PROPOSED DEVELOPMENT NEW CIVIC CENTRE MONAGHAN MONAGHAN CO. COUNCIL

CORA

CONSULTING ENGINEERS

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FOREWORD

The following Conditions and Notes on Site Investigation Procedures should be read in conjunction with this report.

General.

Recommendations made, and opinions expressed in the report are based on the strata observed in the exploratory holes, together with the results of in-situ and laboratory tests. No responsibility can be held for conditions which have not been revealed by exploratory work, or which occur between exploratory hole locations. Whilst the report may suggest the likely configuration of strata, both between exploratory hole locations, or below the maximum depth of the investigation, this is only indicative, and liability cannot be accepted for its accuracy.

Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction below or close to the site.

Standards

The ground investigation works for this project have been carried out by IGSL in accordance with Eurocode 7 - Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as BS 5930 (1999), BS 1377 (Parts 1 to 9) and Engineers Ireland Specification & Related Documents for Ground Investigation in Ireland (2006). The following Irish (IS) and European Standards or Norms are referenced:

- O IS EN 1997-2 Eurocode 7: 2007 Geotechnical Design Part 2: Ground Investigation & Testing
- O IS EN ISO 22475-1:2006 Geotechnical Investigation and Sampling Sampling Methods & Groundwater Measurements
- IS EN ISO 14688-1:2002 Geotechnical Investigation and Testing Identification and Classification of Soil, Part 1: Identification and Description
- IS EN ISO 14688-2:2004 Geotechnical Investigation and Testing Identification and Classification of Soil, Part 2: Classification Principles

Routine Sampling.

Undisturbed samples of soils, predominantly cohesive in nature are obtained unless otherwise stated by a 104mm diameter open-drive tube sampler or Piston Sampler. In granular soils, and where undisturbed sampling is inappropriate, disturbed samples are collected. Smaller disturbed samples are also recovered at intervals to allow a visual examination of the full strata section.

In-Situ Testing.

Standard penetration tests were conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated in accordance with EN ISO 22476-3:2005 to obtain the Energy Ratio (E_r) of each hammer. A calibration certificate is available upon request. The E_r is defined as the ratio of the actual energy E_{meas} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (E_{theor}) as calculated from the drive weight assembly. The recorded number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

Groundwater

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

Engineering Logging

Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2002 and IS EN ISO 14689-1:2004.

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

Retention of Samples.

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

Reporting

Recommendations made and opinions expressed in this report are based on the strata observed in the exploratory holes, together with the results of in-situ and laboratory tests. No responsibility can be held by IGSL Ltd for ground conditions between exploratory hole locations.

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

This report has been prepared for the project client and the information should not be used without prior written permission. Any recommendations developed in this report specifically relate to the proposed development. IGSL Ltd accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.

REPORT ON A SITE INVESTIGATION

NEW CIVIC OFFICES FOR MONAGHAN COUNTY COUNCIL

CORA CONSULTING ENGINEERS

Report No. 24665

July 2023

I Introduction

A major new development is proposed for a site in Monaghan where new Civic Offices are to be located.

An investigation of sub soil conditions in the area of the new development has been carried out by IGSL for CORA, Consulting Engineers, on behalf of Monaghan County Council.

The scheduled site investigation included the following elements.

*	Cable Percussion Boreholes	8 nr.
•	Rotary Core Holes	3 nr.
•	Standpipe Installations	1 nr.
•	Trial Pits	14 nr.
•	BRE Digest 365 Infiltration Tests	4 nr.
•	Geotechnical Laboratory Tests	
*	Chemical and Environmental Tests	

This report includes all factual data from field and laboratory operations and discusses these findings relative to foundation and infrastructural design for the proposed new development.

II Fieldwork

This development is to take place on an undulating greenfield site in Monaghan Town.

The exploratory locations are noted on the drawing enclosed in Appendix VI and were marked out by IGSL on site. All locations have been referenced to national grid and ground levels established.

The various elements of the investigation are detailed in the following paragraphs. All field works were supervised by an experienced geotechnical engineer who carefully recorded stratification, took photographs as necessary, recovered samples and prepared detailed records.

Close liaison was maintained throughout with CORA Consulting Engineers and Monaghan County Council personnel.

All appropriate documentation was submitted and approved prior to site commencement. Each location was scanned electronically (CAT) to ensure that existing services were not damaged. A shallow trial pit was also opened by hand at borehole / corehole locations to confirm this.

Drawings from the various utilities were also examined to ensure that major services were avoided.

Statutory HSE safety precautions relating to general safety and COVID 19 were strictly observed, with working areas restricted to IGSL personnel only, to ensure safety of the general public.

Boreholes

Boreholes were 200mm diameter and were constructed using conventional cable percussion equipment. Holes were referenced BH01 to BH08. A trial pit was opened at each borehole location to 1.00 metre deep to ensure that underground services were not damaged.

Shallow refusal was recorded on boulder obstructions at two locations (BH04 and BH06). Following a period of abortive chiselling, the equipment was moved by about 3 metres and re-bores were taken. These are referenced BH04A and BH06A.

Detailed geotechnical records are contained in Appendix I to this report - the records give details of stratification, sampling, in-situ testing and groundwater. Note is also taken of any obstructions to normal boring requiring the use of the heavy chisel for advancement. It was not possible to recover undisturbed samples because of the hard and granular nature of the strata encountered.

The findings are fairly consistent, with topsoil generally overlying a1.50 stratum of soft to firm brown sandy SILT/CLAY.

Stiff brown sandy gravelly CLAY, typically containing cobble and boulder material, is encountered at shallow depth (generally 0.50 to 1.00 metres). This stratum continues to about 2.50 metres where very stiff to hard dark grey gravelly CLAY is noted. This stratum also contains significant cobbles and boulder.

Boreholes were terminated on boulder obstructions in all locations at varying depths. Chiselling techniques were used in all locations in an attempt to advance borehole depths without success.

The stiff brown and grey gravelly CLAY encountered on this site is a GLACIAL TILL or BOULDER CLAY with the high percentage of coarse material typical of the stratum.

The increasing strength with depth pattern particularly in the base grey boulder clay is also noted. The final refusal depths are **NOT** indicative of rock horizon.

The borehole findings are summarised in the following **TABLE A:**

TABLE A

Ref	Sandy Clay	Stiff brown BC	Stiff grey BC	Refusal Depth
BH01	0.30 – 1.20	1.20 – 3.00		3.00
BH02	0.30 - 1.20 $0.30 - 0.70$	0.70 - 2.50	2.50 - 4.50	4.50
BH03	0.30 - 1.50	1.50 - 3.70	2.00	3.70
BH04	0.30 - 1.20			1.20
BH04A	0.30 - 0.50	0.50 - 2.50	2.50 - 4.50	4.50
BH05	0.30 - 1.50	1.50 - 2.00	2.00 - 4.50	4.50
BH06	0.30 - 0.50	0.50 - 1.00		1.00
BH06A	0.30 - 0.50	0.50 - 1.00		1.00
BH07	0.20 - 0.50	0.50 - 1.00		1.00
BH08	0.30 - 1.00	1.00 - 1.80	1.80 - 3.40	3.40

Ground water ingress was note in two locations, at 3.00 metre BGL in BH01 and at 4.50 metres BGL in BH05. The remaining boreholes were DRY.

Rotary Core Drilling

Rotary core drilling was employed at three of the borehole locations to advance investigation depth, establish bedrock horizon and recover representative rock core if practical.

A BT-44 drilling rig was used to drill in each location using triple tube core drilling technique and an air-mist coolant. Symmetrix open hole drilling (100mm diameter) was used through the overburden deposits.

Detailed drilling records are presented in Appendix II with accompanying core photographs. The records note Total and Solid Core Recovery (TCR / SCR) and provide a detailed geological description of the rock.

Drilling continued in each location to depths between 10.50 and 15.00 metres, penetrating very stiff to hard GLACIAL TILL consisting of brown or grey gravelly CLAY with extensive boulder presence.

Some core was recovered in the hard base till. The enclosed core photographs clearly indicate the significant boulder presence.

The strength of the boulder clay was established by standard penetration tests taken at 1.50 metre intervals during the drilling operation. Results are noted in the right hand column of the records. SPT values typically exceed N=40 with numerous test refusals recorded.

A slotted PVC standpipe was installed in RC02 to facilitate on-going monitoring of ground water level. The installation was sealed at surface and protected by a steel cover.

The rotary core findings are summarised in the following table.

TABLE B

Hole No.	Overburden	Core Recovered	Standpipe	
RC02	0 – 10.50		0 – 10.50	
RC03	0 - 10.50	8.10 - 10.50		
RC06	0 - 15.00	13.5 - 15.00		

Trial Pits

Trial Pits were scheduled in fourteen specified locations and referenced TP01 to TP14. A tracked excavator was used under engineering supervision. Detailed records for each location are presented in Appendix III. These records note the soil stratification and record sampling and ground water details.

Topsoil surface was noted in each location generally overlying a zone of soft SILT/CLAY. Firm to stiff brown or grey gravelly CLAY was then encountered, this stratum typically containing cobbles and boulders.

The findings are consistent with the stratification noted in the boreholes.

Several trial pits were terminated on large boulders. The findings are summarised and presented as follows:

TABLE C

Ref No.	Topsoil	Soft SILT- CLAY	Stiff gravelly CLAY	Water
TP01	0 - 0.25	0.25 - 0.90	0.90 - 1.80	Dry
TP02	0 - 0.25	0.25 - 0.55	0.55 - 1.40	Dry
TP03	0 - 0.20	0.20 - 0.80	0.80 - 1.70	Dry
TP04	0 - 0.10	0.10 - 0.60	0.60 - 1.80	Dry
TP05	0 - 0.20	0.20 - 0.50	0.50 - 2.10	Dry
TP06	0 - 0.25	0.25 - 0.80	0.80 - 1.50	1.00
TP07	0 - 0.25	0.25 - 1.50	1.50 - 1.90	Dry
TP08	0 - 0.25	0.25 - 0.50	0.50 - 2.20	Dry
TP09	0 - 0.25	0.25 - 0.50	0.50 - 1.50	Dry
TP10	0 - 0.30	0.30 - 0.50	0.50 - 2.50	Dry
TP11	0 - 0.20	0.20 - 1.10	1.10 - 2.30	Dry
TP12	0 - 0.30	0.30 - 1.00	1.00 - 1.80	Dry
TP13	0 - 0.20	0.20 - 0.50	0.50 - 1.40	Dry
TP14	0 - 0.20	0.20 - 0.50	0.50 - 2.10	Dry

Trial Pits were backfilled with the excavated spoil, compacted in layers, the disturbed areas were levelled and coarse material was removed.

BRE Digest 365 Test

Infiltration testing was performed at four locations as specified in accordance with BRE Digest 365 'Soakaway Design'. Tests are referenced SA01 to SA04. Detailed data is presented in Appendix IV.

To obtain a measure of the infiltration rate of the sub-soils, water is poured into the test pit, and records taken of the fall in water level against time. The test is carried out over two cycles following initial soakage.

The infiltration rate is the volume of water dispersed per unit exposed area per unit of time, and is generally expressed as metres/minute. In these calculations the exposed area is the sum of the base area and the average internal area of the permeable stratum over the test duration. Design is based on the slowest infiltration rate, which has been calculated from the final cycle.

The stratification in the test area comprised Topsoil over gravelly sandy SILT/CLAY.

Results are summarised as follows:

TABLE D

SA02 SA03	Depth	Soil Type	Infiltration Rate (f) (Metres/ Minute)
SA 01	1.30	Gravelly CLAY	0.00173
SA02	1.60	Gravelly CLAY	0.00023
SA03	1.60	Gravelly CLAY	5.3E-05
SA04	1.30	Gravelly CLAY	0.0000

The results confirm low to very low permeability for the cohesive gravelly clay soils present on the site.

III. Testing

In Situ

Standard penetration tests were carried out at approximate 1.00 metre intervals in the geotechnical boreholes and at 1.50 metres in the Rotary Core Holes to measure relative in-situ soil strength. N values are noted in the right hand column of the individual records, representing the blow count required to drive the standard sampler 300mm into the soil, following initial seating blows. Where full test penetration was not achieved the blow count for a specific penetration is recorded, or refusal is indicated where appropriate. The results of the tests are summarised as follows:

.00 m BGL .00 m BGL .00 m BGL .00 m BGL	N VALUE RANGE	COMMENT
Gravelly CLAY (Box	ılder Clay)	
1.00 m BGL	6 to 13	Soft to Firm
2.00 m BGL	10 to 29	Firm to Stiff
3.00 m BGL	26 to 50	Stiff to Hard
4.00 m BGL	> 50	Hard
4.00 to 15.00 m BGL		
(Rotary Holes)	40 to >50	Hard
		A 457A 37

Limited penetration SPT tests with refusal were recorded on numerous occasions, reflecting a high concentration of cobble / boulder material in the glacial till

Laboratory

A programme of laboratory testing was scheduled following completion of site operations. Geotechnical testing was carried out by IGSL in it's INAB-Accredited laboratory. Chemical and environmental testing was carried out in the UK by EUROFINS / CHEMTEST Ltd. The test programme included the following elements:

Liquid and Plastic Limits / Moisture Content IGS	SL
PSD Grading by Wet Sieve and Hydrometer IGS	SL
MCV IGS	SL
CBR IGS	SL
Compaction	SL
Organic Content EU	ROFINS
± 1	ROFINS
RILTA Suite Environmental EU	ROFINS

All laboratory data is presented in Appendices Va and Vb and individual tests are discussed briefly as follows:

Index Properties / Natural Moisture Content

Classification tests have been carried out on samples of the cohesive soils from borehole and trial pit locations.

The glacial tills plot generally in the CI/CL zone of the standard Classification chart indicative of low plasticity gravelly CLAY matrix material. Natural Moisture Content ranges from 14 to 19 %.

Grading

Wet sieve and hydrometer analysis has been carried out on samples of the cohesive soils from both boreholes and trial pits. The graphs are typically straight line, grading from the fine clay to coarse gravel fraction. The pattern is very typical of glacial till or boulder clay deposition.

Organic Content

Six samples of the soils from the site had organic contents established. Samples were generally taken from shallow depths below the topsoil. Values of 1.0 to 2.5% were determined indicative of very low to negligible organic content.

MCV/CBR/Compaction

Six large composite samples were selected from Trial Pits 01 / 03 / 05 / 09 / 12 and 14 and a series of tests were scheduled to establish the soil characteristics relative to possible re-use during the new development.

The tests carried out included MCV (Moisture Condition Value), Natural Moisture Content, CBR (California Bearing Ratio), Dry Density / Moisture Content relationship.

The results are summarised as follows:

Ref No.		TP03	TP05	TP09	TP12	TP14
Depth	0.70	0.6	0.7	0.7	0.8	1.5
Natural MC (%)	15 ,	13	13	13	10	14
MCV	6.6	7.3	6.8	6.8	6.7	7.8
CBR (%)	5.6	4.6	4.1	2.0	7.7	3.0
Max.Dry Density (mg/cu.m.) 1.90	1.86	1.86	1.88	1.89	1.85
Optimum Moisture (%)	11	12	12	12	12	14

Chemical Suite (Sulphate Chloride pH)

Six samples were sent for analysis to BRE Chemical Suite parameters.

Sulphate concentrations (SO4 2:1 extract) of <0.010 to 0.240 g/l were established with pH values ranging from 7.8 to 8.6. Chloride concentrations (<0.010 to 0.24 g/l) were also determined.

The results indicate a design class of DS-1 (ACEC Classification for Concrete) for sulphate concentrations below 0.5 g/l. No special precautions are necessary to protect below ground foundation concrete.

RILTA Environmental Suite

Six samples of the sub soils were sent to specialist environmental laboratory EUROFINS and testing was carried out in accordance with RILTA requirements to establish Landfill Waste Acceptance Criteria (WAC).

Detailed results are presented in Appendix V o. All samples tested fall into the INERT category with no elevated contaminant levels recorded.

Material excavated from this site can be safely disposed of either within the site boundary or off site to a suitably licensed Landfill Facility

Asbestos screening was carried out on all RILTA samples with no traces of Asbestos noted.

A comprehensive Waste Characterisation Assessment may be required by landfill operators. This can be prepared by specialist environmental consultants using the factual data from field and laboratory as presented in this report.

IV. Discussion:

A major development is being undertaken at this site in Monaghan. A new CIVIC CENTRE is to be constructed for Monaghan County Council.

A detailed investigation of subsoil and bedrock has been carried out under the direction of CORA Consulting Engineers in the area of development.

The exploratory locations are detailed on the site plan in Appendix VI.

The factual data from the field and laboratory is presented in Sections 1 to III of this report.

The site is grassed with some significant variation in ground level.

SUMMARY STRATIFICATION

TOPSOIL overlies soft to firm sandy SILT/CLAY. This upper material extends to depth between 0.50 and 1.50 metres as shown in TABLE A and TABLE B.

Stiff brown gravelly CLAY (brown BOULDER CLAY) is then encountered and continues to about 2.00 metres where it changes to very stiff to hard grey gravelly CLAY (grey black BOULDER CLAY). Proof core drilling confirmed that the GLACIAL TILL continues to at least 15 metres BGL. Bedrock was not established.

UPPER SILT/CLAY

The soils extending from surface to depths up to 1.50 metre are described as soft to firm sandy slightly gravelly SILT/CLAY. SPT values of N=6 to N=10 have been recorded at a depth of 1.00 metre.

BOULDER CLAY

GLACIAL TILL or BOULDER CLAY has been confirmed below approximately 1.50 metres, the stratum continues to at least 15.00 metres BGL. Visual inspection of trial pit excavations and results of in-situ Standard Penetration Tests are indicative of stiff to hard consistency.

The characteristics of the regional boulder clay or glacial till are very well documented and the findings from this detailed investigation are consistent with extensive published data.

ALLOWABLE BEARING PRESSURES

The soil strength has been assessed visually in the trial pits and confirmed by Standard Penetration Tests in boreholes and core holes. The allowable bearing pressures indicated by the field data are summarised as follows:

Depth	Average N Value	Allowable Bearing Pressure				
1.00	7	75 kPa	(Upper Silt/Clay)			
2.00	20	200 kPa	(Boulder Clay)			
3.00	35	300 kPa	` ',			
4.00	>50	400 kPa				

FOUNDATION RECOMMENDATIONS

The use of traditional reinforced foundations for the new Civic Offices development is proposed. Foundations to be placed on the stiff brown or grey boulder CLAY using the allowable bearing pressures indicated above.

We strongly recommend visual inspection of foundation excavations by experienced personnel to ensure uniformity and suitability of the founding medium. Any soft or suspect material should be removed and where necessary replaced with low-grade concrete. The glacial till soils are sensitive to moisture variation and should be protected by blinding following excavation.

The presence of extensive boulders should also be noted with possible over-break in excavation occurring.

The majority of boreholes and trial pits were dry with only occasional water seepages recorded. This may indicate isolated water bearing gravelly zones, typical of the heterogeneous nature of the regional Glacial Till.

SETTLEMENT

Settlement of the order of 5 to 10mm can be expected under the foundation loadings indicated above. Settlement should be quite uniform and differential movement is not anticipated.

EXCAVATION

Given the variations in site levels it is likely that significant cut and fill operations will be required. No major issues will arise with excavation, other than the presence of boulder obstructions and possibly water ingress if gravel zones are encountered.

A detailed programme of laboratory testing has been carried out to establish soil parameters relative to the suitability of excavated material for re-use as engineered fill.

The results reflect a high degree of consistency in the boulder clay over the site area and will allow the appointed contractor to design a suitable programme for earthworks on this site.

BRE DIGEST 365 TESTS

The test results reflect very low permeability characteristics in the gravelly CLAY soils. This is very typical of the cohesive material. Clay matrix material is generally unsuited to dispersion of storm or surface water and consideration should be given to the use of the Local Authority Drainage System for this development.

FOUNDATION CONCRETE

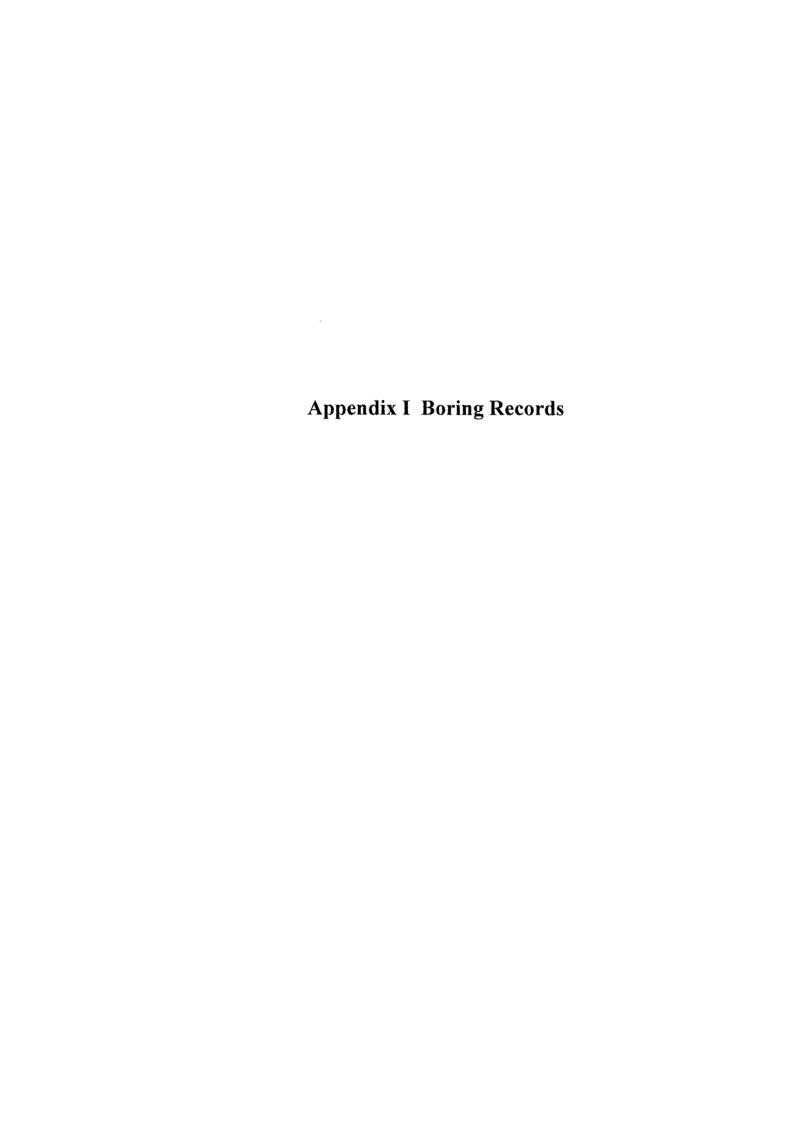
No special precautions are necessary for protection of below ground concrete.

ENVIRONMENTAL

Six samples have been tested to RILTA Suite Parameters and the results confirm an INERT classification for the soils. Excavated material can be safely used on the site or can be disposed of to a suitably licensed Landfill.

A waste Characterisation Assessment (WCA) may be necessary and should be carried out by environmental specialists. This WCA should be submitted to the relevant waste management facility, to confirm suitability for acceptance.

IGSL/JC July 2023





REPORT NUMBER

CONTR	RACT M	onaghan	Active T	ravel -	- Main Sit	е					11	BOREHO SHEET	OLE NO	D. BH01 Sheet 1 of 1	
	DINATES	m AOD)			12.0		PE OLE DIAME OLE DEPTI		mm) :	Dando 20 200 3.00	000	DATE COMMENCED 13/05/2023 DATE COMPLETED 13/05/2023			
CLIENT		onaghan BFL	Co.Co.			SPT HA	MMER REF	NO.				BORED PROCES		P.Allan BY F.C	
		-				LIVEINO	T TOTTO	•,		1		nples	JOED L	1.0	
Depth (m)		C	Description	on			Legend	Elevation	Depth (m)	Ref. Number	Sample Type		Recovery	Field Test Results	Standpipe
0 TC	PSOIL						<u> </u>						1		0,
Fir	m brown sa	andy SILT	T/CLAY	with o	ccasional	gravel	<u>xo</u>		0.30	AA192931	В	0.50			
1 Fir	m grey san	dy SII T/	CLAV				<u> </u>		1.00	AA192932	В	1.00		N = 13	
	own sandy			th occ	asional co	obbles	<u>0</u>		1.20					(2, 3, 2, 3, 4, 4)	
2							8-0-1 0-0-1		2.70	AA192933	В	2.00		N = 17 (2, 2, 2, 4, 5, 6)	
3 Ob	own sandy		-	th som	ne cobble		<u> </u>		3.00					N = 50/75 mm (25, 25, 50)	
5	STRATA BO	DRING		NG											
om (m	2 62 9 2	Time	Comm				Water			Sealed	Rise	e Ti	T	VATER STRIKE DETA Comments	AILS
2.8	3	(h) 1.5	Comm	5,113			Strike 3.00		epth .00	At No	<u>To</u>		nin) 20	Moderate	
											1 =		GF	ROUNDWATER PRO	GRE
	LATION DE						Date		Hole Depth	Casing Depth	Dej	oth to ater	Comme	ents	
Date	Tip De	oth RZT	op RZ	Base	Тур	e	11-05-2		3.00	Nil			nd of BH		
EMAR	KS CAT so	anned lo	ocation a	ind ha	nd dug in	spection	pit was car	ried	I B - Bulk D	le Legeno Disturbed (tub) disturbed Bulk Disturbed fronmental Sam			Samı P - U	Undisturbed 100mm Diameter ple Judisturbed Piston Sample Water Sample	



REPORT NUMBER

CO OPPINA		an ACtive	e rravel	- Main Site	RIG TYP)E			Dand- Of		BOREH SHEET	OLE NC	D. BH02 Sheet 1 of 1	
CO-ORDINAT		D)			BOREH	OLE DIAME		nm) :	Dando 20 200 4.50		DATE C		NCED 13/05/2023 ETED 14/05/2023	
CLIENT ENGINEER	Monagh DBFL	an Co.C	0.			MMER REF				- 1	BORED PROCES		P.Allan	
	DBIL				ENERG	Y RATIO (%)				nples	ם עם פפ	BY F.C	
Depth (m)		Descri	ption			Legend	Elevation	Depth (m)	Ref. Number	Sample Type		Recovery	Field Test Results	Standpipe
0 TOPSOI						41/2/1/1		0.30				1		
	wn sandy S				W 48-05-1-05	X0		0.70	AA197801	В	0.50			
Stiff brov	wn sandy Sl	ILT/CLA	Y with so	me gravel		XO X 0 			AA197802	В	1.00		N = 6 (1, 0, 1, 1, 2, 2)	
2								2.50	AA197803	В	2.00		N = 26 (2, 3, 6, 8, 5, 7)	
Stiff to ve occasion	ery stiff grey nal cobbles	y sandy (gravelly (CLAY with					AA197804	В	3.00		N = 50/225 mm (4, 5, 9, 15, 26)	
4 Obstruct								4.50	AA197805	В	4.00		N = 50/150 mm (6, 10, 20, 30)	
5														
														ý
HARD STRA	TA BORING	CHISEL	LING									l w	/ATER STRIKE DET	All S
om (m) To	T Time	e Con	nments			Water Strike	Ca	sing S	Sealed At	Rise		T	Comments	
0.7 4.3 4	.9 1					June		Put	AL	10	, (ii)	No water strike	
												GR	ROUNDWATER PRO	GRES
NSTALLATIO			-			Date		Hole Depth	Casing Depth	Der	oth to ater	Comme	ents	
Date T	ip Depth R	Z Top R	RZ Base	Тур	е									
REMARKS C	AT scanned ut .	d location	n and ha	nd dug ins	spection	pit was car	ried	B - Bulk D	le Legen Disturbed (tub) Disturbed Bulk Disturbed Fonmental Sam	d		Samp P - U	Undisturbed 100mm Diarneter ple indisturbed Piston Sample Vater Sample	



REPORT NUMBER

	Monaghan Ad	ctive Travel -								BOREHO SHEET	OLE NO	 BH03 Sheet 1 of 1 	
GROUND LEVE			1		PE OLE DIAME OLE DEPTI		nm)	Dando 20 200 3.70	000	DATE CO		ICED 12/05/2023	
	Monaghan Co DBFL	o.Co.			MMER REF (RATIO (%					BORED PROCES		P.Allan Y F.C	
									San	nples			
Depth (m)	Des	scription			Legend	Elevation	Depth (m)	Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0 TOPSOIL					44 44		0.30			1			
Soft to firm gravel	brown sandy	SILT/CLAY v	with occas	ional	-X0 X		0.00	AA192934	В	0.50			
1					~			AA192935	В	1.00		N = 7 (1, 2, 1, 2, 2, 2)	
2 Vandhaana		L. CLAVit		-1	— X — X		2.30	AA192936	В	2.00		N = 10 (2, 2, 2, 3, 2, 3)	
cobbles	sandy gravel	IY CLAY WITH	occasiona	al				AA192937	В	3.00		N = 50 (6, 6, 10, 10, 20, 10)	
Obstruction					<u>~ 0 a</u>		3.70					N = 50/75 mm	
5 6 7 7 8 8 PARD STRATA	BORING/CHIS	SELLING									W	ATER STRIKE DETA	AILS
rom (m) To (m)) Time (h)	Comments			Water Strike		sing :	Sealed At	Ris To			Comments	
2.7 3.5 2.9 3.7	1 1.5				Same		,		10			No water strike	
NOTAL LATION	DETAILS			_			Hole	Casing	De	nth to T		OUNDWATER PRO	GRESS
Date Tip [DETAILS Depth RZ Top	RZ Base	Туре	•	Date		Depth	Depth	N N	pth to /ater	Comme	nts	
REMARKS CAT out .		ation and har	nd dug ins	pection	pit was car	ried	B - Bulk I LB - Larg	Disturbed (tub) Disturbed e Bulk Disturber rironmental Sam	d	+ Vial + Tub)	Sampl P - Un	Indisturbed 100mm Diameter le disturbed Piston Sample later Sample	



REPORT NUMBER

	A CENTRAL PROPERTY.									
CONTRACT Monaghan Active Travel - I	Main Site					- 1	BOREH SHEET	OLE NO	D. BH04 Sheet 1 of 1	
CO-ORDINATES	RIG TYP				Dando 20	nn h		OMME	NCED 12/05/2023	
GROUND LEVEL (m AOD)		DLE DIAMET DLE DEPTH			200 1.20		DATE C			
CLIENT Monaghan Co.Co. ENGINEER DBFL	5-54 Sec. 100-00-00-00-00-00-00-00-00-00-00-00-00-	VIMER REF. ' RATIO (%)	NO.				BORED PROCES		P.Allan BY F.C	
	LIVERCO	10(110 (70)	1		T		nples	JOLD L	1.0	
(E) Description		Legend	Elevation	Depth (m)	Ref. Number	Sample Type	T	Recovery	Field Test Results	Standpipe Details
O TOPSOIL		47 77 1		0.30						
Grey SILT/CLAY with some gravel and cobbles Obstruction	l occasional	\$ \$			AA192938	В	0.50		N = 50/75 mm	
Obstruction End of Borehole at 1.20 m		<u>~ - ~</u>		1.20					(25, 50)	
2										
3										
4										
5										
6										
T6										
7										
8										,
-9										
HARD STRATA BORING/CHISELLING		-						10	 /ATER STRIKE DET/	AII S
From (m) To (m) Time (h) Comments		Water Strike	Cas		Sealed At	Rise		imo T	Comments	111110
1.1 1.2 1									No water strike	
								GF	ROUNDWATER PRO	GRESS
INSTALLATION DETAILS		Date		Hole Depth	Casing Depth	De	oth to later	Comme		
Date Tip Depth RZ Top RZ Base	Туре			25.00						
REMARKS CAT scanned location and hand out . Obstruction encountered .	d dug inspection p	oit was carri	ed ited	Sampl D - Small I B - Bulk Di	le Legen(Disturbed (tub) isturbed Bulk Disturbed ronmental Sam	d		UT - Sam	Undisturbed 100mm Diameter	



REPORT NUMBER

CONTRACT Monaghan Active Travel - I	Main Site						BOREH	OLE NO	D. BH04A	
CO-ORDINATES	RIG TYP	E		Г	ando 20	000	SHEET		Sheet 1 of 1	
GROUND LEVEL (m AOD)	BOREHO	OLE DIAME		m) 2	00 .50		DATE C		NCED 13/05/2023 TED 13/05/2023	
CLIENT Monaghan Co.Co. ENGINEER DBFL	SHEET OF DESCRIPTION	MMER REF. (RATIO (%)				1	BORED PROCE:		P.Allan SY F.C	
	LINERGI	(%)					ples	SSED B	r.C	
Description		Legend	Elevation	Depth (m)	Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
O TOPSOIL		77 77 7		0.30						
Stiff bown sandy SILT/CLAY with some	e gravel	X0			AA192939	В	1.00			
Very stiff grey sandy gravelly CLAY wit	h some	XD		2.50	AA192940	В	2.00		N = 21 (2, 2, 3, 6, 8, 4)	
cobbles					AA192941	В	3.00		N = 50 (4, 4, 5, 10, 20, 15)	
Obstruction		<u> </u>		4.50	AA192942	В	4.00		N = 40/150 mm (6, 10, 19, 21) N = 50/75 mm	
End of Borehole at 4.50 m 6 7 8 HARD STRATA BORING/CHISELLING								W	JATER STRIKE DETA	AILS
rom (m) To (m) Time Comments	*****	Water Strike	Cas		ealed At	Rise		ima	Comments	
1.1 1.3 1 4.4 4.5 1.5		Ounce	Del	- LI	711	10			No water strike	
NSTALLATION DETAILS		Date		Hole	Casing	Dei	oth to	GR Comme	ROUNDWATER PRO	GRES
Date Tip Depth RZ Top RZ Base	Туре	Date		epth	Depth	W	ater	Comme	ents	
REMARKS CAT scanned location and hand out .	d dug inspection	pit was carri	ed	B - Bulk Dis LB - Large	e Legeno Disturbed (tub) Sturbed Bulk Disturbed Onmental Sam	d	Vial + Tub)	Samp P - U	Undisturbed 100mm Diarneter ple indisturbed Piston Sample Water Sample	



REPORT NUMBER

			A44.1	Darin Made Black	w weeks as were						a ar				
	NTRA	200	onaghan	Active Travel	- Main Site		NE			.		BOREHO SHEET	DLE NO.	BH05 Sheet 1 of 1	
		NATES LEVEL ((m AOD)				OLE DIAMI		nm)	Dando 20 200 4.50		DATE CO		DED 15/05/2023 ED 15/05/2023	
	ENT SINEE		onaghan BFL	Co.Co.		Personal partition	MMER REF Y RATIO (%					BORED E		P.Allan F.C	
											Sam	ples			
Depth (m)			D	escription			Legend	Elevation	Depth (m)	Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOP	SOIL					71/2/1/2		0.30						
1	Soft grav		own sand	ly SILT/CLAY	with occa	sional	X0 x o		0.50	AA192946 AA192947	1850	0.50		N = 6	
							————X		2.00	701102347	J	1.00		(2, 6, 1, 1, 2, 2)	
2	occa	sion cob to stiff b	bles	andy gravelly dy gravelly CL			0 0		2.00	AA192948	В	2.00		N = 19 (2, 2, 3, 4, 5, 7)	
3	Stiff occa	to very st sion cob to stiff bi		andy gravelly dy gravelly CL			0 0 0 0 0			AA192949	В	3.00		N = 26 (2, 3, 4, 6, 8, 8)	
4		ruction					0 0 0 0		4.50	AA192950	В	4.00		N = 50/150 mm (6, 8, 20, 30) N = 50/75 mm	
6 8															
HAI	RD S	TRATA B		HISELLING										TER STRIKE DET	AILS
rom	(m)	To (m)	Time (h)	Comments			Wate Strike		sing epth	Sealed At	Rise To			omments	
3. 4.		3.9 4.5	1 1.5				4.50		.50	No	3.50		1 0	Moderate	
							-	-	Uolo	C!	-	A11 2 1		UNDWATER PRO	GRES:
	CALL/ Date	Tip De	everans—ere	op RZ Base	Тур	е	Date		Hole Depth	Casing Depth	Der W	oth to ater	Commen	ts	
REM	IARK	S CAT sout .	canned lo	cation and ha	and dug in	spection	pit was car	rried	B - Bulk I LB - Larg	Die Legen Disturbed (tub) Disturbed e Bulk Disturber erronmental San	d	- Vial + Tub)	Sample P - Und	disturbed 100mm Diameter isturbed Piston Sample ter Sample	



REPORT NUMBER

70/05	75/															
CONTR	RACT N	lonagh	nan Acti	ve Travel	- Main Site	9						BORE		10.	BH06 Sheet 1 of 1	
	DINATES ND LEVEL	(m AO)D)				E OLE DIAM OLE DEPT		mm)	Dando 2 200 1.00	000		COMME		ED 16/05/2023	
CLIENT		lonagh BFL	nan Co.	Co.			MMER REI					BORE!		BY	P.Allan F.C	
=									=		San	nples				ø)
Depth (m)			Desc	ription			Legend	Flevation	Depth (m)	Ref. Number	Sample Type	Depth (m)	(111)	recovery	Field Test Results	Standpipe Details
- 0 TC	PSOIL						31/2/1/2		0.00		-	-	-			
Ve	ry stiff bro d occasion	wn san al cob	ndy SIL [*] obles	T/CLAY w	ith some g	ravel	® -		1.00	AA197914	В	0.80				
	estruction d of Boreh	ole at	1.00 m												N = 50/75 mm (25, 50)	
- 6 - 7																
9																
*																
HARD	STRATA B			ELLING										WA.	TER STRIKE DETA	AILS
From (m	8 050	Tim (h)		mments			Wate Strike		asing epth	Sealed At	Ris To		Time (min)	Co	omments	
0.9	1	1												N	lo water strike	
													G	RO	UNDWATER PRO	GRES
Security of page 100-0	LATION D						Date	е	Hole Depth	Casing Depth	De V	pth to later	Comn	-		
Date	Tip De	epth R	Z Top	RZ Base	Тур	е	-									
REMAR	KS CAT s out . C rebore	Obstruc	ed locati ction en	on and ha	and dug ins d . Moved t	spection to BH06A	pit was ca and atten	rried npted	B - Bulk	ple Leger Il Disturbed (tub Disturbed ge Bulk Disturbed svironmental Sa	ed	+ Vial + Tuh	Sa	mple - Undis	disturbed 100mm Diameter sturbed Piston Sample er Sample	



U	ರತ	ا/ إ			-										24665	
co	NTRA	СТ М	onag	ghan Ac	tive Travel	- Main Site							BOREH	OLE N		
CO	-ORDI	NATES				F	RIG TYP	·F			Dando 20	nnn t	SHEET		Sheet 1 of 1	
		LEVEL	(m A	(OD)		E	BOREH	OLE DIAME		nm)	1.00		DATE C			
	ENT			ghan Co	.Co.			VMER REF					BORED	BY	P.Allan	
ENG	GINEE		BFL.		····	E	NERG	RATIO (%	6)	· · · · · · · · · · · · · · · · · · ·			PROCE	SSEDE		T
Ê									Ē	Έ			nples	1 >		e
Depth (m)				Des	cription			Legend	Elevation	Depth (m)	Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
									<u> </u>	a	άź	s, T	దిక్	ě		Se
- 0		SOIL	wn s	andy SII	T/CLAY wi	th some gra	avel	<u>~</u>		0.30	4					
	and	occasion	al co	obbles		in some gre	1461	®			AA171709	8	0.80			
1		truction						6-6		1.00	171708		0.80		N = 50/75 mm (25, 50)	
	End	of Boreh	ole a	at 1.00 n	n					ļ						
_																
2																

3															7	
															7	
<u> </u>																
4																
5																
6																
7																
8																
9																
9																
HA	RD S	TRATA B	ORI	NG/CHIS	BELLING					<u> </u>	<u> </u>	L	L		<u> </u> WATER STRIKE DET	 AILS
ron	n (m)	To (m)		ime (h)	omments			Wate Strike		ising S epth	Sealed At	Ris To		ime min)	Comments	
0	.9	1	1	1											No water strike	
														G	ROUNDWATER PRO	GRESS
INS	TALL	ATION DI						Date	•	Hole Depth	Casing Depth	De V	pth to /ater	Comm		
[Date	Tip D∈	pth	RZ Top	RZ Base	Туре	!									
REN	MARK	S CAT s	canı	ned loca	tion and ha	ind dug insp	ection	pit was car	ried	Samo	e Lecen	<u> </u>				
	v	out.			unsu ila	a aug mis		p. 1140 001		D - Small 8 - Bulk D	le Legen Disturbed (tub sturbed Bulk Disturbe) ed		San	- Undisturbed 100mm Diameter nple Undisturbed Piston Sample	
										Env - Env	ronmental Sa	mple (Jar	+ Vial + Tub)	w.	Water Sample	



REPORT NUMBER

1																ANU.			
COI	NTRAC	T Mo	naghan A	ctive	Travel	- Main	Site								BOREH SHEET		NO.	BH07 Sheet 1 of 1	
	-ORDIN OUND I	IATES LEVEL (r	n AOD)				RIG TY BOREI BOREI	HOLE				n) 2	Dando 20 200 .00	000	DATE C	ОМІ		ED 16/05/2023	
	ENT SINEER		naghan C	o.Co.			SPT H				N.				BORED			P.Allan F.C	
	JIII						LIVEIN	1	100	• ,	T				nples			7.0	
Depth (m)			De	escrip	tion				Legend		Elevation	Depth (m)	Ref. Number	Sample Type	_		Recovery	Field Test Results	Standpipe Details
0	and o	stiff brow ccasiona uction	n sandy S il cobbles le at 1.00		CLAY w	ith som	e gravel					1.00	AA171710	В	0.80			N = 50/75 mm (25, 50)	
3 3 6 6 7 7 8 8	HARD STRATA BORING/CHISELLING																		
НА	RD STI	RATA BO		IISELI	LING			1	10/-1-	- 17	2:	6		- Di-	- 1 -			TER STRIKE DET	AILS
From 0.	23 23	To (m)	Time (h) 1	Com	ments				Wate Strike		Casi Dep		Sealed At	Ris To		Time min)		omments No water strike	
								-									GPO	UNDWATER PRO	CDESC
INS.	TALLA	TION DE	TAILS					\dashv	Date	e		lole	Casing	De	pth to later	Cor	nment		SINESS
	Date		oth RZ To	p RZ	Z Base		Гуре	+	Dale		D	epth	Depth	W	/ater	501			
REN	MARKS	CAT so out .	anned loo	ation	and ha	l and dug	inspectio	n pit w	vas cai	rried		Samp D - Small B - Bulk D LB - Large Env - Envi	le Leger Disturbed (tub isturbed Bulk Disturbe ironmental Sa	nd ed mple (Jar	+ Vial + Tub)		Sample P - Undi	disturbed 100mm Diameter sturbed Piston Sample er Sample	



REPORT NUMBER

CO	NTRAC	CT M	onaghan	Active	Travel.	- Main Sit	te.						BOREH	OLE N	IO.	BH08	
		30.100	agriaii	. totive	. Huver	mani Oli	RIG TYP	oF .			Dando 20		SHEET	sa N	- TE	Sheet 1 of 1	
		NATES LEVEL (I	m AOD)				BOREH	OLE DIAMI		nm)	200 3.40		DATE C			ED 14/05/2023 ED 14/05/2023	
	ENT		onaghan BFL	Co.Co	o .		ALC: CIVEDNIC	MMER REI				- 1	BORED		D V	P.Allan	
	SINEER	C DE	orL				ENERG	Y RATIO (9	%) 			_	PROCES	SSED	DI 	F.C	
Depth (m)			D	Descrip	otion			Legend	Elevation	Depth (m)	Ref. Number	Sample Type	Depth (m)	Recovery	recovery	Field Test Results	Standpipe Details
- 0	TOPS							41 × 41 × 1		0.30							
	Firm	brown sa	andy SILT	T/CLA	Y with o	ccasional	gravel	X 0X			AA192945	В	0.50			1	
1								×		1.80	AA192946	В	1.00			N = 12 (1, 2, 2, 2, 3, 5)	
2	Stiff to	o very st sional co	iff grey sa bbles	andy g	gravelly (CLAY with	n			1.00	AA192947	7 В	2.00			N = 29 (2, 3, 3, 10, 10, 6)	
3 - 3	Obate	ruction						0 0 0 0 0 0		3.40						N = 50/150 mm (10, 15, 25, 25) N = 50/75 mm (34, 25, 50)	
5 6 8	RD ST	RATA B	ORING/C	HISE	LING										WA.	TER STRIKE DET/	All S
-		To (m)	Time (h)	T =	nments			Wate		sing epth	Sealed At	Ris		ime nin)	T.	mments	1120
2	.6	2.8 3.4	0.75 1.5					Suiki		spui	Λl	То	(1)	N	lo water strike	
										Hole	Casing	l Do	nth to			UNDWATER PRO	GRESS
	TALLA Date	TION DE	pth RZT	Гор R	Z Base	Ту	pe	Dat	e	Depth	Depth	Vi	pth to later	Comm	nent	ds	-
INS	MARK	S CAT so out .	canned lo	ocatio	n and ha	and dug ir	nspection	pit was ca	rried	LB - Larg	DIE Leger I Disturbed (tub Disturbed ge Bulk Disturbe vironmental Sa	ed	+ Vial + Tub)	Sa P	mple - Undis	disturbed 100mm Diameter sturbed Piston Sample er Sample	

Appendix II Rotary Core Logs Photographs



***) ගි		4			GEOT	ECF	INIC	JAL CO	RE LO	3 RECC	ORD				4	2466	35
CC	ONTR	ACT	. 1	/lona	ghan Act	ive Travel	- Mair	n Site						RILLHOL	E NO	RC	02 et 1 of	2
			TES EVEL	(mC	וטו				RIG TYPE	i		Beretta T	DA	TE DRIL		25/0	05/202 05/202	3
CL	IENT	•	N		ghan Co.	Co.			FLUSH			Air/Mist -90	DF	RILLED E	Y	10	3SL	JK
	Т	EK	T		Ì				CORE DIA	AMETER (m	ım)	78	ILC	GGED E	IY 	T).O'She	ea T
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Spa L (n	cture acing .og nm) 50 50d	Non-intact Zone	regend			Descrip				Depth (m)	Elevation	Standpipe Details	SPT (N Value)
1	1.50	0	0	0		er ing de			SYMMET returns of	RIX DRILLI Fsoft CLAY.	NG: No rec	covery, obse	rved by d	riller as				
2	3.00	0	0	0											ANNUAL TO THE TAXABLE			- Constitution of the Cons
~ 4	4.50	0	0	0	· · · · · · · · · · · · · · · · · · ·	144-11111111111111111111111111111111111									4.50			N = 24 (3, 2, 4, 7, 7, 6)
5	6.00	0	0	O				- 0 - 0 - 0	SYMMET returns of	RIX DRILLI gravelly CL	NG: No rec AY with occ	overy, obse casional cob	rved by d bles	riller as				
7	7.50	0	0	0	7-7-7-8-8-8-8-8											1		N = 43 (4, 6, 10, 10, 10, 13)
8	9.00	0	0	0	Application of the state of the	4		76							- Transmire	· inches		N = 51 (17, 9, 11, 13, 13, 14)
REI Hole	VAR	0	0	0				 - - - - - - - - - - - - - - - - - -										
Hole			om 0.	.00-1	0.50m					Water Strike	Casing Depth	Sealed	Rise	Time		mment		DETAILS
										Julke	Берип	At	То	(min)	-			recorded
INS	TALI	.ATI	ON D	ETA	ILS				······································	Date	Hole	Casing	Depth Wate	to Con	GR0 nments		VATE	RDETAILS
	Date		Tip De	pth	RZ Top	RZ Base		Тур			Depth	Depth	Wate	r CON	n nen itt			
25-	05-2	3	10.5	U	1.00	10.50	5	0mm	SP				İ					



GEOTECHNICAL CORF LOG RECORD

COURDIATES		93					GEUI	EUI	HNIC	JAL CO	KE LOC	S RECO	RD				2	2466	35
Rig Type					1ona	ghan Act	ive Travel	- Mai	n Site	1				I		NO			2
CLIENT Monaghan Co.Co. No.LINATION (deg)					(mC)D)				1	į			14 1					
10.50 10.5			R			-	Co.	·····	·	INCLINAT		m)	-90						
10.50 Feturns of gravelly CLAY with occasional cobbles (continued) 10.50 End of Borehole at 10.50 m N = 46, 6, 8, 11, 11 12 13 14 15 16 17		Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	(1	acing .og nm)	Non-intact Zone				·				Depth (m)	_		SPT (N Value)
13 14 15 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	11	0.50							- Q	returns of	gravelly CL	AY with occ	asional cob	ved by drille bles (contin		10.50			N = 48 (6, 8, 11, 12, 12, 13)
16	13		TO THE PERSON NAMED IN COLUMN TO THE			To the state of th			The state of the s						\$98.4-\$-0.00 to 100.4-\$-0.00 to 100.7 t				
17		THE STREET STREET, STR	77,000			Opposite the state of the state			AMALIA II						THE PROPERTY OF THE PROPERTY O				
NSTALLATION DETAILS Date Tip Depth RZ Top RZ Base Type 25-05-23 10.50 1.00 10.50 50mm SP Water Casing Depth RZ Top RZ Base Type Comments C	-	TO THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE					er i de												
NSTALLATION DETAILS Date Tip Depth RZ Top RZ Base Type 25-05-23 10.50 1.00 10.50 Somm SP Sealed Rise Time (min) Comments No water strike recorded Casing Depth At To Tip Comments No water strike recorded Casing Depth Casing Depth Casing Depth Comments Com	18		·				The second secon								and the state of t	n municipal de la constante de		THE POLICE AND ADDRESS OF THE POLICE AND ADD	
Water Strike Depth At To Time (min) Comments	EM	ARK	s				<u></u>				<u> </u>				ļ	WAT	ER ST	RIKE	DETAILS
NSTALLATION DETAILS Date Hole Depth Depth Depth Water Comments	lole (case	d fro	m 0.0	00-1	0.50m	, , , , ,									Cor	mment	S	
Date Tip Depth RZ Top RZ Base Type 25-05-23 10.50 1.00 10.50 50mm SP	JST/	Δ1 1	ΔΤΙΓ	ירו אנ	FTA	II S	• 11				Data	Hole	Casing	Depth to				/ATER	DETAILS
	Da 25-0	ate	ŢŢ	ip De	pth	RZ Top					Date			Water	Comr	nents		******	



IGSL RC FI 10M 24665 - MAIN SITE.GPJ IGSL.GDT 6/8/23

GEOTECHNICAL CORE LOG RECORD

V)ලිදු	رايَّ				GLO I	LUI	HAIC	JAL CO	KE LOG	RECO	עאי				2	2466	S5
CC	NTR	ACT	٨	1ona(ghan Acti	ve Travel	- Mai	n Site						ILLHOLE EET	NO	RC	03 et 1 of	2
		DINA		(mO	D)				RIG TYPE FLUSH			Beretta T	DA	TE DRILL TE LOGG		26/0	95/2023 95/2023	3
	IENT GINE			fonaç ORA	han Co.	Co.			INCLINAT	ION (deg) METER (mi	m)	-90 78	1	ILLED B			SSL - J .O'She	
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Spa L (n	cture acing og am) 0 500	Non-intact Zone	Legend			Descrip	ition			Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0 1 2 3 4 5 5 6 7 8 8 PE	8.10 9.10	100 71 KS ed fro	0 0	0					Returns of gravelly Ci	stiff to very LAY, with oc to subround estone.	stiff, dark	brown, sligi	ntly sandy,	Gravel	8.10 WAT Co.	TER ST	RIKE S	N = 57 (9, 13, 17, 11, 15, 14) N = 50 (5, 11, 10, 17, 11, 12) N = 47 (4, 7, 9, 9, 14, 15) N = 53 (4, 11, 11, 13, 13, 16) N = 50 (8, 11, 12, 13, 10, 15)
INS	TALI	LATIO	ם מכ	ETAI	LS	***************************************				Date	Hole	Casing	Depth t	o Com	GRO		VATER	DETAILS
	Date					RZ Base		Тур	e		Depth	Depth	vvater	. 50/11	nc			
		- 1					I			i	1	1	1	1				



GEOTECHNICAL CORE LOG RECORD

Λĺ	ලියි	<u>.</u>							JAL CO		J . (LQQ					2	2466	55	
CC	NTR	ACT	·	Mona	ighan Act	ive Travel	- Mai	n Site					DRI SHE	LLHOLE	NO	RC:		?	
GR	OUN	D LI			OD)				RIG TYPE Beretta T44 FLUSH Air/Mist			DAT	DATE DRILLED DATE LOGGED						
CLIENT Monaghan Co.Co. ENGINEER CORA										INCLINATION (deg) -90 CORE DIAMETER (mm) 78				LLED BY GGED BY			SL - Ji O'She		
⇒ Downhole Depth (m)	L	T.C.R.%	S.C.R.%	R.Q.D.%	(n	cture acing .og nm)	Non-intact Zone	Legend			Descrip	tion			Depth (π)	Elevation	Standpipe Details	SPT (N Value)	
	10.50				-				<u> </u>	of Borehole	at 10.50 m				10.50				
12					de sintroj.			THE THE THE THE PART AND THE											
14								AND THE PROPERTY OF THE PROPER											
15								Transporture.											
17			-			i delino de											TO THE STORY WHEN THE STORY OF		
REN Hole																THE PROPERTY OF THE PROPERTY O	THE PROPERTY AND ADMINISTRATION OF THE PROPERTY OF THE PROPERT		
												····	·····						
REMARKS Hole cased from 0.00-8.00m							Water Strike	Casing Depth	Sealed At	Rise To	Time (min)		ER ST		DETAILS				
														1000	No	water	strike	recorded	
INS.	INSTALLATION DETAILS									Date	Hole	Casing	Depth to Water	GROUNDWATER DE					
Date Tip Depth RZ Top RZ Base Type								Туг	e e	29-05-23	10.50	Depth 8.00	10.40	Water	Water levels recorded 5 mins after end o drilling.				



GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER

11	ඉව	-														_	. 100			
col	NTR	ACT	` N	/lona	ghan Acti	ve Travel	- Mai	n Site			· · · · · · · · · · · · · · · · · · ·		1	ULLHOL	E NO	RC				
CO-ORDINATES									DIC TYPE Possible Tdd					DATE DRILL		Sheet 1 ED 23/05/02				
GROUND LEVEL (mOD)									RIG TYPE Berett FLUSH Air/Mi				44 DA	TE LOG	GED	23/0	5/202	3		
	ENT			fona ORA	ghan Co.0	Co.			INCLINAT	iON (deg) \METER (m	am)	-90 78		ILLED I			SSL - J .O'She			
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Spa Li (m	cture icing og im)	Non-intact Zone	Legend		Description								SPT (N Value)		
ŏ	<u>ა</u>		<u> </u>		0 25	0 500 !!!!!!!!!	ž	و ا	ev/MMET	TIV DDB 1	010-11) Ir	Depth (m)	Elevation	Standpipe Details	g.		
-1	0 0 0 0									CLAY.	ING: No rec				1.50					
2	2.60	73	0	0				0 0	gravelly C is angular are of lime	Returns of stiff to very stiff, dark brown, slightly sandy, gravelly CLAY, with occasional cobbles. Sand is fine. Gravel is angular to subrounded fine to coarse of limestone. Cobbles are of limestone.								171110		
3	4.00	0	o	0				0 0	returns of	RIX DRILLI gravelly CL	ING: No rec AY with occ	overy, obsei casional cob	rved by di xbles	riller as				N = \$7 (13, 12, 27, 11, 9, 10)		
4 5	5.50	100	0	0														N = 55 (6, 17, 18, 11 12, 14)		
6	7.00	0	o	0		and the development of the second		0										N = 44 (5, 7, 10, 11, 10, 13)		
B E E E E E E E E E E E E E E E E E E E	8.50	0	0	0				- 0 - 0 - 0										N = 46 (8, 9, 8, 14, 13, 11)		
9	0.00	0	0	0														N = 10/75 mm (7, 14, 10)		
REM	REMARKS Hole cased from 0.00-15.00m									Wester	Casina	Codo	D:	T =-		TER S	rike.	DETAILS		
Hole	cas	ea tr	om U	.00-1	5.00m					Water Strike	Casing Depth	Sealed At	Rise To	Tim (min		mment	ts	***************************************		
														- The second sec	N	No water strike recorded				
															GBC	יירואו זר	VATE	RDETAILS		
NST	FALI	.ATI	ON D	ETA	ILS	•		••••	•	Date	Hole Depth	Casing Depth	Depth Wate	to Co	mments		ent Ef	· PT I VILO		
	Date	Ŧ	Tip Do	epth	RZ Top	RZ Base	-	Typ	e		Dopar	ا المروح الم	1	-						

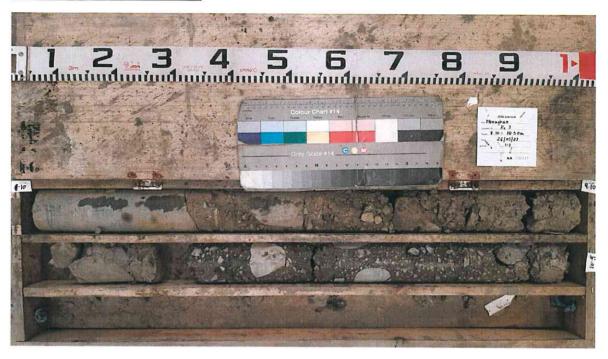


GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER

1	9 3	<u>.</u>														Æ.	:400		
COI	VTR.	ACT	٨	1ona	ghan Acti	ve Travel	- Mai	n Site				·······	DRI	LLHOLI	E NO	RC	06		
CO-	ORI	ANIC	TES			<u></u>							SHE				et 2 of		
GRO	DUN	D LE	VEL	(mC	D)				RIG TYPE Beretta T44 FLUSH Air/Mist				ea I	E DRILI E LOGO					
	LIENT Monaghan Co.Co. NGINEER CORA								INCLINAT							IGSL - JK D.O'Shea			
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Spa Li (m	cture icing og im) o sod	Non-intact Zone	Legend			Depth (m)	Elevation	Standpipe Details	SPT (N Value)					
10	11.50	0	0	0				- O	SYMMET returns of	RIX DRILLI gravelly Cl.	NG: No rec AY with occ	overy, obse casional cob	rved by dri Ibles <i>(cont</i>	ller as inued)				N = 46 (4, 11, 12, 9, 11, 14)	
- 12	3.00	0	0	0		·												N = 55 (15, 16, 19, 11, 12, 13)	
13	3.50	0	0	0	-			-8-							13.50	1			
13		100	0	0					Returns of stiff to very stiff, dark brown, slightly sandy, gravelly CLAY, with occasional cobbles. Sand is fine. Gravel is angular to subrounded fine to coarse of limestone. Cobbles are of limestone.										
- 15	5.00							<u></u>	Ead	of Borehole	at 15 00 m				15.00				
17 18	TO THE PARTY OF TH														Marganian and Andrews and Andr				
REMARKS Hole cased from 0.00-15.00m										Water	Casing	Sealed	Rise	WATER STRIKE D					
REMARKS Hole cased from 0.00-15.00m INSTALLATION DETAILS Date Tip Depth RZ Top RZ Base Typ										Strike	Depth	At	To	To (min) Comments No water strike reco					
INSTALLATION DETAILS										Date	Hole	Casing	Depth to	GROUNDWATER DETA					
Date Tip Depth RZ Top RZ Base Typ								Туг	ЭЕ	23-05-23	Depth 15.00	15.00	13.40	Wate	Water levels recorded 5 mins after end of drilling.				

RC03 - Box 1 of 1 - 8.10-10.50m



RC06 - Box 1 of 1 - 1.50-15.00m



Appendix III Trial Pit Records Photographs



CONTI										<u>د</u> -۳	665	
	RACT	Monaghan Active Travel						TRIAL P	IT NO.	TPO		
LOGG	ED BY	I.Reder	CO-ORDINAT	833,817.07 N					TARTED			
CLIEN ENGIN		Monaghan Co.Co. DBFL/Cora	GROUND LE	VEL (m)	72.34			EXCAVA METHO		3T T macl	racked nine	
									Sample	s	² a)	meter
		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPSOI	L		1 21 A								
	coarse. (eyish brown to brown, slightly sand th medium cobbles content. Sand i gravel is fine to coarse subangular ded, cobbles are small to coarse si ded	10 0 0 10 10 10 10 10 10 10 10 10 10 10	0.25	72.09		AA200193	В	0.70			
1.0 (f	CLAY wi	tiff, grey, slightly sandy gravelly slighth high cobbles and boulders contents of the state of t	ent. Sand is noular to		0.90	71.44						
-	TP termi	nated at 1.8m due to many boulder rial Pit at 1.80m	rs	0-7	1.80	70.54		AA200194	В	1.60		
Ground TP dry	dwater C	onditions		h				 		.1		,
Ct. Live		m:::::::::::::::::::::::::::::::::::::										
Stabilit TP stab	ole											
Genera TP don	al Remar ne for civi	ks ic offices project									and the second s	



J	53L	Т	RIAL PIT	RECO	RD					24	665	
CON	ITRACT	Monaghan Active Travel						TRIAL P	IT NO.	TP()2 et 1 of 1	
LOG	GED BY	l.Reder	CO-ORDINAT		833,7	17.94 E 82.52 N		DATE S		27/0	4/2023 4/2023	
CLIE	INEER	Monaghan Co.Co. DBFL/Cora	GROUND LE	/EL (m)	69.34			EXCAVA METHOI		3T T mac	racked hine	
									Sample	S	'a)	neter
	***************************************	Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPSOI		aralla Of AV	1 W V	0.25	69.09						
<u> </u> - -	with low fine to co	rm, brown, slightly sandy slightly gra cobbles content. Sand is fine to coa parse subangular to subrounded, co bangular to subrounded.	rse, gravel is		0.55	68.79						
1.0	Dense, t	original to subrounded. brownish grey, very clayey very sand ubrounded to subangular GRAVEL, ilar to angular cobbles and boulders	y fine to with high content.	00000000000000000000000000000000000000				AA200181	В	0.80		
-	TP termi End of T	nated at 1.4m due to many boulders rial Pit at 1.40m	;	90°0	1.40	67.94						
2.0												
3.0												
4.0				4								
-												
TP d	ry	onditions										
Stabi TP st	ility ightly unst	able from 0.55m										
Gene TP de	eral Remar one for civ	ks ic offices project									·	

IGSL TP LOG 24665.GPJ IGSL.GDT 10/5/23



ಕತ್ತು 📗				עאי				***************************************	24	665	
TRACT	Monaghan Active Travel							T NO.			
GED BY	I.Reder			833,7	66.18 N		DATE ST		27/0	4/2023	
NT NEER	Monaghan Co.Co. DBFL/Cora	GROUND LE	VEL (m)	72.15							
								Sample	5	oa)	meter
	Geotechnical Descrip	otion	Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KF	Hand Penetrometer (KPa)
Soft, bro content. subangu	own, sandy slighlty gravelly CL Sand is fine to coarse, gravel Jlar to subrounded, cobbles a	is fine to coarse		0.20	71.95						
silty CLA is fine to subroun	AY with high cobbles and boul coarse, gravel is fine to coars ded, cobbles and boulders are	ders content. Sand	5	0.80	71.35		AA200179	B	0.60		
TP termi End of T	inated at 1.7m due to many bo rial Pit at 1.70m	oulders	XO S	1.70	70.45		AA200180	В	1.50		
			The control of the co								
	Conditions		<u> </u>			<u> </u>					
•											
lity able							V-8-4-4				

	TOPSO Soft, brocontent, subangular, subangular, angular. TP term End of T	TRACT Monaghan Active Travel GED BY I.Reder NT Monaghan Co.Co. NEER DBFL/Cora Geotechnical Descrip TOPSOIL Soft, brown, sandy slightly gravelly CL content. Sand is fine to coarse, grave subangular to subrounded, cobbles a to subrounded. Firm to stiff, greyish brown, slightly sa silty CLAY with high cobbles and bould is fine to coarse, gravel is fine to coar subrounded, cobbles and boulders ar angular. TP terminated at 1.7m due to many be End of Trial Pit at 1.70m	TRACT Monaghan Active Travel GED BY I.Reder NT Monaghan Co.Co. NEER DBFL/Cora Geotechnical Description TOPSOIL Soft, brown, sandy slighlty gravelly CLAY with low cobbles content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbles are small subangular to subrounded. Firm to stiff, greyish brown, slightly sandy gravelly slightly silty CLAY with high cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbles and boulders are subangular to angular. TP terminated at 1.7m due to many boulders End of Trial Pit at 1.70m	TRACT Monaghan Active Travel GED BY I.Reder NT Monaghan Co.Co. NEER DBFL/Cora Geotechnical Description Geotechnical Description TOPSOIL Soft, brown, sandy slightly gravelly CLAY with low cobbles content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded. Firm to stiff, greyish brown, slightly sandy gravelly slightly slift CLAY with high cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded. The terminated at 1.7m due to many boulders are subangular to angular. The terminated at 1.7m due to many boulders are subangular to family and the subrounded. The terminated at 1.7m due to many boulders are subangular to angular. The terminated at 1.7m due to many boulders are subangular to subrounded.	TRACT Monaghan Active Travel GED BY I.Reder GROUND LEVEL (m) 72.15 TOPSOIL Soft, brown, sandy slightly gravelly CLAY with low cobbles content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse, gravel is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to angular. TP terminated at 1.7m due to many boulders End of Trial Pit at 1.70m Individual to many boulders content. Sand is fine to coarse, gravel is fine to coarse. gravel is fine to coarse subangular to angular.	TRACT Monaghan Active Travel GED BY I.Reder S33,766.18 N TOPSOIL Geotechnical Description Firm to stiff, greyish brown, slightly gravelly CIAY with low cobbles content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbles are small subangular to subrounded, cobbles are subangular to subrounded, cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbles and boulders are subangular to angular. TP terminated at 1.7m due to many boulders TP terminated at 1.7m due to many boulders End of Trial Pit at 1.70m The terminated at 1.7m due to many boulders TP terminated at 1.7m due to many boulders	GED BY I.Reder Geotechnical Description TOPSOIL Soft, brown, sandy slightly gravelly CLAY with low cobbles content. Sand is fine to coarse subangular to subrounded. Firm to stiff, greyish brown, slightly sandy gravelly slightly slib CLAY with high cobbles are small subangular to subrounded, cobbles are subangular to subrounded, cobbles and boulders content. Sand is fine to coarse, gravel is fine to co	TRACT Monaghan Active Travel GED BY I.Reder TO-ORDINATES 667,451.08 E 833,766.18 N BATES OR STAND TRACE OR ST	TRIACT Monaghan Active Travel GED BY LiReder THAL PIT NO. SHEET GED BY LiReder THAL PIT NO. SHEET DATE STARTED DATE COMPLET EXCAVATION METHOD TOPSOIL Soft brown, sandy slightly gravelly CLAY with low cobbler content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbles and boulders are subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse, gravel is fine to coarse. The coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse subangular to approach to coarse, gravel is fine to coarse gravel is fine to coarse. The coarse gravel is fine to coarse gravel is fine to coarse gravel is fine to coarse. The coarse gravel is fine to coarse gravel is fine to coarse gravel is fine to coarse. The coarse gravel is fine to coarse gravel is fine to coarse. The coarse gravel is fine to coarse gravel is fine to coarse. The co	TRACT Monaghan Active Travel GED BY LReder CO-ORDINATES 667.451.08 E 833.766.18 N GROUND LEVEL (m) 72.15 TO BET DEPL'Cara Geotechnical Description Geotechnical Description Geotechnical Description Geotechnical Description Geotechnical Description Geotechnical Description TOPSOIL Soft, brown, sandy slightly gravely CLAY with low obbiles content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbiles are subangular to subrounded, cobbiles are boulders content. Sand is fine to coarse subangular to subrounded, cobbiles and boulders are subangular to subrounded. TIP terminated at 1.7m due to many boulders TOPSOIL A2200179 B 0.60 A2200179 B 0.60 A2200180 B 1.50 TOPSOIL A2200180 B 1.50	TRIAL PI NO. TP03 SheET Shout I of 1 Secretary I Reder CO-ORDINATES 657-451.08 E 833,766.19 N ORDINATE Monaghan Co Co. NEER DBFL/Cora Geolechnical Description Geolechnical



J.	ار باندن	•	TRIAL PIT I	RECO	RD					24	665	
CON	TRACT	Monaghan Active Travel						TRIAL P	IT NO.	TPO)4 et 1 of 1	
LOG	GED BY	l.Reder	CO-ORDINAT		833,7	81.57 E 81.44 N		DATE S'		28/0	4/2023 4/2023	
CLIE ENGI	NT NEER	Monaghan Co.Co. DBFL/Cora	GROUND LEV	/EL (m)	73.74			EXCAVA METHO		3T T mac	racked hine	
									Sample	s	a)	neter
		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Type	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
1.0	cobbles gravel is cobbles (POSSII Firm to s CLAY w	own, slightly sandy very gravelly CL and boulders content. Sand is fine in fine to coarse subangular to subro and boulders are subangular to an BLE FILL) stiff, greyish brown, sandy gravelly s ith high cobbles and boulders conte oarse, gravel is fine to coarse suba ded, cobbles and boulders are sub	to coarse, nunded, gular. slightly silty ent. Sand is		0.10	73.64		AA200184	В	0.50		
2.0	TP termi	inated at 1.8m due to many boulde rial Pit at 1.80m	rs		1.80	71,94		AA200185	В	1.30		
3.0												
~4.0												
Grou	ndwater (Conditions										
TP dr												
Stabi TP st	lity able						***************************************					
	ral Remar	rks vic offices project							·····			
11" U(one for CIV	ne omess project										



10			TRIAL PIT	RECO	RD				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	24	665	
CON	TRACT	Monaghan Active Travel		······································				TRIAL P	IT NO.	TP()5 et 1 of 1	
LOG	GED BY	I.Reder	CO-ORDINA		833,7	07.95 E 82.70 N		DATE S		28/0	4/2023 4/2023	
CLIE	NT NEER	Monaghan Co.Co. DBFL/Cora	GROUND LE	VEL (m)	69.54	,		EXCAVA METHOI		3T T mac	racked hine	
									Sample	s	a)	neter
		Geotechnical Descriptio	n	Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPSO Soft, bro	own, slightly sandy slighlty gravel	ly CLAY. Sand is	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.20	69.34						
	fine to consult subroun Firm to some silty CLA Sand is	oarse, gravel is fine to coarse suided. stiff, brownish grey, slightly sand AY with high cobbles and low bot fine to coarse, gravel is fine to co	bangular to / gravelly slightly ilders content. parse subangular		0.50	69.04		AA200182	: В	0.70		
1.0	to subro subroun	unded, cobbles and boulders are ded.	e subangular to	X 8 X 4 X 5 X 5						4.70		
2.0	TP termi End of T	inated at 2.1m due to many bould Trial Pit at 2.10m	ders	X A	2.10	67.44		AA200183	В	1.70		
3.0												
4.0												
Grou		Conditions									<u> </u>	;
., uí	,											
Stabi TP st	lity able											
Gene	ral Remar	rks ric offices project		· · · · · · · · · · · · · · · · · · ·								

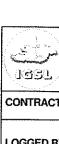


TRIAL PIT RECORD

REPORT NUMBER

24665

\ J\ 5	75L										000	
CON	TRACT	Monaghan Active Travel						TRIAL P	IT NO.	TP(06 et 1 of 1	
LOG	GED BY	I.Reder	CO-ORDINA		833,8	74.33 E 10.79 N		DATE S		28/0	14/2023 14/2023	
CLIE	NT NEER	Monaghan Co.Co. DBFL/Cora	GROUND LE	VEL (m)	74.34	4		EXCAV/ METHOI	ATION D		racked hine	
		Geotechnical Descript	tion		The second secon	To a control of the design of	Ke Ke		Sample	G	(KPa)	etrometer
				Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	cobbles coarse s	il. bwn, slightly sandy slightly grave content. Sand is fine to coarse subangular to subrounded, cobular to subrounded.	e, gravel is fine to	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.25	74.09						
1.0	Firm to s silty CLA	stiff, greyish brown, slightly san AY with high cobbles and bould coarse, gravel is fine to coars ded, cobbles and boulders are	ders content. Sand e subangular to		0.80	73.54	(Seepage)	AA200186	В	0.70		1 1111111111111111111111111111111111111
	TP termi End of T	nated at 1.5m due to many bo rial Pit at 1.50m	ulders	2 2-3	1.50	72.84		AA200187	В	1.40		
2.0				The state of the s								
3.0								THE PARTY OF THE P				
4.0												
	ndwater C age flow a	conditions at 1.0m								<u> </u>	L	
Stabil P sta												
	al Remar ne for civ	ks ic offices project		<u> </u>	****							
					····							



TRIAL PIT RECORD

REPORT NUMBER

/ 1/3	33L								***************************************	24	665	
CON	TRACT	Monaghan Active Travel	CO-ORDINAT	TES	667.4	58.22 E		TRIAL PI			et 1 of 1	
LOG	GED BY	I.Reder			833,8	33.25 N		DATE ST			4/2023 4/2023	
CLIE ENGI	NT NEER	Monaghan Co.Co. DBFL/Cora	GROUND LE	VEL (m)	75.79			EXCAVA METHOD		3T T mac	racked hine	
									Samples		(a)	neter
		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPSOI	L wn, slightly sandy slighlty gravelly	/ CLAV with	<u> </u>	0.25	75.54						
	some ha	iir roots. Sand is fine to coarse, gr ubangular to subrounded. rm, greyish brown, very sandy gra	ravel is fine to	<u> </u>	0.60	75.19		AA200188	В	0.50		
1.0	medium fine to co	cobbles content. Sand is fine to c parse subangular to subrounded, bangular to angular. (Possible ve	coarse, gravel is cobbles are									
	Firm to s	tiff, brown, slightly sandy gravelly and low boulders content. Sand is	CLAY with high s fine to coarse.		1.50	74.29		AA200189	В	1.30		
	gravel is	fine to coarse subangular to sub- and boulders are subangular to a	rounded,		1.90	73.89		AA200190	В	1.80		
3.0												
4.0												
Grou i TP dr		conditions										
Stabil TP sta												
Gene TP do	ral Remar ne for civ	ks ic offices project		·								
	-	AND		· · · · · · · · · · · · · · · · · · ·								



J.S.S.T.	Т	RIAL PIT I	RECO	RD					24	665	
CONTRACT	Monaghan Active Travel					***	TRIAL P	IT NO.	TPO		
LOGGED BY	I.Reder	CO-ORDINATI		833,8	26.80 E 58.25 N		DATE ST		28/0	et 1 of 1 4/2023 4/2023	
	Monaghan Co.Co. DBFL/Cora	GROUND LEV	/EL (m)	79.90			EXCAVA METHO		3T T mac	racked hine	
								Sample	s)a)	meter
	Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL			7.37.3 7.8.77	0.25	79.65						
k gravel is f	m, brown, slightly sandy gravelly Cl and hair roots content. Sand is fine fine to coarse subangular to subrou	ınded	10 19 10 1	0.50	79.40		7				
Firm to st with high to coarse	tre small subangular to subrounded iff, greyish brown, slightly sandy gra cobbles and low boulders content. , gravel is fine to coarse subangula ed, cobbles and boulders are suba	avelly CLAY Sand is fine				,	AA200195	В	0.80		
							AA200196	В	1.80		
TP termin End of Tri	ated at 2.2m due to many boulders ial Pit at 2.20m	3	O Do	2.20	77.70						
3.0											
4.0											
Groundwater Co	nditions										
ΓP dry											
Stability P stable											
General Remark	S coffices project			 		··· · · · · · · · · · · · · · · · · ·					
T GOLIE IOI CIVIC	, omoes project										



J.	13L		TRIAL PIT	RECO	RD					24	665	
CON	TRACT	Monaghan Active Travel						TRIAL P	IT NO.	TPO		
LOG	GED BY	I.Reder	CO-ORDINAT		833,8	77.14 E 42.01 N		DATE ST		28/0	4/2023 4/2023	
CLIE	NT NEER	Monaghan Co.Co. DBFL/Cora	GROUND LE	/EL (m)	75.17			EXCAVA METHO		3T T mack	racked nine	
									Sample	s	'a)	meter
		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Type	Depth	Vane Test (KPa)	Hand Penetrometer
0.0	TOPSOI	L		78.77	2.05	74.00	***************************************					
	roots cor	wn, slightly sandy slightly gravelly (ntent. Sand is fine to coarse, grave	CLAY with hair I is fine to	0 0	0.25	74.92 74.67						
1.0	Firm to s	ubangular to subrounded. stiff, greyish brown, slightly sandy g Y with high cobbles and boulders o coarse, gravel is fine to coarse sul ded, cobbles and boulders are sub	ravelly slightly content. Sand bangular to angular to	1 × 8 × 9	0.50	74.07		AA200191	В	0.70		
	TP termi End of T	nated at 1.5m due to many boulder rial Pit at 1.50m	rs	4.0	1.50	73.67	,	AA200192	В	1.50		
3.0												
4.0												
		Conditions										
ΓP dr	У											
Stabi P st	lity able						***************************************					
iene P do	ral Remar	ks ic offices project						·····			 	



	33L	Т	RIAL PIT	RECO	RD					24	665	
CON	TRACT	Monaghan Active Travel						TRIAL P	IT NO.	TP1	0 et 1 of 1	
LOG	GED BY	1.Reder	CO-ORDINAT		833,8	49.28 E 75.03 N		DATE S		28/0	4/2023 4/2023	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
CLIE ENGI	NT NEER	Monaghan Co.Co. DBFL/Cora	GROUND LEV	/EL (m)	81.69			EXCAVA METHOI		3T T mac	racked hine	
									Sample	s	(a)	neter
		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
1.0	roots co- coarse s Stiff to v gravelly Sand is to subro angular.	own, slightly sandy slightly gravelly Content. Sand is fine to coarse, gravel subangular to subrounded. ery stiff, greyish brown to brown, slightly with high cobbles and boulde fine to coarse, gravel is fine to coarse, gravel is sone to coarse, unded, cobbles and boulders are su	is fine to ghtly sandy ers content		0.30 0.50 2.50	81.39 81.19		AA200197 AA200198 AA200199	В	0.60 1.60 2.50		
TP di	у	Conditions										
Stabi TP st	lity able	***************************************										***************************************
	ral Remar	rks ric offices project	***************************************				***************************************	777WARA # 8478 W 4478				
_,												



TRIAL PIT RECORD

) (<u>)</u>	ಕರ೭ 📗									24	665	
CON	TRACT	Monaghan Active Travel						TRIAL PI SHEET	T NO.	TP1	1 et 1 of 1	
LOG	GED BY	I.Reder	CO-ORDINA	TES	667,48 833,88	82.17 E 86.75 N		DATE ST			4/2023 4/2023	
CLIE	NT NEER	Monaghan Co.Co. DBFL/Cora	GROUND LE	VEL (m)	76.84			EXCAVA METHOE		3T T macl	racked hine	
									Sample	s	,a)	meter
		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer
0.0	TOPSO Soft to f	irm, brown/grey mottled, slightly sa	indy slightly		0.20	76.64						
1.0	coarse,	CLAY with low cobbles content. S gravel is fine to coarse subangular ded, cobbles are small subangular ded.	r to					AA205152	В	0.70		
	with med	stiff, greyish brown, slightly sandy of dium cobbles and low boulders col parse, gravel is fine to coarse sub- ded, cobbles and boulders are sub-	ntent. Sand is angular to		1.10	75.74	·	AA205153	В	1.50		
2.0	TP termi	inated at 2.3m due to many boulde rial Pit at 2.30m	ers		2.30	74.54		AA205154	В	2.20		
3.0												
4.0												
Groui P dr		Conditions							- Constitution of the Cons			
Stabil P stabil								***************************************				
	ral Remai one for civ	rks ric offices project										***************************************



TRIAL PIT RECORD

REPORT NUMBER

24665

CO-ORDINATES LOGGED BY L. Reder CO-ORDINATES GROUND LEVEL (m) T. 46 CO-ORDINATES GROUND L	1337									<u>4</u>	.000	
CLIENT Monaghan Co.Co. BROUND LEVEL (m) Geotechnical Description Geo	CONTRACT	Monaghan Active Travel						1	T NO.			
Geotechnical Description Geotechnical Description Geotechnical Description TOPSOIL Soft, brown, slightly sandy slightly gravelly CLAY with hair roots content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded. Soft to firm, greyish brown, slightly sandy slightly gravelly CLAY with now cobies content. Sand is fine to coarse subangular to subrounded. Soft to firm, greyish prown, slightly sandy very gravelly CLAY with high cobbles and boulders content. Sand is fine to coarse subangular to subrounded. Soft to firm, greyish prown, slightly sandy very gravelly CLAY with high cobbles and boulders content. Sand is fine to coarse subangular to angular, cobbles and boulders content. Sand is fine to coarse subangular to angular, cobbles and boulders content. Sand is fine to coarse subangular to angular, cobbles and boulders or subangular to angular, cobbles and boulders or subangular to angular, cobbles and boulders or subangular to angular. (possible very clayey angular gravel and cobbles) TP terminated at 1.8m due to boulders or rock EMCHATION Samples Samples Samples AA205178 B 0.80 76.46 AA205178 B 1.70 AA205179 B 1.70	.OGGED BY	I.Reder			667,4 833,9	91.71 E 09.43 N		DATE ST		04/0	5/2023	
TOPSOIL Soft, brown, slightly sandy slightly gravelly CLAY with hair roots content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded. Soft to firm, greyish brown, slightly sandy slightly gravelly CLAY with low cobbles content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded. Soft to firm, greyish brown, slightly sandy very gravelly CLAY with high cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to angular, cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to angular, cobbles and boulders are subangular to angular. (possible very clayey angular gravel and cobbles) TP terminated at 1.8m due to boulders or rock End of Trial Pit at 1.80m 1.80 75.66 AA205178 B 1.70			GROUND LEV	VEL (m)	77.46		***************************************					
TOPSOIL Soft, brown, slightly sandy slightly gravelly CLAY with hair roots content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded. Soft to firm, greyish brown, slightly sandy slightly gravelly CLAY with low cobbles content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded. Soft to firm, greyish brown, slightly sandy very gravelly CLAY with high cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to angular, cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to angular, cobbles and boulders are subangular to angular. (possible very clayey angular gravel and cobbles) TP terminated at 1.8m due to boulders or rock End of Trial Pit at 1.80m 1.80 75.66 AA205178 B 1.70									Samples		,a)	meter
Soft, brown, slightly sandy slightly gravelly CLAY with hair roots content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded. Soft to firm, greyish brown , slightly sandy very gravelly CLAY with high cobbles are small subangular to subrounded. Soft to firm, greyish brown , slightly sandy very gravelly CLAY with high cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to angular, cobbles and boulders are subangular to angular, cobbles and boulders are subangular to angular, cobbles and boulders are subangular to angular. (possible very clayey angular gravel and cobbles) TP terminated at 1.8m due to boulders or rock End of Trial Pit at 1.80m 0.30 77.16 0.55 76.91 1.00 76.46 AA205178 B 0.80 AA205179 B 1.70		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KF	Hand Penetrometer (KPa)
Soft to firm, greyish brown , slightly sandy slightly gravelly CLAY with how cobbles content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded. Soft to firm, greyish brown , slightly sandy slightly gravelly CLAY with low cobbles content. Sand is fine to coarse subangular to subrounded, cobbles are small subangular to subrounded. Soft to firm, greyish brown , slightly sandy very gravelly CLAY with high cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to angular (possible very clayey angular gravel and cobbles) TP terminated at 1.8m due to boulders or rock End of Trial Pit at 1.80m AA205178 B 0.80 AA205178 B 1.70	10130			<u>0 34 3</u>	0.30	77 16						
CLAY with low cobbles content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbles are small subangular to subrounded. Soft to firm, greyish brown, slightly sandy very gravelly CLAY with high cobbles and boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to angular, cobbles and boulders are subangular to angular, (possible very clayey angular gravel and cobbles) TP terminated at 1.8m due to boulders or rock End of Trial Pit at 1.80m AA205178 B 0.80 76.46 AA205178 B 1.00 76.46 AA205179 B 1.70	with hair fine to c	r roots content. Sand is fine to coa carse subangular to subrounded.	rse, gravel is									
fine to coarse, gravel is fine to coarse subangular to angular, cobbles and boulders are subangular to angular. (possible very clayey angular gravel and cobbles) TP terminated at 1.8m due to boulders or rock End of Trial Pit at 1.80m AA205179 B 1.70	gravel is cobbles Soft to fi	ith low cobbles content. Sand is fir ine to coarse subangular to subrare small subangular to subround irm, grevish brown, slightly sandy	ne to coarse, ounded, ed. very gravelly		1.00	76.46		AA205178	В	0.80		
TP terminated at 1.8m due to boulders or rock End of Trial Pit at 1.80m	fine to co angular,	oarse, gravel is fine to coarse suba , cobbles and boulders are subang	angular to ular to angular.		1 90	75.66		AA205179	В	1.70		
3.0	End of T		rock			7 3.30						
3.0												
	3.0							THE THE PERSONNEL AND THE PERS				
4.0	4.0											
Groundwater Conditions TP dry		Conditions		:								
No. L. H.L.	A. E. 1824 -			~~~~								
Stability IP stable	tability P stable											
General Remarks IP done for civic offices project			•									



رز	55L	1	TRIAL PIT	RECO	RD					24	665	
CON	TRACT	Monaghan Active Travel				7/17/1/11		TRIAL P	PIT NO.	TP1		APPR
LOG	GED BY	I.Reder	CO-ORDINAT		833,9	64.88 E 29.00 N		DATE S		04/0	et 1 of 1 5/2023 5/2023	
CLIE	NT INEER	Monaghan Co.Co. DBFL/Cora	GROUND LEV	/EL (m)	83.28	-		EXCAV/ METHO		3T T mac	racked hine	
									Sample	s	(a)	neter
		Geotechnical Description		Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPSO		(b. O.1 A)/	77 74	0.20	83.08						
	with hair	own, slightly sandy slightly slightly gr r roots content. Sand is fine to coars oarse subangular to subrounded.	ravelly CLAY se, gravel is		0.50	82.78			-			
1.0	to coars	stiff, greyish brown, slightly sandy sl ith low cobbles and boulders conter e, gravel is fine to coarse subangula ded, cobbles and boulders are suba ded.	ar to		0.50	02.70		AA205173	В	0.60		
- - -	TP termi End of T	inated at 1.4m due to many boulder rial Pit at 1.40m	S	<u> </u>	1.40	81.88		AA205174	В	1.40	THE PROPERTY OF THE PROPERTY O	
2.0												
3.0												
4.0						e e e e e e e e e e e e e e e e e e e						
- -						петима стано вымамы.						
Grou	ndwater C	Conditions							······································			 -
31	•											
Stabi TP st	lity able			····								
Gene	ral Remar	ks ic offices project										

IGSL TP LOG 24665.GPJ IGSL.GDT 10/5/23



TRIAL PIT RECORD

REPORT NUMBER

24665

										24000		
CONTRACT Monaghan Active Travel									TRIAL PIT NO. SHEET		TP14 Sheet 1 of 1	
LOGGED BY CLIENT ENGINEER		I.Reder	CO-ORDINATES		667,490.90 E 833,949.34 N			DATE STARTED DATE COMPLET				
		Monaghan Co.Co. DBFL/Cora	GROUND LEV	/EL (m)	80.90			EXCAVATION METHOD			3T Tracked machine	
								Samples)a)	meter
	Geotechnical Description			Legend	Depth (m)	Elevation	Water Strike	Sample Ref	Туре	Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0		OPSOIL The first transfer of transfer of the first transfer of transfer of the first transfer of transfe				80.70						
-	Soft to firm, brown, slightly sandy slightly slightly gravelly CLAY with hair roots content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded.				0.20 0.50	80.40						
0	Firm to s with low coarse, g subround	Firm to stiff, greyish brown, slightly sandy gravelly CLAY with low cobbles and low boulders content. Sand is fine to coarse, gravel is fine to coarse subangular to subrounded, cobbles and boulders are subangular to subrounded.			0.30	80.40		AA205175	В	0.70		
								AA205176	В	1.50		
2.0	TP termi End of T	nated at 2.1m due to many boulders rial Pit at 2.10m	5		2.10	78.80		AA105177	В	2.10		
3.0												
4.0												
Grou TP di	ndwater C	conditions						4			<u> </u>	
Stabi TP st	ility able							***************************************				

IGSL TP LOG 24665.GPJ IGSLGDT 10/5/23

General Remarks
TP done for civic offices project

Site: Monaghan Active Travel Project Engineer: DBFL/CORA





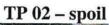
TP 01 – spoil



Site: Monaghan Active Travel Project Engineer: DBFL/CORA









Site: Monaghan Active Travel Project Engineer: DBFL/CORA







Site: Monaghan Active Travel Project Engineer: DBFL/CORA





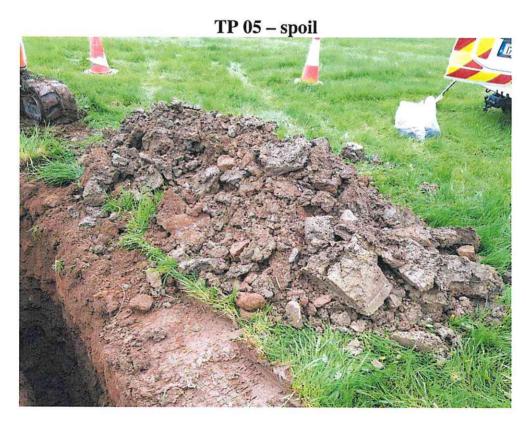
TP 04 – spoil



Site: Monaghan Active Travel Project Engineer: DBFL/CORA



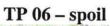




Site: Monaghan Active Travel
Project Engineer: DBFL/CORA





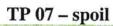




Site: Monaghan Active Travel Project Engineer: DBFL/CORA









Site: Monaghan Active Travel Project Engineer: DBFL/CORA









Site: Monaghan Active Travel Project Engineer: DBFL/CORA

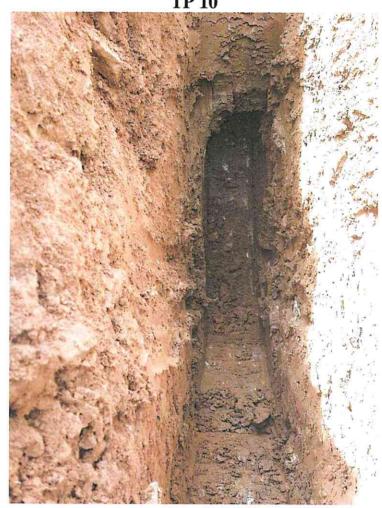






Site: Monaghan Active Travel Project Engineer: DBFL/CORA





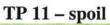




Site: Monaghan Active Travel Project Engineer: DBFL/CORA









Site: Monaghan Active Travel Project Engineer: DBFL/CORA







Site: Monaghan Active Travel Project Engineer: DBFL/CORA





TP 13 – spoil



Site: Monaghan Active Travel Project Engineer: DBFL/CORA





TP 14 – spoil





f -value from field tests Soakaway Design **IGS**I Contract: Monaghan, Active Travel 24665 Test No. SA01 **Engineer CORA** Date: 04/05/2023 Summary of ground conditions Description from to Ground water 0.00 0.25 TOPSOIL 0.25 0.50 Soft, brown, slightly sandy slightly gravelly CLAY with low hair roots content 0.50 DRY 1.30 Soft to firm, brown/grey mottled, slightly sandy gravelly slightly silty CLAY with high subangular to angular cobbles and boulders content 1.30 Obstruction - boulders Location: E:667491.477; N:833784.047; G.L. 71.944mOD Notes: SA01 done for Civic Offices project Field Data Field Test Depth to Elapsed Depth of Pit (D) 1.30 m Water 0.50 Time Width of Pit (B) m 2.00 (m) (min) Length of Pit (L) m 0.500 0.00 Initial depth to Water = 0.50 m 0.510 Final depth to water = 1.00 0.73 m 0.530 2.00 30.00 Elapsed time (mins)= 0.560 3.00 0.580 4.00 Top of permeable soil m 0.590 5.00 Base of permeable soil 0.600 6.00 0.605 7.00 0.610 8.00 0.615 9.00 0.620 10.00 Base area= 1 m2 0.640 12.00 *Av. side area of permeable stratum over test period 3.425 m2 0.660 14.00 Total Exposed area = 4.425 m2 16.00 0.670 18.00 0.680 20.00 0.690 Infiltration rate (f) = Volume of water used/unit exposed area / unit time 0.710 25.00 0.730 30.00 f= 0.00173 m/min or 2.88763E-05 m/sec Depth of water vs Elapsed Time (mins) 35.00 30.00 Time(mins) 25.00 20.00 15.00 10.00 5.00 0.00 0.000 0.100 0.200 0.300 0.400 0.700 0.500 0.600 0.800 Depth to Water (m)

f -value from field tests Soakaway Design **IGSI** Contract: Monaghan, Active Travel 24665 Test No. SA02 Engineer CORA Date: 04/05/2023 Summary of ground conditions from Description Ground water to 0.00 0.20 TOPSOIL 0.20 0.70 Soft to firm, brown, slightly sandy slightly gravelly CLAY with medium cobbles 0.70 1.60 Firm to stiff, greyish brown, slightly sandy gravelly slightly silty CLAY with low DRY subangular to angular cobbles and boulders content Location: E:667480.695; N:833861.983; G.L. 75.647mOD Notes: SA02 done for Civic Offices project Field Data Field Test Depth to Elapsed Depth of Pit (D) 1.60 m Water Time 0.50 Width of Pit (B) m 2.00 (m) (min) Length of Pit (L) m 0.600 0.00 Initial depth to Water = 0.60 m 0.610 1.00 Final depth to water = 0.68 m 0.620 2.00 Elapsed time (mins)= 60.00 0.630 3.00 0.630 4.00 Top of permeable soil m 0.640 5.00 Base of permeable soil 0.640 6.00 0.640 7.00 0.640 8.00 0.640 9.00 0.640 10.00 Base area= m2 0.640 12.00 *Av. side area of permeable stratum over test period 4.8 m2 14.00 0.640 Total Exposed area = 5.8 m2 0.640 16.00 0.650 18.00 0.660 20.00 Infiltration rate (f) = Volume of water used/unit exposed area / unit time 0.660 25.00 f= 0.00023 m/min 0.670 30.00 or 3.83142E-06 m/sec 0.670 40.00 0.680 50.00 0.680 60.00 Depth of water vs Elapsed Time (mins) 70.00 60.00 Time(mins) 50.00 40.00 30.00 20.00 10.00 \$ 0.00 0.580 0.600 0.620 0.640 0.660 0.680 0.700

Depth to Water (m)

f -value from field tests Soakaway Design IGS Contract: Monaghan, Active Travel 24665 Test No. SA03 **Engineer CORA** Date: 04/05/2023 Summary of ground conditions from to Description Ground water TOPSOIL 0.00 0.30 0.30 1.60 Firm to stiff, greyish brown, slightly sandy gravelly slightly silty CLAY with high cobbles and low boulders content DRY Location: E:667448.448; N:833888.586; G.L. 83.582mOD Notes: SA03 done for Civic Offices project Field Data Field Test Depth to Elapsed Depth of Pit (D) 1.60 m Water Time Width of Pit (B) 0.50 m (m) (min) Length of Pit (L) 2.00 0.540 0.00 Initial depth to Water = 0.54 m 0.540 1.00 Final depth to water = 0.55 m 0.540 2.00 Elapsed time (mins)= 30.00 0.540 3.00 0.550 4.00 Top of permeable soil m 0.550 5.00 Base of permeable soil 0.550 6.00 Water movement stoped at 0.55m 0.550 7.00 0.550 8.00 0.550 9.00 0.550 10.00 Base area= 1 m2 0.550 12.00 *Av. side area of permeable stratum over test period 5.275 m2 14.00 0.550 Total Exposed area = 6.275 m2 0.550 16.00 0.550 18.00 0.550 20.00 Infiltration rate (f) = Volume of water used/unit exposed area / unit time 0.550 25.00 0.550 30.00 f= 5.3E-05 m/min or 8.85347E-07 m/sec Depth of water vs Elapsed Time (mins) 35.00 30.00 Time(mins) 25.00 20.00 15.00 10.00 5.00 0.00 0.540 0.542 0.538 0.544 0.546 0.548 0.550 0.552 Depth to Water (m)

f -value from field tests Soakaway Design IGS Contract: Monaghan, Active Travel 24665 Test No. SA04 **Engineer CORA** Date: 04/05/2023 Summary of ground conditions from Description to Ground water 0.00 TOPSOIL 0.25 0.25 0.50 Soft, brown, sl. sandy sl. gravelly CLAY with low cobbles and hair rrots content 0.50 1.30 Firm to stiff, brown, slightly sandy gravelly CLAY with high subangular to subrour DRY cobbles and low boulders content 1.30 Obstruction - boulders Location: E:667494.53; N:833936.177; G.L. 79.506mOD Notes: SA04 done for Civic Offices project Field Data Field Test Depth to Elapsed Depth of Pit (D) 1.30 m Water Time Width of Pit (B) 0.50 m (m) (min) Length of Pit (L) 1.50 0.480 0.00 Initial depth to Water = 0.48 m 0.480 1.00 Final depth to water = 0.48 m 0.480 2.00 Elapsed time (mins)= 30.00 0.480 3.00 0.480 4.00 Top of permeable soil m 0.480 5.00 Base of permeable soil 0.480 6.00 No Water Movement 0.480 7.00 0.480 8.00 0.480 9.00 0.480 10.00 Base area= 0.75 m2 0.480 12.00 *Av. side area of permeable stratum over test period 3.28 m2 14.00 0.480 Total Exposed area = 4.03 m2 0.480 16.00 0.480 18.00 0.480 20.00 Infiltration rate (f) = Volume of water used/unit exposed area / unit time 0.480 25.00 0.480 30.00 f= 0 m/min or 0 m/sec Depth of water vs Elapsed Time (mins) 35.00 30.00 Time(mins) 25.00 20.00 15.00 10.00 5.00 0.00 0.000 0.100 0.200 0.300 0.400 0.500 0.600 Depth to Water (m)

Site: Monaghan Active Travel Project Engineer: DBFL/CORA









Site: Monaghan Active Travel Project Engineer: DBFL/CORA

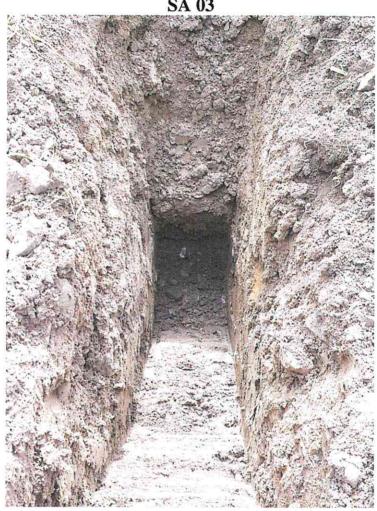






Site: Monaghan Active Travel Project Engineer: DBFL/CORA







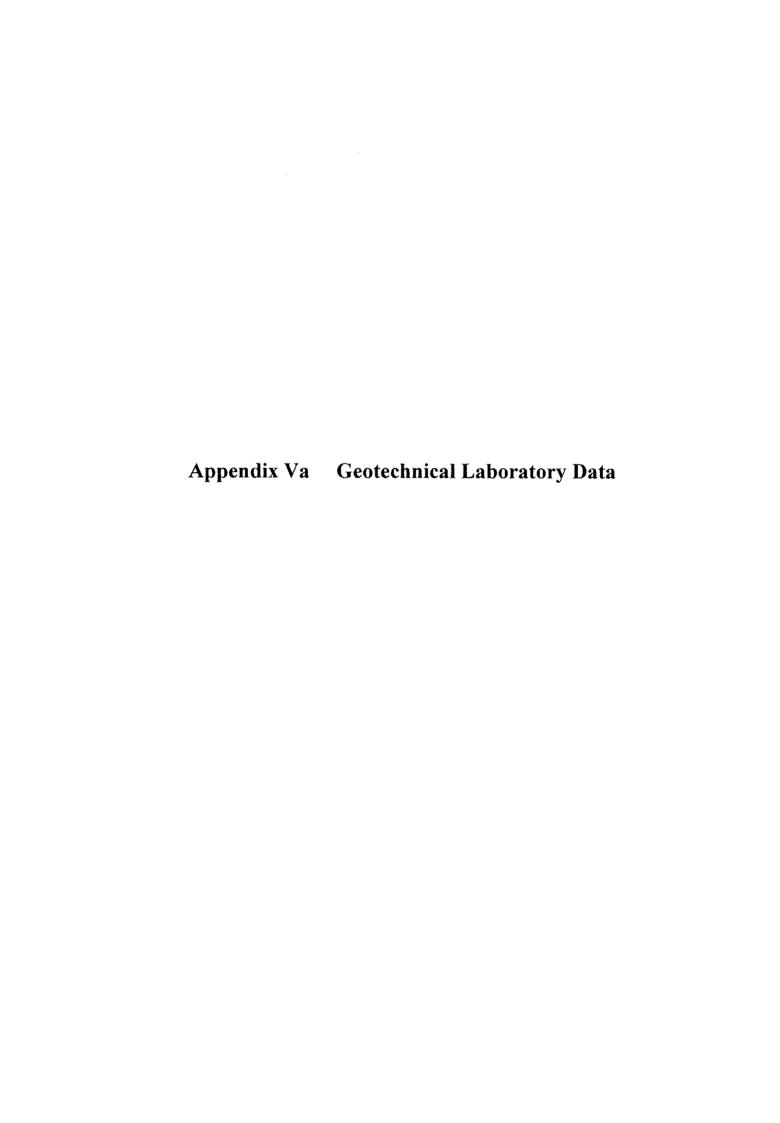
Site: Monaghan Active Travel Project Engineer: DBFL/CORA



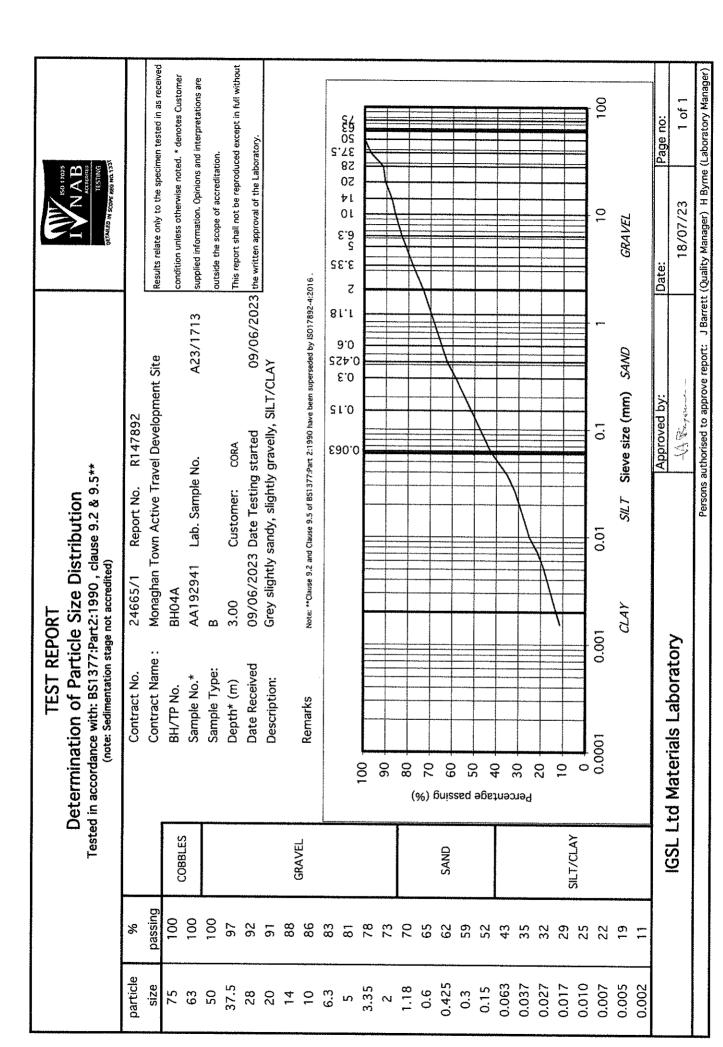


SA 04 – spoil





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			Monaghan Town Active Travel Development Site			Description	Brown sandy gravelly CLAY	Brown sandy gravelly CLAY	Brown sandy gravelly CLAY	Brown sandy gravelly SILT	Grey brown sandy gravelly CLAY	Grey brown sandy gravelly CLAY							Results relate only to the specimen tested, in as received condition unless otherwise noted.	892-12.	Opinions and interpretations are outside the scope of accreditation." denotes Customer supplied information.	This report shalf not be reproduced except in fullwithout written approval from the Laboratory.		18/07/23
		3**	iive Travel			Classification (BS5930)	70	70	- 0		CL	70							adition unless	92-1 and EN17	ditation. * deno	ten approval fr		
	lic Limits	3, 4.4 & 5.	Town Act			Preparation Liquid Limit	4.4	4.4	4.4	4.4	4.4	4.4							as received co	ded by EN 178	scope of accre	fullwithout writ	ру	一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一
	d & Plast	ises 3.2, 4.	Monaghar			ļ	WS	WS	SM	MS	WS	WS							cimen tested,in	NOTE: "These clauses have been superceded by EN 17892-1 and EN17892-12.	are outside the	fuced except in	Approved by	多字
oort	ent, Liqui	:1990, clau	Vame:			% <425µm	67	99	71	85	61	72							only to the sper	e clauses have	nterpretations	all not be reproc		
Test Report	ure Conte	377:Part 2	Contract Name:			Plasticity Index	14	16	17	М	14	14						Remarks:	Results relate	NOTE: "Thes	Opinions and i	This report sha		Aanager)
 	of Moist	e with BS1				Plastic Limit %	14	17	19	ď	16	19						Irbed	P 3				ve reports	aboratory A
	Determination of Moisture Content, Liquid & Plastic Limits	in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**	24665/1		09/06/23	Liquid Limit %	28	33	36	32	30	33						B - Bulk Distu	U - Undisturbed				ized to appro	H Byrne (Laboratory Manager)
	Deter	Tested in	No.		sted:	Moisture Content %	18	14	16	19	14	14						Sample Type: B - Bulk Disturbed					Persons authorized to approve reports	
			Contract No.		Date Tested:	Sample Type*	В	В	В	В	В	В									method			
					09/06/23	Lab. Ref	A23/1710	A23/1711	A23/1712	A23/1714	A23/1716	A23/1717									meter definitive	meter one poin		boratory
			R147891 Cora ceived: 1.0 1.0 0.7 0.6 0.6 NS - Wet sieved				AR - As received	NP - Non plastic	4.3 Cone Penetrometer definitive method	4.4 Cone Penetrometer one point method	-	IGSL Ltd Materials Laboratory												
ratory	usiness Park		Report No.	Customer	Samples Received:	Sample No. Depth* (m)	AA192933	AA197802	AA192935	AA192947	AA200193	AA200179	************			*****		Preparation: W	∢		Ϊ	Clause: 4.		SL Ltd Ma
IGSL Ltd Materials Laboratory	Unit J5, M7 Business Park Newhall, Naas	Co. Kildare 045 846176				ВН/ТР*	BH01	BH02	ВН03	BH05	TP01	TP03										_	<u>`</u>	<u>5</u>



TEST REPORT Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5** (note: Sedimentation stage not accredited)



particle	%			Contract No.	24665/1	Report No.	R147893			
size	passing			Contract Name:	Monaghan T	own Active Tra	Monaghan Town Active Travel Development Site	t Site	Results relate only to the specimen tested in as received	nen tested in as received
75	100	CORRIEC		BH/TP No.	BH08		-		condition unless otherwise noted. * denotes Customer	d. * denotes Customer
63	100	CORRECT		Sample No.*	AA192947	Lab. Sample No.	No.	A23/1715	supplied information. Opinions and interpretations are	nd interpretations are
20	94			Sample Type:	В				outside the scope of accreditation.	on.
37.5	94			Depth* (m)	2.00	Customer:	CORA		This report shall not be reproduced except in full without	ced except in full without
28	89			Date Received	09/06/202	09/06/2023 Date Testing started	started	09/06/2023	09/06/2023 the written approval of the Laboratory.	oratory.
20	88			Description:	Grey sandy,	Grey sandy, slightly gravelly, SILT/CLAY	, SILT/CLAY			
4	98	GRAVFI								
10	85	77 A LAID		Remarks	Note: **Clause 9.2 a	ind Clause 9.5 of BS1377	Part 2:1990 have been s	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016	2016.	
6.3	82							\$2		Ş.
S	80						0.0 r.0	E.O S4.O ∋.O	3.3 5.6.3 10 10 14 20 20 20 3.8	28 20 50 53 54
3.35	2.2		100							
2	74		06							
1.18	72		8 (
9.0	29		2 %) f					\ 		
0.425	64	SAND	gniza							
0.3	58									
0.15	48									
0.063	38		cent							
0.037	31									
0.027	28		- 07							
0.017	25	CH T/CI AV	9							
0.010	22	2	0							
0.007	13		0.0	0.0001 0.0	.001	0.01	0.1	,	10	100
0.005	17				CLAY	SILT Si	Sieve size (mm) SAND	SAND	GRAVEL	
0.002	10			The state of the s						
		1001	A 1 1 1 2 2 2 2	neter and the			Approved by:		Date:	Page no:
		IGSL L	.ta Mater	IGSL Ltd Materiais Laboratory	>		一个多一个		18/07/23	1 of 1
						Persons a	Persons authorised to approve report:		J Barrett (Quality Manager) H Byrne (Laboratory Manager)	(Laboratory Manager)

Determination of Particle Size Distribution Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5** (note: Sedimentation stage not accredited) **TEST REPORT**



particle	%			Contract No.	24665/1 Report No.	R147894		
size	passing			Contract Name:	Monaghan Town Active Travel Development Site	vel Development Site	Results relate only to the specimen tested in as received	en tested in as received
75	100	CORRIEC		BH/TP No.	TP05		condition unless otherwise noted. * denotes Customer	* denotes Customer
63	100	CORRECT		Sample No.*	AA200182 Lab. Sample No.	No. A23/1718	supplied information. Opinions and interpretations are	interpretations are
20	100			Sample Type:	В		outside the scope of accreditation.	<u>م</u>
37.5	100			Depth [⋆] (m)	0.70 Customer:	CORA	This report shall not be reproduced except in full without	d except in full without
28	66			Date Received	09/06/2023 Date Testing started		09/06/2023 the written approval of the Laboratory.	atory.
20	86			Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY	ly gravelly, SILT/CLAY		
14	96	CDAVC						
10	95	GRAVEL		Remarks	Note: **Clause 9.2 and Clause 9.5 of 8S1377	Note: **Clause 9.2 and Clause 9.5 of BS1377-Part 2:1990 have been superseded by ISO17892-4:2016 .	2016,	
6.3	93			***************************************		S		S
Ŋ	92					90.0 1.0 5.0 3.0 1.1	3.3 56.3 10 14 20 28	28 28 37 50 83 50 50 50
3.35	96		100					
2	87		06					
1.18	84		80					
9.0	83		2 %) (%					
0.425	79	SAND	gnie					
0.3	22							
0.15	99							
0.063	55							
0.037	46							
0.027	41		50					
0.017	35	CII T/CI AV	10					
0.010	29		0					
0.007	56		0.0	0.0001 0.001	0.01	0.1	10	100
0.005	21				CLAY SILT SI	Sieve size (mm) SAND	GRAVEL	
0.002	14			SERVICE CO. C.				
		1001	1 1 1 1 2 2 2	1 -1 -1 -1		Approved by:	Date:	Page no:
		IGSE E	to mate	IGSL Ltd Materials Laboratory	>	- V.J. B. y Excession	18/07/23	1 of 1

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IGSL Ltd Materials Laboratory

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Date:

Determination of Particle Size Distribution Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5** (note: Sedimentation stage not accredited) **TEST REPORT**



particle	%		_	Contract No.	24665/1 Report No. R147895	
size	passing			Contract Name:	Monaghan Town Active Travel Development Site	Results relate only to the specimen tested in as received
22	100	CORRIEC		3H/TP No.	TP09	condition unless otherwise noted. * denotes Customer
63	100	67766		Sample No.*	AA200191 Lab. Sample No. A2	A23/1719 supplied information. Opinions and interpretations are
20	100		~ /	Sample Type:	8	outside the scope of accreditation.
37.5	96		ا ست	Depth* (m)	0.70 Customer: CORA	This report shall not be reproduced except in full without
28	95			Date Received	09/06/2023 Date Testing started 0'	09/06/2023 the written approval of the Laboratory.
20	91			Description:	Grey brown sandy, slightly gravelly, SILT/CLAY	
4	88	13/1/05				
10	85	GNAVEL		Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377.Part 2:1990 have been superseded by ISO17892-4:2016	by iSO17892-4:2016 ,
6.3	8				S	CT 88
ιΩ	78		1		90.0 11.0 5.0	0.6 3.3 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5
3.35	74		100			
2	69		- 06			
1.18	65		+ 08 °			
9.0	09		2 %) f			
0.425	56	SAND	gnie:			
0.3	51					
0.15	39					
0.063	28					
0.038	23					
0.027	21		- 707			
0.017	8	CII T/CI AV	10 +			
0.010	16		<u> </u>			
0.007	15		0.0001	0.001	0.01 0.01	10 100
0.005	12				CLAY SILT Sieve size (mm) SAND	C GRAVEL
0.002	6					

TEST REPORT Determination of Particle Size Distribution Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5** (note: Sedimentation stage not accredited)



					0				COLUMN STORE REG NO. 13.51	4
	particle	%			Contract No.	24665/1 Report No.	R147896			
	size	passing			Contract Name:	Monaghan Town Active Travel Development Site	ravel Development Site		Results relate only to the specimen tested in as received	nen tested in as received
	7.5	100	CORRIEC		BH/TP No.	TP12			condition unless otherwise noted. * denotes Customer	d. * denotes Customer
	63	100	CODDITIO		Sample No.*	AA205178 Lab. Sample No.		A23/1720	supplied information. Opinions and interpretations are	nd interpretations are
	50	06			Sample Type:	&			outside the scope of accreditation.	ou,
	37.5	82			Depth* (m)	0.80 Customer:	CORA		This report shall not be reproduced except in full without	ced except in full without
••••••••••••••••••••••••••••••••••••••	28	80			Date Received	09/06/2023 Date Testing started		06/2023	09/06/2023 the written approval of the Laboratory.	sratory.
	20	75			Description:	Brown slightly sandy, gravelly, SILT/CLAY		-		
	4	7.1	GRAVE							
	10	89	<u> </u>		Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377.Part 2:1990 have been superseded by ISO17892-4:2016 .	77:Part 2:1990 have been superseded b	y ISO17892-4:2	716.	
	6.3	63					S			S
	2	09		,			90.0 1.0 8.0	6.0 ۲.۱	3.3 5.5 10 14 20 20 20 28	28 28. 37. 503 503 503 503
	3,35	25		001						
	2	52		- 06						
	1.18	48		80 (
	9.0	42		02 %) f						
	0.425	39	SAND	gnies						
	0.3	34								
	0.15	53						-		
	0.063	20								
	0.038	17								
	0.027	15		50 +						
	0.017	13	CH T/CI AV	10+						
	0.010	12		0						
	0.007	11		0.0001	0.001	0.01	0.1		10	100
******	0.005	თ				CLAY	Sieve size (mm) SAND		GRAVEL	
	0.002	7			and the second s	CHIAGONA CHARLES CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CANADA CONTRACTOR CONTRACTO				
			1001	Mark Land	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		Approved by:		Date:	Page no:
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IGSL Ltd Materials Laboratory

Page no:

Date:

		>	DETAILED IN SCO
TEST REPORT	Determination of Particle Size Distribution	Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5**	(note: Sedimentation stage not accredited)



10:11:00	6							
particle	8			Contract No.	24665/1 Report No.	40. R147897		
size	passing			Contract Name:	Monaghan Town Active	Monaghan Town Active Travel Development Site	Results relate only to the	Results relate only to the specimen tested in as received
22	90	CORRIFS		BH/TP No.	TP14		condition unless otherwise	condition unless otherwise noted. * denotes Customer
63	100			Sample No.*	AA205176 Lab. Sample No.		A23/1721 supplied information. Opin	supplied information. Opinions and interpretations are
20	100			Sample Type:	മ		outside the scope of accreditation.	ditation,
37.5	93			Depth* (m)	1.50 Customer:	er: CORA	This report shall not be re	This report shall not be reproduced except in full without
28	89			Date Received	09/06/2023 Date Testing started		09/06/2023 the written approval of the Laboratory.	Laboratory.
20	98			Description:	Grey brown slightly sar	SILT/CLA		
4	82	CDAVE						
10	2.2	פֿעאַ	-t-Walla tama	Remarks	Note: **Clause 9.2 and Clause 9.5 of	Note: **Clause 9.2 and Clause 9.5 of BS1377;Part 2:1990 have been superseded by ISO17892-4:2016	y ISO1 7892-4:2016 .	
6.3	72				A. C.	S	8	S
Ŋ	69					90.0 1.0 8.0	0.6 3.3 3.3 5.6.3 10 10	28 28. 37. 58. 58. 58. 58.
3.35	09		100					
2	53		06					X
1.18	49		80					
9.0	45		2 %) f					
0.425	43	SAND	Suiz:					
0.3	40							
0.15	34							
0.063	56							
0.038	23							
0.027	21		50					
0.017	19	CII T/CI AV	10					
0.010	17	5777	Ó					
0.007	15		ე. ე.	0.0001 0.00	0.01	0.1	1 10	100
0.005	13				CLAY SILT	7 Sieve size (mm) SAND	GRAVEL	
0.002	10							

IGSL Ltd Materials Laboratory Unit J5,M7 Business Park

Naas Co. Kildare

Test Report

Determination of Moisture Condition Value at Natural Moisture Content



Tested in accordance with BS1377:Part 4:1990, clause 5.4

045 899324		Tested in accordance	e with BS1377:Part 4:1990, clause 5.4	
	Report No.		R147898	
	Contract No	.	24665/1	
	Contract Na	ame:	Monaghan Town Active Travel Developme	nt Site
	Customer:		CORA	
	BH/TP*		TP01	
	Sample No	*	AA200193	
	Depth* (m)		0.70	
	Sample Typ	oe:	В	
	Lab Sample	∍ No.	A23/1716	
	Source* (if	applicable)	N/A	
	Material Typ	pe* (if applicable):	В	
	Sample Re	ceived:	09/06/23	
	Date Tested	d:	09/06/23	
	Sample Ce	rt:	Not Provided	
	Moisture Co	ontent (%):	15	
	% Particles (By dry mas		16	
	MCV:		6.6	
	Interpretation	on of Plot:	Steepest Straight Line	
	Description	of Soil:	Grey brown sandy gravelly CLAY	

Results relate only to the specimen tested, in as received condition unless other	rwise noted.	Persons authoris	sed to a	approve reports
Opinions and interpretations are outside the scope of accreditation.		J 8a	arrett (Qi	uality Manager)
* denotes Customer supplied information.		нв	lyrne (Lal	boratory Manager)
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IGSL Ltd

Materials Laboratory Unit J5,M7 Business Park

Naas

Co. Kildare 045 899324

Test Report

Determination of Moisture Condition Value at Natural Moisture Content



Tested in accordance with BS1377:Part 4:1990, clause 5.4

Report No. R147899

Contract No. 24665/1

Contract Name: Monaghan Town Active Travel Development Site

Customer: CORA

BH/TP* TP03

Sample No.* AA200179

Depth* (m) 0.60

Sample Type:

Lab Sample No. A23/1717

Source* (if applicable) N/A

Material Type* (if applicable): В

Sample Received: 09/06/23

Date Tested: 09/06/23

Sample Cert: Not Provided

Moisture Content (%): 13

% Particles > 20mm 15

(By dry mass):

MCV: 7.3

Interpretation of Plot: Steepest Straight Line

Description of Soil: Grey brown sandy gravelly CLAY

Results relate only to the specimen tested, in as received condition unless otherwise noted.

Opinions and interpretations are outside the scope of accreditation.

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Persons authorised to approve reports J Barrett (Quality Manager) H Byrne (Laboratory Manager)

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Naas

Test Report

Determination of Moisture Condition Value at Natural Moisture Content



			Content	TESTIA
Co. Kildare 045 899324		Tested in accord	lance with BS1377:Part 4:1990, clause 5.4	DETAILED IN SCOPE REG NO.
	Report No	•	R147900	
	Contract N	ο.	24665/1	
	Contract N	ame:	Monaghan Town Active Travel Developm	nent Site
	Customer:		CORA	
	BH/TP*		TP05	
	Sample No).*	AA200182	
	Depth* (m)		0.70	
	Sample Ty	pe:	В	
	Lab Sampl	e No.	A23/1718	
	Source* (if	applicable)	N/A	
	Material Ty	pe* (if applicable):	В	
	Sample Re	ceived:	09/06/23	
	Date Teste	d:	09/06/23	
	Sample Ce	ert:	Not Provided	
	Moisture C	ontent (%):	13	
	% Particles (By dry ma		11	
	MCV:		6.8	
	Interpretati	on of Plot:	Steepest Straight Line	
	Description	of Soil:	Brown slightly sandy, slightly gravelly, SiL	T/CLAY

Results relate only to the specimen tested, in as received condition unless othe	wise noted.	Persons authorised to	approve reports
Opinions and interpretations are outside the scope of accreditation.		J Barrett (0	Quality Manager)
* denotes Customer supplied information.		H Byrne (L	aboratory Manager)
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Unit J5,M7 Business Park

Naas

Test Report

Determination of Moisture Condition Value at Natural Moisture Content



Co. Kildare 045 899324		Tested in accorda	nce with BS1377:Part 4:1990, clause 5.4	DETARED HI SCO
	Report No	í.	R147901	
	Contract N	o.	24665/1	
	Contract N	ame:	Monaghan Town Active Travel Developme	ent Site
	Customer:		CORA	
	BH/TP*		TP09	
	Sample No).*	AA200191	
	Depth* (m)		0.70	
	Sample Ty	pe:	В	
	Lab Sampl	e No.	A23/1719	
	Source* (if	applicable)	N/A	
	Material Ty	rpe* (if applicable):	В	
	Sample Re	ceived:	09/06/23	
	Date Teste	d:	09/06/23	
	Sample Ce	ert:	Not Provided	
	Moisture C	ontent (%):	13	
	% Particles (By dry ma		11	
	MCV:		6.8	
	Interpretation	on of Plot:	Steepest Straight Line	
	Description	of Soil:	Grey brown sandy, slightly gravelly, SILT/0	CLAY

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.		Persons authorised to approve reports		
		J Barrett (C	J Barrett (Quality Manager)	
* denotes Customer supplied information.		H Byrne (La	H Byrne (Laboratory Manager)	
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IGSL Ltd Materials Laboratory Unit J5,M7 Business Park

Naas Co. Kildare

Test Report

Determination of Moisture Condition Value at Natural Moisture Content



Co. Kildare 045 899324	L Lesien in accordance with HSTR77Part 4:1000 Places F						
	Report No		R147902				
	Contract N	0.	24665/1				
	Contract N	ame:	Monaghan Town Active Travel Developme	nt Site			
	Customer:		CORA				
	BH/TP*		TP12				
	Sample No	.*	AA205178				
	Depth* (m)		0.80				
	Sample Typ	pe:	В				
	Lab Sample	e No.	A23/1720				
	Source* (if	applicable)	N/A				
	Material Ty	pe* (if applicable):	В				
	Sample Re	ceived:	09/06/23				
	Date Teste	d:	09/06/23				
	Sample Ce	rt:	Not Provided				
	Moisture Co	ontent (%):	10				
	% Particles (By dry mas		21				
	MCV:		6.7				
	Interpretation	on of Plot:	Steepest Straight Line				
	Description	of Soil:	Brown slightly sandy, gravelly, SILT/CLAY				

Results relate only to the specimen tested, in as received condition unless other	Persons authorised to	approve reports	
Opinions and interpretations are outside the scope of accreditation.	J Barrett (Quality Manager)		
* denotes Customer supplied information.	H Byrne (Laboratory Manager)		
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IGSL Ltd

Materials Laboratory Unit J5,M7 Business Park

Naas

Co. Kildare 045 899324

Test Report

Determination of Moisture Condition Value at Natural Moisture Content



Tested in accordance with BS1377:Part 4:1990, clause 5.4

Report No.

R147903

Contract No.

24665/1

Contract Name:

Monaghan Town Active Travel Development Site

Customer:

CORA

BH/TP*

TP14

Sample No.*

AA205176

Depth* (m)

1.50

Sample Type:

В

Lab Sample No.

A23/1721

Source* (if applicable)

N/A

Material Type* (if applicable):

В

Sample Received:

09/06/23

Date Tested:

09/06/23

Sample Cert:

Not Provided

Moisture Content (%):

14

% Particles > 20mm

15

(By dry mass):

MCV:

7.8

Interpretation of Plot:

Steepest Straight Line

Description of Soil:

Grey brown slightly sandy, gravelly, SILT/CLAY

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation. Persons authorised to approve reports

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J Barrett (Quality Manager)

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H Byrne (Laboratory Manager)

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TEST REPORT Determination of California Bearing Ratio (CBR)



Tested in accordance with BS1377:Part 4:1990, clause 7

199324			l resten	iii accoluai	ice with BS137	7.Fan 4.199	o, clause /	<u> </u>
	Report	No.	R147904	į.	Contract	Monaghan Tov	vn Active Travel	Development Si
	Contra	ct No.	24665/1		Customer		Coi	
	Date re	eceive	d 09/06/2	3	Date Tested	15/06/23	Çol	a
	BH/TP	No.*	TP01		Sample No.*	AA200193	Туре:	В
	Depth*	(m)	0.70		Lab sample N	lo.	A23/1716	
	0							
	2 -							
	1.8 -							
	1.6 -							
	1.4 -							
	1.2 -							
Ŝ								
Force (kN)	1 -							
For	0.8 -							
	0.6 -							
	0.4 -		-1					
	0.2	تو						
	0 -	0.5					<u> </u>	
	C	0.5	5 1 1.5	2 2.5	3 3.5 4 Penetration (n		5.5 6 6.5	7 7.5
				_				
_	Key:			- Тор		Base		
[Descrip	otion:	Grey brow	n sandy gra	velly CLAY	*****		
Į	nitial C	onditi	on:	Unsoaked				
			tent (%):	14	Bulk Density (- '	2.01	
	Surcha % Mate			4 13	Dry Density (N	/lg/m³):	1.76	
			mpaction:		paction Method	12		
F	Test Re	esult	Тор	Base	7			
-		R %	5.7	5.6				
l		sture	14	14				
L	Conte	ent %	ł	1	1			

Results relate only to the specimen tested, in as received condition unless otherwise noted

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045 899324

TEST REPORT Determination of California Bearing Ratio (CBR)



Tested in accordance with BS1377:Part 4:1990, clause 7

Report No. R147905 Contract Monaghan Town Active Travel Development Site Contract No. 24665/1 Customer Cora Date received 09/06/23 **Date Tested** 15/06/23 BH/TP No.* **TP03** Sample No.* AA200179 Type: В Depth* (m) 0.60 Lab sample No. A23/1717 1.2 1 8.0 Force (kN) 0.6 0.4 0.2 0 1.5 2 2.5 3 3.5 4 4.5 5.5 6 6.5 7.5 Penetration (mm) Key: Top ----- Base

Description: Grey brov	vn sandy gra	velly CLAY	
Initial Condition:	Unsoaked		
Moisture Content (%):	12	Bulk Density (Mg/m ³):	2.03
Surcharge (kg):	4	Dry Density (Mg/m ³):	1.82
% Material >20mm:	10		
Method of compaction:	Static Com	paction Method 2	

Test Result	Тор	Base
CBR %	4.5	4.8
Moisture Content %	12	11

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IGSL Ltd Materials Laboratory

Unit J5,M7 Business Park Naas Co.Kildare

TEST REPORT Determination of California Bearing Ratio (CBR)



045 899324 Tested in accordance with BS1377:Part 4:1990, clause 7 Report No. R147906 Contract Monaghan Town Active Travel Development Site Contract No. 24665/1 Customer Cora Date received 09/06/23 **Date Tested** 15/06/23 BH/TP No.* **TP05** Sample No.* AA200182 Type: В Depth* (m) 0.70 Lab sample No. A23/1718 1.4 1.2 1 0.8 Force (kN) 0.6 0.4 0.2 1.5 2 2.5 3.5 3 4 4.5 5 5.5 6 6.5 7.5 Penetration (mm) Key: Top ----- Base Description: Brown slightly sandy, slightly gravelly, SILT/CLAY Initial Condition: Unsoaked Moisture Content (%): 13 Bulk Density (Mg/m³): 2.08 Surcharge (kg): Dry Density (Mg/m³): 4 1.83 % Material >20mm: 10 Method of compaction: Static Compaction Method 2 Test Result Top Base CBR % 3.7 4.5 Moisture 14 13 Content %

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045 899324

TEST REPORT Determination of California Bearing Ratio (CBR)



Tested in accordance with BS1377:Part 4:1990, clause 7

Report I	No.	R147907	•	Contract	Monaghan Tov	vn Active Travel	Development
Contrac	t No.	24665/1		Customer		Coi	·a
Date red	ceived	09/06/2	3	Date Tested	15/06/23	Col	a
BH/TP N	No.*	TP09		Sample No.*	AA200191	Туре:	В
Depth* ((m)	0.70		Lab sample N	lo.	A23/1719	
				,			
0.8 T							
ļ							
0.6							
L							
⊋							
- 0.4							
20							
*			100				
0.2			سننتلط				
-		/					
م ا	250						
0	0.5	1 1.5	2 2.5	3 3.5 4	4.5 5 5	5.5 6 6.5	7 7.5
				Penetration (n	nm)		
Key:			- Тор		Rase		
Descript	ion	Crow brown	-				
<u> </u>			n sandy, się	htly gravelly, S	IL1/GLAY		
Initial Co			Unsoaked		3	***************************************	
Moisture Surcharg			14 4	Bulk Density (Dry Density (N		2.11	
% Mater			13	DI Y DELISITY (N	ngati):	1.85	
Method			Static Con	paction Method	d 2	··········	
Test Res	sult	Тор	Base	7			
CBR	***************************************	1.8	2.1	1			

Test Result	Тор	Base
CBR %	1.8	2.1
Moisture Content %	14	14

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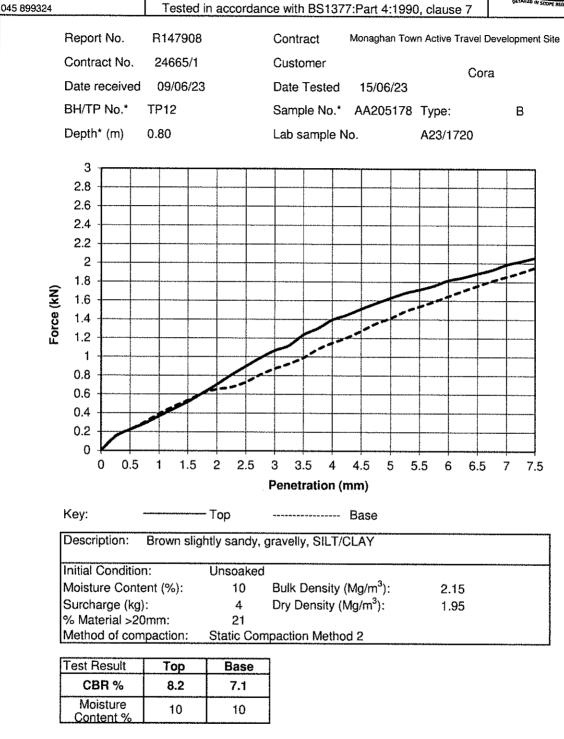
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TEST REPORT Determination of California Bearing Ratio (CBR)



Tested in accordance with BS1377:Part 4:1990, clause 7



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TEST REPORT Determination of California Bearing Ratio (CBR)



5 899324	Tested in accord	dance with BS1377:Part 4:1990, clause 7	£B IN SCOPE
Report No.	R147909	Contract Monaghan Town Active Travel Developm	ent Site
Contract No.	24665/1	Customer	
Date received	09/06/23	Cora Date Tested 15/06/23	
BH/TP No.*	TP14	Sample No.* AA205176 Type: B	
Depth* (m)	1.50	Lab sample No. A23/1721	
1.2			7
1			_
0.8			
Force (kN)			
0.4			
0.2			
0 0.5	1 1.5 2 2.5		
0 0.5	1 1.5 2 2.8	5 3 3.5 4 4.5 5 5.5 6 6.5 7 7 Penetration (mm)	7.5
Key:	Тор	Base	
Description: G	Grey brown slightly	sandy, gravelly, SILT/CLAY	
Initial Conditio		2	_
Surcharge (kg): 4	Bulk Density (Mg/m³): 2.04 Dry Density (Mg/m³): 1.79	

Test Result	Тор	Base
CBR %	2.7	3.3
Moisture Content %	14	13

15

Static Compaction Method 2

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% Material >20mm:

Method of compaction:

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Test Report

Dry Density/Moisture Content Relationship



Tested in accordance with BS1377:Part 4:1990

Report No.

R147910

Contract No. 24665/1

Contract Name:

Monaghan Town Active Travel Development Site

Location*:

TPOI

Sample No*.

AA200193

Depth* (m)

1.79

0.7

Material Type

В

Lab sample no.

A23/1716

Customer: CORA

2.5 Kg Rammer

Date Received:

Dry Density (Mg/m³)

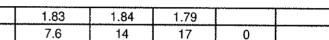
09/06/2023

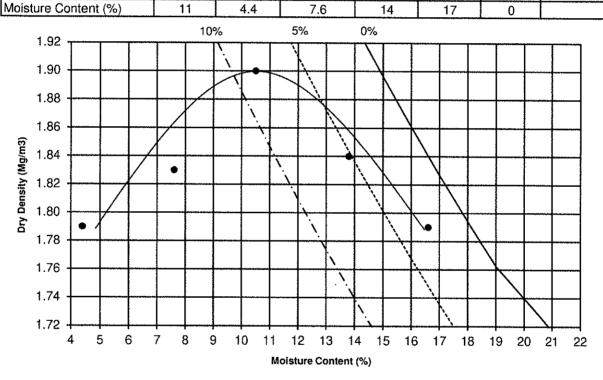
1.90

Test Method:

3.3

Date Tested: 03/07/2023 BS1377:Part 4:1990





Maximum Dry Density (Mg/m3):

1.90

Optimum Moisture Content (%):

11

Description:

Brown sandy gravelly SILT/CLAY

Sample Preparation:

Material passing 20mm

Single / Separate samples used

Particle Density (Mg/m³):

2.65

Particle Density:

Assumed

% retained on 20/37.5mm sieve:

13

R147910 TP01 0mc

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IGSL Materials Laboratory

IGSL Ltd Materials Laboratory M7 Business Park Naas

Test Report

Dry Density/Moisture Content Relationship



Tested in accordance with BS1377:Part 4:1990

Report No.

Co. Kildare

R147911

Contract No. 24665/1

Contract Name:

Monaghan Town Active Travel Development Site

Location*:

TDAS

Sample No*.

AA200179

Depth* (m)

Material Type

В

Lab sample no.

Date Received:

A23/1717 09/06/2023

Customer: CORA

Test Method:

0.7

2.5 Kg Rammer

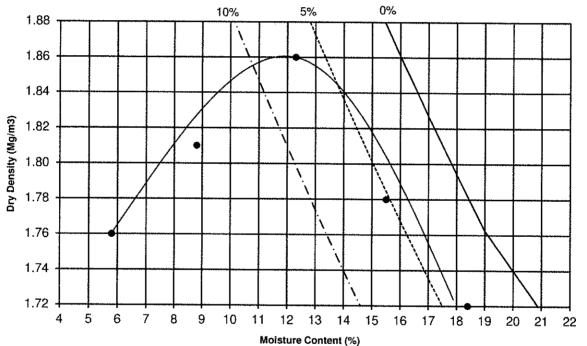
Date Tested:

03/07/2023

BS1377:Part 4:1990

3.3

Dry Density (Mg/m³)	1.86	1.76	1.81	1.78	1.72		
Moisture Content (%)	12	5.8	8.8	16	18	0	



Maximum Dry Density (Mg/m3):

1.86

Optimum Moisture Content (%):

12

Description:

Brown sandy gravelly SILT/CLAY

Sample Preparation:

Material passing 20mm

Single / Separate samples used

Particle Density (Mg/m³):

2.65

Particle Density:

Assumed

% retained on 20/37.5mm sieve:

10

R147911 TP03 @ 0.6 0mc

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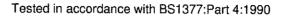
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IGSL Ltd Materials Laboratory M7 Business Park

Naas Co. Kildare

Test Report

Dry Density/Moisture Content Relationship





Report No.

R147912

Contract No. 24665/1

Contract Name:

Monaghan Town Active Travel Development Site

Location*:

Sample No*.

AA200182

Depth* (m)

0.7

Test Method:

Material Type

В

Lab sample no. Date Received:

A23/1718 09/06/2023 Customer: CORA

2.5 Kg Rammer

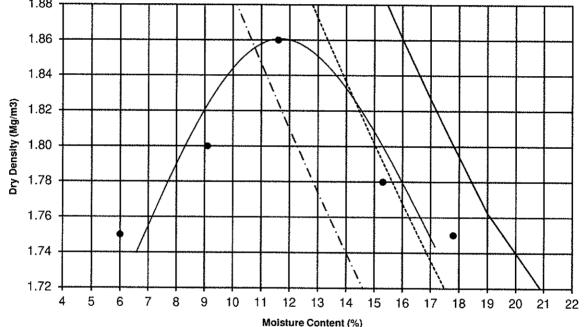
Date Tested:

03/07/2023

BS1377:Part 4:1990

3.3

Dry Density (Mg/m²)	1.86	1.75	1.80	1.78	1.75		
Moisture Content (%)	12	6.0	9.1	15	18	0	
1.88		10%	5%	0%			
1.00		l i	\ \				
1,86		لذلل					
.,,,,	1 1	1 1 1/2	-1-11	1 1 1		1 1	



Maximum Dry Density (Mg/m3):

1.86

Optimum Moisture Content (%):

12

Description:

Brown slightly sandy, slightly gravelly, SILT/CLAY

Sample Preparation:

Material passing 20mm

Single / Separate samples used

Particle Density (Mg/m³):

2.65

Particle Density:

Assumed

% retained on 20/37.5mm sieve:

10

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IGSL Ltd Materials Laboratory M7 Business Park

Naas Co. Kildare

Test Report

Dry Density/Moisture Content Relationship



Tested in accordance with BS1377:Part 4:1990

Report No.

R147913

Contract No. 24665/1

Contract Name:

Monaghan Town Active Travel Development Site

Location*:

Sample No*.

AA200191

Depth* (m)

0.7 Material Type В

Lab sample no.

A23/1719

Customer: CORA

Test Method:

2.5 Kg Rammer

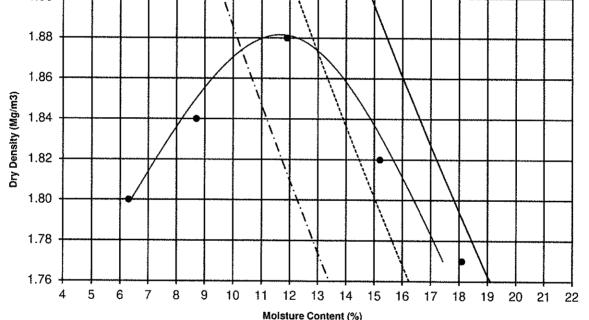
Date Received: Date Tested:

09/06/2023 03/07/2023

BS1377:Part 4:1990

3.3

Dry Density (Mg/m ³)	1.88	1.80	1.84	1.82	1.77		
Moisture Content (%)	12	6.3	8.7	15	18	0	
1.90		10%	5%	0%			
1.90		, i		$\Box \ \Box$			
1.88							



Maximum Dry Density (Mg/m³):

1.88

Optimum Moisture Content (%):

12

Description:

Grey brown sandy, slightly gravelly, SILT/CLAY

R147913 TP09 1.5 0mc

Sample Preparation:

Material passing 20mm

Single / Separate samples used

Particle Density (Mg/m³):

2.65

Particle Density:

Assumed

% retained on 20/37.5mm sieve:

13

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Test Report

Dry Density/Moisture Content Relationship



Tested in accordance with BS1377:Part 4:1990

Report No.

R147914

Contract No. 24665/1

Contract Name:

Monaghan Town Active Travel Development Site

Location*:

TO12

Sample No*.

AA205179

Depth* (m)

0.8 Material Type

В

Lab sample no.

A23/1720

Customer: CORA

Date Received:

09/06/2023

Test Method:

2.5 Kg Rammer

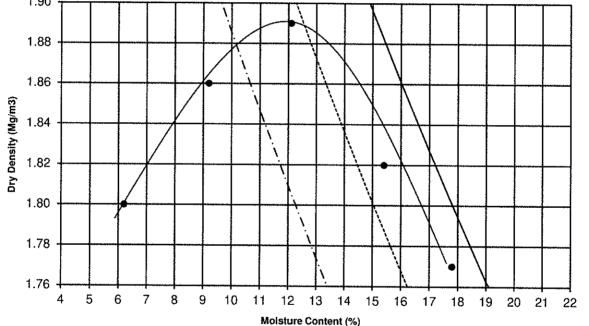
Date Tested:

03/07/2023

BS1377:Part 4:1990

3.3

Dry Density (Mg/m°)	1.89	1.80	1.86	1.82	1.77		1
Moisture Content (%)	12	6.2	9.2	15	18	0	
1.90		10%	5%	0%			
1.00				\prod			
1.88							***
	1 1	ואו	1 M X	1 1 7 7			



Maximum Dry Density (Mg/m3):

1.89

Optimum Moisture Content (%):

12

Description:

Brown slightly sandy, gravelly, SILT/CLAY

R147914 TP12 0mc

Sample Preparation:

Material passing 20mm

Single / Separate samples used

Particle Density (Mg/m³):

2.65

Particle Density:

Assumed

% retained on 20/37.5mm sieve:

19

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IGSL Ltd Materials Laboratory M7 Business Park Naas

Co. Kildare

Test Report

Dry Density/Moisture Content Relationship



Tested in accordance with BS1377:Part 4:1990

Report No.

R147915

Contract No. 24665/1

Contract Name:

Monaghan Town Active Travel Development Site

Location*:

Sample No*.

AA205176

Depth* (m)

1.5 Material Type В

Lab sample no. Date Received:

A23/1721

Customer: CORA

09/06/2023

Test Method:

2.5 Kg Rammer

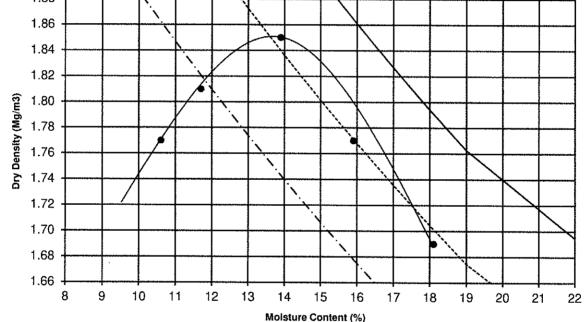
Date Tested:

03/07/2023

BS1377:Part 4:1990

3.3

Dry Density (Mg/m	า")	1.77	1.69	1.85	1.81	1.77		
Moisture Content	(%)	11	18	14	12	16	0	***************************************
1.00	10	1%	5%	0%	•			
1.88 T		·. T	N			T T		
1.86	 	` .	 	ļ	+			
1.84								
1 92				NN				



Maximum Dry Density (Mg/m³):

1.85

Optimum Moisture Content (%):

14

Description:

Grey brown slightly sandy, gravelly, SILT/CLAY

Sample Preparation:

Material passing 20mm

Single / Separate samples used

Particle Density (Mg/m³):

2.65

Particle Density:

Assumed

% retained on 20/37.5mm sieve:

14

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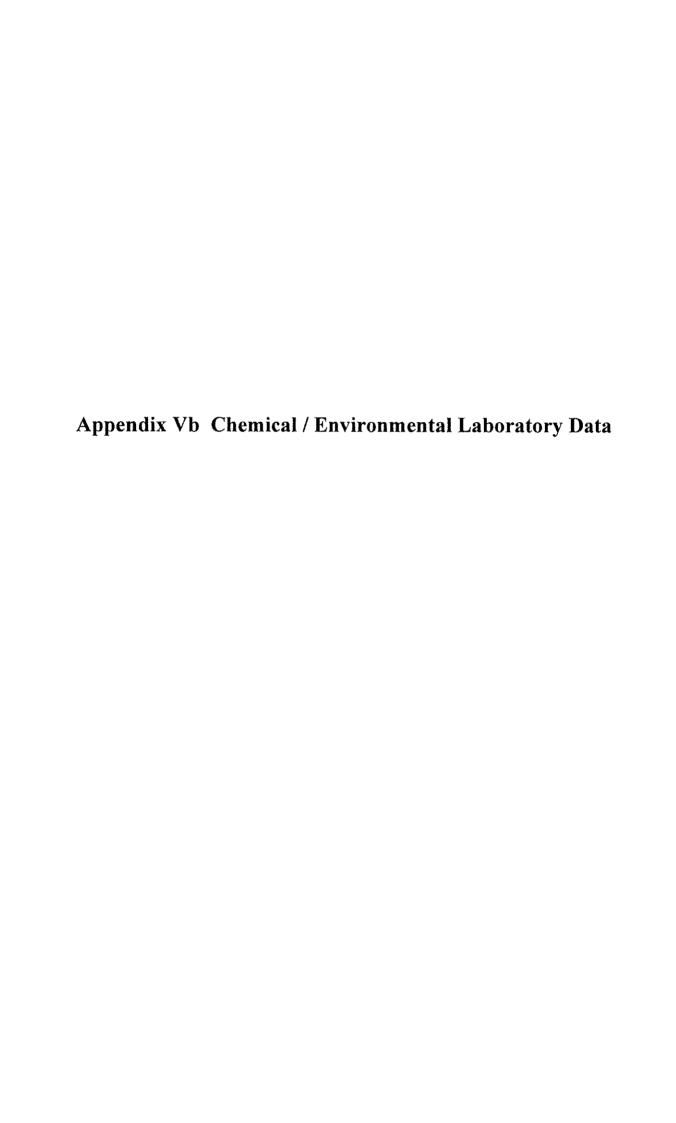
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Chemtest

Eurofins Chemtest Ltd Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.com

Final Report

Report No.:

23-19446-1

Initial Date of Issue:

19-Jun-2023

Re-Issue Details:

Client

IGSL

Client Address:

M7 Business Park

Naas

County Kildare

ireland

Contact(s):

Darren Keogh

Project

24665 / 1 Monaghan Town Active

Travel Development Site(CORA)

Quotation No.:

Q20-19951

Date Received:

08-Jun-2023

Order No.:

Date Instructed:

08-Jun-2023

No. of Samples:

18

7

Turnaround (Wkdays):

Results Due:

16-Jun-2023

Date Approved:

19-Jun-2023

Approved By:

Details:

Stuart Henderson, Technical

Manager

Results - Leachate

Site(CORA)											
Client: IGSL			Che	mtest Jc	ib No.:	Chemtest Job No.: 23-19446	23-19446	23-19446	23-19446	23-19446	23-19446
Quotation No.: Q20-19951		Ĭ	Shemte	Chemtest Sample ID.:	ole ID.:	1653387	1653389	1653392	1653395	1653398	1653402
Order No.:			Clie	Client Sample Ref.:	e Ref.:	AA192931	AA192934	AA171710	AA200184	AA200195	AA205173
			Se	Sample Location:	cation:	BH01	BH03	8H07	TP04	TP08	TP13
				Sample Type:	Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	ith (m):	0.50	0.50	0.80	0.50	08.0	0.60
Determinand	Accred.		Type	SOP Type Units	COD						
рН	P	1010	10:1		N/A	8.4	8.1	8.8	6.8	8.9	8.2
Ammonium	n	1220	10:1	l/6m	0.050	0.22	0.13	0.11	0.11	0.12	0.15
Ammonium	Z	1220	10:1	mg/kg	0.10	2.5	1.4	1.5	1.6	1.7	1.6
Boron (Dissolved)	n	1455	10:1	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzolilfluoranthene	z	1800	10.1	ua/1 0.010	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Project: 24665 / 1 Monaghan Town Active Travel Development

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Client: IGSI		HU.	Chemiest Joh No.	Ich Na	SANOTO	27 40446	SALOF CO	2×10× cc	SERVE CO	OFFICE CO.	0770700	20000	SHOW AND COMPANY OF THE PARTY O
Quotation No.: Q20-19951		Chem	Chemtest Sample ID.	nole ID.:	1653387	1653388	1653389	1653390	1653301	1653302	1653303	1653304	23-19446
Order No.:		ð	Client Sample Ref	ple Ref.	AA192931	AA197802	AA192934	AA192939	AA192947	AA171710	A 200193	AA200179	1033333
		0.	Sample Location	ocation.	BH01	RHO	BHO3	BHOAA	BELOG	2000	1504	77000	10070
			Same	Sample Type		7015	200	100	200	1010		5011	100
	-		Too D.	Ton Denth (m)		100	0.50	100		200	SOIL	301	301.
			o do C	(pri) (my)	0.30	20.1	0.00	20.7	00.1	0.00	0.70	na:n	0.50
			L	- 1	DURHAM		DUKHAM			NEW-ASB			NEW-ASB
Determinand	Accred.	SOP	Units	20		100							0.450
ACM Type	5	2192		ΨN	-		,			-			1
Asbestos Identification	⊃	2192		N/A	No Asbestos Detected		No Asbestos	-		No Asbestos			No Asbestos
Moisture	z	2030	%	0.020	25	7.0	Delected	-	**	Delected	Ç	4,	Defected
CH (25:1)	Z	2010		4.0		14186		IAIOE	14195				2
Boron (Hot Water Soluble)	: -	2120	ma/ka	0.40	[A] < 0.40	0.0	IA1 < 0.40	(A) 6:3	(M)	[A] < 0.40			[A] < 0.40
Magnesium (Water Soluble)	Z	2120		0 0 10		[A] < 0.010		141 < 0.040	101 < 0.040	21.0			0.40
Sulphate (2:1 Water Soluble) as SO4	: ¬	2120))	0.010		[A] < 0.010		[A] < 0.010	[A] < 0.010				
Total Sulphur)	2175	%	0.010		[A] 0.032		[A] 0.015	[A] 0.019				
Sulphur (Elemental)	ח	2180	Ε	1.0	[A] 2.7	,	[A] 3.2			[A] 2.3			[A] 2.2
Chloride (Water Soluble)	₽	2220		0.010		[A] 0.11		[A] < 0.010	(A) < 0.010				
Nitrate (Water Soluble)	z	2220	1/6	0.010		< 0.010		< 0.010	< 0.010				
Cyanide (Total)	٦	2300	mg/kg	0.50	[A] < 0.50		[A] < 0.50			[A] < 0.50			[A] < 0.50
Sulphide (Easily Liberatable)	z	2325	mg/kg	0.50	[A] 14		[A] 4.7			[A12.5			[A] 4.6
Ammonium (Water Soluble)	n	2220	1/6	0.01		< 0.01		< 0.01	< 0.01				
Sulphate (Acid Soluble)	n	2430	%	0.010	[A] 0.024	[A] 0.057	[A] 0.018	[A] 0.029	[A] 0.031	[A] 0.014			[A] 0.053
Arsenic	n	2455	mg/kg	0.5	3.3		3.6			3.3			5.1
Barium	⊃	2455	mg/kg	0	28		39			88			34
Cadmium	n	2455	mg/kg	0.10	< 0.10		< 0.10			< 0.10			< 0.10
Chromium	n	2455	mg/kg	0.5	15		16			15			18
Molybdenum	n	2455	mg/kg	0.5	< 0.5		< 0.5			< 0.5			< 0.5
Antimony	z	2455	ga/kgm	2.0	< 2.0		< 2.0			< 2.0			< 2.0
Copper	n	2455	mg/kg	0.50	10		13			11			13
Mercury	ב		mg/kg	0.05	< 0.05		< 0.05			0.05			0.07
Nickel	ר		mg/kg	0.50	23		31			21			28
Lead	ם		mg/kg	0.50	8.1		12			14			20
Selenium	ב		mg/kg	0.25	< 0.25		< 0.25			< 0.25			< 0.25
Zinc	Ð	-	mg/kg	0.50	29		88			37			62
Chromium (Trivalent)	z	-	mg/kg	1.0	15		16			15			18
Chromium (Hexavalent)	z	2490	mg/kg	0.50	< 0.50		< 0.50			< 0.50			< 0.50
Organic Matter	ר	2625	%	0.40							[A] 2.5	[A] 1.8	
Mineral Oil (TPH Calculation)	Z	2670	mg/kg	10	< 10		< 10			< 10			< 10
Aliphatic TPH > C5-C6	Z	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Aliphatic TPH >C6-C8	z	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Aliphatic TPH >C8-C10	z		mg/kg	1:0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Aliphatic TPH >C10-C12	z	2680	mg/kg	0.1	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Aliphatic TPH >C12-C16	z	2680	mg/kg	0.	[A] < 1.0		[A] < 1.0			[A] < 1.0			(A) < 1.0
Aliphatic TPH >C16-C21	z	2680	mg/kg	0.	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0

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Client: IGSL		3	1emtes	Chemtest Job No.:	.: 23-19446	23-19446	23-19446	23-19446	23-19446	23-19446	23-19446	22.10446	22.10/46
Quotation No.: Q20-19951		Chen	ntest Sa	Chemtest Sample ID.:		1653388	1653389	1653390	1653391	1653392	1653393	1653394	1653395
Order No.:	-	Ō	lient Sa	Client Sample Ref.:	AA192931	AA197802	AA192934	AA192939	AA192947	AA171710	AA200193	AA200179	AA200184
			Sample	Sample Location:	1: 8H01	BH02	BH03	BH04A	BH05	BH07	TP01	TP03	TPDA
			San	Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOII	ilos
			Top	Top Depth (m):	0.50	1.00	0.50	1.00	1.00	0.80	0.70	0,60	0.50
			Asb	Asbestos Lab:	DURHAM		DURHAM			NEW-ASB			NFW-ASB
Determinand	Accred.	SOP		100 S									200
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Aliphatic TPH >C35-C44	z	2680	_	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Total Aliphatic Hydrocarbons	z	2680	mg/kg	3 5.0	[A] < 5.0		[A] < 5.0			[A] < 5.0			[A] < 5.0
Aromatic TPH >C5-C7	z	2680	mg/kg		[A] < 1.0		[A] < 1.0			A] < 1.0			[A] < 1.0
Aromatic TPH >C7-C8	z	2680		L	[A] < 1.0		[A] < 1.0			[A] < 1.0			141<10
Aromatic TPH >C8-C10	z	2680			[A] < 1.0		[A] < 1.0			A < 1.0			[A] < 1.0
Aromatic TPH >C10-C12	z	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Aromatic TPH >C12-C16	z	2680	mg/kg	1.0	[A] < 1.0		A < 1.0			[A] < 1.0			[A] < 1.0
Aromatic TPH >C16-C21	z	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0			IA] < 1.0			[A] < 1.0
Aromatic TPH >C21-C35	Z	2680		1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Aromatic TPH >C35-C44	z	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Total Aromatic Hydrocarbons	N	2680		5.0	[A] < 5.0		[A] < 5.0			[A] < 5.0			[A] < 5.0
Total Petroleum Hydrocarbons	z	2680	mg/kg	10.0	[A] < 10		[A] < 10			[A] < 10			[A] < 10
Велгепе	Λ	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Toluene	n	2760	µg/kg	1.0	[A] < 1.0		(A) < 1.0			A] < 1.0			[A] < 1.0
Ethylbenzene	n	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
m & p-Xylene	n	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
o-Xylene	ב	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0			[A] < 1.0			[A] < 1.0
Methyl Tert-Butyl Ether	⊃	2760			_		[A] < 1.0			[A] < 1.0			[A] < 1.0
Naphthalene	z	2800	mg/kg		\Box		[A] < 0.010			[A] < 0.010			[A] < 0.010
Acenaphthylene	z	2800	mg/kg				[A] < 0.010			[A] < 0.010			[A] < 0.010
Acenaphthene	z	2800	mg/kg				[A] < 0.010			[A] < 0.010			[A] < 0.010
Fluorene	z	2800	mg/kg	_	[A] < 0.010		[A] < 0.010			[A] < 0.010			[A] < 0.010
Phenanthrene	z	2800	mg/kg	0.010	[A] < 0.010		[A] < 0.010			[A] < 0.010			[A] < 0.010
Anthracene	z	2800	mg/kg		₹.		[A] < 0.010			[A] < 0.010			[A] < 0.010
Fluoranthene	z	2800	mg/kg		_		[A] < 0.010			[A] < 0.010			[A] < 0.010
Pyrene	z	2800	mg/kg	_	[A] 0.18		[A] < 0.010			[A] < 0.010			[A] < 0.010
Benzo[a]anthracene	z	2800	mg/kg	-	_		[A] < 0.010			[A] < 0.010			[A] < 0.010
Chrysene	z	2800	mg/kg	-			[A] < 0.010			[A] < 0.010			[A] < 0.010
Benzo[b]fluoranthene	z	2800	mg/kg		_		[A] < 0.010			[A] < 0.010			[A] < 0.010
Benzo(k)fluoranthene	z	2800			\neg		[A] < 0.010			[A] < 0.010			[A] < 0.010
Benzo(a)pyrene	z	2800	mg/kg				[A] < 0.010			[A] < 0.010			[A] < 0.010
Indeno(1,2,3-c,d)Pyrene	z	2800	mg/kg	_	_		[A] < 0.010			[A] < 0.010			[A] < 0.010
Dibenz(a,h)Anthracene	z	2800	mg/kg	0.010			[A] < 0.010			[A] < 0.010			[A] < 0.010
Benzo[g,h,i]perylene	Z	2800			[A] < 0.010		[A] < 0.010			[A] < 0.010			[A] < 0.010
Coronene	z	2800	mg/kg	1	[A] < 0.010		[A] < 0.010			[A] < 0.010			[A] < 0.010
Total Of 17 PAH's	z	2800	mg/kg				[A] < 0.20			[A] < 0.20			[A] < 0.20
PCB 28	2	2815	mg/kg	0.0010	[A] < 0.0010		[A] < 0.0010			[A] < 0.0010			[A] < 0.0010

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Client: IGSL		Chemi	Chemtest Job No.:	: 23-19446	23-19446	23-19446	23-19446	23-19446	23-19446	23-19446	23-19446	22-19446
Quotation No.: Q20-19951		Chemtest	Chemtest Sample ID.:	: 1653387	1653388	1653389	1653390	1653391	Т	1653393		1653395
Order No.:		Client	Client Sample Ref.:	: AA192931	AA197802	AA192934	AA192939	AA192947	AA171710	AA200193	AA200179	AA200184
		Sam	Sample Location:	: BH01	BH02	BH03	BH04A	BH05	BH07	TP01	1	TP04
		נט	Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		7	Top Depth (m):	0.50	1.00	0.50	1.00	1.00	0.80	0.70	0.60	0.50
		∢	Asbestos Lab:	: DURHAM		DURHAM			NEW-ASB			NEW-ASB
Determinand	Accred.	SOP	Accred. SOP Units LOD									
PCB 52	z	2815 mc	2815 mg/kg 0.0010	[A] < 0.0010		[A] < 0.0010			[A] < 0.0010			[A] < 0.0010
PCB 90+101	z	2815 mg	mg/kg 0.0010	[A] < 0.0010		[A] < 0.0010			[A] < 0.0010			[A] < 0.0010
PCB 118	2	2815 mg	2815 mg/kg 0.0010	[A] < 0.0010		[A] < 0.0010			[A] < 0.0010			[A] < 0.0010
PCB 153	z	2815 mg	2815 mg/kg 0.0010	[A] < 0.0010		[A] < 0.0010			[A] < 0.0010			[A] < 0.0010
PCB 138	z	2815 mg	2815 mg/kg 0.0010	[A] < 0.0010		[A] < 0.0010			[A] < 0.0010			[A] < 0.0010
PCB 180	z	2815 mg	mg/kg 0.0010	[A] < 0.0010		[A] < 0,0010			[A] < 0.0010			[A] < 0.0010
Total PCBs (7 congeners)	z	2815 mg	2815 mg/kg 0.0010	[A] < 0.0010		[A] < 0.0010			[A] < 0.0010			[A] < 0.0010
Total Phenols	⊃	2920 ma/ka	1/kg 0.10	< 0.10		< 0.10			< 0.10			V 0 10

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Client Sample ID.: 1653396 1653397		Chemtest Job	st.Job No:	24-1044R	32.104AR	22,104.18	72.10AAR	2410 - CC	SEKOF CO.	OFFUR CO	OF FUE CO	2770700
Cilent Sample Ref. AA200182 AA200182 Sample Location: TP05 TP07 Sample Location: TP05 TP07 Sample Location: TP05 TP07 Accred. SOP Units LOD U	້ວ	mtest :	Sample ID	91	1653397	1653398	1653399	1653400	1653401	1653402	1653403	1653404
Sample Location: TP05 TP07		Client S	ample Ref		AA200188	AA200195	AA200196	AA200191	AA205178	AA205173	AA205175	AA205176
Accrect Sample Type: SOIL SOIL		Samp	le Location		TP07	TP08	TP08	TP09	TP12	TP13	TP 14	TP14
Accred SOP Units LOD C.70 C.50		Ϊ́	Imple Type	l	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Accred SOP Units LOD U 2192 N/A 12 U 2192 N/A 12 N 2020 % 0.020 13 12 I 2120 m/A 0.020 13 12 Ie) N 2120 m/A (A) 0.010 [A] 0.010 U 2120 m/A 0.010 [A] 0.010 U 2120 m/A 0.010 [A] 0.010 U 2120 m/A 0.010 [A] 0.034 U 2220 m/A 0.010 [A] 0.034 U 2456 m/A 0.01 [A] 0.064 U 2456 m/A 0.0 0.0		 ਹੁ	Depth (m)		0.50	0.80	1.80	0.70	0.80	09'0	0.70	1.50
Accred. SDP Units LOD U 2192 N/A 12 U 2192 N/A 12 N 2030 % 0.020 13 12 N 2010 % 0.020 13 12 (a) 2120 mg/kg 0.40 [A] 8.0 (A] 8.0 (b) 2120 mg/kg 0.010 [A] 0.034 (A] 0.034 (b) 2120 g/l 0.010 [A] 0.024 (A] 0.034 (c) 1 2175 g/l 0.010 [A] 0.034 (c) 0 2120 g/l 0.010 [A] 0.034 (c) 0 2120 g/l 0.010 [A] 0.034 (c) 0 2120 g/l 0.010 [A] 0.034 (d) 0 2120 g/l 0.010 [A] 0.034 (d) 0 2220 g/l 0.010 [A] 0.041 (d) 0 <		As	bestos Lat	5:		COVENTRY				NEW-ASB		
U 2192 N/A NA I 2192 N/A 12 I 2030 % 0.020 13 12 I 2030 % 0.020 13 12 I 2120 g/I 0.010 I/A 8.0 I/A 8.0 I 2120 g/I 0.010 I/A 8.0 I/A 8.0 U 2120 g/I 0.010 I/A 8.0 I/A 8.0 U 2120 g/I 0.010 I/A 8.0 I/A 8.0 U 2120 g/I 0.010 I/A 8.0 I/A 8.0 D 2120 g/I 0.010 I/A 8.0 I/A 8.0 D 2120 g/I 0.010 I/A 8.0 I/A 8.0 D 2220 g/I 0.010 I/A 9.0 I/A 9.0 D 2455 mg/Kg 0.50 I/A 9.0 I/A 9.0 D 0 2455 mg/Kg 0.5 I/A 9.0 I/A 9.0 <th>70.</th> <th>CERR</th> <th>ts LOD</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>9511107 WW. 10010</th>	70.	CERR	ts LOD									9511107 WW. 10010
N 2192 N/A		32	N/A			ť				-		
N 2030 % 0.020 13 12		32	Υ/N			No Asbestos Detected				No Asbestos Detected		
Each Both Color Each		L	t	_	12	10	7.8	11	11	19	12	13
1	Г	9	4.0		[A] 8.0		[A] 8.6				[A] 7.8	
ble) as SO4 U 2120 g/l 0.010 [A] < 0.010 [A] < 0.010 buble) as SO4 U 2120 g/l 0.010 [A] < 0.010 clip as SO4 U 2120 g/l 0.010 [A] < 0.010 clip as SO4 U 2120 g/l 0.010 [A] < 0.017 clip able) N 2220 g/l 0.010 clip able) N 2230 mg/kg 0.50 clip able) U 2455 mg/kg 0.50 clip able) N 2450 mg/kg 1.0 clip able) N 2450 mg/kg 1.0 clip able) N 2650 mg/kg 1.0 clip able) N 26	_		┿			[A] < 0,40				[A] 0.52	22.6	
Decision	2	L	t		[A] < 0.010		[A] < 0.010				[A] < 0.010	
U 2175 % 0.010 [A] 0.034 U 2180 mg/kg 1.0 [A] 0.038 N 2220 g/l 0.010 [A] 0.017 able) N 2220 g/l 0.010 0.017 ble) U 2220 g/l 0.010 0.017 ble) U 2220 g/l 0.010 0.017 ble) U 2220 g/l 0.010 0.017 U 2425 mg/kg 0.50 0.01 0.010 U 2455 mg/kg 0.05 0.05 0.00 U 2455 mg/kg 0.50 0.00 0.00 0.00 U 2455 mg/kg 0.50 0.00	n	L	 		[A] < 0.010		[A] < 0.010				[A] 0.24	
U 2180 mg/kg 1.0 D 2220 g/I 0.010 [A] 0.017 Bole) N 2220 g/I 0.010 0.017 ble) N 2325 mg/kg 0.50 0.017 0.017 ble) N 2326 mg/kg 0.50 0.001 (A] 0.065 ble) U 2430 mg/kg 0.50 0.001 (A] 0.065 U 2455 mg/kg 0.10 (A] 0.065 0.00 <td>Г</td> <td></td> <td></td> <td></td> <td>[A] 0.034</td> <td></td> <td>[A] 0.027</td> <td></td> <td></td> <td></td> <td>IA10.077</td> <td></td>	Г				[A] 0.034		[A] 0.027				IA10.077	
(b) (b) (b) (b) (b) (b) (c) (c) <td>n</td> <td></td> <td>-</td> <td></td> <td></td> <td>[A] 2.6</td> <td></td> <td></td> <td></td> <td>[A] 3.8</td> <td></td> <td></td>	n		-			[A] 2.6				[A] 3.8		
N 2220 gfl 0.010 0.017	ח		_		[A] 0.028		[A] < 0.010				[A] < 0.010	
ble) N 2325 mg/kg 0.50		L	-		0.017		< 0.010				< 0.010	
ble) N 2325 mg/kg 0.50		_	0			[A] < 0.50				[A] < 0.50		
ble) U 2220 gyl 0.010 < 0.011 U 2430 % 0.010 [A] 0.065 U 2455 mg/kg 0.5 U 2455 mg/kg 0.10 U 2455 mg/kg 0.10 U 2455 mg/kg 0.5 U 2455 mg/kg 0.50 U 2450 U 2450 mg/kg 0.50 U 2450 U 24	N	_	0			[A] 3.3				[A] 3.3		:
U 2430 % 0.010 [A] 0.065 U 2455 mg/kg 0.5 (1)	n	_	_		< 0.01		< 0.01				< 0.01	
U 2455 mg/kg 0.5 U 2455 mg/kg 0.0 U 2455 mg/kg 0.10 U 2455 mg/kg 0.5 U 2455 mg/kg 0.0 U 2455 mg/kg 0.0 U 2455 mg/kg 0.50 N 2450 mg/kg 0.50 N 2680 mg/kg 0.0 N 2680 mg/kg 1.0 N 2680 mg/kg 1.0 N 2680 mg/kg 1.0 N 2680 mg/kg 1.0 N 2680 <					[A] 0.065	[A] 0.033	[A] 0.045			[A] 0.040	[A] 0.075	
U 2455 mg/kg 0 U 2455 mg/kg 0.10 U 2455 mg/kg 0.5 U 2455 mg/kg 0.0 N 2455 mg/kg 0.0 U 2455 mg/kg 0.50 N 2455 mg/kg 0.50 N 2455 mg/kg 0.50 N 2450 mg/kg 0.50 N 2680 mg/kg 1.0 N 2680 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>4.5</td><td></td><td></td><td></td><td>5.3</td><td></td><td></td></t<>						4.5				5.3		
U 2455 mg/kg 0.10 U 2455 mg/kg 0.5 U 2455 mg/kg 0.0 N 2455 mg/kg 0.0 U 2455 mg/kg 0.0 U 2455 mg/kg 0.50 N 2455 mg/kg 0.50 N 2456 mg/kg 0.50 N 2650 mg/kg 1.0 N 2680 mg/kg 1.0 N <td></td> <td>_</td> <td></td> <td></td> <td></td> <td>48</td> <td></td> <td></td> <td></td> <td>43</td> <td></td> <td></td>		_				48				43		
U 2455 mg/kg 0.5 U 2455 mg/kg 0.0 N 2455 mg/kg 0.0 U 2455 mg/kg 0.0 U 2455 mg/kg 0.50 N 2490 mg/kg 0.50 N 260 mg/kg 1.0 N 2680 mg/kg 1.0 N		-				< 0.10				< 0.10		
U 2455 mg/kg 0.5 N 2455 mg/kg 2.0 U 2455 mg/kg 0.50 N 2450 mg/kg 0.50 N 2626 % 0.40 [A] 1.1 N 2680 mg/kg 1.0 N <td< td=""><td></td><td></td><td></td><td></td><td></td><td>27</td><td></td><td></td><td></td><td>28</td><td></td><td></td></td<>						27				28		
N 2455 mg/kg 2.0 U 2455 mg/kg 0.50 N 2490 mg/kg 1.0 N 2680 mg/kg 1.0 N 268			Щ			< 0.5				< 0.5		
U 2455 mg/kg 0.50 U 2455 mg/kg 0.05 U 2455 mg/kg 0.50 U 2455 mg/kg 0.50 U 2455 mg/kg 0.25 U 2455 mg/kg 0.50 N 2490 mg/kg 1.0 N 2626 % 0.40 [A] 1.1 N 2680 mg/kg 1.0 N N 2680 mg/kg			ᆫ			< 2.0				< 2.0		
U 2455 mg/kg 0.05 U 2455 mg/kg 0.50 U 2455 mg/kg 0.50 U 2455 mg/kg 0.50 U 2455 mg/kg 0.50 N 2490 mg/kg 1.0 N 2626 % 0.40 [A] 1.1 U 2626 % 0.40 [A] 1.1 N 2680 mg/kg 1.0 N			L.,			21				18		
U 2455 mg/kg 0.50 U 2455 mg/kg 0.50 U 2455 mg/kg 0.25 U 2455 mg/kg 0.50 N 2490 mg/kg 1.0 N 2490 mg/kg 1.0 U 2625 % 0.40 [A] 1.1 U 2626 mg/kg 1.0 1.0 N 2680 mg/kg 1.0 1.0						< 0.05				< 0.05		
titon) N 2680 mg/kg 1.0 mg						43				37		
U 2455 mg/kg 0.25 U 2455 mg/kg 0.50 N 2490 mg/kg 1.0 N 2490 mg/kg 1.0 U 2625 % 0.40 [A] 1.1 U 2626 mg/kg 1.0 N 2680 mg/kg 1.0						16				13		
U 2455 mg/kg 0.50			$\overline{}$			< 0.25				< 0.25		
N 2490 mg/kg 1.0						48				41		
N 2490 mg/kg 0.50 (tion) N 2625 % 0.40 [A] 1.1 N 2670 mg/kg 10 (A) 1.1 N 2680 mg/kg 1.0 (A) 1.0						27				28		
titon) N 2625 % 0.40 [A] 1.1 N 2680 mg/kg 1.0						< 0.50				< 0.50		
M 2670 mg/kg mg/kg 10 N 2680 mg/kg 1.0	⊃		0.40	Щ				[A] 1.1	[A] 1.0		-	A) 1.1
N 2680 mg/kg 1.0	Z				-	< 10				< 10		
N 2680 mg/kg 1.0			Ψ.			[A] < 1.0				[A] < 1.0		
N 2680 mg/kg 1.0 N 2680 mg/kg 1.0 N 2680 mg/kg 1.0		_	7			[A] < 1.0				[A] < 1.0		
N 2680 mg/kg 1.0 N 2680 mg/kg 1.0	Z		_			[A] < 1.0			••••	[A] < 1.0		
N 2680 mg/kg 1.0	Z					[A] < 1.0				[A] < 1.0		
	z	0 mg/				[A] < 1.0				[A] < 1.0		
2680 mg/kg 1.0	٦	0 mg/l				[A] < 1.0				[A] < 1.0		

Project: 24665 / 1 Monaghan Town Active Travel Development_ Site(CORA)

Client: IGSL		Ö	Chemtest Job	t Job No.:	23-19446	23-1944R	23-19446	23-1044R	23.1044E	23.10JAE	23.10448	22 404AR	29 40446
Quotation No.: Q20-19951		Chen	Chemtest Sampl	ample ID.:	17	1653397	1653398	1653399	1653400	1653401	1653402	1653403	1653404
Order No.:		Ö	lient Sa	Client Sample Ref .:	AA200182	AA200188	AA200195	AA200196	AA200191	AA205178	AA205173	AA205175	AA205176
			Sample	Sample Location:	TP05	TP07	TP08	TP08	TP09	TP12	TP13	TP14	TP14
			San	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top	Top Depth (m):	0.70	0.50	08'0	1.80	0.70	0.80	09:0	0.70	1.50
			Asb	estos Lab:			COVENTRY				NEW-ASB		
Determinand	Accred.	SOP	3500	Units LOD									
Aliphatic TPH >C21-C35	z	2680	mg/kg	Ш			[A] < 1.0				[A] < 1.0		
Aliphatic TPH >C35-C44	z	2680	mg/kg	3 1.0			[A] < 1.0				[A] < 1.0		
Total Aliphatic Hydrocarbons	Z	2680	mg/kg	L			[A] < 5.0				[A] < 5.0		
Aromatic TPH >C5-C7	Z	2680	mg/kg	1.0			[A] < 1.0				[A] < 1.0		
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0			[A] < 1.0				[A] < 1.0		
Aromatic TPH >C8-C10	z	2680	mg/kg	1.0			[A] < 1.0				[A] < 1.0		
Aromatic TPH >C10-C12	Z	2680	mg/kg	1.0			[A] < 1.0				[A] < 1.0		
Aromatic TPH >C12-C16	Z	2680	mg/kg				[A] < 1.0				[A] < 1.0		
Aromatic TPH >C16-C21	z	2680					[A] < 1.0				[A] < 1.0		
Aromatic TPH >C21-C35	z	2680		1.0			[A] < 1.0				[A] < 1.0		
Aromatic TPH >C35-C44	z	2680		L			[A] < 1.0				[A] < 1.0		
Total Aromatic Hydrocarbons	z	2680		L			[A] < 5.0				[A] < 5.0		
Total Petroleum Hydrocarbons	z	2680		Ľ			[A] < 10				[A] < 10		
Benzene	5	2760	µg/kg	_			[A] < 1.0				[A] < 1.0		
Toluene	Ð	2760					[A] < 1.0				[A] < 1.0		
Ethylbenzene	ם	2760		_			[A] < 1.0				[A] < 1.0		
m & p-Xylene	Þ	2760	µg/kg	1.0			[A] < 1.0				[A] < 1.0		
o-Xylene	Ω	2760	l µg/kg	1.0			[A] < 1.0				[A] < 1.0		
Methyl Tert-Butyl Ether	n	2760		_			[A] < 1.0				[A] < 1.0		
Naphthalene	z	2800					[A] < 0.010				[A] < 0.010		
Acenaphthylene	z	2800		0			[A] < 0.010				[A] < 0.010		
Acenaphthene	z	2800	mg/kg	_			[A] < 0.010				[A] < 0.010		
Fluorene	Z	2800	mg/kg	\vdash			[A] < 0.010				[A] < 0.010		
Phenanthrene	z	2800	mg/kg	-			[A] < 0.010				[A] < 0.010		
Anthracene	z	2800	mg/kg	0.010			[A] < 0.010				[A] < 0.010		
Fluoranthene	z	2800	mg/kg				[A] < 0.010				[A] < 0.010		
Pyrene	Z	2800	mg/kg	9			[A] < 0.010				[A] < 0.010		
Benzo[a]anthracene	z	2800	mg/kg				[A] < 0.010				[A] < 0.010		
Chrysene	z	2800					[A] < 0.010				[A] < 0.010		
Benzo[b]ffuoranthene	z	2800	mg/kg				[A] < 0.010				[A] < 0.010		
Benzo[k]fluoranthene	Z	2800	mg/kg	٥			[A] < 0.010				[A] < 0.010		
Benzo[a]pyrene	Z	2800	mg/kg	0.010			[A] < 0.010				[A] < 0.010		
Indeno(1,2,3-c,d)Pyrene	Z	2800	mg/kg	0			[A] < 0.010				[A] < 0.010		
Dibenz(a,h)Anthracene	Z	2800	mg/kg	0.010			[A] < 0.010				[A] < 0.010		
Benzo[g,h,i]perytene	z	2800	mg/kg	Ö			[A] < 0.010				[A] < 0.010		
Coronene	z	2800	mg/kg				[A] < 0.010				[A] < 0.010		
Total Of 17 PAH's	z	2800		_			[A] < 0.20				[A] < 0.20		
PCB 28	z	2815	mg/kg	0.0010		******	[A] < 0.0010				[A] < 0.0010		
				•				THE STREET STREET					Ĺ

Project: 24665 / 1 Monaghan Town Active Travel Development Site(CORA)

Client: IGSL		Che	Chemtest Job No.	No.: 23-19446	23-19446	23-19446	23-19446	23-19446 23-19446	23-19446	23-19446	23-19446	23-19446
Quotation No.: Q20-19951		Chemte	Chemtest Sample ID.:	: 1653396	1653397	1653398	1653399	1653400	1653401	1653402	1653403	1653404
Order No.:		Clie	Client Sample Ref.:	: AA200182	AA200188	AA200195	AA200196	AA200191	AA205178	AA205173	AA205175	AA205176
		ώ	Sample Location:	: TP05	TP07	TP08	1P08	TP09	TP12	TP13	TP14	TP14
			Sample Type:	: SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):	E 0.70	0.50	0.80	1.80	0.70	0.80	09:0	0.70	1.50
			Asbestos Lab:			COVENTRY				NEW-ASB		
Determinand	Accred.	SOP	Accred. SOP Units LOD									
PCB 52	z	2815	2815 mg/kg 0.0010			[A] < 0.0010				[A] < 0.0010		
PCB 90+101	z	2815	2815 mg/kg 0.0010			[A] < 0.0010				[A] < 0.0010		-
PCB 118	z	2815	2815 mg/kg 0.0010			[A] < 0.0010				[A] < 0.0010		
PCB 153	z	2815	2815 mg/kg 0.0010			[A] < 0.0010				[A] < 0.0010		
PCB 138	2	2815	2815 mg/kg 0.0010			[A] < 0.0010				[A] < 0.0010		
PCB 180	z	2815	2815 mg/kg 0.0010			[A] < 0.0010				[A] < 0.0010		
Total PCBs (7 congeners)	z	2815	2815 mg/kg 0.0010			[A] < 0.0010				[A] < 0.0010		
Total Phenois	n	2920	mg/kg 0.10			< 0.10				< 0.10		

Results - Single Stage WAC

Project: 24665 / 1 Monaghan Town Active Travel Development Site(CORA)

Limits Stable, Non-reactive Pazardous Pazardous	Chemtest Job No:	23-19446				Landfill	Landfill Waste Acceptance Criteria	e Criteria
National Carbon C	Chemtest Sample ID:	1653387					Limits	
Designation	Sample Ref:	AA192931					Stable, Non-	
Location: BH01 Decetion: Depth Decetion: Decetion: Decetion: Decetion: Depth Depth Decetion: D	Sample ID:						reactive	
Particle Depth(mi); Depth	Sample Location:	BH01			-		hazardous	Hazardous
Oppeth(m): SOP Accred. Units Landfill hazardous Ball SOP Accred. Units Landfill Landfill Landfill nand SOP Accred. Units SO Landfill	Top Depth(m):	0.50				Inert Waste	waste in non-	Waste
g Date: Accred. Units (A) 2.4 3 Canadial nand carbon 2825 U % [A) 2.4 3 5 guinticarbon 2810 U % 5.0 - - EX 2810 U mg/kg [A] < 0.010 6 - - EX 2810 U mg/kg [A] < 0.010 6 - - EX 2870 U mg/kg [A] < 0.010 6 - - 17 PAHS 2870 U mg/kg [A] < 0.010 - - - 17 PAHS 2010 U mg/kg [A] < 0.010 - - - 17 PAHS 2010 U mg/kg [A] < 0.010 -	Bottom Depth(m):					Landfill	hazardous	Landfill
nand SOP Acred Units M [A] 24 3 5 ganic Carbon 2625 U % [A] 24 3 5 ganic Carbon 2625 U % [A] 24 3 5 EX 2760 U mg/kg [A] 2010 6 — EX (2 congeners) 2815 U mg/kg [A] 240 1 — EX (2 congeners) 2815 U mg/kg [A] 240 1 — — EX (2 congeners) 2810 U mg/kg [A] 240 1 —	Sampling Date:						Landfill	
Parisic Carbon 2625 U P P P S D	Determinand	SOP	Accred.	Units				
Section Care Care	Total Organic Carbon	2625	n	%	[A] 2.4	3	5	9
EX 2760 U mg/kg [A] < 0.0010 6 — BS (7 congeners) 2815 N mg/kg [A] < 0.0010	Loss On Ignition	2610	n	%	5.0			10
Big (7 congeners) 2815 N mg/kg [A] < 0.0010 1 INVAC 2870 U mg/kg [A] < 10 INVAC 2800 N mg/kg [A] < 10 INVAC 2800 N mg/kg [A] < 100 INVAC 2800 N mg/kg [A] < 100 INVAC 2010 U mg/kg [A] < 100 Intelesation Capacity 2015 N mol/kg 0.0060 Intelesation Capacity 2015 N mol/kg 0.0060 0.0060 0.0060 0.0060 Intelesation Capacity 2015 N c.0.0050 0.006	Total BTEX	2760	n	mg/kg	[A] < 0.010	9	-	-
MAC 2670 U mg/kg [A] 0.500 U mg/kg [A] 0.55 1.00 U U T/8 T/8 U Sevalurate Sevalurate T/8 T/8 T/8 T/8 Sevalurate T/8	Total PCBs (7 congeners)	2815	Z	mg/kg	[A] < 0.0010	-	-	
Parks 2800	TPH Total WAC	2670	n	mg/kg	01 > [A]	200	-	
10 10 10 10 10 10 10 10	Total Of 17 PAH's	2800	Z	mg/kg	[A] 0.35	100	-	1
Intalisation Capacity 2015 N mol/kg 0.0060 — To evaluate nalysis Intalisation Capacity 2015 N 10:1 Eluate Limit values for compliance lear nalysis Interpretation Interpretation Interpretation Interpretation Interpretation 1455 U < 0.0005	Hd	2010	'n		7.8		9<	
nalysis 10:1 Eluate 10:1 Eluate Limit values for compliance lear mg/l mg/l mg/kg using BS EN 12457 at L/S 1 1455 U 0,0002 0,0523 0.5 2 n 1455 U < 0,0001	Acid Neutralisation Capacity	2015	Z	тоl/kg	0800'0	1	To evaluate	To evaluate
mg/l mg/l mg/kg using BS EN 12457 at L/S 10 to 1455 U 0,0002 0,0023 0,5 Z I	Eluate Analysis			10:1 Eluate	10:1 Eluate	Limit values	for compliance is	eaching test
1455 U 0,0002 0,005 0,5 2 1455 U < 0,005				mg/l	mg/kg	a Sing B	S EN 12457 at L/S	: 10 l/kg
1455 U < 0.005 0.050 20 100 In 1455 U < 0.0001	Arsenic	1455	n	0.0002	0.0023	0.5	2	25
Interview of the control of	Ваѓит	1455	ח	< 0.005	< 0.050	20	100	300
n 1455 U < 0,0005 < 0,0050 0.5 10	Cadmium	1455	n	< 0.00011	< 0.0011	0.04	*	c,
um 0.0011 0.011 2 50 um 455 U <0.0005	Chromium	1455	n	< 0.0005	< 0.0050	0.5	10	70
um 455 U <0.0006 <0.0056 0.01 0.00 <th< td=""><td>Copper</td><td>1455</td><td>n</td><td>0.0011</td><td>0.011</td><td>2</td><td>20</td><td>100</td></th<>	Copper	1455	n	0.0011	0.011	2	20	100
Jum 1455 U 0.0006 0.0058 0.5 10 1455 U 0.0007 0.0666 0.4 10 10 1455 U <0.0005	Mercury	1455	n	< 0.00005	< 0.00050	0.01	0.2	2
1455 U 0.0007 0.0666 0.4 10 1455 U <0.0050	Molybdenum	1455	n	0.0006	0.0058	0.5	10	30
(1455) U < 0.0005 < 0.0050 0.5 10 (1455) U < 0.0050	Nicke!	1455	∩	0.0007	0.0066	0.4	10	40
() 1455 U < 0.0050 0.06 0.7 () 1455 U < 0.005	Lead	1455	-	< 0.0005	< 0.0050	0.5	10	50
In the control of the contro	Antimony	1455	⊃	< 0.0005	< 0.0050	90.0	0.7	5
1455 U 0.005 0.046 4 50 FO FO FO FO FO FO FO F	Selenium	1455	D	< 0.0005	< 0.0050	0.1	0.5	7
1220 U <1.0 800 1500 1500	Zinc	1455	n	0.005	0.046	4	50	200
1220 U 0.15 1.5	Chloride	1220	¬	< 1.0	< 10	800	15000	25000
1220 U < 10 100 20000 Solved Solids 1020 N 45 450 6000 - dex 1920 U < 0.30	Fluoride	1220		0.15	1.5	10	150	500
1020 N 45 450 4060 60000 1020 U <0.030 1 1610 U 4.8 <50 500 800	Sulphate	1220	Ω	< 1,0	< 10	1000	20000	20000
1920 U < 0.30 1 - 1610 U 4.8 < 50 500 800	Total Dissolved Solids	1020	Z	45	450	4000	00009	100000
1610 U 4.8 <50 500 800	Phenol Index	1920	Ð	< 0.030	< 0.30	1	1	,
	Dissoived Organic Carbon	1610)	4.8	< 50	200	800	1000

Solid Information	
Dry mass of test portion/kg	060'0
Moisture (%)	25

Waste Acceptance Criteria

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

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Chemtest Job No:	23-19446				(interesting i	andell March Accombance Cuitation	Cattonia
Chemtest Sample ID:	1653389					Limits	POLICE
Sample Ref:	AA192934					Stable Non-	
Sample ID:						reactive	
Sample Location:	BH03					hazardous	Hazardous
Top Depth(m):	0.50				inert Waste	waste in non-	Waste
Bottom Depth(m):					Landfill	hazardous	Landfill
Sampling Date:						Landfill	
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	Ω	%	[A] 2,0	3	5	9
Loss On Ignition	2610	n	%	1.5			10
Total BTEX	2760	ñ	mg/kg	[A] < 0.010	9	-	
Total PCBs (7 congeners)	2815	Z	mg/kg	[A] < 0.0010	_		
TPH Total WAC	2670	n	mg/kg	[A] < 10	500		
Total Of 17 PAH's	2800	Z	mg/kg	[A] < 0.20	100		
Ha	2010	ח		8.0	7.0	9<	
Acid Neutralisation Capacity	2015	Z	mol/kg	0.012	3	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate	10:1 Eluate	Limit values	Limit values for compliance leaching test	eaching test
			mg/i	mg/kg	using B	using BS EN 12457 at L/S 10 l/kg	10 l/kg
Arsenic	1455	ם	0.0003	0.0031	0.5	2	25
Barium	1455	n	< 0.005	< 0.050	20	100	300
Cadmium	1455	n	< 0.00011	< 0.0011	0.04	-	2
Chromium	1455	n	< 0.0005	< 0.0050	9.0	10	70
Copper	1455	n	0.0011	0.011	2	50	100
Mercury	1455	n	< 0.00005	< 0.00050	0.01	0.2	2
Mołybdenum	1455	Ð	0.0008	0.0079	0.5	10	30
Nickel	1455	n	0.0005	0.0050	0.4	10	40
Lead	1455	n	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	n	< 0.0005	< 0.0050	0.06	0.7	c
Seleníum	1455	n	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	U	0.003	0.033	4	20	200
Chloride	1220	n	< 1.0	< 10	800	15000	25000
Fluoride	1220	Ù	0.10	1.0	10	150	200
Sulphate	1220	D	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	Z	47	470	4000	60000	100000
Phenol Index	1920	٦	< 0.030	< 0.30	-	-	-
Dissolved Organic Carbon	1610	U	4.1	< 50	200	800	1000

CORD MICHIGAN	
Dry mass of test portion/kg	060'0
(Moisture (%)	22

Waste Acceptance Criteria

Project; 24665 / 1 Monaghan Town Active Travel Development Site(CORA)

Chemtest Sample ID: Sample Ref: Sample ID: Sample Location:	0++0:-0.4				Landfill	Landfill Waste Acceptance Criteria	Criteria
Sample Ref: Sample ID: Sample Location: Ton Dooth(m):	1653392					Limits	
Sample ID: Sample Location:	AA171710					Stable, Non-	
Sample Location:						reactive	
Ton Danshim).	BH07					hazardous	Hazardous
Lob Deputation.	0.80				Inert Waste	waste in non-	Waste
Bottom Depth(m):					Landfill	hazardous	Landfill
Sampling Date:				****		Landfill	
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	Ω	%	[A] 1.3	ဇ	5	9
Loss On Ignition	2610	n	%	10	1	l	10
Total BTEX	2760	n	mg/kg	[A] < 0.010	9	1	
Total PCBs (7 congeners)	2815	Z	mg/kg	[A] < 0.0010	-	-	ŝ
TPH Total WAC	2670	ח	mg/kg	[A] < 10	500		1
Total Of 17 PAH's	2800	z	mg/kg	[A] < 0.20	100		1
Hd	2010	P		8.2	***	9<	ı
Acid Neutralisation Capacity	2015	Z	mol/kg	0.011	**	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate	10:1 Eluate	Limit values	Limit values for compliance leaching test	aching test
			mg/l	mg/kg	using B	using BS EN 12457 at L/S 10 l/kg	10 l/kg
Arsenic	1455	Ŋ	0.0003	0:0030	0.5	2	25
Barium	1455	n	< 0.005	< 0.050	20	100	300
Cadmium	1455	ņ	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455	n	< 0.0005	< 0.0050	0.5	10	70
Copper	1455	n	0.0016	0.016	2	50	100
Mercury	1455	D	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455)	0.0006	0.0062	0.5	10	30
Nickel	1455	n	0.0008	0.0077	0.4	10	40
Lead	1455	⊃	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	n	< 0.0005	< 0.0050	90:0	0.7	3
Selenium	1455	n	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	n	0.003	0.035	4	50	200
Chloride	1220	n	< 1.0	< 10	008	15000	25000
Fluoride	1220	n	0.14	1.4	10	150	200
Sulphate	1220	n	2.3	23	1000	20000	50000
Total Dissolved Solids	1020	z	40	400	4000	00009	100000
Phenol Index	1920	n	< 0.030	< 0.30		-	1
Dissolved Organic Carbon	1610	ח	4.4	> 50	200	800	1000

	0.090	6.8
Solid Information	Dry mass of test portion/kg	Moisture (%)

Waste Acceptance Criteria

Project: 24665 / 1 Monaghan Town Active Travel Development Site(CORA)

	0110				Till Touck	andfill Waste Accentance Criteria	Critoria
Chemtest Sample ID:	1653395			······································		Limits	
Sample Ref:	AA200184					Stable, Non-	
Sample ID:						reactive	
Sample Location:	TP04					hazardous	Hazardous
Top Depth(m):	0.50				Inert Waste	waste in non-	Waste
Bottom Depth(m):					Landfill	hazardous	Landfill
Sampling Date:						Landfill	
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	n	%	[A] 1.3	3	5	9
Loss On Ignition	2610	n	%	3.1	1	1	10
Total BTEX	2760	n	mg/kg	[A] < 0.010	9		
Total PCBs (7 congeners)	2815	Z	mg/kg	[A] < 0.0010	,		1
TPH Total WAC	2670	_	mg/kg	[A] < 10	500	-	
Total Of 17 PAH's	2800	z	mg/kg	[A] < 0.20	100	11.	ı
ЬН	2010)		8.2	1	9<	
Acid Neutralisation Capacity	2015	Z	mol/kg	0900'0	1	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate	10:1 Eluate	Limit values	Limit values for compliance leaching test	aching test
			l∕g⁄⊓	mg/kg	using B	using BS EN 12457 at L/S 10 I/kg	10 l/kg
Arsenic	1455	ח	0.0003	0.0029	9.0	2	25
Barium	1455	⊃	< 0.005	< 0.050	20	100	300
Cadmium	1455	U	< 0.00011	< 0.0011	0.04	+	5
Chromium	1455	n	< 0.0005	< 0.0050	0.5	10	70
Copper	1455	n	0.0010	0.010	2	50	100
Mercury	1455	n	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	ח	0.0008	0.0081	0.5	10	30
Nickel	1455	⊃	0.0005	0.0053	0.4	10	40
Lead	1455	⊃	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	n	< 0.0005	< 0.0050	90.0	7.0	5
Selenium	1455	n	< 0.0005	< 0.0050	0.1	0.5	
Zinc	1455	ລ	0.005	0.055	4	20	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	Ų	0.12	1.2	10	150	500
Sulphate	1220	ņ	< 1.0	< 10	1000	20000	20000
Total Dissolved Solids	1020	z	31	310	4000	00009	100000
Phenol index	1920	n	< 0.030	< 0.30	-		
Dissolved Organic Carbon	1610	Ú	3.5	< 50	200	800	1000

Solid Information	
Dry mass of test portion/kg	060'0
Moisture (%)	10

Waste Acceptance Criteria

Project: 24665 / 1 Monaghan Town Active Travel Development Site(CORA)

Chemtest Job No:	23-19446				Landfill V	Landfill Waste Acceptance Criteria	e Criferia
Chemtest Sample ID:	1653398					Limits	
Sample Ref:	AA200195					Stable, Non-	
Sample ID:						reactive	
Sample Location:	TP08					hazardous	Hazardous
Top Depth(m):	0.80				Inert Waste	waste in non-	Waste
Bottom Depth(m):					Landfill	hazardous	Landfill
Sampling Date:						Landfill	
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	n	%	[A] 0.77	3	S	9
Loss On Ignition	2610	Ŋ	%	2.8		ļ	10
Total BTEX	2760	n	mg/kg	[A] < 0.010	ගු	1	1
Total PCBs (7 congeners)	2815	N	mg/kg	[A] < 0.0010	Į		t
TPH Total WAC	2670	U	mg/kg	[A] < 10	200	ì	1
Total Of 17 PAH's	2800	N	mg/kg	[A] < 0.20	100	-	-
Hd	2010	U		8.4		9<	l
Acid Neutralisation Capacity	2015	Z	бұ/₃ош	0.017	1	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate	10:1 Eluate	Limit values	Limit values for compliance leaching test	eaching test
			mg/i	mg/kg	using B	using BS EN 12457 at L/S 10 l/kg	10 l/kg
Arsenic	1455	n	9000.0	0.0061	9'0	2	25
Barium	1455	U	< 0.005	< 0.050	20	100	300
Cadmium	1455	O	< 0.00011	< 0.0011	0.04	-	5
Chromium	1455	, n	< 0.0005	< 0.0050	0.5	10	70
Copper	1455	U	0.0006	0.0060	2	90	100
Mercury	1455	U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	n	0.0008	0.0076	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0050	90.0	2.0	5
Selenium	1455	n	< 0.0005	< 0.0050	0.1	\$'0	7
Zinc	1455	n	0.003	0.034	4	50	200
Chloride	1220	n	< 1.0	< 10	800	15000	25000
Fluoride	1220	n	0.096	< 1.0	10	150	500
Sulphate	1220	n	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	z	31	310	4000	00009	100000
Phenol index	1920	⊃	< 0.030	< 0.30	*-	ł	•
Dissolved Organic Carbon	1610	D	3.0	< 50	500	800	1000

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

Waste Acceptance Criteria

Project: 24665 / 1 Monaghan Town Active Travel Development Site(CORA)

Chemtest Job No:	23-19446				Landfill	Landfill Waste Acceptance Criteria	e Criteria
Chemtest Sample ID:	1653402					Limits	
Sample Ref:	AA205173					Stable, Non-	
Sample ID:						reactive	
Sample Location:	TP13					hazardous	Hazardous
Top Depth(m):	0.60				Inert Waste	waste in non-	Waste
Bottom Depth(m):					Landfill	hazardous	Landfill
Sampling Date:						Landfill	
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	n	%	[A] 0.34	9	5	9
Loss On Ignition	2610	Þ	%	4.7	ł	1	10
Total BTEX	2760	n	mg/kg	[A] < 0.010	9	444	
Total PCBs (7 congeners)	2815	Z	mg/kg	[A] < 0.0010	1	1	1
TPH Total WAC	2670	n	mg/kg	0t > [A]	500	11.11	1
Total Of 17 PAH's	2800	Z	mg/kg	[A] < 0.20	100	ŀ	1
Hd	2010	n		7.8		9,	1
Acid Neutralisation Capacity	2015	2	mol/kg	0600'0	*;	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate	10:1 Eluate	Limit values	Limit values for compliance leaching test	eaching test
			mg/l	mg/kg	using B	using BS EN 12457 at L/S 10 l/kg	i 10 l/kg
Arsenic	1455	n	0.0019	0.019	0.5	2	25
Barium	1455	Ω	< 0.005	< 0.050	20	100	300
Cadmium	1455	n	< 0.00011	< 0.0011	0.04	-	5
Chromium	1455	n	0.0036	960.0	0.5	10	70
Copper	1455	n	0.0058	0.058	2	20	100
Mercury	1455	n	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455	n	0.0004	0.0043	0.5	10	30
Nickel	1455	U	0.0056	0.056	0.4	10	40
Lead	1455	⊃	0.0013	0.013	0.5	10	20
Antimony	1455	n	< 0.0005	< 0.0050	0.06	0.7	5
Sefenium	1455	n	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455	U	0.010	0.10	4	50	200
Chloride	1220	n	1.1	11	008	15000	25000
Fluoride	1220	Ŋ	0.12	1.2	10	150	500
Sulphate	1220	n	2.0	20	1000	20000	50000
Total Dissolved Solids	1020	Z	13	130	4000	00009	100000
Phenol Index	1920	Ω	< 0.030	< 0.30	τ-	1	-
Dissolved Organic Carbon	1610	ņ	5.7	57	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	19

Waste Acceptance Criteria

Deviations

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

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1653387	AA192931		BH01		A	Amber Glass 250ml
1653387	AA192931		BH01		А	Plastic Tub 500g
1653388	AA197802		BH02		A	Amber Glass 250ml
1653388	AA197802		BH02		А	Plastic Tub 500g
1653389	AA192934		BH03		A	Amber Glass 250ml
1653389	AA192934		BH03		А	Plastic Tub 500g
1653390	AA192939		ВН04А		A	Amber Glass 250ml
1653390	AA192939		BH04A		А	Plastic Tub 500g
1653391	AA192947		BH05		A	Amber Glass 250ml
1653391	AA192947		BH05		А	Plastic Tub 500g
1653392	AA171710		BH07		Α	Amber Glass 250ml
1653392	AA171710		BH07		А	Plastic Tub 500g
1653393	AA200193		TP01		А	Amber Glass 250ml
1653393	AA200193		TP01		А	Plastic Tub 500g
1653394	AA200179		TP03		А	Amber Glass 250ml
1653394	AA200179		TP03		А	Plastic Tub 500g
1653395	AA200184		TP04		Α	Amber Glass 250ml
1653395	AA200184		TP04		Α	Plastic Tub 500g
1653396	AA200182		TP05		Α	Amber Glass 250ml
1653396	AA200182		TP05		А	Plastic Tub 500g
1653397	AA200188		TP07		Α	Amber Glass 250ml
1653397	AA200188		TP07		А	Plastic Tub 500g

Deviations

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

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1653398	AA200195		TP08		A	Amber Glass 250ml
1653398	AA200195		TP08		А	Plastic Tub 500g
1653399	AA200196		TP08		А	Amber Glass 250ml
1653399	AA200196		TP08		А	Plastic Tub 500g
1653400	AA200191		TP09		А	Amber Glass 250ml
1653400	AA200191		TP09		А	Plastic Tub 500g
1653401	AA205178		TP12		А	Amber Glass 250ml
1653401	AA205178		TP12		А	Plastic Tub 500g
1653402	AA205173		TP13		А	Amber Glass 250ml
1653402	AA205173		TP13		A	Plastic Tub 500g
1653403	AA205175		TP14		A	Amber Glass 250ml
1653403	AA205175		TP14		А	Plastic Tub 500g
1653404	AA205176		TP14		А	Amber Glass 250ml
1653404	AA205176		TP14		Α	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	Ηα	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkatinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.

Test Methods

SOP	Title	Parameters included	Method summary
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenois in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

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

