		6.9 pH	6.9 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				0.1 mg/kg		0.082 mg/kg	0.0000082 %	✓	
30	pyrene 204-927-3 129-00-0				0.1 mg/kg		0.082 mg/kg	0.0000082 %	✓	
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0271 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: IT01A/0.50/2023-10-26

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 1.6	3	5
2	LOI (loss on ignition)	% 4.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 6.9	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg 0.017	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg <0.1	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 280	4,000	60,000

Key

User supplied data

Classification of sample: IT02/0.50/2023-10-26

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
IT02/0.50/2023-10-26	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13% (wet weight correction)		

Hazard properties

None identified





Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				2.4 mg/kg	1.197	2.5 mg/kg	0.00025 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				11 mg/kg	1.32	12.636 mg/kg	0.00126 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	barium { barium sulphide }				53 mg/kg	1.233	56.876 mg/kg	0.00569 %	✓	
	016-002-00-X	244-214-4	21109-95-5							
4	boron { diboron trioxide }			11	0.4 mg/kg	3.22	1.121 mg/kg	0.000112 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	cadmium { cadmium oxide }				1.1 mg/kg	1.142	1.093 mg/kg	0.000109 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				25 mg/kg	1.462	31.789 mg/kg	0.00318 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				25 mg/kg	1.126	24.488 mg/kg	0.00245 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	22 mg/kg		19.14 mg/kg	0.00191 %	✓	
	082-001-00-6									
10	mercury { mercury dichloride }				0.07 mg/kg	1.353	0.0824 mg/kg	0.0000824 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
11	molybdenum { molybdenum(VI) oxide }				1.4 mg/kg	1.5	1.827 mg/kg	0.000183 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
12	nickel { nickel sulfate }				35 mg/kg	2.637	80.287 mg/kg	0.00803 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
13	selenium { nickel selenate }				<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
14	zinc { zinc oxide }				120 mg/kg	1.245	129.948 mg/kg	0.013 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
17	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
18	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
19	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
20	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.1 mg/kg	1.884	0.164 mg/kg	0.0000164 %	✓	
	006-007-00-5									
22	pH		PH		7.3 pH		7.3 pH	7.3 pH		
23	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
24	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
25	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
26	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
27	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
28	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
29	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
30	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
31	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
32	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
33	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
34	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
35	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
36	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
37	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
38	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
39	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
40	polychlorobiphenyls; PCB				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
41	monohydric phenols		P1186		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0378 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: IT02/0.50/2023-10-26

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 0.7	3	5
2	LOI (loss on ignition)	% 2.4	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 7.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.01	0.5	2
10	barium	mg/kg <0.1	20	100
11	cadmium	mg/kg <0.02	0.04	1
12	chromium	mg/kg <0.1	0.5	10
13	copper	mg/kg <0.02	2	50
14	mercury	mg/kg <0.002	0.01	0.2
15	molybdenum	mg/kg <0.1	0.5	10
16	nickel	mg/kg <0.1	0.4	10
17	lead	mg/kg <0.05	0.5	10
18	antimony	mg/kg <0.05	0.06	0.7
19	selenium	mg/kg <0.03	0.1	0.5
20	zinc	mg/kg <0.01	4	50
21	chloride	mg/kg <100	800	15,000
22	fluoride	mg/kg <0.1	10	150
23	sulphate	mg/kg <100	1,000	20,000
24	phenol index	mg/kg <1	1	-
25	DOC (dissolved organic carbon)	mg/kg <50	500	800
26	TDS (total dissolved solids)	mg/kg 92	4,000	60,000

Key

User supplied data

Classification of sample: BH01/0.50/2023-11-13

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH01/0.50/2023-11-13	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
16% (wet weight correction)		

Hazard properties

None identified

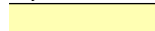



Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.2	mg/kg	1.197	2.212	mg/kg	0.000221 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				16	mg/kg	1.32	17.745	mg/kg	0.00177 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				60	mg/kg	1.233	62.168	mg/kg	0.00622 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.3	mg/kg	3.22	0.811	mg/kg	0.0000811 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				2.9	mg/kg	1.142	2.783	mg/kg	0.000278 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16	mg/kg	1.462	19.643	mg/kg	0.00196 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				50	mg/kg	1.126	47.287	mg/kg	0.00473 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	25	mg/kg		21	mg/kg	0.0021 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.08	mg/kg	1.353	0.091	mg/kg	0.0000091 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				4	mg/kg	1.5	5.041	mg/kg	0.000504 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				51	mg/kg	2.637	112.956	mg/kg	0.0113 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				130	mg/kg	1.245	135.923	mg/kg	0.0136 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.2 mg/kg	1.884	0.317 mg/kg	0.0000317 %	✓	
22	pH PH				7.9 pH		7.9 pH	7.9 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene 204-927-3 129-00-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0444 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: BH01/0.50/2023-11-13

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Non Haz (Non hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 0.7	3	5
2	LOI (loss on ignition)	% 3.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 7.9	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg	0.5	2
10	barium	mg/kg	20	100
11	cadmium	mg/kg	0.04	1
12	chromium	mg/kg	0.5	10
13	copper	mg/kg	2	50
14	mercury	mg/kg	0.01	0.2
15	molybdenum	mg/kg	0.5	10
16	nickel	mg/kg	0.4	10
17	lead	mg/kg	0.5	10
18	antimony	mg/kg	0.06	0.7
19	selenium	mg/kg	0.1	0.5
20	zinc	mg/kg	4	50
21	chloride	mg/kg	800	15,000
22	fluoride	mg/kg	10	150
23	sulphate	mg/kg	1,000	20,000
24	phenol index	mg/kg	1	-
25	DOC (dissolved organic carbon)	mg/kg	500	800
26	TDS (total dissolved solids)	mg/kg	4,000	60,000

Key

	User supplied data
	Missing WAC determinand value

Classification of sample: BH02/0.50/2023-11-13

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH02/0.50/2023-11-13	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12% (wet weight correction)		

Hazard properties

None identified





Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.1	mg/kg	1.197	1.159	mg/kg	0.000116 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				15	mg/kg	1.32	17.428	mg/kg	0.00174 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				61	mg/kg	1.233	66.214	mg/kg	0.00662 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.3	mg/kg	3.22	0.85	mg/kg	0.000085 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				1.4	mg/kg	1.142	1.407	mg/kg	0.000141 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15	mg/kg	1.462	19.293	mg/kg	0.00193 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				28	mg/kg	1.126	27.742	mg/kg	0.00277 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	29	mg/kg		25.52	mg/kg	0.00255 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.1	mg/kg	1.353	0.119	mg/kg	0.0000119 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				1.8	mg/kg	1.5	2.376	mg/kg	0.000238 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				27	mg/kg	2.637	62.648	mg/kg	0.00626 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				89	mg/kg	1.245	97.486	mg/kg	0.00975 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.1 mg/kg	1.884	0.166 mg/kg	0.0000166 %	✓	
22	pH PH				8.3 pH		8.3 pH	8.3 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene 204-927-3 129-00-0				0.2 mg/kg		0.176 mg/kg	0.0000176 %	✓	
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				0.3 mg/kg		0.264 mg/kg	0.0000264 %	✓	
Total:								0.0338 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: BH02/0.50/2023-11-13

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Non Haz (Non hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 0.9	3	5
2	LOI (loss on ignition)	% 2.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg	0.5	2
10	barium	mg/kg	20	100
11	cadmium	mg/kg	0.04	1
12	chromium	mg/kg	0.5	10
13	copper	mg/kg	2	50
14	mercury	mg/kg	0.01	0.2
15	molybdenum	mg/kg	0.5	10
16	nickel	mg/kg	0.4	10
17	lead	mg/kg	0.5	10
18	antimony	mg/kg	0.06	0.7
19	selenium	mg/kg	0.1	0.5
20	zinc	mg/kg	4	50
21	chloride	mg/kg	800	15,000
22	fluoride	mg/kg	10	150
23	sulphate	mg/kg	1,000	20,000
24	phenol index	mg/kg	1	-
25	DOC (dissolved organic carbon)	mg/kg	500	800
26	TDS (total dissolved solids)	mg/kg	4,000	60,000

Key

	User supplied data
	Missing WAC determinand value

Classification of sample: BH06/0.50/2023-11-11

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH06/0.50/2023-11-11	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
20% (wet weight correction)		

Hazard properties

None identified

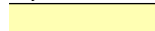



Determinands

Moisture content: 20% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.6	mg/kg	1.197	1.532	mg/kg	0.000153 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				17	mg/kg	1.32	17.956	mg/kg	0.0018 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				75	mg/kg	1.233	74.01	mg/kg	0.0074 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.3	mg/kg	3.22	0.773	mg/kg	0.0000773 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				2	mg/kg	1.142	1.828	mg/kg	0.000183 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18	mg/kg	1.462	21.046	mg/kg	0.0021 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				42	mg/kg	1.126	37.83	mg/kg	0.00378 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	69	mg/kg		55.2	mg/kg	0.00552 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.325	mg/kg	0.0000325 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				25	mg/kg	1.5	30.004	mg/kg	0.003 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				35	mg/kg	2.637	73.827	mg/kg	0.00738 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				0.7	mg/kg	2.554	1.43	mg/kg	0.000143 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				110	mg/kg	1.245	109.535	mg/kg	0.011 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.2 mg/kg	1.884	0.301 mg/kg	0.0000301 %	✓	
22	pH PH				7.7 pH		7.7 pH	7.7 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene 204-927-3 129-00-0				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				0.6 mg/kg		0.48 mg/kg	0.000048 %	✓	
Total:								0.044 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: BH06/0.50/2023-11-11

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Non Haz (Non hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 2.5	3	5
2	LOI (loss on ignition)	% 6.4	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 7.7	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg	0.5	2
10	barium	mg/kg	20	100
11	cadmium	mg/kg	0.04	1
12	chromium	mg/kg	0.5	10
13	copper	mg/kg	2	50
14	mercury	mg/kg	0.01	0.2
15	molybdenum	mg/kg	0.5	10
16	nickel	mg/kg	0.4	10
17	lead	mg/kg	0.5	10
18	antimony	mg/kg	0.06	0.7
19	selenium	mg/kg	0.1	0.5
20	zinc	mg/kg	4	50
21	chloride	mg/kg	800	15,000
22	fluoride	mg/kg	10	150
23	sulphate	mg/kg	1,000	20,000
24	phenol index	mg/kg	1	-
25	DOC (dissolved organic carbon)	mg/kg	500	800
26	TDS (total dissolved solids)	mg/kg	4,000	60,000

Key

	User supplied data
	Missing WAC determinand value

Classification of sample: BH04/0.50/2023-11-11

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: BH04/0.50/2023-11-11	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 15% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified





Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.8	mg/kg	1.197	1.832	mg/kg	0.000183 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				13	mg/kg	1.32	14.59	mg/kg	0.00146 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				48	mg/kg	1.233	50.327	mg/kg	0.00503 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	<0.2	mg/kg	3.22	<0.644	mg/kg	<0.0000644 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				2.6	mg/kg	1.142	2.525	mg/kg	0.000252 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15	mg/kg	1.462	18.635	mg/kg	0.00186 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				38	mg/kg	1.126	36.366	mg/kg	0.00364 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	23	mg/kg		19.55	mg/kg	0.00196 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				0.08	mg/kg	1.353	0.092	mg/kg	0.0000092 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				3.7	mg/kg	1.5	4.718	mg/kg	0.000472 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				46	mg/kg	2.637	103.094	mg/kg	0.0103 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				100	mg/kg	1.245	105.801	mg/kg	0.0106 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
17	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
18	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
19	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
20	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
	006-007-00-5									
22	pH		PH		8 pH		8 pH	8pH		
23	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
24	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
25	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
26	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
27	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
28	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
29	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
30	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
31	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
32	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
33	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
34	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
35	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
36	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
37	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
38	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
39	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
40	polychlorobiphenyls; PCB				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
41	monohydric phenols		P1186		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0374 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: BH04/0.50/2023-11-11

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Non Haz (Non hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 1.3	3	5
2	LOI (loss on ignition)	% 3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 8	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg	0.5	2
10	barium	mg/kg	20	100
11	cadmium	mg/kg	0.04	1
12	chromium	mg/kg	0.5	10
13	copper	mg/kg	2	50
14	mercury	mg/kg	0.01	0.2
15	molybdenum	mg/kg	0.5	10
16	nickel	mg/kg	0.4	10
17	lead	mg/kg	0.5	10
18	antimony	mg/kg	0.06	0.7
19	selenium	mg/kg	0.1	0.5
20	zinc	mg/kg	4	50
21	chloride	mg/kg	800	15,000
22	fluoride	mg/kg	10	150
23	sulphate	mg/kg	1,000	20,000
24	phenol index	mg/kg	1	-
25	DOC (dissolved organic carbon)	mg/kg	500	800
26	TDS (total dissolved solids)	mg/kg	4,000	60,000

Key

	User supplied data
	Missing WAC determinand value

Classification of sample: BH11/0.50/2023-11-13

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH11/0.50/2023-11-13	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
20% (wet weight correction)		

Hazard properties

None identified

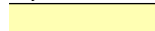



Determinands

Moisture content: 20% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.1	mg/kg	1.197	2.011	mg/kg	0.000201 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				22	mg/kg	1.32	23.238	mg/kg	0.00232 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	barium { barium sulphide }				74	mg/kg	1.233	73.023	mg/kg	0.0073 %	✓	
	016-002-00-X	244-214-4	21109-95-5									
4	boron { diboron trioxide }			11	0.4	mg/kg	3.22	1.03	mg/kg	0.000103 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				1.5	mg/kg	1.142	1.371	mg/kg	0.000137 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18	mg/kg	1.462	21.046	mg/kg	0.0021 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				58	mg/kg	1.126	52.241	mg/kg	0.00522 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	120	mg/kg		96	mg/kg	0.0096 %	✓	
	082-001-00-6											
10	mercury { mercury dichloride }				1.9	mg/kg	1.353	2.057	mg/kg	0.000206 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	molybdenum { molybdenum(VI) oxide }				3.7	mg/kg	1.5	4.441	mg/kg	0.000444 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
12	nickel { nickel sulfate }				37	mg/kg	2.637	78.046	mg/kg	0.0078 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
13	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
14	zinc { zinc oxide }				110	mg/kg	1.245	109.535	mg/kg	0.011 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
15	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X 216-653-1 1634-04-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
17	benzene 601-020-00-8 200-753-7 71-43-2				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
18	toluene 601-021-00-3 203-625-9 108-88-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
19	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
21	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.2 mg/kg	1.884	0.301 mg/kg	0.0000301 %	✓	
22	pH PH				7.6 pH		7.6 pH	7.6 pH		
23	naphthalene 601-052-00-2 202-049-5 91-20-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene 205-917-1 208-96-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene 201-469-6 83-32-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene 201-695-5 86-73-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene 201-581-5 85-01-8				0.1 mg/kg		0.08 mg/kg	0.000008 %	✓	
28	anthracene 204-371-1 120-12-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene 205-912-4 206-44-0				0.1 mg/kg		0.08 mg/kg	0.000008 %	✓	
30	pyrene 204-927-3 129-00-0				0.2 mg/kg		0.16 mg/kg	0.000016 %	✓	
31	benzo[a]anthracene 601-033-00-9 200-280-6 56-55-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene 601-048-00-0 205-923-4 218-01-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene 601-034-00-4 205-911-9 205-99-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene 205-893-2 193-39-5				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene 601-041-00-2 200-181-8 53-70-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene 205-883-8 191-24-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene 205-881-7 191-07-1				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
41	monohydric phenols P1186				0.6 mg/kg		0.48 mg/kg	0.000048 %	✓	
Total:								0.048 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: BH11/0.50/2023-11-13

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Non Haz (Non hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 4.4	3	5
2	LOI (loss on ignition)	% 7.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.04	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.01	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <1.6	100	-
7	pH	pH 7.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg	0.5	2
10	barium	mg/kg	20	100
11	cadmium	mg/kg	0.04	1
12	chromium	mg/kg	0.5	10
13	copper	mg/kg	2	50
14	mercury	mg/kg	0.01	0.2
15	molybdenum	mg/kg	0.5	10
16	nickel	mg/kg	0.4	10
17	lead	mg/kg	0.5	10
18	antimony	mg/kg	0.06	0.7
19	selenium	mg/kg	0.1	0.5
20	zinc	mg/kg	4	50
21	chloride	mg/kg	800	15,000
22	fluoride	mg/kg	10	150
23	sulphate	mg/kg	1,000	20,000
24	phenol index	mg/kg	1	-
25	DOC (dissolved organic carbon)	mg/kg	500	800
26	TDS (total dissolved solids)	mg/kg	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail
	Missing WAC determinand value

Appendix A: Classifier defined and non EU CLP determinands

▪ **barium sulphide** (EC Number: 244-214-4, CAS Number: 21109-95-5)

EU CLP index number: 016-002-00-X

Description/Comments:

Additional Hazard Statement(s): EUH031 >= 0.8 %

Reason for additional Hazards Statement(s):

14 Dec 2015 - EUH031 >= 0.8 % hazard statement sourced from: WM3, Table C12.2

▪ **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332, Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Resp. Sens. 1; H334, Skin Sens. 1; H317, Repr. 1B; H360FD, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

▪ **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

EU CLP index number: 082-001-00-6

Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

03 Jun 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

▪ **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226, Asp. Tox. 1; H304, STOT RE 2; H373, Muta. 1B; H340, Carc. 1B; H350, Repr. 2; H361d, Aquatic Chronic 2; H411

▪ **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

EU CLP index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

03 Jun 2015 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

▪ **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

EU CLP index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

▪ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

▪ **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302, Acute Tox. 1; H330, Acute Tox. 1; H310, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315

▪ **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Aquatic Chronic 2; H411

• **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

• **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

• **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: <http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en>
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

• **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

EU CLP index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

29 Sep 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

• **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

barium {barium sulphide}

Reasonable case CLP species based on hazard statements

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable case CLP species based on hazard statements/molecular weight

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel sulfate}

Reasonable case CLP species based on hazard statements/molecular weight

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight

zinc {zinc oxide}

Reasonable case CLP species based on hazard statements/molecular weight

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide]

Appendix C: Version

HazWasteOnline Classification Engine: EU WM3 1st Edition v1.1.NI using the EU LoW

HazWasteOnline Classification Engine Version: 2024.158.6092.11254 (06 Jun 2024)

HazWasteOnline Database: 2024.158.6092.11254 (06 Jun 2024)

This classification utilises the following guidance and legislation:

WM3 v1.1.NI - Waste Classification - 1st Edition v1.1.NI - Jan 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

17th ATP - Regulation (EU) 2021/849 of 11 March 2021

18th ATP - Regulation (EU) 2022/692 of 16 February 2022

POPs Amendment 2022 - Regulation (EU) 2022/2400 of 23 November 2022

19th ATP - Regulation (EU) 2023/1434 of 25 April 2023

20th ATP - Regulation (EU) 2023/1435 of 2 May 2023

21st ATP - Regulation (EU) 2024/197 of 19 October 2023