

Appendix 11.2. Site Investigation Factual Report, 31st August 2022



Our Ref: JMS/Rp/P22044 + attachments (*.pdf)

31st August, 2022

Atkins,

Atkins House,

150 Airside Business Park,

Swords,

Co. Dublin,

K67K5W4.

Re: Mortarstown Waste Water Treatment Plant (WWTP), Additional Site Investigation– Factual Report.

Introduction

In March 2022, Priority Geotechnical (PGL) were requested by Atkins Global on behalf of the client Ervia, to undertake additional site investigation works as part of the Mortarstown element of the CIP Lot 5 Project, Co. Carlow. Atkins were acting as consulting engineers to the employer.

Mortarstown is located to the south west of Carlow Town, approximately 200m from the banks of the River Barrow. There is an associated pump station (Kilkenny Road Pumping Station) located to the north of this site on the Kilkenny Road to the South of the Institute of Technology Carlow. Both the WWTP and Pumping Station are being upgraded with the following works proposed at each location.

Mortarstown WwTP:

- Replace the existing inlet works.
- Demolish the existing circular stormwater holding tank and replace with 1 No. 33m Ø circular tank with volume of 3,395m³. Repurpose the existing 24m Ø 1,650m³ final settlement tanks as auxiliary stormwater storage thus providing a combined storage volume of 5,025m³ to service the Stage 2 horizon of 67,000 PE;
- Provide 02Nr. new circular primary settlement tanks (PST) (2,115m³ each) with travelling bridge scrapers to service the Stage 2 horizon of 67,000 PE;
- Replace the existing 03Nr. air blowers at the aeration tanks with 4 No. new energy efficient air blowers (sized for the Stage 1 horizon of 58,000 PE) including modifications to the existing air delivery pipework to accommodate the newly installed air blowers;
- Provide extension to existing blower building to accommodate new blowers;
- Provide 02Nr. new 32m Ø circular final settlement tank and new RAS/WAS pump station;
- Provide 01Nr. new 7.2m Ø picket fence thickener and upgrade existing sludge treatment works;
- Provide all new interconnecting pipework associated with the proposed upgrade works (including the rerouting of the existing 400mm and 600mm Ø rising mains at the WwTP);
- Replace the existing Motor Control Centre (MCC) with intelligent MCC comprising PLC and associated SCADA system.

Scope of Works

The additional site investigation works are necessary to determine the condition and engineering properties of the ground at proposed sites. The original scope of works for Mortarstown, which was specified by Ervia, comprised of;

- 05Nr. cable percussion boreholes;
- 05Nr. rotary boreholes;
- Slit trenches;
- All associated sampling;
- Laboratory testing;

- All associated In-situ testing and;
- Factual reporting.

Quantities and details of works carried out are outlined, herein.

This factual report presents the fieldworks records and data obtained with regard to the additional site investigation at Mortarstown, Co. Carlow as part of the CIP Lot 5 project. This report should be read in conjunction with the accompanying (attached) exploratory and photographic records and laboratory test.

Metroscan Utility Locating (MUL) carried out a Ground Penetrating Radar survey on behalf of PGL in order to identify existing underground services. The findings are accompanying this factual report.

Site Works

This investigation was carried out in accordance with Eurocode 7- Geotechnical Design Part 2, ground investigation and testing (BS EN 1997-2: 2007) and the relevant British Standards (BS 5930 (2015) Code of Practice for Site Investigation and BS 1377, Method of Tests for Soil for Civil Engineering Purposes, *in situ* Tests Parts 1 to 9).

The intrusive fieldworks were undertaken between the 04th March and 16th June, 2022 under the supervision of PGL's, Engineering Geologist. Details of the plant and equipment used are detailed on the relevant exploratory records, attached herein.

Cable Percussion Boreholes

Five (05) cable percussion boreholes were advanced to depths of between 4.5m below existing ground level (bgl) and 8.6m bgl using PGL's Dando 2000 light cable percussion rig and 200mm diameter casing. Boreholes terminated after chiselling without progress. The records are attached, herein.

Location	Final Depth (m bgl)	Date Start (dd/mm/yyyy)
BH101	5.50	11/03/2022
BH102	4.50	10/03/2022
BH103	8.60	14/03/2022
BH104	5.10	15/03/2022

Location	Final Depth (m bgl)	Date Start (dd/mm/yyyy)
BH105	7.20	04/03/2022

Chiselling Records				
Location	Depth Top (m bgl)	Depth Base (m bgl)	Duration (hh:mm)	Tool
BH101	2.45	2.60	01:00	Chisel.
	5.30	5.50	01:00	Chisel.
BH102	1.55	1.60	01:00	Chisel
	4.10	4.20	02:00	Chisel
	4.20	4.25	01:00	Chisel
BH103	3.30	3.45	01:00	Chisel
	8.50	8.60	01:00	Chisel.
BH104	5.00	5.10	02:00	Chisel
BH105	2.90	3.00	01:00	Chisel
	5.30	5.50	01:00	Chisel
	6.05	6.40	03:00	Chisel
	6.40	7.00	04:00	Chisel
	7.00	7.20	02:00	Chisel

Rotary Boreholes

Subsequently, five (05) rotary boreholes were drilled to depths 19.3m bgl to 25.0m bgl using PGL's Soilmech PSM rotary rig using 131mm dia. Symmetrex casing and T6H. The exploratory records are attached, herein.

Location	Final Depth (m bgl)	Date Start (dd/mm/yyyy)
RC101	25.00	01/04/2022
RC102	21.00	31/03/2022
RC103	25.00	31/03/2022
RC104	19.30	04/04/2022
RC105	21.00	05/04/2022

Slit Trenches

Eight (08) number trial pits were excavated to depths of between 0.86m bgl and 3.0m bgl using a 3t tracked excavator. The trial pit exploratory records are attached, herein.

Location	Final Depth (m bgl)	Date Start (dd/mm/yyyy)
ST101	2.70	16/06/2022
ST102	2.45	16/06/2022
ST102A	1.60	16/06/2022

Location	Final Depth (m bgl)	Date Start (dd/mm/yyyy)
ST103	1.02	15/06/2022
ST104	1.20	15/06/2022
ST105	1.10	15/06/2022
ST106	0.86	15/06/2022
ST107	1.40	15/06/2022
ST108	0.88	15/06/2022
ST109	1.52	15/06/2022
ST110	3.00	13/06/2022

Survey and Drawings

Upon completion of the fieldworks, the 'as built' exploration locations were surveyed using Trimble 5700/5800 GPS equipment to the Ordinance Survey Irish Trans Mercator system of co-ordinates (ITM) and elevations to Malin Head datum. The exploratory locations are summarised below and shown on the Exploratory Location layout and Plan (P22044-SI-A, P22044-SI-01 to P22044-SI-03) attached.

Location	Easting	Northing	Ground Level (mOD)	Final Depth (m bgl)	Date Start (dd/mm/yyyy)
BH101	671321.80	674904.70	-	5.50	11/03/2022
BH102	671357.10	674891.40	-	4.50	10/03/2022
BH103	671299.30	674845.10	-	8.60	14/03/2022
BH104	671334.10	674832.00	-	5.10	15/03/2022
BH105	671278.50	674721.20	-	7.20	04/03/2022
RC101	671321.80	674904.70	-	25.00	01/04/2022
RC102	671357.10	674891.40	-	21.00	31/03/2022
RC103	671299.30	674845.10	-	25.00	31/03/2022
RC104	671334.10	674832.00	-	19.30	04/04/2022
RC105	671278.50	674721.20	-	21.00	05/04/2022
ST101	671240.89	674924.54	46.58	2.70	16/06/2022
ST102	671267.85	674987.04	48.39	2.45	16/06/2022
ST102A	671280.43	674979.72	49.85	1.60	16/06/2022
ST103	671251.86	674999.17	49.23	1.02	15/06/2022
ST104	671291.71	675088.27	50.30	1.20	15/06/2022
ST105	671312.14	675134.31	50.63	1.10	15/06/2022
ST106	671339.84	675196.64	50.31	0.86	15/06/2022
ST107	671406.20	675305.23	49.28	1.40	15/06/2022
ST108	671431.66	675363.11	48.22	0.88	15/06/2022
ST109	671491.02	675456.60	46.68	1.52	15/06/2022
ST110	671573.90	675581.85	47.42	3.00	13/06/2022

Sampling

A total of fifty five (55) bulk disturbed samples (B), eight (08) small disturbed samples (D), five (05) undisturbed samples (U), eighteen (18) window samples (WS), four (04) environmental samples (ENV) and 4.9lin.m of rotary core were recovered from the exploratory holes in accordance with Geotechnical Investigation and Sampling– Sampling Methods and Groundwater Measurements (EN ISO 22475-1:2006).

In-Situ Testing

Standard Penetration Test

A total of seventy seven (77) Standard Penetration Tests, N values, were typically carried out in the boreholes using the 60° solid cone in place of the standard split barrel sampler. The Standard Penetration Test was carried out in accordance with Geotechnical Investigation and Testing, Part 3 Standard penetration test, BS EN ISO 22476-3:2005+A1:2011. The data is presented on the exploratory logs accompanying this factual report.

In-Situ Vane Tests

Two (02) in-situ hand vane tests were carried out in trial pits at depths 1.50m bgl to 1.60m bgl. The results (kPa) are displayed graphically on the accompanying exploratory logs.

Laboratory Testing

Laboratory testing was scheduled by Atkins and carried out by PGL in accordance with BS1377 (1990), Methods of test for soils for civil engineering purposes and the ISRM suggested methods for rock characterisation, testing and monitoring. Specialist environmental testing was carried out by Chemtest UK Ltd. on behalf of PGL. The lab test results are summarised hereafter and accompany this factual report.

Please note that all samples shall be retained for a period no longer than 28 days from the date of this report. Thereafter all remaining samples shall be appropriately disposed of unless a written instruction to the contrary is received by PGL prior to the date of this reporting and within the 28 day period outlined above. Laboratory testing will result in a reduction of sample quantity and in some cases the use of the full sample mass. Samples already tested may not be suitable or available for further testing.

SUMMARY OF LABORATORY TESTSING

Soil		
Type	Nr.	Remarks
Natural Moisture Content	41	5% to 38%
Atterberg Limits	15	Liquid Limit, LL 22% to 34%
		Plastic Limit, PL 16% to 23%
		Plasticity Index, PI 6 to 11
Particle Size Distribution	45	30Nr. hydrometer analysis on fine soils
One dimensional consolidation test	01	BH103 7.00m See attached results
pH	06	7.7 to 9.2
Sulphate (2:1 Water Soluble) as SO ₄	06	<0.010g/l to 5.9g/l
Chloride (water soluble)	04	<0.010g/l
Organic matter	03	1.5% to 3.3%
Waste Acceptance Criteria (WAC)	02	See attached results

Published Geology

Solid

The Geological Survey of Ireland, 1:100,000 mapping (Sheet 19) was reviewed to determine the geology of the site. The geology of the area is defined by two units with the majority of the site underlain by the Ballyadams Formation (BA). This is described as crinoidal Packstone/ Wackestone Limestone. The Milford Formation (MI) is mapped to the east and characterised by peloidal calcarenitic Limestone. Historic borehole ID's (2617SWW340, 2617SWW373) indicated a depth to bedrock between 7.6m and 18.9m.

Superficial Deposits

Teagasc subsoil mapping indicates the study area is underlain by Made Ground and Gravels (GLs) derived from Limestone. Alluvial deposits are associated with the channel of the River Barrow. The national aquifer vulnerability mapping indicated a high vulnerability rating across the area.

Ground and Groundwater Conditions

The full details of the ground conditions encountered are provided for on the exploratory records accompanying this report. The records provide descriptions, in accordance with BS 5930 (2015) and Eurocode 7, Geotechnical Investigation and Testing, Identification and classification of soils, Part 1, Identification and description (EN ISO 14688-1: 2002),– Identification and Classification of Soil, Part 2: Classification Principles (EN ISO 14688-2:2004) and Identification and Classification of Rock, Part 1: Identification & Description (EN ISO 14689-1:2004) of the materials encountered, in situ testing and details of the samples taken, together with any observations made during the ground investigation.

Groundwater was encountered at depths 2.6m bgl to 7.5m bgl during the period of works. Groundwater observations may be subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc. Four (04) groundwater monitoring standpipes were installed under the scope of works. The groundwater regime should be assessed from standpipe well installations, where available.

SUMMARY OF GROUNDWATER

Location	Depth Strike (m bgl)	Remarks	Standpipe (Y/N)
BH101	-	None encountered	N
BH102	-	See shift data.	N
BH103	4.30	See shift data.	N
BH104	3.10	See shift data.	N
BH105	-	None encountered	N
RC101	6.00	GW cut off by casing at 11.00m.	Y
RC102	-	None encountered.	N
RC103	7.50	GW cut off at 15.00m.	Y
RC104	7.50	GW cut off at 13.00m.	Y
RC105	6.50	GW cut off by casing at 11.00m.	Y
ST101	2.60	Trickle flow rate.	N
ST102	-	None encountered.	N
ST102A	-	None encountered.	N
ST103	-	None encountered.	N
ST104	-	None encountered.	N
ST105	-	None encountered.	N
ST106	-	None encountered.	N

Location	Depth Strike (m bgl)	Remarks	Standpipe (Y/N)
ST107	-	None encountered.	N
ST108	-	None encountered.	N
ST109	-	None encountered.	N
ST110	2.90	Trickle flow rate.	N

Four (04) 50mm diameter HDPE standpipes were installed for the purpose of groundwater monitoring. A summary of standpipe details is presented hereafter.

SUMMARY OF STANDPIPE CONSTRUCTION

Location	Depth Top (m bgl)	Depth Base (m bgl)	Diameter (mm)	Pipe Type
RC101	0.00	1.00	50	PLAIN
	1.00	25.00	50	SLOTTED
RC103	0.00	1.00	50	PLAIN
	1.00	9.00	50	SLOTTED
RC104	0.00	10.00	50	PLAIN
	10.00	15.00	50	SLOTTED
RC105	0.00	1.00	50	PLAIN
	1.00	9.00	50	SLOTTED

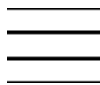
Exploratory holes were backfilled upon instruction from the engineer. Backfill details are shown graphically on the exploratory logs accompanying this factual report.



GRAVEL Backfill to installation/ borehole



ARISINGS Backfill



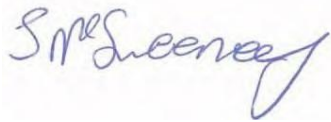
uPVC slotted pipe



BENTONITE Backfill to installation/
borehole

Should you have any queries in relation to the data collected, please do not hesitate to contact our office.

Yours sincerely,
For **Priority Geotechnical**,

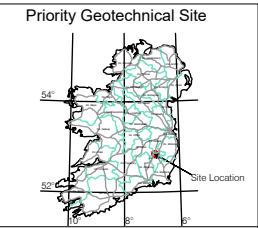
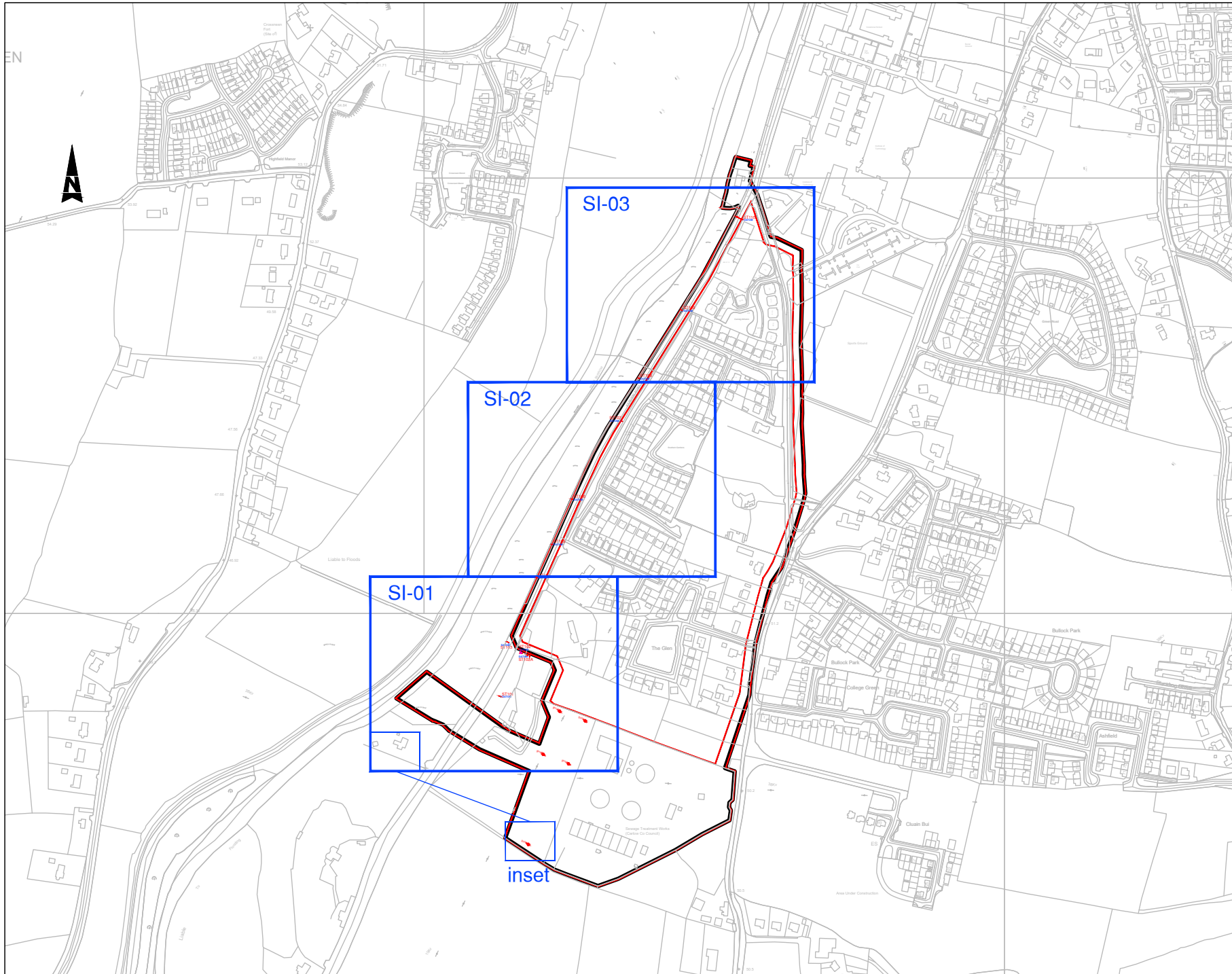


James McSweeney BSc
Engineering Geologist

No responsibility can be held by PGL for ground conditions between exploratory locations. The exploratory logs provide for ground profiles and configuration of strata relevant to the investigation depths achieved during the fieldworks. Caution shall be taken when extrapolating between such exploratory locations. No liability is accepted for ground conditions extraneous to the exploratory locations.

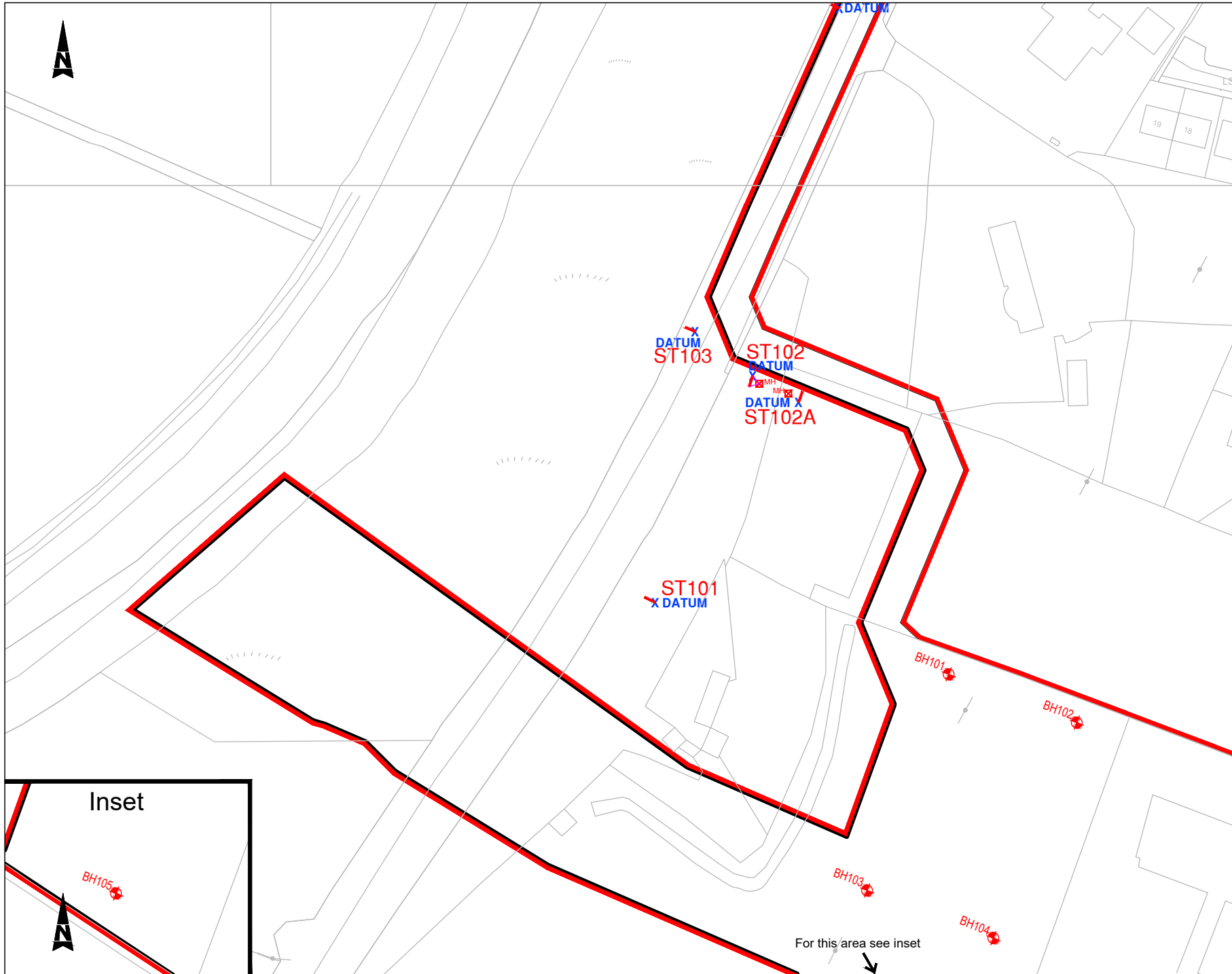
No account has been taken of potential subsidence or ground movement due to mineral extraction, mining works or karstification below or in proximity to the site, unless specifically addressed.

This report has been prepared for Employer and their Representative as outline, herein. The information should not be used without their prior written permission. PGL accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.



JOB NAME:	
Mortarstown WWTP Co. Carlow	
Sheet Title:	
EXPLORATORY LOCATION LAYOUT	
JOB NUMBER:	
P22044	
DRAWING NUMBER:	
P22044-SI-A	
DRAWN BY:	
Gary Curtin	
DATE:	
13/06/2022	
SCALE:	APPROVED:
1:5,000 ON A3	GH
REVISION:	
D01	





KEY:

ST00 / DATUM / BH00

Denotes Silt Trench and Datum location

Denotes Borehole location

Sheet and Inset location

JOB NAME:

Mortarstown WWTP
Co. Carlow

Sheet Title:

LOCATION PLAN

JOB NUMBER:

P22044

DRAWING NUMBER:

P22044-SI-01

DRAWN BY:

Gary Curtin

DATE:

13/06/2022

SCALE:

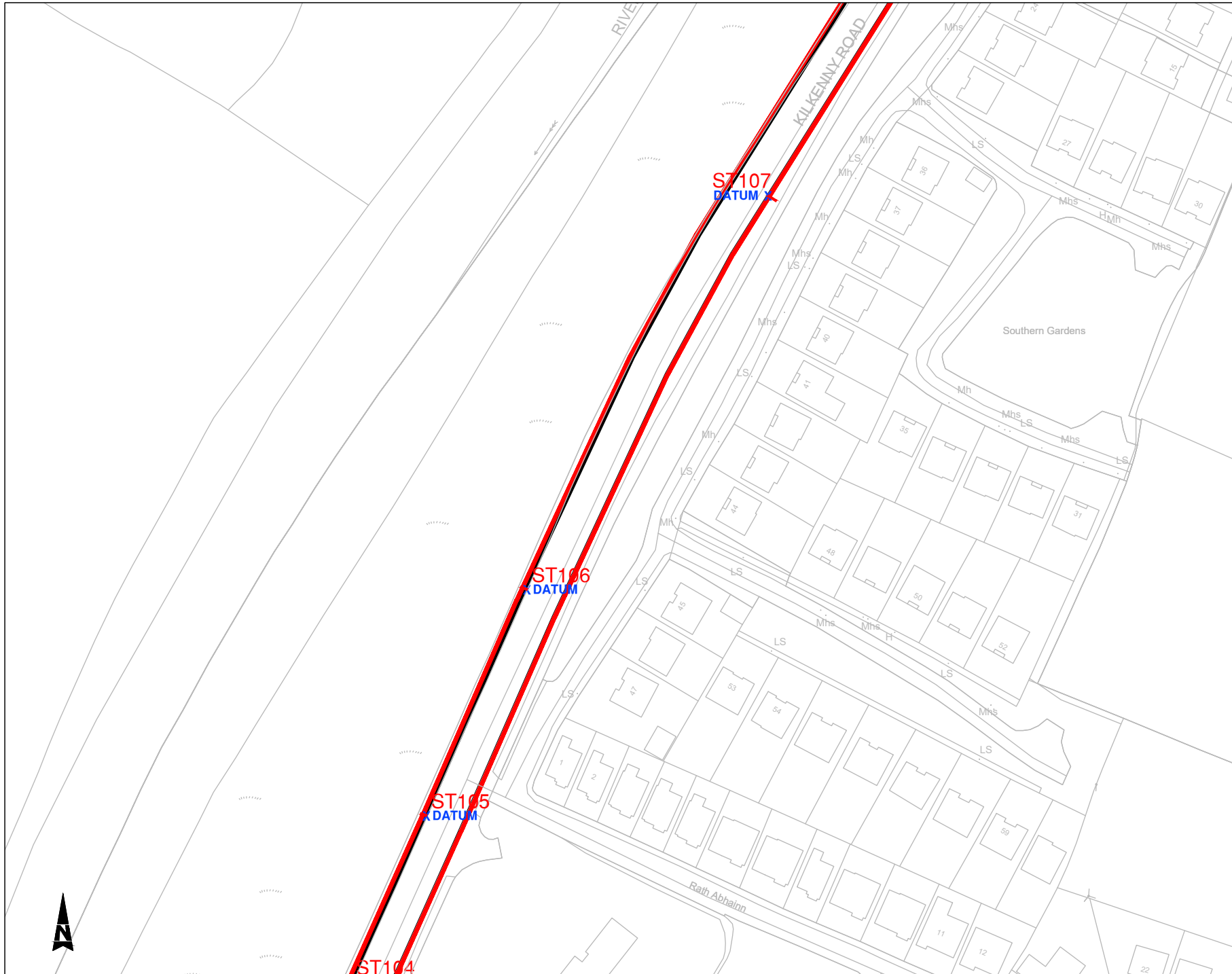
1:2,000 ON A3

APPROVED:

GH

REVISION:

D01



KEY:

ST00 DATUM Denotes Silt Trench and Datum location

BH00 Denotes Borehole location

JOB NAME:

Mortarstown WWTP
Co. Carlow

Sheet Title:

LOCATION PLAN

JOB NUMBER:

P22044

DRAWING NUMBER:

P22044-SI-02

DRAWN BY:

Gary Curtin

DATE:

13/06/2022

SCALE:

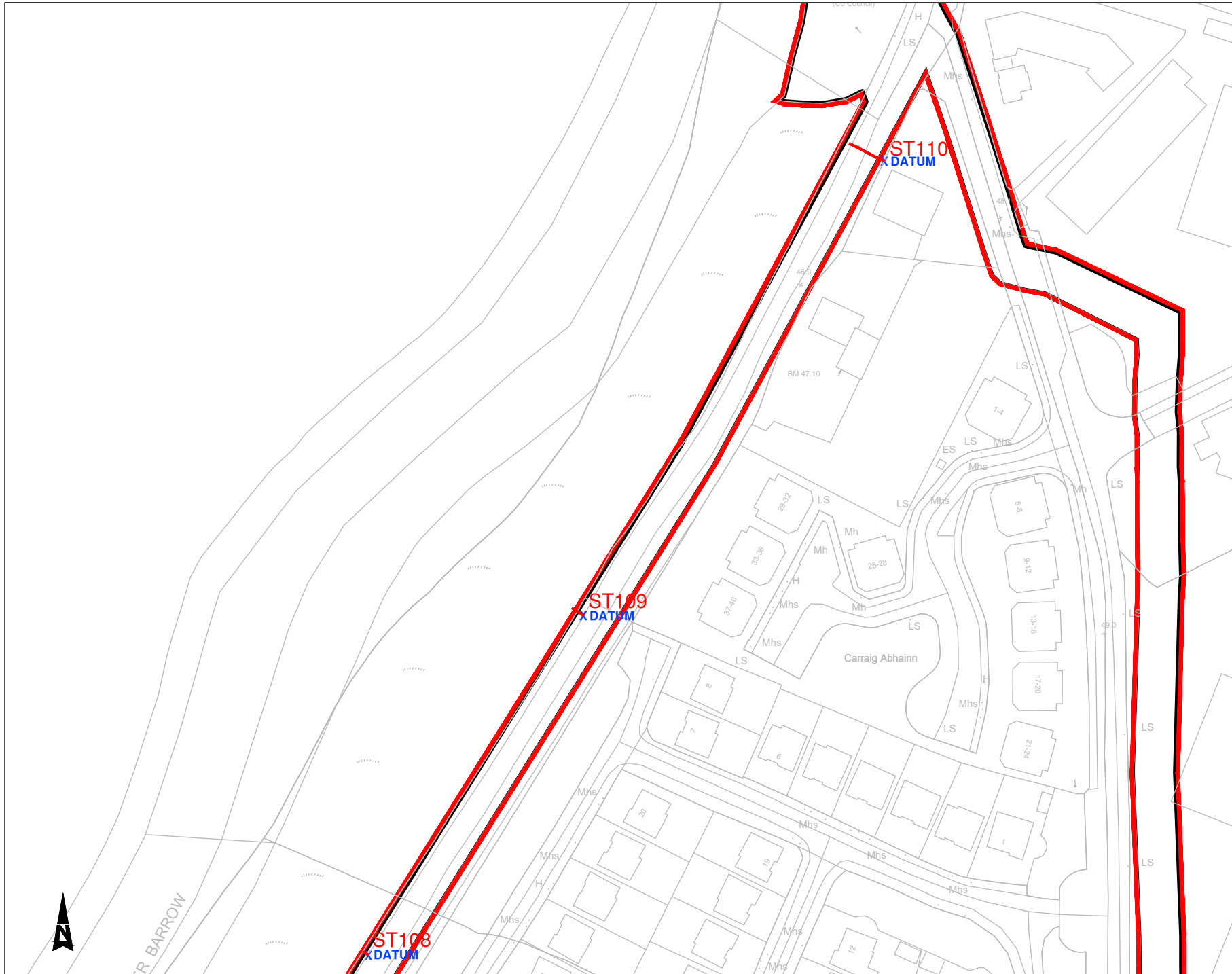
1:2,000 ON A3

APPROVED:

GH

REVISION:

D01



KEY TO SYMBOLS ON EXPLORATORY HOLE RECORDS

All linear dimensions are in metres or millimetres

DESCRIPTIONS

** Drillers Description
Friable Easily crumbled

SAMPLES

U() Undisturbed 102mm diameter sample, () denotes number of blows to drive sampler
U()F, U()P F- not recovered, P-partially recovered
U38 Undisturbed 38mm diameter sample
P(F), (P) Piston sample - disturbed
B Bulk sample - disturbed
D Jar Sample - disturbed
W Water Sample
CBR California Bearing Ratio mould sample
ES Chemical Sample for Contamination Analysis
SPTLS Standard Penetration Test S lump sample from split sampler

CORE RECOVERY AND ROCK QUALITY

TCR Total Core Recovery (% of Core Run)
SCR Solid Core Recovery (length of core having at least one full diameter as % of core run)
RQD Rock Quality Designation (length of solid core greater than 100mm as % of core run)
Where there is insufficient space for the TCR, SCR and RQD, the results may be found in the remarks column
If Fracture Spacing in mm (Minimum/Average/Maximum) NI - non intact, NR - no recovery
AZCL Assumed Zone of Core Loss
NI Non intact

GROUNDWATER

▽ Groundwater strike
▼ Groundwater level after standing period
Date/Water Date of shift (day/month)/Depth to water at end of previous shift shown above the date and depth to water at beginning of shift given below the date

INSITU TESTING

S Standard Penetration Test - split barrel sampler
C Standard Penetration Test - solid 60° cone
SW Self Weight Penetration
Ivp, HVp (R) In Situ Vane Test, Hand Vane Test (R) demonstrates remoulded strength
K(F), (C), (R), (P) Permeability Test
HP Hand Penetrometer Test

MEASURED PROPERTIES

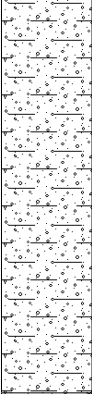
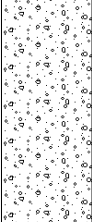
N Standard Penetration Test - blows required to drive 300mm after seating drive
x/y Denotes x blows for y mm within the Standard Penetration Test
x*/y Denotes x blows for y mm within the seating drive
 c_u Undrained Shear Strength (kN/m²)
CBR California Bearing Ratio

ROTARY DRILLING SIZES

Index Letter	Nominal Diameter (mm)	
	Borehole	Core
N	75	54
H	99	76
P	120	92
S	146	113

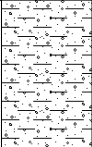
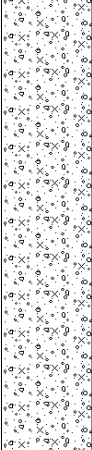
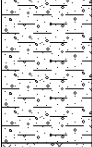
 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By PC		Borehole No. BH101			
						Logged By CS		Sheet 1 of 1			
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671322E - 674905N			Hole Type CP		
Location Mortarstown, Co. Carlow.						Level m OD			Scale 1:50		
Client Irish Water						Date 11/03/2022 - 11/03/2022					
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description			
		Depth (m bgl)	Type	Results							
		0.00 - 1.00	B		0.20			(TOPSOIL)			
		1.00 - 2.00	B SPT (C)	N=36 (6,6/8,8,9,11)	1.00			Brown, very gravelly very clayey SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded.	1		
		2.00 - 3.00	B SPT (C)	N=45 (10,11/11,12,11,11)				Dense, brown, very sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded.	2		
		3.00 - 4.00	B SPT (C)	N=51 (9,11/13,11,12,15)	3.00			Dense, brown, slightly clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded.	3		
		4.00	SPT (C)	N=45 (11,10/9,11,11,14)					4		
	5.00	SPT (C)	75 (12,15/75 for 80mm)	5.50				5			
							End of Borehole at 5.500m		6		
									7		
									8		
									9		
Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)		
				None encountered	5.50	200	200	2.45	2.60		
					Equipment	Dando 2000		Duration (hh:mm)	Tool		
								01:00	Chisel.		
								01:00	Chisel.		
Remarks Borehole terminated at 5.50m bgl, obstruction.						Shift Data		Shift		Depth (m bgl)	Remarks
						GW (m bgl) Dry		11/03/2022 08:00 11/03/2022 18:00		0.00 5.50	Start of shift. End of borehole.

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By PC		Borehole No. BH102	
						Logged By EK		Sheet 1 of 1	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671357E - 674891N		Hole Type CP	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 10/03/2022 - 10/03/2022			

Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
		0.00 - 1.00	B		0.25		(TOPSOIL) Brown, slightly gravelly sandy SILT. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded.		
		0.30 - 1.00	U				Medium dense to dense, grey brown, slightly clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded, various lithologies.		
		1.00 - 2.00 1.00	B SPT (C)	N=26 (2,3/6,6,7,7)	3.00			1	
		2.00 - 3.00 2.00	B SPT (C)	N=46 (10,11/11,12,13,10)				2	
		3.00 - 4.00 3.00	B SPT (C)	N=47 (9,9/10,10,13,14)				3	
	4.00	SPT (C)	50 (18,21/50 for 0mm)	4.50		Dense, grey brown, clayey sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded. Cobbles are 63-90mm dia, rounded.	4		
							End of Borehole at 4.500m	5	
								6	
								7	
								8	
								9	

Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment See shift data.	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
					4.50	200	200	1.55 4.10 4.20	1.60 4.20 4.25	01:00 02:00 01:00	Chisel Chisel Chisel
					Equipment		Dando 2000				

Remarks Borehole terminated at 4.50m bgl, refusal.	Shift Data		GW (m bgl)	Shift	Depth (m bgl)	Remarks
				10/03/2022 08:00	0.00	Start of shift.
		Dry		10/03/2022 18:00	4.50	End of borehole.

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By PC		Borehole No. BH103			
						Logged By EK		Sheet 1 of 1			
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671299E - 674845N		Hole Type CP			
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50			
Client Irish Water						Date 14/03/2022 - 14/03/2022					
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description			
		Depth (m bgl)	Type	Results							
		0.00 - 1.00	B		1.00			Light brown, slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular.	1		
		1.00 - 1.60 1.00 - 2.00	U B					Light brown, very gravelly very clayey SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded.			
		2.00 - 3.00 2.00	B SPT (C)	N=23 (3,4/4,7,7,5)	2.00			Medium dense, light brown, silty very sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are 63-100, sub-rounded, Limestone. <i>2.00m - 5.00m: Reducing Sand fraction with depth.</i>	2		
		3.00 - 4.00 3.00	B SPT (C)	N=29 (6,6/7,7,8,7)					3		
		4.00 - 5.00 4.00	B SPT (C)	N=34 (7,7/8,8,9,9)					4		
		5.00 - 6.00 5.00	B SPT (C)	N=37 (7,8/8,9,10,10)	5.00			Dense to medium dense, light brown, very clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded.	5		
		6.00 - 7.00 6.00	B SPT (C)	N=29 (6,6/7,7,8,7)					6		
		7.00 - 7.60	U		7.00			Light brown, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular.	7		
					8.00				Light brown grey, silty sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse.	8	
					8.60			End of Borehole at 8.600m		9	
Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
4.30				See shift data.	8.60	200	200	3.30 8.50	3.45 8.60	01:00 01:00	Chisel Chisel.
					Equipment	Dando 2000					
Remarks Borehole terminated at 8.60m bgl, refusal.						Shift Data		Shift		Remarks	
						GW (m bgl) 4.00	14/03/2022 08:00 14/03/2022 18:00	Depth (m bgl) 0.00 8.60	Start of shift. End of borehole.		

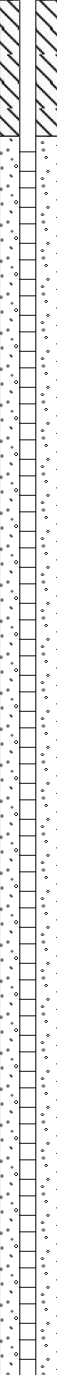
 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By PC		Borehole No. BH104 Sheet 1 of 1	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671334E - 674832N		Hole Type CP	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 15/03/2022 - 15/03/2022			

Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
		0.00 - 1.00	B				Light brown beige, slightly gravelly very sandy SILT. Sand is fine to coarse. Gravel is fine to coarse, sub-angular.		
		1.00 - 2.00 1.00	B SPT (C)	N=18 (3,3/4,4,5,5)	1.00		Stiff, brown, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular.	1	
		2.00 - 3.00 2.00	B SPT (C)	N=19 (4,4/5,5,4,5)				2	
		3.00 - 3.85 3.00	B SPT (C)	N=7 (1,1/2,2,1,2)	3.00		Loose, grey beige, slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular.	3	
		4.00 - 4.60	U		3.85		Grey, slightly silty sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to rounded. Cobbles are angular to rounded, 63-130mm dia., Limestone lithology.	4	
		4.60	B		5.10		End of Borehole at 5.100m	5	
								6	
								7	
								8	
								9	

Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
3.10	2.40	20		See shift data.	5.10	200	200	5.00	5.10	02:00	Chisel
					Equipment						
					Dando 2000						

Remarks Borehole terminated at 5.10m bgl, refusal.	Shift Data		GW (m bgl)	Shift	Depth (m bgl)	Remarks
				15/03/2022 08:00	0.00	Start of shift
			2.40	15/03/2022 18:00	5.10	End of borehole.

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC101 Sheet 1 of 3	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671322E - 674905N		Hole Type RO	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 01/04/2022 - 01/04/2022			

Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
							Refer to BH101 for detailed overburden description.	1	
					5.50			2	
	▼	6.00 - 6.50	WS		6.00		Open hole boring. Driller described: SAND.	3	
		6.50	SPT (C)	N=24 (4,5/6,6,5,7)			Open hole boring. Medium dense, light brown, slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse.	4	
		7.50 - 8.10	WS					5	
		8.10	SPT (C)	N=26 (3,9/6,6,7,7)				6	
		9.00 - 9.40	WS					7	
								8	
								9	

Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
6.00				GW cut off by casing at 11.00m.	25.00	131	131				
					Equipment		Soilmec PSM				

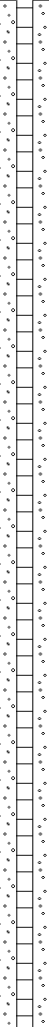
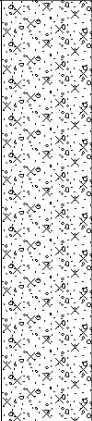
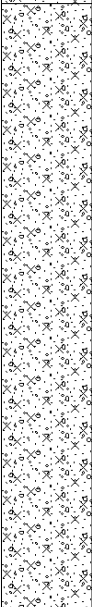
Remarks Borehole terminated at 25.00m bgl. 50mm dia. standpipe installed. Response zone from 1.00m bgl to 25.00m bgl.	Shift Data			GW (m bgl)	Shift	Depth (m bgl)	Remarks
					01/04/2022 08:00	0.00	Start of shift.
				Dry	01/04/2022 18:00	25.00	End of shift.
				Dry	04/04/2022 08:00	25.00	Start of shift.
				Dry	04/04/2022 18:00	25.00	End of borehole.

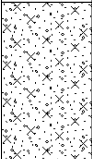
 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC101 Sheet 2 of 3	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671322E - 674905N		Hole Type RO	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 01/04/2022 - 01/04/2022			

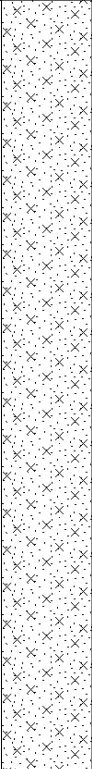
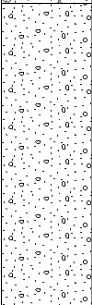
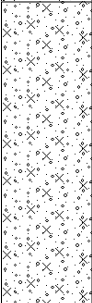
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
		9.40	SPT (C)	N=16 (4,4/4,3,4,5)			Open hole boring. Medium dense, light brown, slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse. <i>9.00m - 10.50m: Driller noted blowing Sands.</i>	10	
		10.50 - 11.00	WS		10.50		Open hole boring. Medium dense, light brown, silty SAND. Sand is fine to coarse.	11	
		11.00	SPT (C)	N=22 (2,5/6,5,6)				12	
		12.00 - 12.60	WS		12.00		Open hole boring. Firm, light brown, slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is fine to coarse.	13	
		12.60	SPT (C)	N=20 (3,3/4,4,5,7)				14	
		14.10	SPT (C)	N=14 (2,3/2,4,4,4)	14.70		Open hole boring. Driller described: Dense, gravelly silty SAND.	15	
		15.00	SPT (C)	63 (6,8/63 for 127mm)			Open hole boring. Driller described: Dense, BOULDERS.	16	
		16.50	SPT (C)	50 (25 for 0mm/50 for 0mm)	16.20		Open hole boring. Driller described: Dense, silty SAND with cobble content.	17	
		18.00	SPT (C)	N=36 (5,5/7,8,10,11)	17.00			18	

Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
6.00				GW cut off by casing at 11.00m.	25.00	131	131				
					Equipment						
					Soilmec PSM						

Remarks Borehole terminated at 25.00m bgl. 50mm dia. standpipe installed. Response zone from 1.00m bgl to 25.00m bgl.	Shift Data			
	GW (m bgl)	Shift	Depth (m bgl)	Remarks
	Dry	01/04/2022 08:00	0.00	Start of shift.
	Dry	01/04/2022 18:00	25.00	End of shift.
	Dry	04/04/2022 08:00	25.00	Start of shift.
	Dry	04/04/2022 18:00	25.00	End of borehole.

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC101		
						Logged By N/A		Sheet 3 of 3		
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671322E - 674905N		Hole Type RO		
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50		
Client Irish Water						Date 01/04/2022 - 01/04/2022				
Well Backfill 	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description		
		Depth (m bgl)	Type	Results						
		19.50	SPT (C)	N=30 (6,5/6,8,8,8)				Open hole boring. Driller described: Dense, silty SAND with cobble content.	19	
		21.00	SPT (C)	N=34 (4,5/6,7,8,13)	21.00				20	
		22.50	SPT (C)	50 (25 for 0mm/50 for 0mm)					Open hole boring. Driller described: Dense, sandy GRAVEL with boulder content.	21
		24.00	SPT (C)	50 (38 for 105mm/50 for 0mm)						22
		25.00	SPT (C)	50 (25 for 0mm/50 for 40mm)	25.00				23	
									24	
									25	
									26	
									27	
Groundwater					Hole Information			Chiselling Details		
Struck (m bgl) 6.00	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment GW cut off by casing at 11.00m.	Depth (m bgl) 25.00	Hole Dia (mm) 131	Casing Dia (mm) 131	Top (m)	Base (m)	
					Equipment		Soilmech PSM		Duration (hh:mm)	
Remarks Borehole terminated at 25.00m bgl. 50mm dia. standpipe installed. Response zone from 1.00m bgl to 25.00m bgl.					Shift Data					
					GW (m bgl)	Shift	Depth (m bgl)	Remarks		
					Dry	01/04/2022 08:00	0.00	Start of shift.		
					Dry	01/04/2022 18:00	25.00	End of shift.		
					Dry	04/04/2022 08:00	25.00	Start of shift.		
					Dry	04/04/2022 18:00	25.00	End of borehole.		

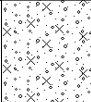
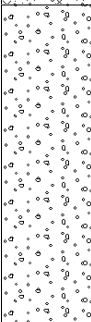
 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC102	
						Logged By CS		Sheet 1 of 3	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671357E - 674891N		Hole Type RO	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 31/03/2022 - 31/03/2022			
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
								Refer to BH102 for detailed overburden description.	1
									2
									3
									4
		4.50	SPT (C)	25 (6,13/25 for 30mm)	4.20			Open hole boring. Medium dense, slightly gravelly silty SAND.	5
					5.30				
	6.00 - 6.60	B						6	
	6.60	SPT (C)	N=23 (4,5/5,5,6,7)					7	
	7.50 - 8.20	B						8	
	8.20	SPT (C)	N=24 (3,4/6,5,6,7)					9	
	9.00 - 9.60	WS							
Groundwater					Hole Information			Chiselling Details	
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)
				None encountered.	21.00	131	131		
					Equipment	Soilmec PSM		Duration (hh:mm)	
									Tool
Remarks Borehole terminated at 21.00m bgl.						Shift Data			
						GW (m bgl) Dry	Shift 31/03/2022 08:00 31/03/2022 18:00	Depth (m bgl) 0.00 21.00	Remarks Start of shift. End of borehole.

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC102	
						Logged By CS		Sheet 2 of 3	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671357E - 674891N		Hole Type RO	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 31/03/2022 - 31/03/2022			
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
		9.60	SPT (C)	N=22 (3,4/6,5,5,6)				Open hole boring. Medium dense, light brown, slightly silty SAND.	10
		10.50 - 11.50	WS						11
		11.50	SPT (C)	N=23 (4,5/5,6,6,6)					12
		12.00 - 12.70	B						13
		12.70	SPT (C)	N=34 (6,6/8,9,8,9)				Open hole boring. Driller described: Dense, GRAVEL with cobble content.	14
		13.50 - 15.50	B						15
		14.50	SPT (C)	N=50 (4,5/6,17,17,10)	14.20				16
		15.00	SPT (C)	35 (7,8/35 for 105mm)					17
		16.50 - 17.50	B		16.20			Open hole boring. Driller described: Medium dense, slightly gravelly very silty SAND.	18
		17.50	SPT (C)	N=17 (3,3/3,4,3,7)					
	18.00 - 18.60	B							

Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
				None encountered.	21.00	131	131				
					Equipment		Soilmec PSM				

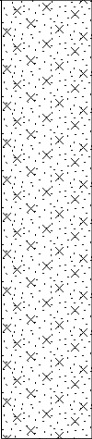
Remarks	Shift Data			
	GW (m bgl)	Shift	Depth (m bgl)	Remarks
		31/03/2022 08:00	0.00	Start of shift.
Borehole terminated at 21.00m bgl.	Dry	31/03/2022 18:00	21.00	End of borehole.

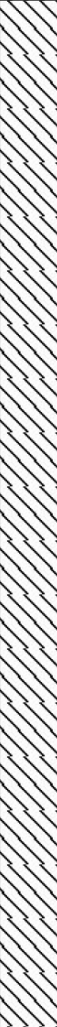
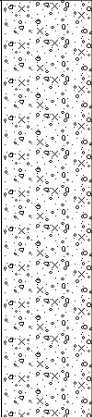
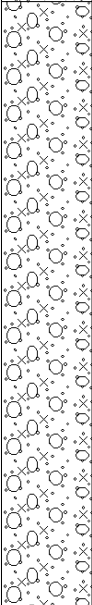
 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC102 Sheet 3 of 3	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671357E - 674891N		Hole Type RO	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 31/03/2022 - 31/03/2022			

Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
					18.90			Open hole boring. Driller described: Medium dense, slightly gravelly very silty SAND.	
		19.50	SPT (C)	N=47 (14,9/10,12,12,13)				Open hole boring. Driller described: Dense, sandy GRAVEL with cobble content.	19
		21.00	SPT (C)	42 (11,18/42 for 105mm)	21.00			End of Borehole at 21.000m	21
									22
									23
									24
									25
									26
									27

Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
				None encountered.	21.00	131	131				
					Equipment		Soilmach PSM				

Remarks Borehole terminated at 21.00m bgl.	Shift Data		GW (m bgl)	Shift	Depth (m bgl)	Remarks
				31/03/2022 08:00	0.00	Start of shift.
			Dry	31/03/2022 18:00	21.00	End of borehole.

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC103	
						Logged By CS		Sheet 2 of 3	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671299E - 674845N		Hole Type RO	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 31/03/2022 - 31/03/2022			
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
		10.50 - 11.50	WS		12.00		Open hole boring. Driller described: Dense to medium dense, slightly silty SAND. Sand is fine to coarse.	10	
		11.50	SPT (C)	N=23 (3,4/6,4,6,7)				11	
		12.00 - 13.00	B					12	
		13.00	SPT (C)	N=31 (3,3/5,7,8,11)				13	
		13.50 - 14.50	B					14	
		14.50	SPT (C)	N=17 (4,4/3,4,4,6)				15	
		15.00 - 16.00	B					16	
		16.00	SPT (C)	N=23 (5,4/5,5,5,8)				17	
		16.50	SPT (C)	N=34 (5,7/8,8,9,9)				18	
		18.00	SPT (C)	25 (6,16/25 for 40mm)					
Groundwater					Hole Information			Chiselling Details	
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)
7.50				GW cut off at 15.00m.	25.00	131	131		
					Equipment	Soilmec PSM		Duration (hh:mm)	
Remarks Borehole terminated at 25.0m bgl. 50mm dia. standpipe installed. Response zone from 1.00m - 9.00m bgl.					Shift Data		Shift		Remarks
					GW (m bgl) 31/03/2022 08:00 0.00 Start of shift.		Depth (m bgl) 31/03/2022 18:00 25.00 End of borehole.		
					Dry				

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC103		
						Logged By CS		Sheet 3 of 3		
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671299E - 674845N		Hole Type RO		
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50		
Client Irish Water						Date 31/03/2022 - 31/03/2022				
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description		
		Depth (m bgl)	Type	Results						
		19.50	SPT (C)	N=43 (4,8/8,9,11,15)				Open hole boring. Driller described: Medium dense to dense, silty sandy GRAVEL with boulder content.	19	
									20	
		21.00	SPT (C)	N=37 (6,10/11,8,9,9)	21.00			Open hole boring. Driller described: Dense, sandy GRAVEL with boulder content.	21	
									22	
		22.50	SPT (C)	50 (25 for 0mm/50 for 40mm)						23
	24.00	SPT (C)	N=60 (13,14/19,19,10,12)					24		
	25.00	SPT (C)	N=28 (6,8/9,6,8,5)	25.00			End of Borehole at 25.000m	25		
								26		
								27		
Groundwater					Hole Information			Chiselling Details		
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	
7.50				GW cut off at 15.00m.	25.00	131	131			
					Equipment	Soilmec PSM		Duration (hh:mm)		
Remarks Borehole terminated at 25.0m bgl. 50mm dia. standpipe installed. Response zone from 1.00m - 9.00m bgl.					Shift Data		GW (m bgl)	Shift	Depth (m bgl)	Remarks
							Dry	31/03/2022 08:00 31/03/2022 18:00	0.00 25.00	Start of shift. End of borehole.

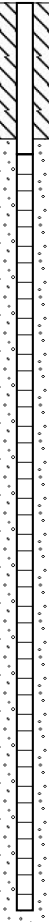
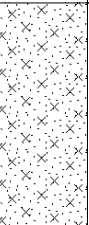
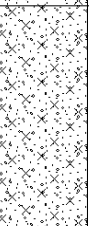
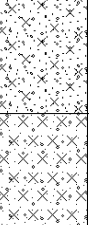
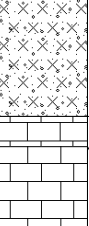
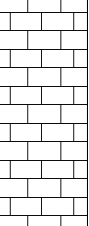
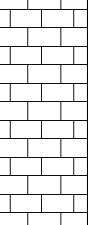
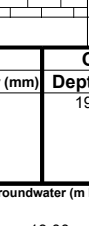
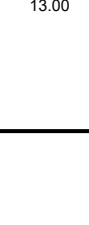
		Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By: GW		Borehole No. RC104 Sheet 1 of 3	
								Logged By: CS			
Project Name: Mortarstown WWTP				Project No. P22044		Co-ords: 671334E - 674832N				Hole Type RC	
Location: Mortarstown, Co. Carlow.						Level: m OD				Scale 1:50	
Client: Irish Water						Dates: 04/04/2022				04/04/2022	

Well	Water Strike (m)	Depth (m)	Sample/ Nspt/ Fractures	Coring (%)			Depth (m) / Fl (/m)	Level (mOD)	Legend	Stratum Description	
				TCR	SCR	RQD					
										Refer to BH104 for overburden detail.	1
											2
											3
											4
		6.00 - 6.40	WS				5.10				5
			N=12 (3,3/3,2,3,4) (C)								6
		7.50 - 8.10	WS				7.50			Open hole boring. Medium dense, slightly gravelly silty SAND. Sand is fine to coarse.	7
			N=17 (2,3/4,4,4,5) (C)								8
		9.00 - 9.30	WS							Open hole boring. Medium dense, lightly brown, silty SAND. Sand is fine to coarse.	9

Groundwater:					Hole Details		Casing Details		Equipment:		Soilmec PSM
Struck (m bgl)	Level (m bgl)	After (min)	Sealed	Comment	Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)	Method:	Compressed air mist.	
7.50				GW cut off at 13.00m.	19.30	131	19.30	131			

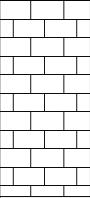
Remarks: Borehole terminated at 19.30m bgl. 50mm dia. standpipe installed. Response zone from 10.00m to 15.00m bgl.	Shift Data:	Groundwater (m bgl)	Shift	Hole Depth (m bgl)	Remarks
		13.00	04/04/2022 08:00 04/04/2022 18:00	0.00 19.30	Start of shift. End of borehole

		Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie				Drilled By: GW		Borehole No. RC104 Sheet 2 of 3	
						Logged By: CS			
Project Name: Mortarstown WWTP				Project No. P22044		Co-ords: 671334E - 674832N		Hole Type RC	
Location: Mortarstown, Co. Carlow.						Level: m OD		Scale 1:50	
Client: Irish Water						Dates: 04/04/2022 04/04/2022			

Well	Water Strike (m)	Depth (m)	Sample/ Nspt/ Fractures	Coring (%)			Depth (m) / Fl (/m)	Level (mOD)	Legend	Stratum Description	
				TCR	SCR	RQD					
			N=6 (1,1/2,1,1,2) (C)							Open hole boring. Medium dense, lightly brown, silty SAND. Sand is fine to coarse.	10
		10.50 - 10.90	WS N=16 (1,2/3,3,3,7) (C)				10.50				Open hole boring. Loose, slightly gravelly silty SAND. Sand is fine to coarse.
		12.00 - 12.60	WS								Open hole boring. Stiff, slightly gravelly slightly sandy SILT.
			N=22 (13,6/4,6,6,6) (C)				12.70				
			50 (25 for 0mm/50 for 0mm) (C)				14.20				Open hole boring. Driller described: Rock. Assumed Limestone lithology. Lithology: Medium strong, grey LIMESTONE with calcite veining. Weathering: Slightly to moderately weathered with minor oxidation colouration. Fractures: 2 sets observed. Set 1 is dipping 88 degrees with close fracture spacing and undulating rough fracture surfaces. Set 2 is dipping 0-10 degrees with close fracture spacing and undulating rough fracture surfaces.
		14.40 - 15.90	50 (25 for 0mm/50 for 0mm) (C) 40mm min 180mm max 130mm avg	100	83	40	6/m				
			40mm min 280mm max 190mm avg				5/m				16
		15.90 - 17.30	85mm min 420mm max 200mm avg	88	88	49	3/m				17
	17.30 - 18.30	80mm min 300mm max 150mm avg	100	100	52	4/m		18			

Groundwater:					Hole Details		Casing Details		Equipment:	Soilmec PSM
Struck (m bgl)	Level (m bgl)	After (min)	Sealed	Comment	Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)	Method:	Compressed air mist.
7.50				GW cut off at 13.00m.	19.30	131	19.30	131		

Remarks: Borehole terminated at 19.30m bgl. 50mm dia. standpipe installed. Response zone from 10.00m to 15.00m bgl.	Shift Data:	Groundwater (m bgl)		Shift		Hole Depth (m bgl)		Remarks Start of shift. End of borehole
		13.00		04/04/2022 08:00 04/04/2022 18:00		0.00 19.30		

		Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By: GW		Borehole No. RC104 Sheet 3 of 3	
								Logged By: CS			
Project Name: Mortarstown WWTP				Project No. P22044		Co-ords: 671334E - 674832N				Hole Type RC	
Location: Mortarstown, Co. Carlow.						Level: m OD				Scale 1:50	
Client: Irish Water						Dates: 04/04/2022 04/04/2022					
Well	Water Strike (m)	Depth (m)	Sample/ Nspt/ Fractures	Coring (%)			Depth (m) / Fl (/m)	Level (mOD)	Legend	Stratum Description	
				TCR	SCR	RQD					
		18.30 - 19.30		100	100	42	19.30			Lithology: Medium strong, grey LIMESTONE with calcite veining. Weathering: Slightly to moderately weathered with minor oxidation colouration. Fractures: 2 sets observed. Set 1 is dipping 88 degrees with close fracture spacing and undulating rough fracture surfaces. Set 2 is dipping 0-10 degrees with close fracture spacing and undulating rough fracture surfaces. End of Borehole at 19.300m	19
											20
											21
											22
											23
											24
											25
											26
											27
Groundwater:				Hole Details		Casing Details		Equipment:		Soilmech PSM	
Struck (m bgl)	Level (m bgl)	After (min)	Sealed	Comment		Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)	Method:	
7.50				GW cut off at 13.00m.		19.30	131	19.30	131	Compressed air mist.	
Remarks:				Shift Data:		Groundwater (m bgl)		Shift		Hole Depth (m bgl)	
Borehole terminated at 19.30m bgl. 50mm dia. standpipe installed. Response zone from 10.00m to 15.00m bgl.						13.00		04/04/2022 08:00 04/04/2022 18:00		0.00 19.30	
										Remarks Start of shift. End of borehole	

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC105 Sheet 1 of 3	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671278E - 674721N		Hole Type RO	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 05/04/2022 - 05/04/2022			

Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
							Refer to BH105 for detailed overburden description.	1	
								2	
								3	
								4	
								5	
								6	
								7	
		7.50 - 8.00	WS		7.20			8	
		8.00	SPT (C)	N=7 (3,3/1,1,2,3)				9	
		9.00 - 9.20	WS						

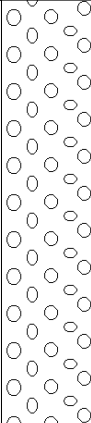
Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
6.50				GW cut off by casing at 11.00m.	21.00	131	131				
					Equipment						
					Soilmec PSM						

Remarks Borehole terminated at 21.00m bgl. 50mm dia. standpipe installed. Response zone from 1.00m to 9.00m.	Shift Data			
	GW (m bgl)	Shift	Depth (m bgl)	Remarks
	Dry	05/04/2022 08:00 05/04/2022 18:00	0.00 21.00	Start of shift. End of borehole.

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC105 Sheet 2 of 3	
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671278E - 674721N		Hole Type RO	
Location Mortarstown, Co. Carlow.						Level m OD		Scale 1:50	
Client Irish Water						Date 05/04/2022 - 05/04/2022			
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description	
		Depth (m bgl)	Type	Results					
		9.20	SPT (C)	N=6 (1,1/0,1,2,3)				Open hole boring. Loose to medium dense, very silty SAND. Sand is fine to coarse.	10
		11.30	SPT (C)	N=11 (2,1/2,3,3,3)					11
		12.00 - 12.50	WS						12
		12.50	SPT (C)	N=11 (3,3/3,2,3,3)	12.50			Open hole boring. Medium dense, BOULDERS.	13
		13.50 - 14.20	WS		13.30				14
		14.20	SPT (C)	N=20 (4,6/6,6,5,3)				Open hole boring. Medium dense, light brown, silty SAND.	15
		15.00 - 15.70	WS						16
		15.70	SPT (C)	N=25 (3,3/6,6,6,7)					17
	16.50	SPT (C)	N=20 (4,5/4,4,6,6)					18	
	18.00	SPT (C)	50 (19 for 0mm/50 for 0mm)	17.80	18.00		Open hole boring. Driller described: Sandy GRAVEL with cobble content.		

Groundwater					Hole Information			Chiselling Details			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
6.50				GW cut off by casing at 11.00m.	21.00	131	131				
					Equipment		Soilmec PSM				

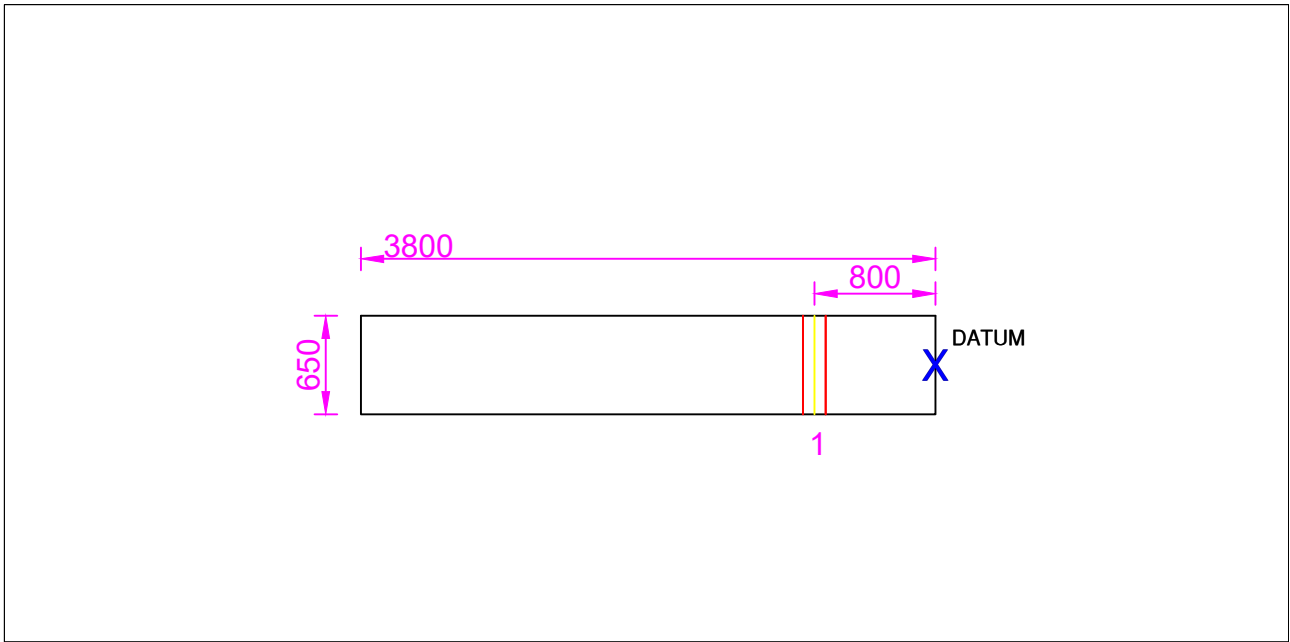
Remarks	Shift Data			
	GW (m bgl)	Shift	Depth (m bgl)	Remarks
		05/04/2022 08:00	0.00	Start of shift.
Borehole terminated at 21.00m bgl. 50mm dia. standpipe installed. Response zone from 1.00m to 9.00m.	Dry	05/04/2022 18:00	21.00	End of borehole.

 Priority Geotechnical Ltd. Tel: 021 4631600 www.prioritygeotechnical.ie						Drilled By GW		Borehole No. RC105		
						Logged By CS		Sheet 3 of 3		
Project Name Mortarstown WWTP				Project No. P22044		Co-ords 671278E - 674721N			Hole Type RO	
Location Mortarstown, Co. Carlow.						Level m OD			Scale 1:50	
Client Irish Water						Date 05/04/2022 - 05/04/2022				
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description		
		Depth (m bgl)	Type	Results						
		19.50	SPT (C)	50 (23 for 75mm/50 for 0mm)				Open hole boring. Driller described: Dense, BOULDERS.	19	
		21.00	SPT (C)	50 (25 for 0mm/50 for 0mm)	21.00				21	
								End of Borehole at 21.000m	22	
									23	
									24	
									25	
									26	
									27	
Groundwater					Hole Information			Chiselling Details		
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	
6.50				GW cut off by casing at 11.00m.	21.00	131	131			
					Equipment		Soilmech PSM			
Remarks Borehole terminated at 21.00m bgl. 50mm dia. standpipe installed. Response zone from 1.00m to 9.00m.						Shift Data				
						GW (m bgl) Dry	Shift 05/04/2022 08:00 05/04/2022 18:00	Depth (m bgl) 0.00 21.00	Remarks Start of shift. End of borehole.	

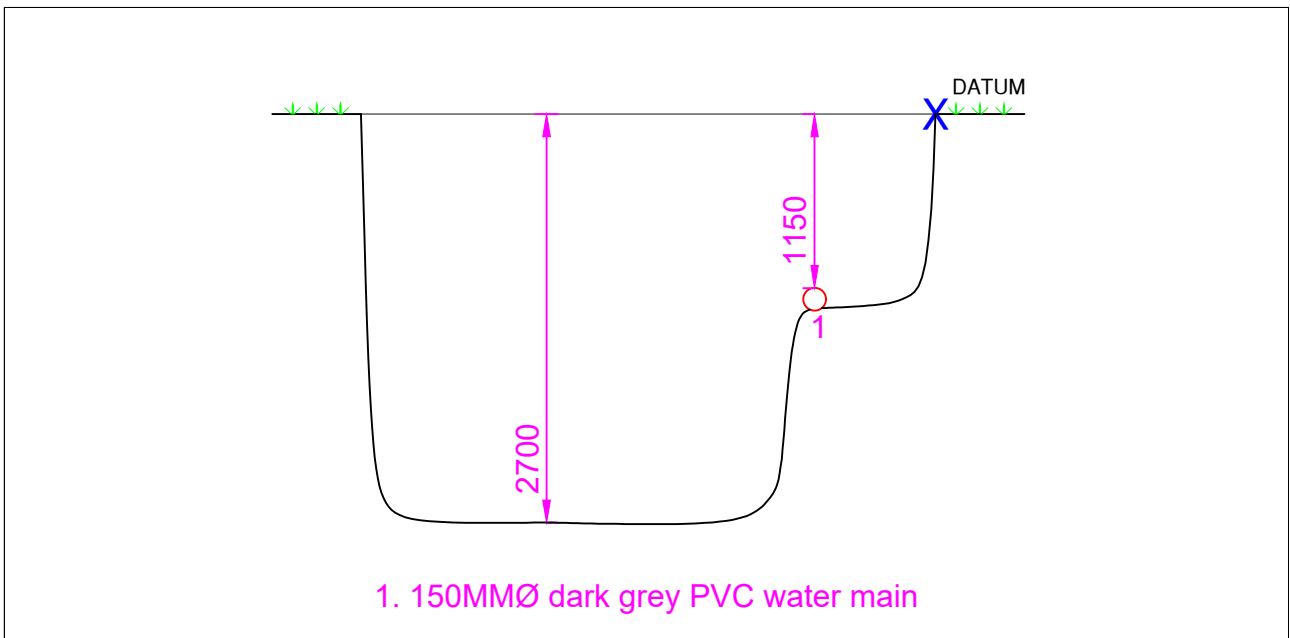
		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No ST101 Sheet 1 of 1	
Project Name: Mortarstown WWTP		Project No. P22044		Co-ords: 671241E - 674925N Level: 46.58m OD		Date 16/06/2022
Location: Mortarstown, Co. Carlow.				Dimensions (m): 0.65 3.80		Scale 1:25
Client: Irish Water				Depth: 2.70m BGL		Logged KH

Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.30 - 1.50	B D	HVP=45kPa HVP=49kPa HVP=49kPa	0.50	46.08		(TOPSOIL) Brown, very gravelly very silty SAND.	1
	0.30 - 1.50						Loose, brown, silty SAND. Sand is fine to medium.	
	1.50 - 2.40	B B		1.50	45.08		Firm, soft to firm, grey brown, slightly gravelly sandy organic SILT with plant roots. Sand is fine to coarse. Gravel is fine to coarse, angular to sub-angular.	2
	1.50 - 2.40							
	1.60							
1.60								
2.40 - 2.70	B	2.40	44.18		Loose, grey, slightly silty very gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded.	3		
		2.70	43.88		End of Pit at 2.700m		4	
▼								5

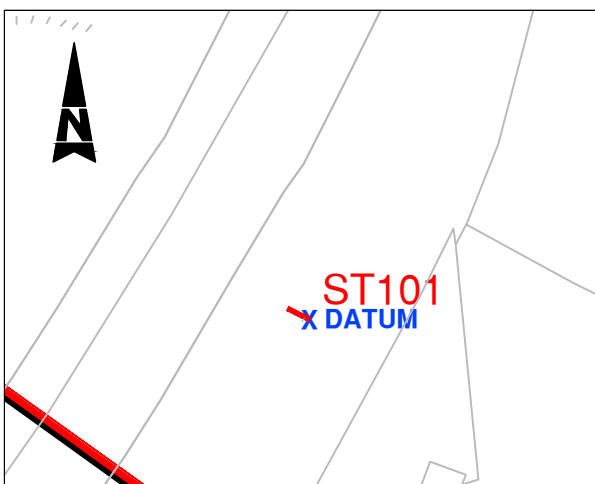
Stability: Good Plant: 3t tracked excavator. Backfill: Arisings.	Groundwater: 2.60m: Trickle flow rate.
Remarks: ST101 terminated at 2.70m bgl. Refer to DWG P22044 ST101 for cross sectional detail. Hand vane carried out at 1.60m bgl using 19mm blade.	



SLIT TRENCH PLAN, 1:50 ON A4



SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES: EASTING: 671240.9 NORTHING: 674924.5 LEVEL: 46.579mAOD		SLIT TRENCH NUMBER: ST101
KEY: DATUM: X		JOB NAME: Mortarstown WWTP Co. Carlow
SLIT TRENCH DIMENSIONS: LENGTH: 3.80m WIDTH: 0.65m DEPTH: 1.27m		JOB NUMBER: P22044
STRATA SHOWN ON DETAILED LOG		DRAWING NUMBER: P22044-ST101
DRAWN BY: Gary Curtin	DATE: 17/06/2022	
LOGGED BY: K.H.	DATE: 16/06/2022	
SCALE: AS STATED	APPROVED: GH	
REVISION: D01		

Photographic Record



Number:

ST101

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS



Number:

ST101

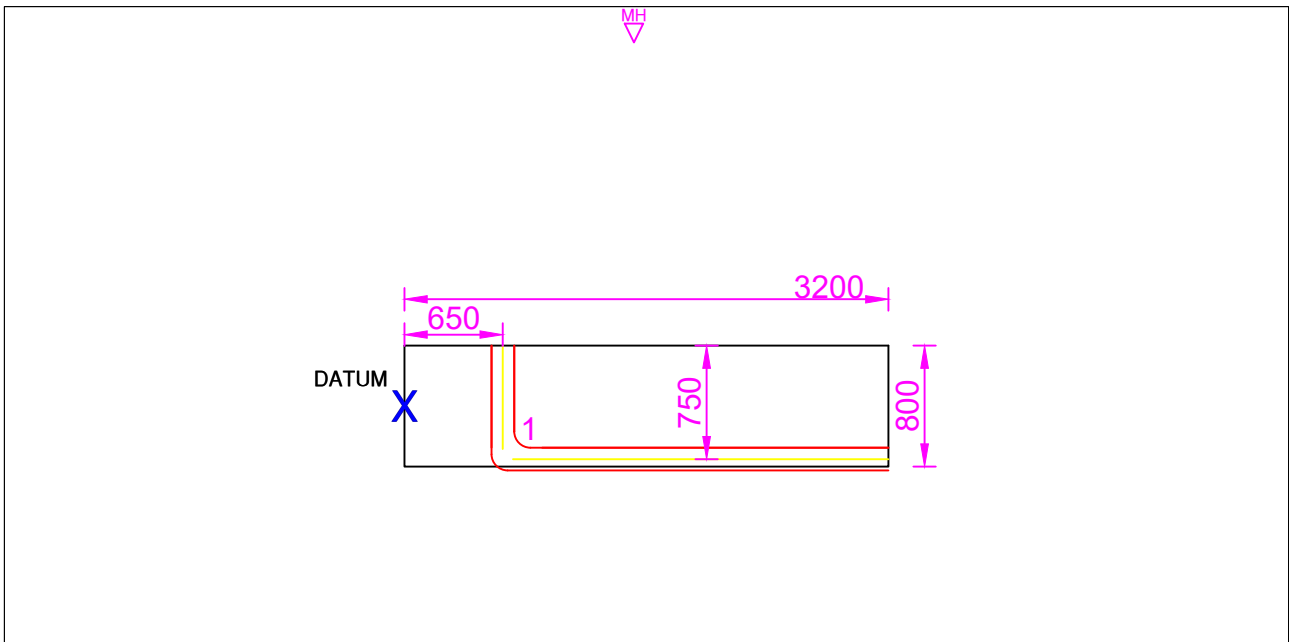
Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

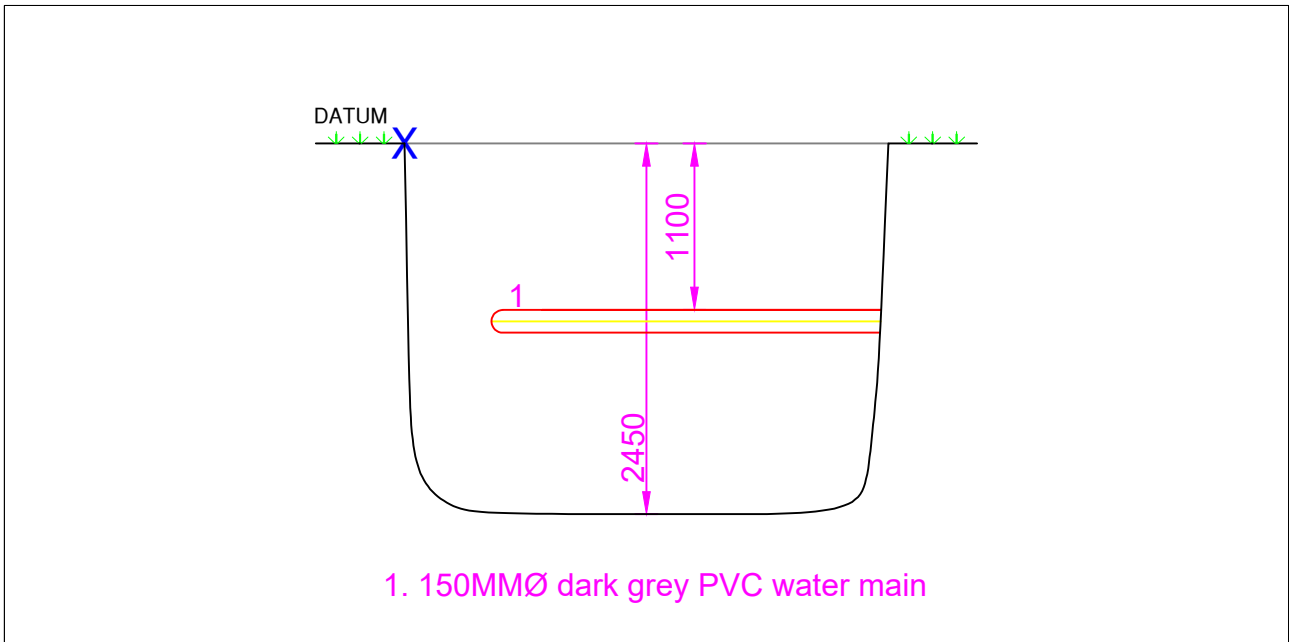
		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No ST102 Sheet 1 of 1	
Project Name: Mortarstown WWTP		Project No. P22044		Co-ords: 671268E - 674987N Level: 48.39m OD		Date 16/06/2022
Location: Mortarstown, Co. Carlow.				Dimensions (m): 0.80 3.20		Scale 1:25
Client: Irish Water				Depth: 2.45m BGL		Logged KH

Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.40 - 1.20	B D		0.40	47.99		(TOPSOIL)	
	0.40 - 1.20						(MADE GROUND) Soft, grey brown, silty sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded. Cobbles are angular to sub-rounded, 63-200mm dia.	1
	1.50 - 2.45	B D		1.20	47.19			Soft to firm, light brown, slightly sandy gravelly CLAY with low cobble content and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to rounded. Cobbles are sub-angular to rounded, 63-200mm dia. Boulders are sub-angular to rounded, 200-350mm dia.
1.50 - 2.45								3
				2.45	45.94		End of Pit at 2.450m	4
								5

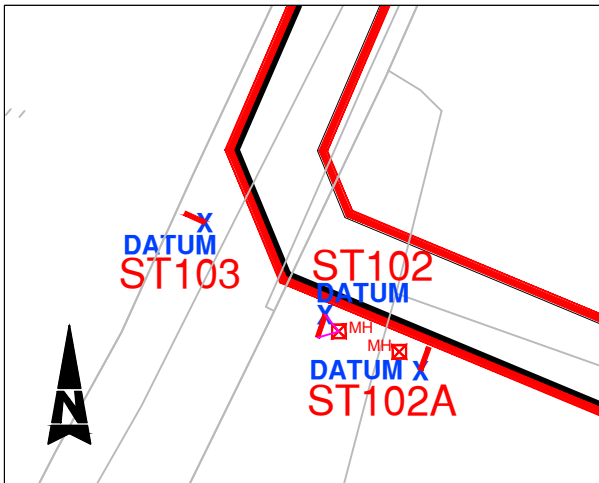
Stability: Good. Plant: 3t tracked excavator. Backfill: Arisings.	Groundwater: None encountered.
Remarks: ST102 terminated at 2.45m bgl, boulder obstruction. Refer to DWG P22044 ST102 for cross sectional detail.	



SLIT TRENCH PLAN, 1:50 ON A4



SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES: EASTING: 671267.8 NORTHING: 674987.0 LEVEL: 48.387mAOD		SLIT TRENCH NUMBER: ST102
KEY: DATUM: X		JOB NAME: Mortarstown WWTP Co. Carlow
SLIT TRENCH DIMENSIONS: LENGTH: 3.20m WIDTH: 0.80m DEPTH: 2.45m		JOB NUMBER: P22044
STRATA SHOWN ON DETAILED LOG		DRAWING NUMBER: P22044-ST102
DRAWN BY: Gary Curtin	DATE: 17/06/2022	
LOGGED BY: K.H.	DATE: 16/06/2022	
SCALE: AS STATED	APPROVED: GH	
REVISION: D01		



Number:

ST102

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS



Number:

ST102

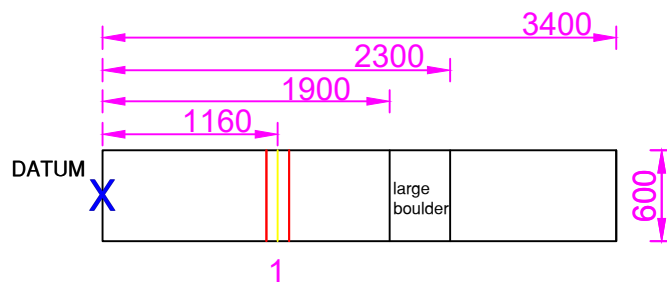
Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

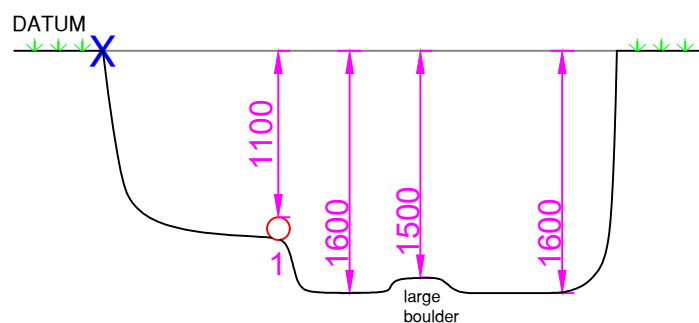
		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No ST102A Sheet 1 of 1	
Project Name: Mortarstown WWTP		Project No. P22044		Co-ords: 671280E - 674980N Level: 49.85m OD		Date 16/06/2022
Location: Mortarstown, Co. Carlow.				Dimensions (m): 0.60 3.40		Scale 1:25
Client: Irish Water				Depth: 1.60m BGL		Logged KH

Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
				0.15	49.70		(TOPSOIL)	
	0.50 - 1.60 0.50 - 1.60	B D					Loose, brown, very clayey very sandy GRAVEL with medium cobble content and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to rounded. Cobbles are sub-angular to rounded, 63-200mm dia. Boulders are sub-angular to rounded, 200-450mm dia.	1
				1.60	48.25		End of Pit at 1.600m	2
								3
								4
								5

Stability: Good. Plant: 3t tracked excavator. Backfill: Arisings.	Groundwater: None encountered.
Remarks: ST102A terminated at 1.60m bgl, boulder obstruction. Refer to DWG P22044 ST102A for cross sectional detail.	

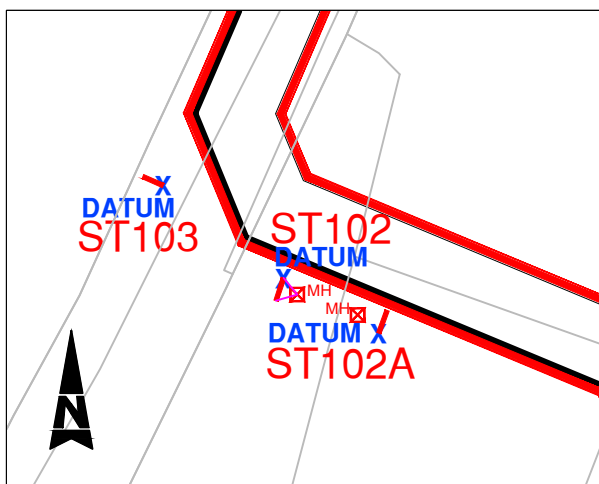


SLIT TRENCH PLAN, 1:50 ON A4



1. 150MMØ dark grey PVC water main

SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES: EASTING: 671280.4 NORTHING: 674979.7 LEVEL: 49.847mAOD		SLIT TRENCH NUMBER: ST102A
KEY: DATUM: X		JOB NAME: Mortarstown WWTP Co. Carlow
SLIT TRENCH DIMENSIONS: LENGTH: 3.40m WIDTH: 0.60m DEPTH: 1.60m		JOB NUMBER: P22044
STRATA SHOWN ON DETAILED LOG		DRAWING NUMBER: P22044-ST102A
DRAWN BY: Gary Curtin	DATE: 17/06/2022	
LOGGED BY: K.H.	DATE: 16/06/2022	
SCALE: AS STATED	APPROVED: GH	
REVISION: D01		



Number:

ST102A

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS



Number:

ST102A

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No ST103 Sheet 1 of 1	
Project Name: Mortarstown WWTP		Project No. P22044		Co-ords: 671252E - 674999N Level: 49.23m OD		Date 15/06/2022
Location: Mortarstown, Co. Carlow.				Dimensions (m): 0.65 3.00		Scale 1:25
Client: Irish Water				Depth: 1.02m BGL		Logged KH

Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.10	49.13		(TOPSOIL)
	0.50 - 1.02	B					(MADE GROUND) Loose, brown, slightly clayey very sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse. Cobbles are sub-angular to rounded, 63-200mm dia.
				1.02	48.21		End of Pit at 1.020m

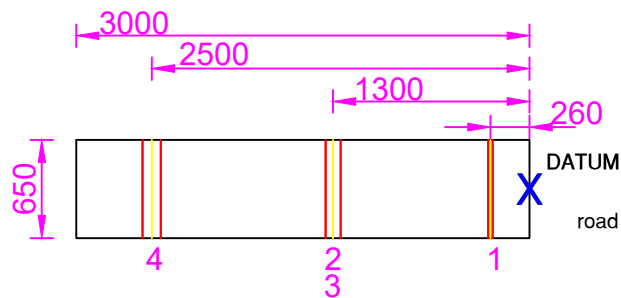
Stability: Good to moderate.

Plant: 3t tracked excavator.

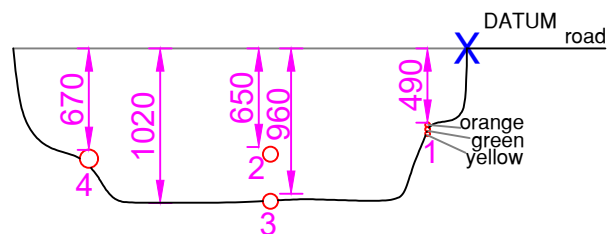
Backfill: Arisings.

Groundwater: None encountered.

Remarks: ST103 terminated at 1.02m bgl. Refer to DWG P22044 ST103 for cross sectional detail.

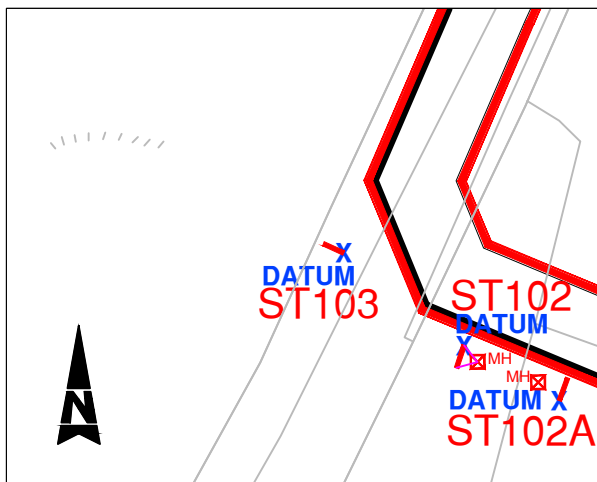


SLIT TRENCH PLAN, 1:50 ON A4



1. 3no.30MMØ orange, green, yellow plastic fibre optic ducts
2. 100MMØ dark grey PVC water main
3. 100MMØ yellow PE gas main
4. 120MMØ orange clay possibly Eircom duct, CAT signal

SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES: EASTING: 671251.9 NORTHING: 674999.2 LEVEL: 49.231mAOD		SLIT TRENCH NUMBER: ST103
KEY: DATUM: X		JOB NAME: Mortarstown WWTP Co. Carlow
SLIT TRENCH DIMENSIONS: LENGTH: 3.00m WIDTH: 0.60m DEPTH: 1.20m		JOB NUMBER: P22044
STRATA SHOWN ON DETAILED LOG		DRAWING NUMBER: P22044-ST103
DRAWN BY: Gary Curtin	DATE: 17/06/2022	
LOGGED BY: K.H.	DATE: 15/06/2022	
SCALE: AS STATED	APPROVED: GH	
REVISION: D01		

Photographic Record



Number:

ST103

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS



Number:

ST103

**Project
Project No
Engineer**

Mortarstown WWTP
P22044
ATKINS

Project Name: Mortarstown WWTP

Project No.
P22044

Co-ords: 671292E - 675088N
Level: 50.30m OD

Date
15/06/2022

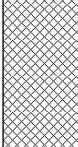
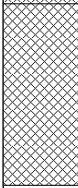
Location: Mortarstown, Co. Carlow.

Dimensions (m): 2.50
Depth: 1.20m BGL

Scale
1:25

Logged
KH

Client: Irish Water

Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.10 - 0.60	B		0.10	50.20		(TOPSOIL)	
							(MADE GROUND) Loose, brown, slightly silty very sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to rounded. Cobbles are sub-angular to rounded, 63-200mm dia.	
	0.65	ENV		0.60	49.70		(MADE GROUND) Loose, beige, slightly silty slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded.	1
				1.20	49.10		End of Pit at 1.200m	2
								3
								4
								5

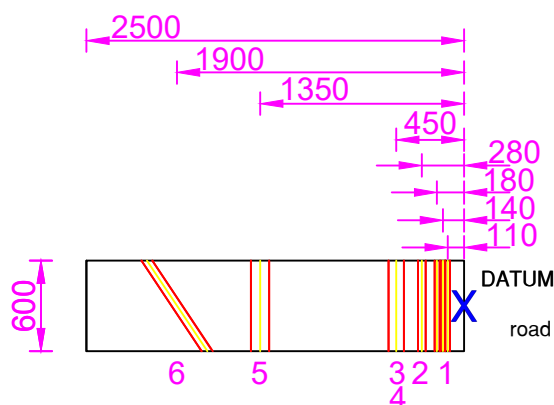
Stability: Good.

Plant: 3t tracked excavator.

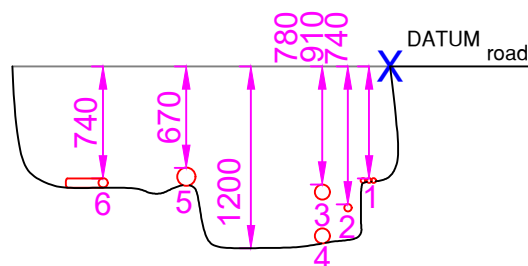
Backfill: Arisings.

Groundwater: None encountered.

Remarks: ST104 terminated at 1.20m bgl. Refer to DWG P22044 ST104 for cross sectional detail.

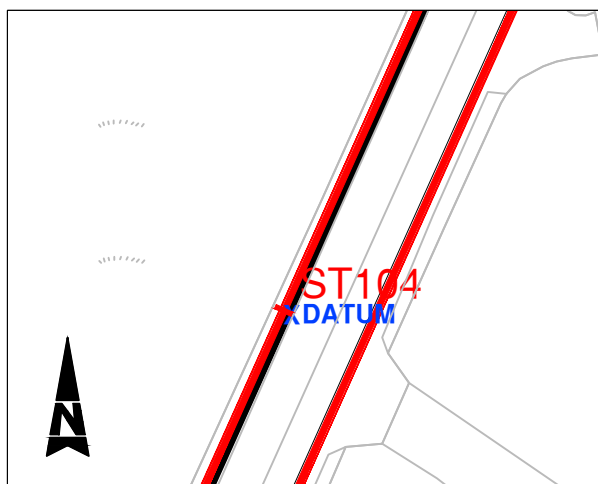


SLIT TRENCH PLAN, 1:50 ON A4



1. 3no.30MMØ orange,green, yellow PVC fibre optic ducts
2. 50MMØ dark grey PVC duct, CAT power signal
3. 100MMØ dark grey PVC pipe, assumed water main
4. 100MMØ yellow PE gas main
5. 120MMØ orange clay duct, possibly fibre or telecom
6. 60MMØ dark grey Eircom duct

SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES: EASTING: 671291.7 NORTHING: 675088.3 LEVEL: 50.303mAOD		SLIT TRENCH NUMBER: ST104
KEY: DATUM: X		JOB NAME: Mortarstown WWTP Co. Carlow
SLIT TRENCH DIMENSIONS: LENGTH: 2.50m WIDTH: 0.60m DEPTH: 1.20m		JOB NUMBER: P22044
STRATA SHOWN ON DETAILED LOG		DRAWING NUMBER: P22044-ST104
DRAWN BY: Gary Curtin	DATE: 17/06/2022	
LOGGED BY: K.H.	DATE: 15/06/2022	
SCALE: AS STATED	APPROVED: GH	
REVISION: D01		



Number:

ST104

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS



Number:

ST104

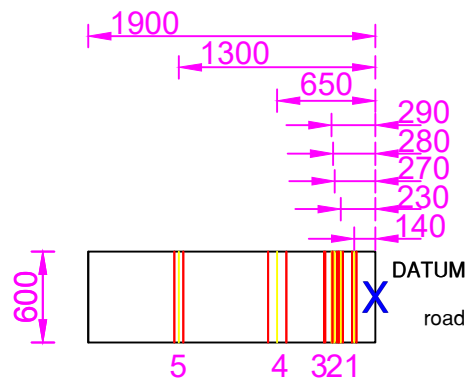
Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

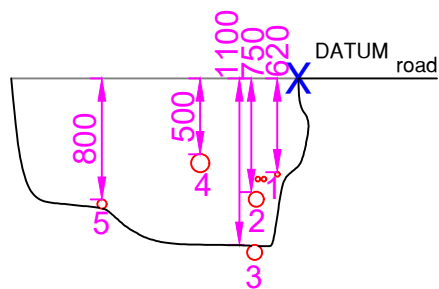
				Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie				Trial Pit No ST105 Sheet 1 of 1	
Project Name: Mortarstown WWTP				Project No. P22044		Co-ords: 671312E - 675134N Level: 50.63m OD		Date 15/06/2022	
Location: Mortarstown, Co. Carlow.						Dimensions (m): 0.60 1.90		Scale 1:25	
Client: Irish Water						Depth: 1.10m BGL		Logged KH	

Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
				0.10	50.53		(TOPSOIL)	
	0.50	B					(MADE GROUND) Loose, brown, very clayey very sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular.	1
				1.10	49.53		End of Pit at 1.100m	2
								3
								4
								5

Stability: Good. Plant: 3t tracked excavator. Backfill: Arisings.				Groundwater: None encountered.			
Remarks: ST105 terminated at 1.10m bgl. Refer to DWG P22044 ST105 for cross sectional detail.							

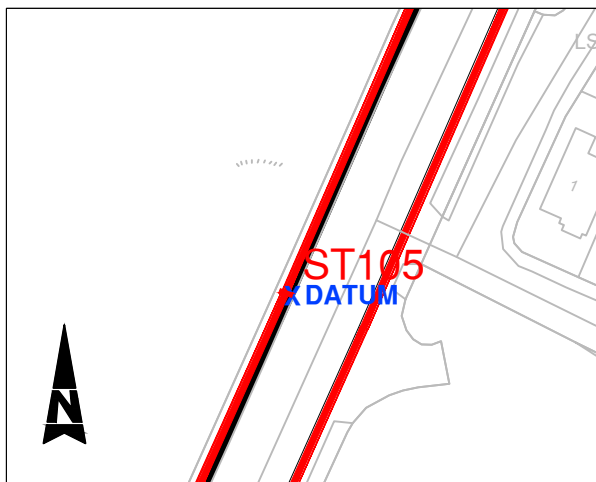


SLIT TRENCH PLAN, 1:50 ON A4



1. 3no.30MMØ green, orange, yellow PVC fibre optic ducts
2. 100MMØ dark grey PVC water main
3. 100MMØ yellow PE gas main, collar or service also fiund
4. 120MMØ clay duct, fibre or telecom, CAT signal
5. 6MMØ dark grey PVC duct, possibly fibre optic

SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES: EASTING: 671312.1 NORTHING: 675134.3 LEVEL: 50.627mAOD		SLIT TRENCH NUMBER: ST105
KEY: DATUM: X		JOB NAME: Mortarstown WWTP Co. Carlow
SLIT TRENCH DIMENSIONS: LENGTH: 1.90m WIDTH: 0.60m DEPTH: 1.10m		JOB NUMBER: P22044
STRATA SHOWN ON DETAILED LOG		DRAWING NUMBER: P22044-ST105
DRAWN BY: Gary Curtin	DATE: 17/06/2022	
LOGGED BY: K.H.	DATE: 15/06/2022	
SCALE: AS STATED	APPROVED: GH	
REVISION: D01		

Photographic Record



Number:

ST105

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS



Number:

ST105

**Project
Project No
Engineer**

Mortarstown WWTP
P22044
ATKINS

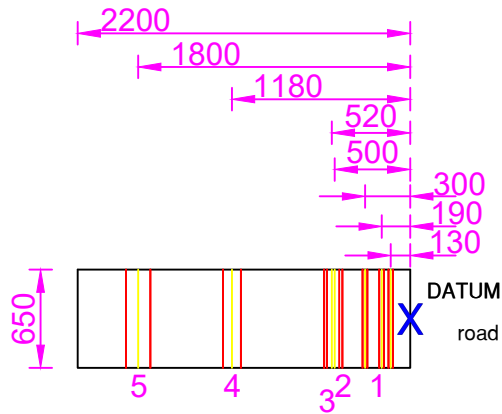
Project Name: Mortarstown WWTP	Project No. P22044	Co-ords: 671340E - 675197N Level: 50.31m OD	Date 15/06/2022
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Location: Mortarstown, Co. Carlow.	Dimensions (m): 2.20 0.65	Scale 1:25
Client: Irish Water	Depth: 0.86m BGL	Logged KH

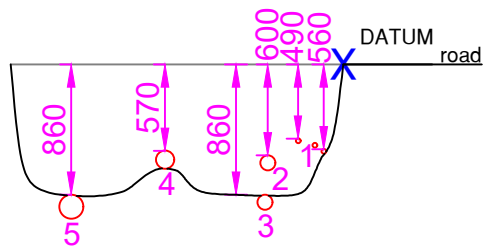
Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.10			0.10	50.21		(TOPSOIL)	
	0.50 0.50 - 0.86	ENV B					(MADE GROUND) Loose, brown, slightly sandy gravelly SILT with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to rounded.	
				0.86	49.45		End of Pit at 0.860m	1
								2
								3
								4
								5

Stability: Good. Plant: 3t tracked excavator. Backfill: Arisings.	Groundwater: None encountered.
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Remarks: ST106 terminated at 0.86m bgl. Refer to DWG P22044 ST106 for cross sectional detail.

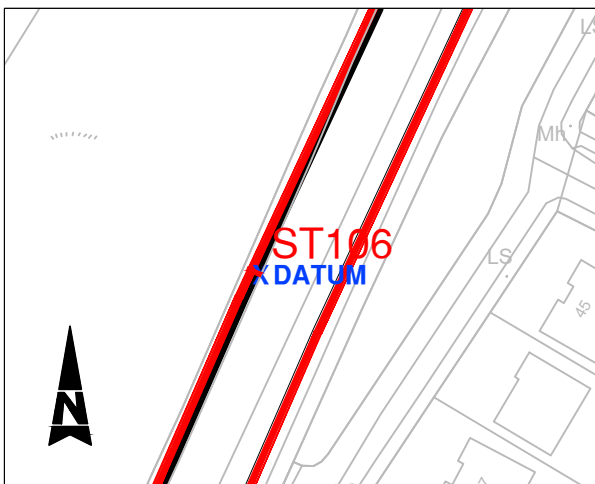


SLIT TRENCH PLAN, 1:50 ON A4



1. 3no.30MMØ green, orange, yellow PVC fibre optic ducts
2. 100MMØ dark grey PVC water main
3. 100MMØ dark grey PVC pipe, possible gas
4. 120MMØ orange clay pipe, CAT power signal
5. 160MMØ dark grey PVC duct, assumed fibre, CAT power signal

SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES: EASTING: 671339.8 NORTHING: 675196.6 LEVEL: 50.314mAOD		SLIT TRENCH NUMBER: ST106
KEY: DATUM: X		JOB NAME: Mortarstown WWTP Co. Carlow
SLIT TRENCH DIMENSIONS: LENGTH: 2.20m WIDTH: 0.65m DEPTH: 0.86m		JOB NUMBER: P22044
STRATA SHOWN ON DETAILED LOG		DRAWING NUMBER: P22044-ST106
DRAWN BY: Gary Curtin	DATE: 17/06/2022	
LOGGED BY: K.H.	DATE: 15/06/2022	
SCALE: AS STATED	APPROVED: GH	



Number:

ST106

**Project
Project No
Engineer**

Mortarstown WWTP
P22044
ATKINS



Number:

ST106

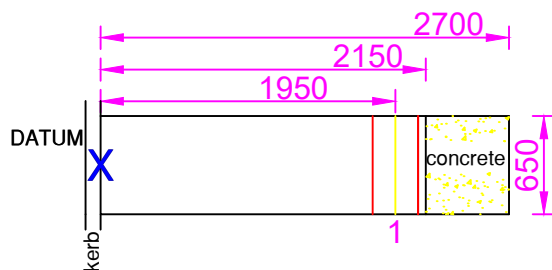
Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

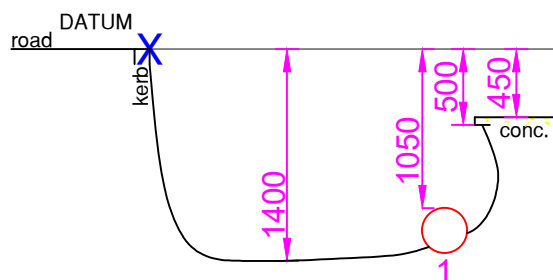
		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No ST107 Sheet 1 of 1	
Project Name: Mortarstown WWTP		Project No. P22044		Co-ords: 671406E - 675305N Level: 49.28m OD		Date 15/06/2022
Location: Mortarstown, Co. Carlow.				Dimensions (m): 0.65 2.70		Scale 1:25
Client: Irish Water				Depth: 1.40m BGL		Logged KH

Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
				0.15	49.13		(TOPSOIL)	
	0.50 - 1.10	B					(MADE GROUND) Loose, brown, silty gravelly SAND with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded.	1
	1.10 - 1.50	B		1.10	48.18		Beige, slightly gravelly sandy CLAY. Sand is fine to coarse. (Possible Made Ground)	
				1.40	47.88		End of Pit at 1.400m	2
								3
								4
								5

Stability: Good. Plant: 3t tracked excavator. Backfill: Arisings.	Groundwater: None encountered.
Remarks: ST107 terminated at 1.40m bgl. Refer to DWG P22044 ST107 for cross sectional detail.	

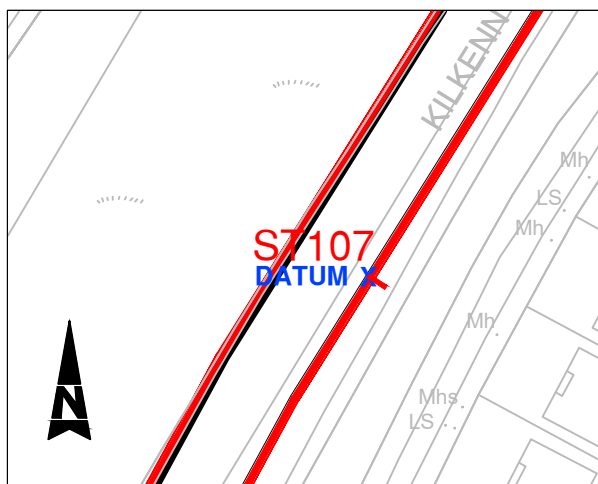


SLIT TRENCH PLAN, 1:50 ON A4



1. 300MMØ concrete pipe, assumed storm or sewer pipe

SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES:
EASTING: 671406.2
NORTHING: 675305.2
LEVEL: 49.281mAOD

SLIT TRENCH NUMBER:

ST107

JOB NAME:

Mortarstown WWTP
Co. Carlow

JOB NUMBER:

P22044

DRAWING NUMBER:

P22044-ST107

KEY:
DATUM: X

SLIT TRENCH DIMENSIONS:
LENGTH: 2.70m
WIDTH: 0.65m
DEPTH: 1.40m

STRATA SHOWN ON DETAILED LOG

DRAWN BY:
Gary Curtin

DATE:
16/06/2022

LOGGED BY:
K.H.

DATE:
15/06/2022

SCALE:
AS STATED

APPROVED:
GH

REVISION:
D01





Number:

ST107

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

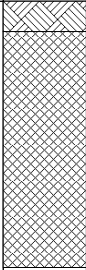


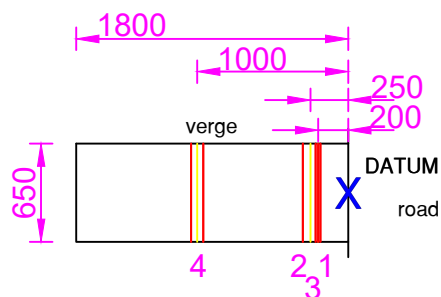
Number:

ST107

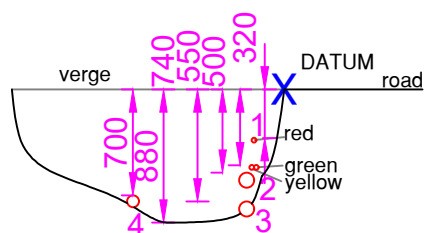
Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No ST108 Sheet 1 of 1			
Project Name: Mortarstown WWTP		Project No. P22044		Co-ords: 671432E - 675363N Level: 48.22m OD		Date 15/06/2022		
Location: Mortarstown, Co. Carlow.				Dimensions (m): 1.50 0.65		Scale 1:25		
Client: Irish Water				Depth: 0.88m BGL		Logged KH		
Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.50 0.50 - 0.88	ENV B		0.10	48.12		(TOPSOIL)	
				(MADE GROUND) Loose, brown, clayey very sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is fine to coarse. Cobbles are sub-angular to rounded, 63-200mm dia.				
				0.88	47.34		End of Pit at 0.880m	
							1	
							2	
							3	
							4	
							5	
Stability: Good. Plant: 3t tracked excavator. Backfill: Arisings.				Groundwater: None encountered.				
Remarks: ST108 terminated at 0.88m bgl. Refer to DWG P22044 ST108 for cross sectional detail.								

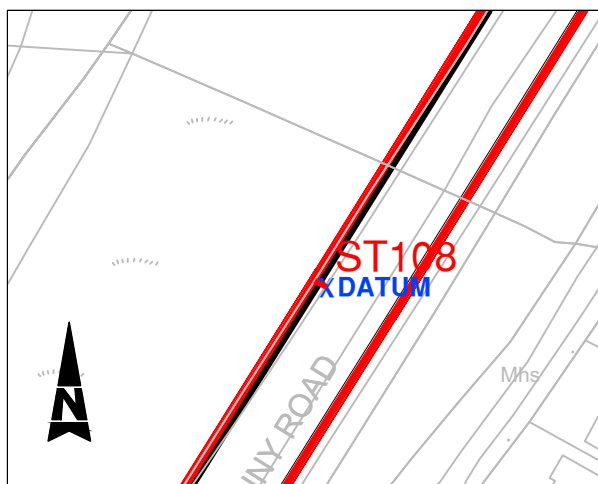


SLIT TRENCH PLAN, 1:50 ON A4



1. 3no.30MMØ red/orange, green, yellow PVC fibre optic ducts
2. 100MMØ dark grey PVC water pipe
3. 100MMØ yellow PE gas pipe
4. 80MMØ blue corrugated plastic duct, possibly fibre optic

SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES:
EASTING: 671431.7
NORTHING: 675363.1
LEVEL: 48.224mAOD

SLIT TRENCH NUMBER:

ST108

JOB NAME:

Mortarstown WWTP
Co. Carlow

JOB NUMBER:

P22044

DRAWING NUMBER:

P22044-ST108

KEY:
DATUM: X

SLIT TRENCH DIMENSIONS:
LENGTH: 1.80m
WIDTH: 0.65m
DEPTH: 0.88m

STRATA SHOWN ON DETAILED LOG

DRAWN BY:
Gary Curtin

DATE:
16/06/2022

LOGGED BY:
K.H.

DATE:
15/06/2022

SCALE:
AS STATED

APPROVED:
GH

REVISION:
D01





Number:

ST108

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

Photographic Record



Number:

ST108

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS



Priority Geotechnical Ltd.
Tel: 021 4631600
Fax: 021 4638690
www.prioritygeotechnical.ie

Trial Pit No

ST109

Sheet 1 of 1

Project Name: Mortarstown WWTP

Project No.
P22044

Co-ords: 671491E - 675457N
Level: 46.68m OD

Date
15/06/2022

Location: Mortarstown, Co. Carlow.

Dimensions (m):

4.00

Scale
1:25

Client: Irish Water

Depth:
1.52m BGL

Logged
KH

Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.50 - 1.52	B		0.10	46.58		(TOPSOIL)	
				1.52	45.16		(MADE GROUND) Loose, brown, clayey very sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is fine to coarse. Cobbles are sub-angular to rounded, 63-200mm dia. End of Pit at 1.520m	

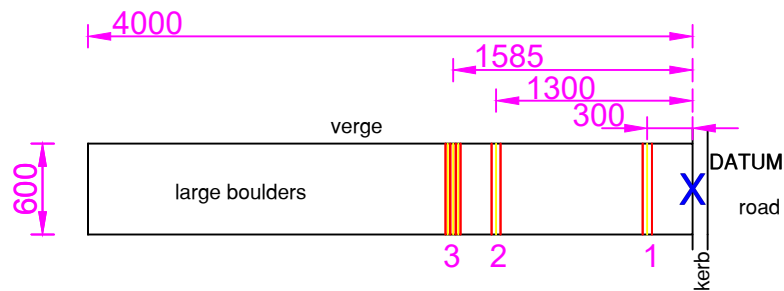
Stability: Good.

Plant: 3t tracked excavator.

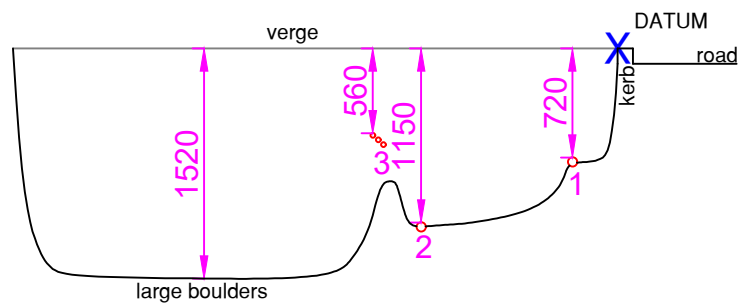
Backfill: Arisings.

Groundwater: None encountered.

Remarks: ST109 terminated at 1.52m bgl. Refer to DWG P22044 ST109 for cross sectional detail.

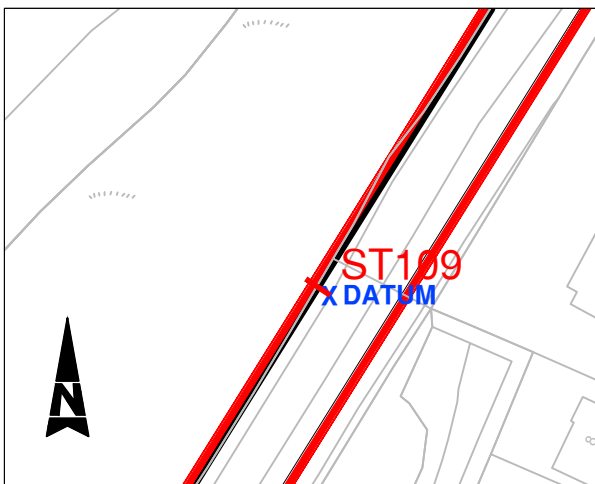


SLIT TRENCH PLAN, 1:50 ON A4



1. 60MMØ dark grey PVC water pipe
2. 60MMØ dark grey PVC electrical duct
3. 3no.30MMØ red/green/yellow PVC fibre optic ducts

SLIT TRENCH SECTION, 1:50 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES:
EASTING: 671491.0
NORTHING: 675456.6
LEVEL: 46.677mAOD

KEY:
DATUM: X

SLIT TRENCH DIMENSIONS:
LENGTH: 4.00m
WIDTH: 0.60m
DEPTH: 1.52m

STRATA SHOWN ON DETAILED LOG

DRAWN BY: Gary Curtin
DATE: 16/06/2022

LOGGED BY: K.H.
DATE: 15/06/2022

SCALE: AS STATED
APPROVED: GH
REVISION: D01

SLIT TRENCH NUMBER:

ST109

JOB NAME:

Mortarstown WWTP
Co. Carlow

JOB NUMBER:

P22044

DRAWING NUMBER:

P22044-ST109





Number:

ST109

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS



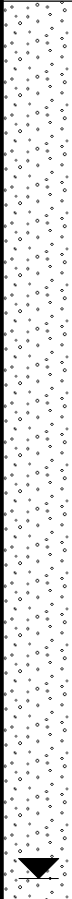
Number:

ST109

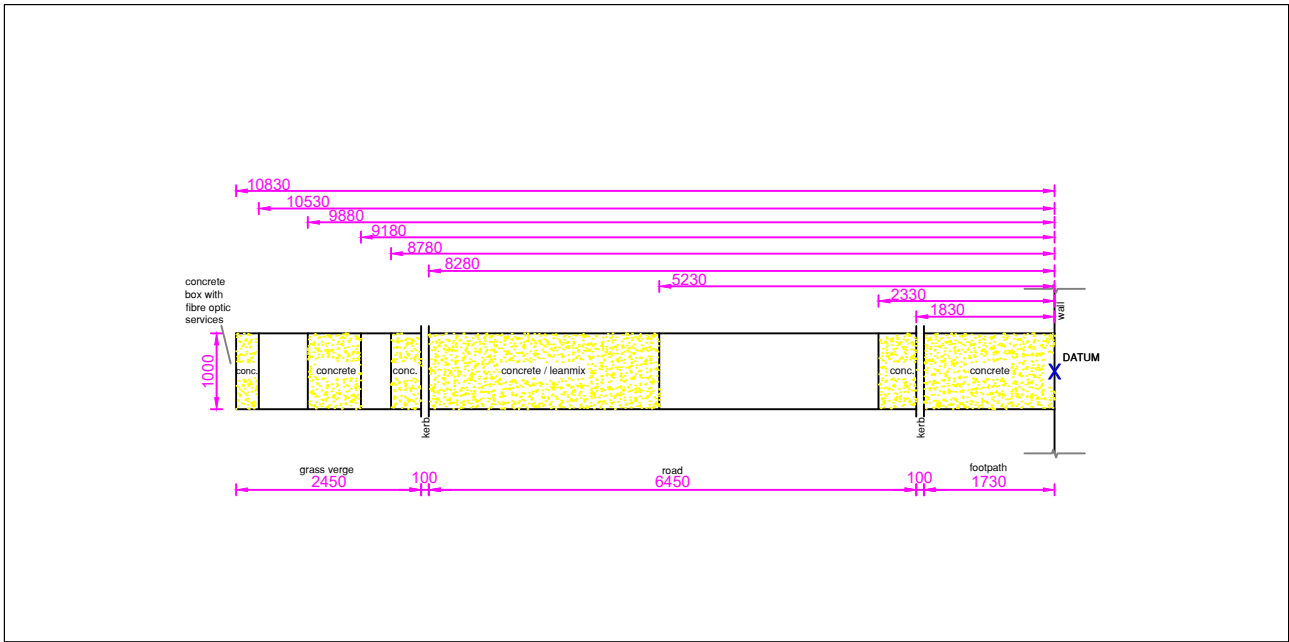
Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

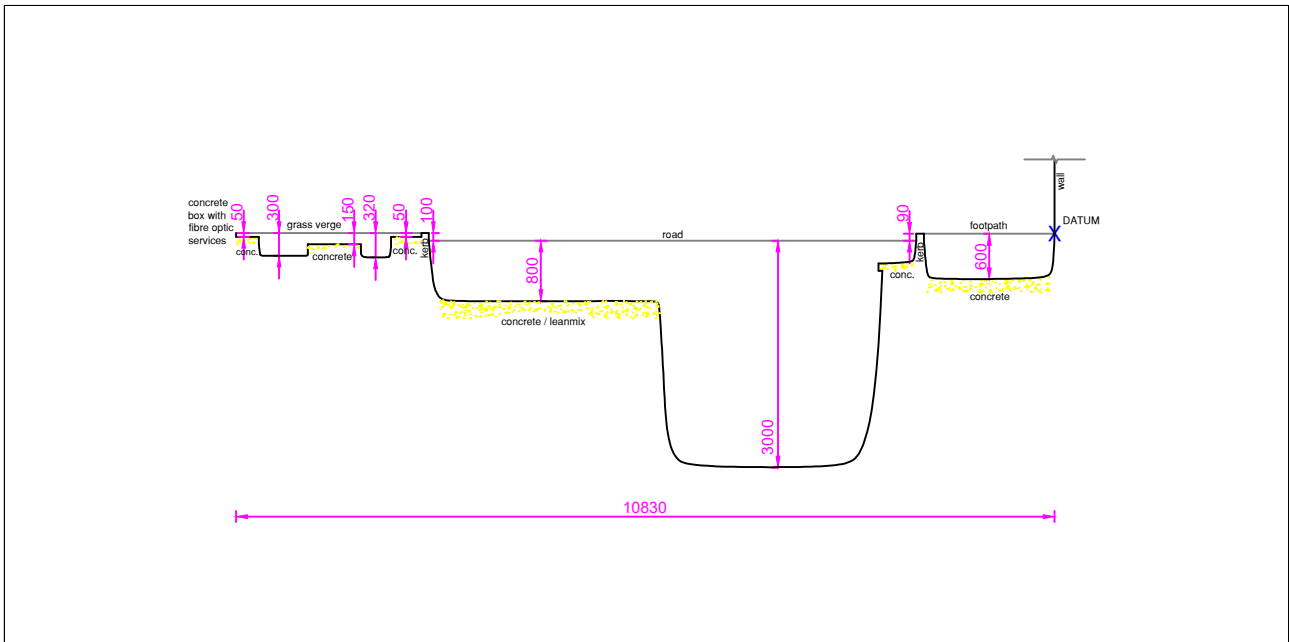
		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No ST110 Sheet 1 of 1	
Project Name: Mortarstown WWTP		Project No. P22044		Co-ords: 671574E - 675582N Level: 47.42m OD		Date 13/06/2022
Location: Mortarstown, Co. Carlow.				Dimensions (m): 1.00 10.83		Scale 1:25
Client: Irish Water				Depth: 3.00m BGL		Logged KH

Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
				0.15	47.27		Bituminous surfacing.	
	0.30	ENV					(MADE GROUND) Brown, slightly silty gravelly COBBLES. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded. Cobbles are sub-rounded to rounded.	
	0.65 - 1.10	B		0.65	46.77		Orange brown, slightly gravelly sandy CLAY. Sand is fine to coarse.	1
	0.65 - 1.10	D						
				1.10	46.32		Orange brown, clayey SAND. Sand is fine to coarse.	
		1.50 - 2.30	B					
		1.50 - 2.30	D					
		1.50						
		1.50						
		1.50						
				2.30	45.12		Beige, very silty very gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded.	
	2.50 - 3.00	B						
	2.50 - 3.00	D						
				3.00	44.42		End of Pit at 3.000m	3
								4
								5

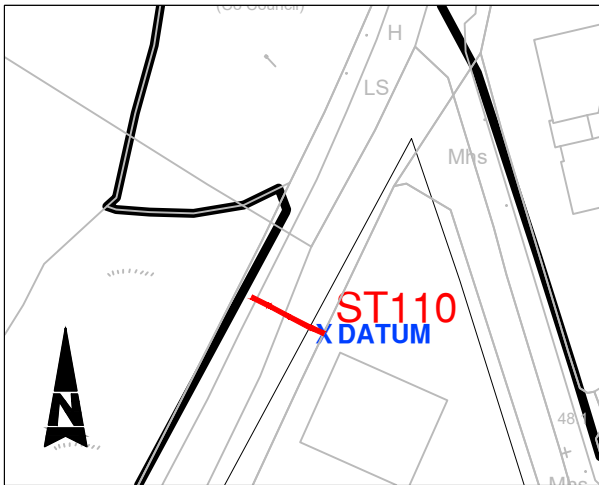
Stability: Good.		Groundwater: 2.90m: Trickle flow rate.	
Plant: 3t tracked excavator.			
Backfill: Leanmix and tar.			
Remarks: ST110 terminated at 3.00m bgl. Refer to DWG P22044 ST110 for cross sectional detail.			



SLIT TRENCH PLAN, 1:100 ON A4



SLIT TRENCH SECTION, 1:100 ON A4



SLIT TRENCH LOCATION PLAN, 1:1000 ON A4

DATUM COORDINATES: EASTING: 671573.9 NORTHING: 675581.9 LEVEL: 47.424mAOD		SLIT TRENCH NUMBER: ST110
KEY: DATUM: X		JOB NAME: Mortarstown WWTP Co. Carlow
SLIT TRENCH DIMENSIONS: LENGTH: 10.83m WIDTH: 1.00m DEPTH: 3.00m		JOB NUMBER: P22044
STRATA SHOWN ON DETAILED LOG		DRAWING NUMBER: P22044-ST110
DRAWN BY: Gary Curtin	DATE: 15/06/2022	
LOGGED BY: K.H.	DATE: 13/06/2022	
SCALE: AS STATED	APPROVED: GH	
REVISION: D01		



Number:

ST110

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS



Number:

ST110

Project
Project No
Engineer

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P22044
ATKINS



Number:

ST110

Project
Project No
Engineer

Mortarstown WWTP
P22044
ATKINS

KEY TO SYMBOLS - LABORATORY TEST RESULT

U	Undisturbed Sample	
P	Piston Sample	
TWS	Thin Wall Sample	
B	Bulk Sample - Disturbed	
D	Jar Sample - Disturbed	
W	Water Sample	
pH	Acidity/Alkalinity Index	
SO ₃	% - Total Sulphate Content (acid soluble)	
SO ₃	g/ltr - Water Soluble Sulphate (Water or 2:1 Aqueous Soil Extract)	
+	Calcareous Reaction	
Cl	Chloride Content	
PI	Plasticity Index	
<425	% of material in sample passing 425 micron sieve	
LL	Liquid Limit	
PL	Plastic Limit	
MC	Water Content	
NP	Non Plastic	
Y _b	Bulk Density	
Y _d	Dry Density	
Ps	Particle Density	
U/D	Undrained/Drained Triaxial	
U/C	Unconsolidated/Consolidated Triaxial	
T/M	Single Stage/Multistage Triaxial	
100/38	Sample Diameter (mm)	
REM	Remoulded Triaxial Test Specimen	
TST	Triaxial Suction Test	
V	Vane Test	
DSB	Drained Shear Box	
RSB	Residual Shear Box	
RS	Ring Shear	
σ ₃	Cell Pressure	
σ ₁ -σ ₃	Deviator Stress	
c	Cohesion	
c ₋	Effective Cohesion Intercept	
φ	Angle of Shearing Resistance - Degrees	
φ ₋	Effective Angle of Shearing Resistance	
ε _f	Strain at Failure	
*	Failed under 1 st Load	
**	Failed under 2 nd Load	
#	Untestable	
##	Excessive Strain	
p _o	Effective Overburden Pressure	
m _v	Coefficient of Volume Decrease	
c _v	Coefficient of Consolidation	
Opt	Optimum	
Nat	Natural	
Std	Standard Compaction - 2.5kg Rammer	(¶ CBR)
Hvy	Heavy Compaction - 4.5kg Rammer	(§ CBR)
Vib	Vibratory Compaction	
CBR	California Bearing Ratio	
Sat m.c.	Saturation Moisture Content	
MCV	Moisture Condition Value	

Natural Moisture Content/Atterberg Limits Summary

Job Ref

BS 1377 : Part 2 : 1990 : Clause 3

Location

Mortarstown WWTP

P22044

Hole ID	Sample Ref	Depth (m)	Sample Type	Sample Description	MC	LL	PL	PI	% Pass 425
BH101	1	0	B	Very gravelly very clayey SAND	25	34	23	11	61.8
BH101	2	1	B	Very sandy GRAVEL with high cobble content	6				
BH102	4	3	B	Clayey sandy GRAVEL with high cobble content	5				
BH103	1	0	B	Slightly gravelly sandy CLAY	20	25	17	8	85.6
BH103	2	1	B	Very gravelly very clayey SAND	19	28	19	9	69.3
BH103	3	2	B	Silty very sandy GRAVEL with medium cobble content	12	22	17	5	52.5
BH103	6	5	B	Very clayey very sandy GRAVEL	18	25	16	9	71
BH104	1	0	B	Slightly gravelly sandy CLAY	12	24	17	7	60.4
BH104	3	2	B	Slightly gravelly slightly sandy CLAY	19	30	20	10	77.1
BH104	4	3	B	Slightly gravelly silty SAND	24				
BH105	2	1	B	Slightly gravelly sandy SILT	16	23	NP	NP	73.9
BH105	8	6	B	Slightly silty sandy GRAVEL with medium cobble content	7				
RC101	1	6	WS	Slightly gravelly silty SAND	20				
RC101	4	10.5	WS	Slightly sandy SILT	9	31	NP	NP	99.7
RC101	5	12	WS	Slightly gravelly slightly sandy SILT	17				
RC102	1	6	B	Slightly gravelly silty SAND	22				
RC102	4	10.5	WS	Slightly gravelly silty SAND	20				
RC102	6	13.5	B	Silty SAND	25				
RC102	7	16.5	B	Slightly gravelly very silty SAND	21				
RC103	1	10.5	WS	Sandy SILT	24				

Natural Moisture Content/Atterberg Limits Summary

Job Ref

BS 1377 : Part 2 : 1990 : Clause 3

Location

Mortarstown WWTP

P22044

Hole ID	Sample Ref	Depth (m)	Sample Type	Sample Description	MC	LL	PL	PI	% Pass 425
RC103	2	12	B	Slightly sandy SILT	31				
RC104	1	6	WS	Slightly gravelly silty SAND	22				
RC104	3	9	WS	Slightly gravelly sandy SILT	22				
RC104	4	10.5	WS	Slightly gravelly slightly sandy SILT	21				
RC105	1	7.5	WS	Very silty SAND	20				
RC105	3	12	WS	Silty SAND	23				
RC105	4	13.5	WS	Silty SAND	23				
RC105	5	15	WS	Silty SAND	22				
ST101	1	0.3	B	Very gravelly very silty SAND	20				
ST101	3	1.5	B	Slightly gravelly sandy SILT	38				
ST102	2	0.4	D	Silty sandy GRAVEL with medium cobble content	10	29	23	6	41.4
ST102	4	1.5	D	Slightly sandy gravelly CLAY with low cobble content	14	26	16	10	67.1
ST102A	2	0.5	D	Very clayey very sandy GRAVEL with medium cobble content	10	25	17	8	57.5
ST104	1	0.1	B	Slightly silty very sandy GRAVEL	12				
ST106	1	0.5	B	Very clayey very sandy GRAVEL	11	27	19	8	44.4
ST107	2	1.1	B	Slightly gravelly sandy CLAY	18				
ST108	1	0.5	B	Clayey very sandy GRAVEL	10				
ST109	1	0.5	B	Clayey very sandy GRAVEL	13	27	20	7	50.5
ST110	2	0.65	D	Slightly gravelly sandy CLAY	18				
ST110	4	1.5	D	Silty SAND	20	23	NP	NP	93.7

Location

Mortarstown WWTP

P22044

[illegible]

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH101

Location

Mortarstown WWTP

Sample No

1

Depth

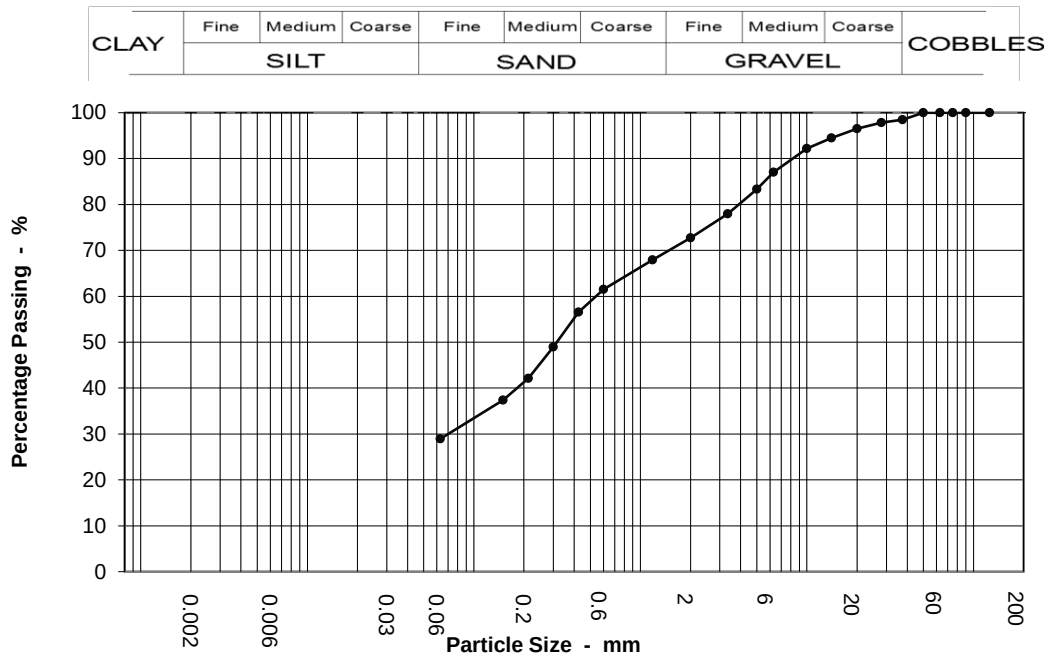
0.00 m

Soil Description

Very gravelly very clayey SAND

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	98		
28	98		
20	97		
14	94		
10	92		
6.3	87		
5	83		
3.35	78		
2	73		
1.18	68		
0.6	62		
0.425	57		
0.3	49		
0.212	42		
0.15	37		
0.063	29		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	27.0
Sand	44.0
Silt & Clay	29.0

Grading Analysis	
D100	50.00
D60	0.54
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH101

Location

Mortarstown WWTP

Sample No

2

Depth

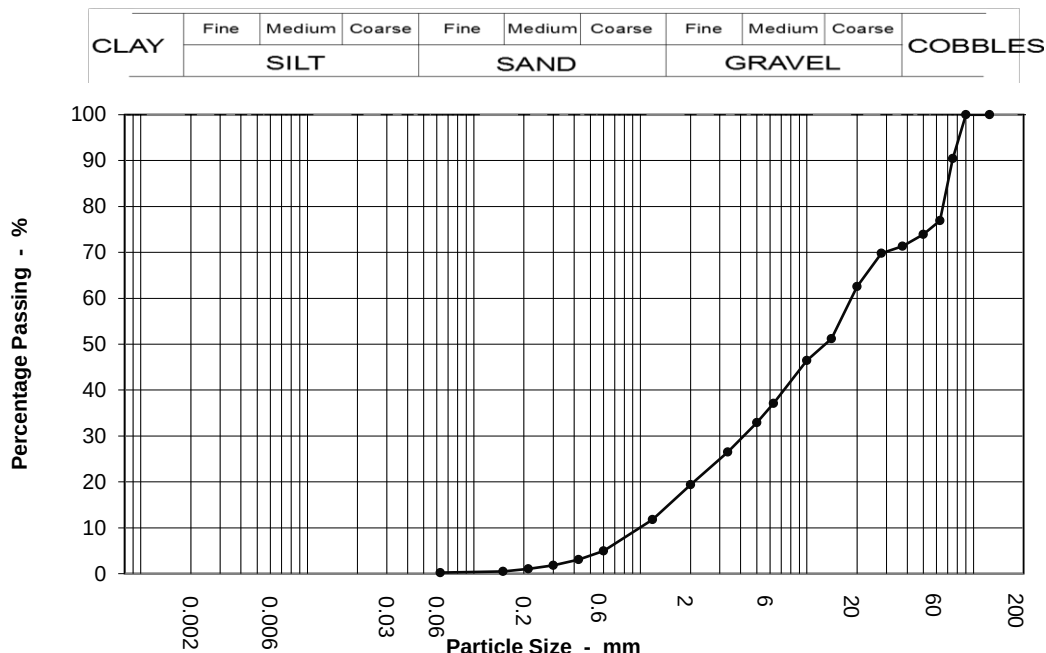
1.00 m

Soil Description

Very sandy GRAVEL with high cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	90		
63	77		
50	74		
37.5	71		
28	70		
20	63		
14	51		
10	46		
6.3	37		
5	33		
3.35	27		
2	19		
1.18	12		
0.6	5		
0.425	3		
0.3	2		
0.212	1		
0.15	1		
0.063	0		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	23.0
Gravel	57.0
Sand	19.0
Silt & Clay	0.0

Grading Analysis	
D100	90.00
D60	18.50
D10	0.99
Uniformity Coefficient	19.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH101

Location

Mortarstown WWTP

Sample No

4

Depth

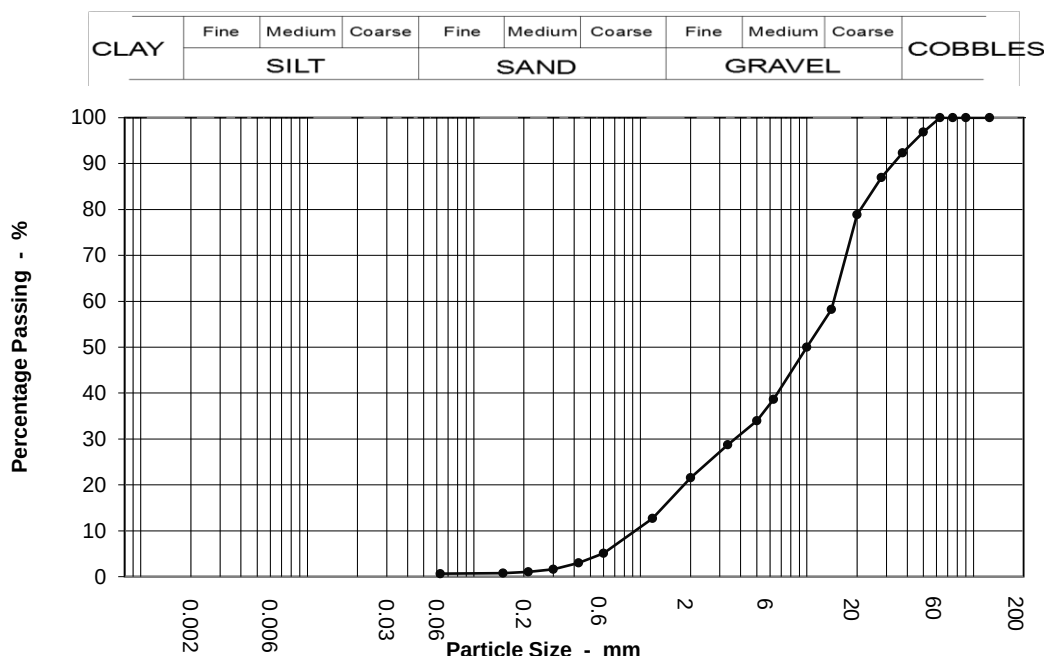
3.00 m

Soil Description

Slightly clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	97		
37.5	92		
28	87		
20	79		
14	58		
10	50		
6.3	39		
5	34		
3.35	29		
2	22		
1.18	13		
0.6	5		
0.425	3		
0.3	2		
0.212	1		
0.15	1		
0.063	1		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	78.0
Sand	21.0
Silt & Clay	1.0

Grading Analysis	
D100	63.00
D60	14.40
D10	0.93
Uniformity Coefficient	16.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH102

Location

Mortarstown WWTP

Sample No

3

Depth

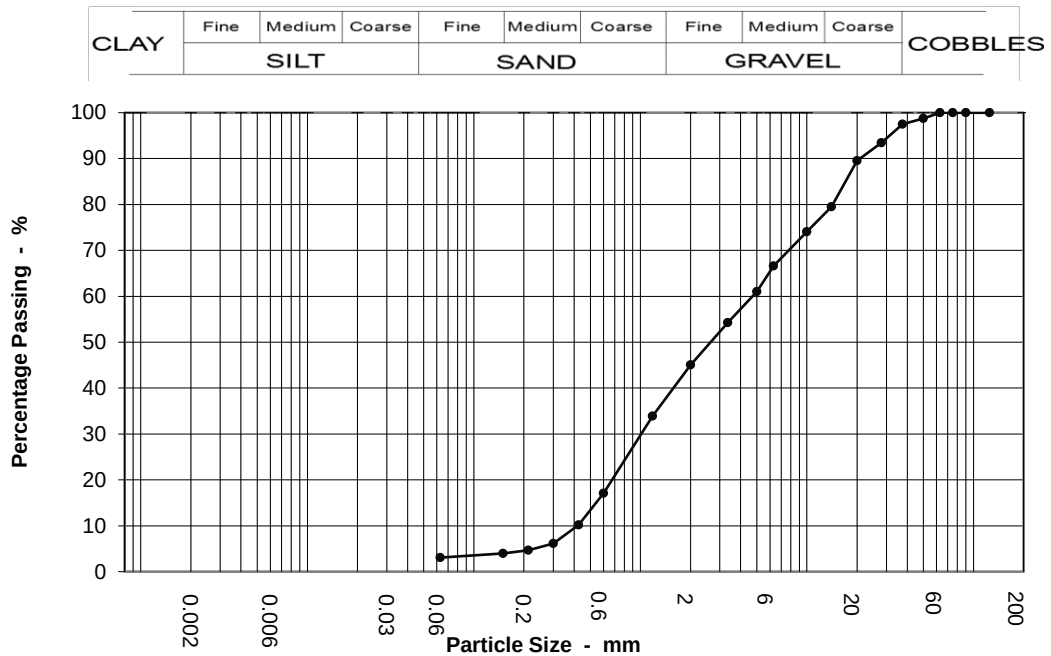
2.00 m

Soil Description

Slightly clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	99		
37.5	97		
28	93		
20	90		
14	79		
10	74		
6.3	67		
5	61		
3.35	54		
2	45		
1.18	34		
0.6	17		
0.425	10		
0.3	6		
0.212	5		
0.15	4		
0.063	3		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	55.0
Sand	42.0
Silt & Clay	3.0

Grading Analysis	
D100	63.00
D60	4.71
D10	0.42
Uniformity Coefficient	11.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH102

Location

Mortarstown WWTP

Sample No

4

Depth

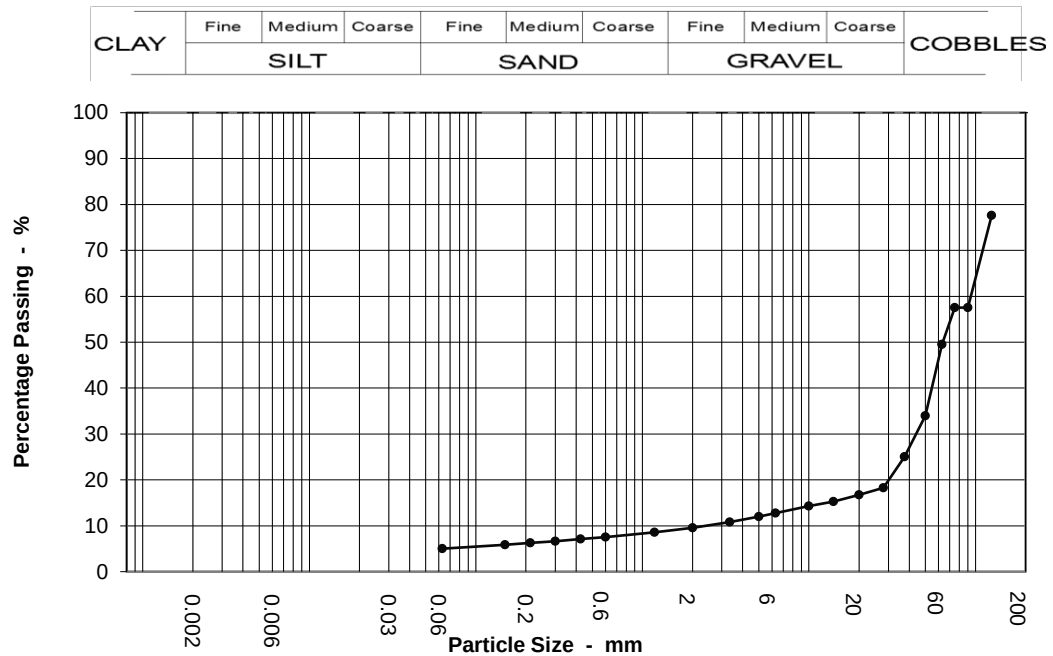
3.00 m

Soil Description

Clayey sandy GRAVEL with high cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	78		
90	58		
75	58		
63	50		
50	34		
37.5	25		
28	18		
20	17		
14	15		
10	14		
6.3	13		
5	12		
3.35	11		
2	10		
1.18	9		
0.6	8		
0.425	7		
0.3	7		
0.212	6		
0.15	6		
0.063	5		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	50.0
Gravel	40.0
Sand	5.0
Silt & Clay	5.0

Grading Analysis	
D100	
D60	93.70
D10	2.42
Uniformity Coefficient	39.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH103

Location

Mortarstown WWTP

Sample No

1

Depth

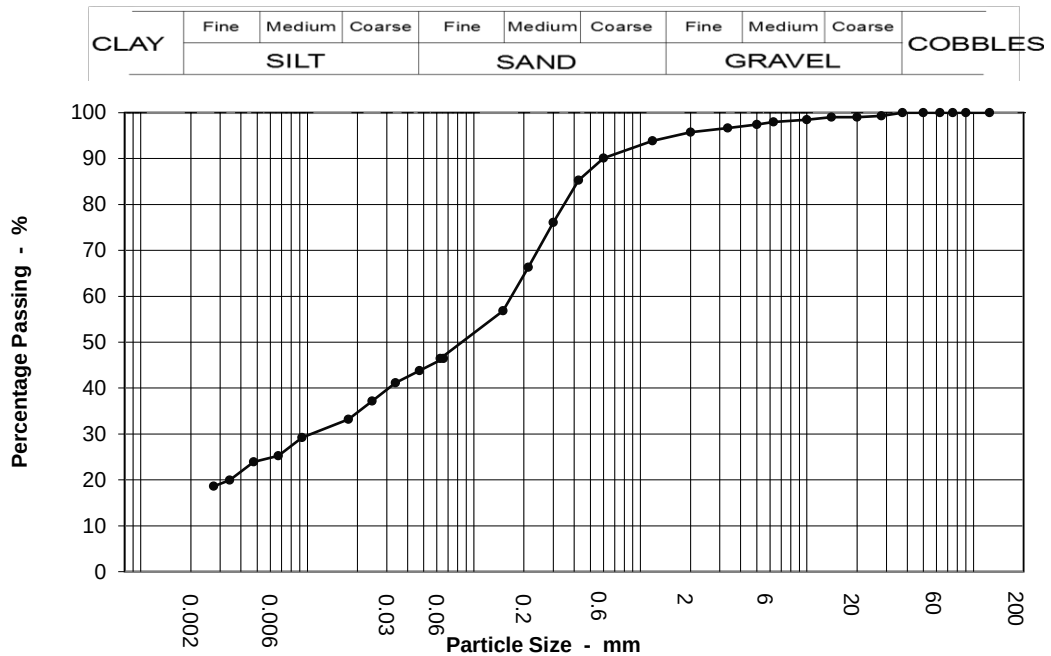
0.00 m

Soil Description

Slightly gravelly sandy CLAY

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.066	46
90	100	0.047	44
75	100	0.034	41
63	100	0.024	37
50	100	0.018	33
37.5	100	0.009	29
28	99	0.007	25
20	99	0.005	24
14	99	0.003	20
10	98	0.003	19
6.3	98	0.001	16
5	97		
3.35	97		
2	96		
1.18	94		
0.6	90		
0.425	85		
0.3	76		
0.212	66		
0.15	57		
0.063	46		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	4.0
Sand	49.0
Silt	29.0
Clay	17.0

Grading Analysis	
D100	37.50
D60	0.17
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH103

Location

Mortarstown WWTP

Sample No

2

Depth

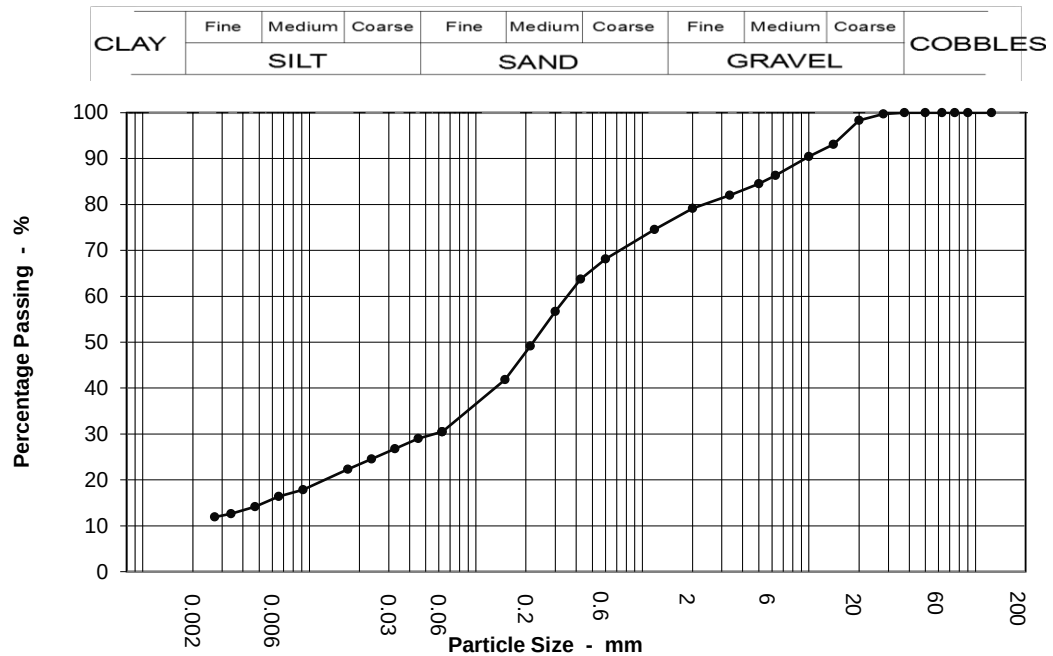
1.00 m

Soil Description

Very gravelly very clayey SAND

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.063	30
90	100	0.045	29
75	100	0.033	27
63	100	0.024	25
50	100	0.017	22
37.5	100	0.009	18
28	100	0.007	16
20	98	0.005	14
14	93	0.003	13
10	90	0.003	12
6.3	86	0.001	10
5	85		
3.35	82		
2	79		
1.18	75		
0.6	68		
0.425	64		
0.3	57		
0.212	49		
0.15	42		
0.063	30		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	21.0
Sand	49.0
Silt	20.0
Clay	11.0

Grading Analysis	
D100	37.50
D60	0.35
D10	0.00
Uniformity Coefficient	220.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH103

Location

Mortarstown WWTP

Sample No

3

Depth

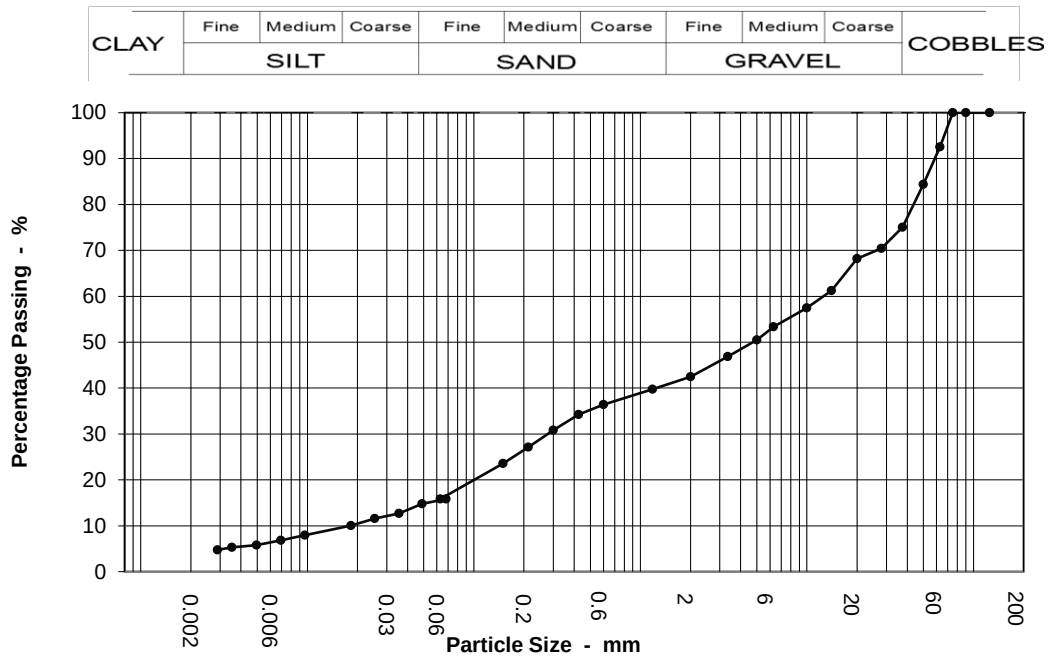
2.00 m

Soil Description

Silty very sandy GRAVEL with medium cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.068	16
90	100	0.049	15
75	100	0.036	13
63	93	0.025	12
50	84	0.018	10
37.5	75	0.010	8
28	70	0.007	7
20	68	0.005	6
14	61	0.004	5
10	57	0.003	5
6.3	53	0.002	4
5	50		
3.35	47		
2	42		
1.18	40		
0.6	36		
0.425	34		
0.3	31		
0.212	27		
0.15	24		
0.063	16		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	7.0
Gravel	50.0
Sand	27.0
Silt	11.0
Clay	4.0

Grading Analysis	
D100	75.00
D60	12.60
D10	0.02
Uniformity Coefficient	690.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH103

Location

Mortarstown WWTP

Sample No

5

Depth

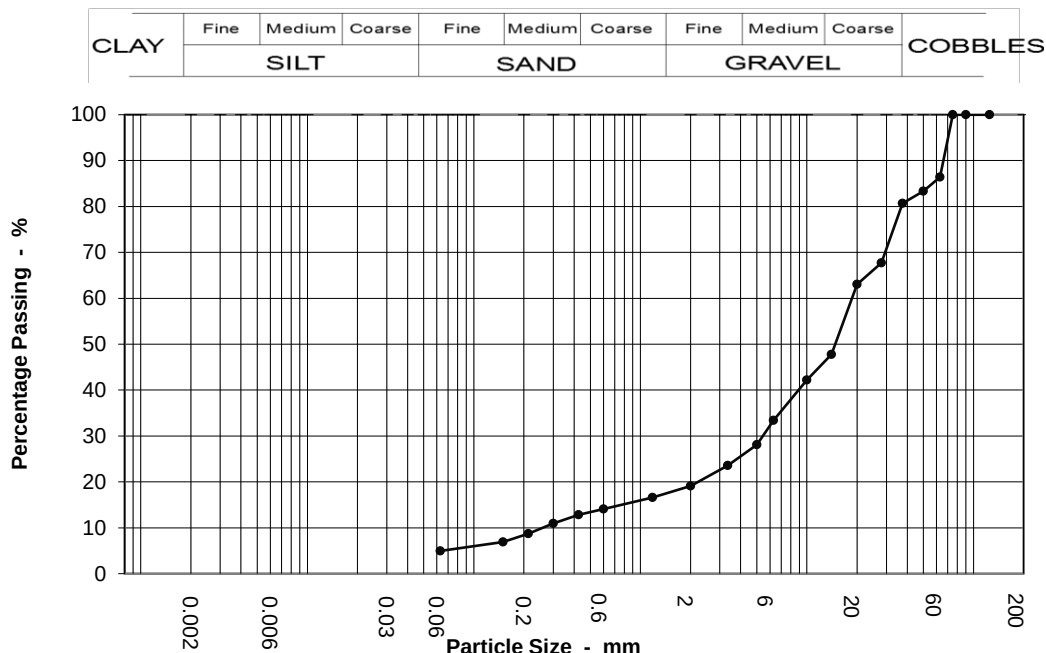
4.00 m

Soil Description

Silty sandy GRAVEL with medium cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	86		
50	83		
37.5	81		
28	68		
20	63		
14	48		
10	42		
6.3	33		
5	28		
3.35	24		
2	19		
1.18	17		
0.6	14		
0.425	13		
0.3	11		
0.212	9		
0.15	7		
0.063	5		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	14.0
Gravel	67.0
Sand	14.0
Silt & Clay	5.0

Grading Analysis	
D100	75.00
D60	18.60
D10	0.26
Uniformity Coefficient	72.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH103

Location

Mortarstown WWTP

Sample No

6

Depth

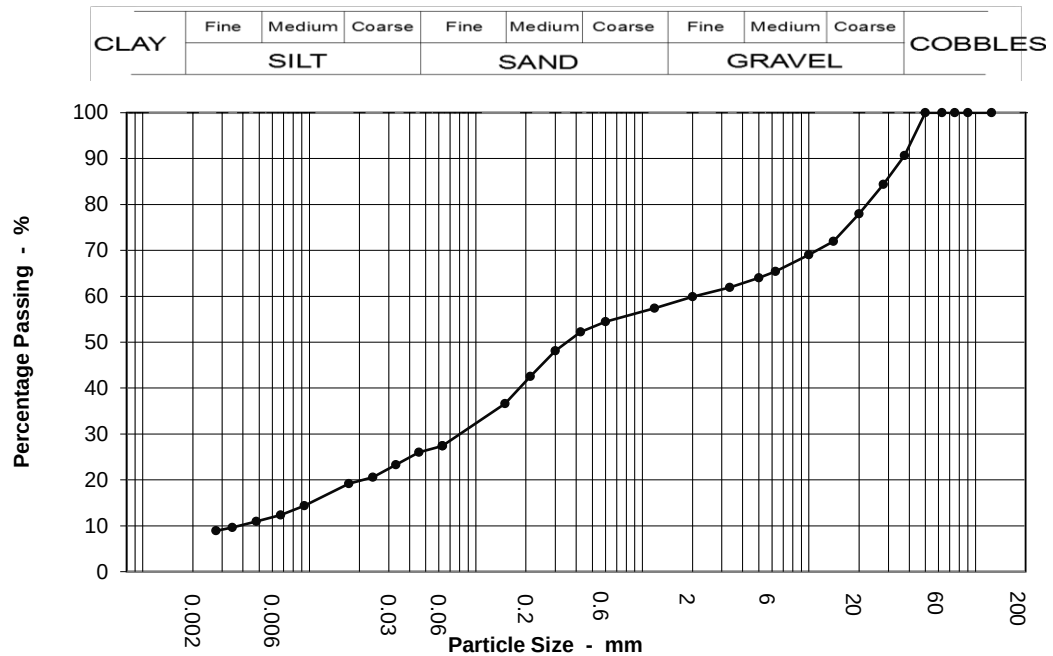
5.00 m

Soil Description

Very clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.063	27
90	100	0.045	26
75	100	0.033	23
63	100	0.024	21
50	100	0.017	19
37.5	91	0.009	14
28	84	0.007	12
20	78	0.005	11
14	72	0.003	10
10	69	0.003	9
6.3	65	0.002	7
5	64		
3.35	62		
2	60		
1.18	57		
0.6	54		
0.425	52		
0.3	48		
0.212	43		
0.15	37		
0.063	27		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	40.0
Sand	33.0
Silt	20.0
Clay	8.0

Grading Analysis	
D100	50.00
D60	2.04
D10	0.00
Uniformity Coefficient	540.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH104

Location

Mortarstown WWTP

Sample No

3

Depth

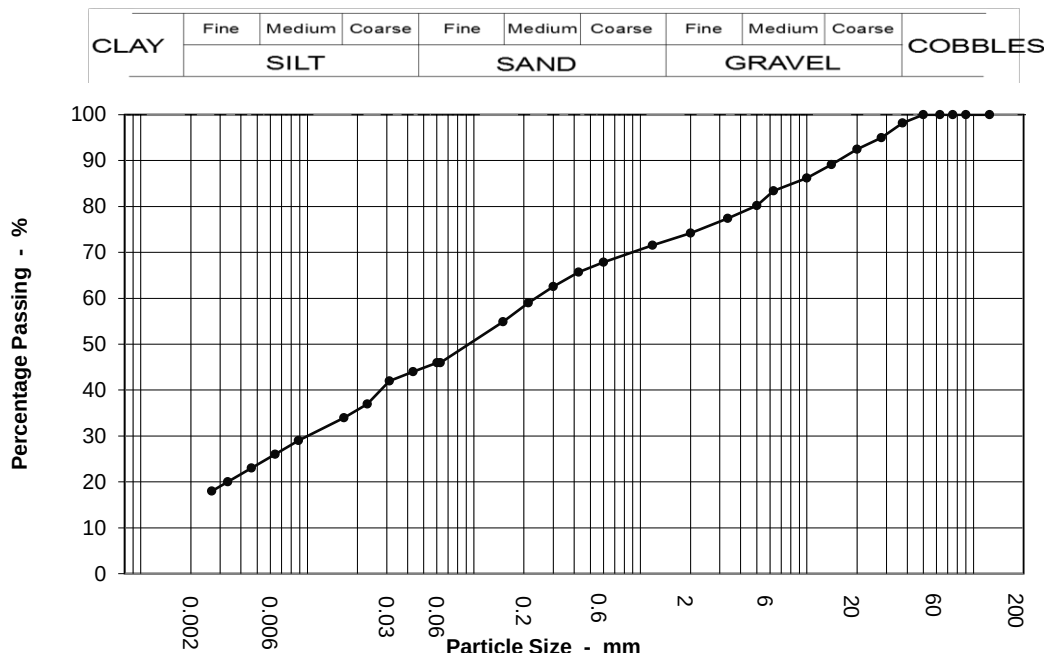
2.00 m

Soil Description

Slightly gravelly slightly sandy CLAY

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.060	46
90	100	0.043	44
75	100	0.031	42
63	100	0.023	37
50	100	0.017	34
37.5	98	0.009	29
28	95	0.006	26
20	92	0.005	23
14	89	0.003	20
10	86	0.003	18
6.3	83	0.001	15
5	80		
3.35	77		
2	74		
1.18	72		
0.6	68		
0.425	66		
0.3	63		
0.212	59		
0.15	55		
0.063	46		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	26.0
Sand	28.0
Silt	29.0
Clay	17.0

Grading Analysis	
D100	50.00
D60	0.23
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH104

Location

Mortarstown WWTP

Sample No

4

Depth

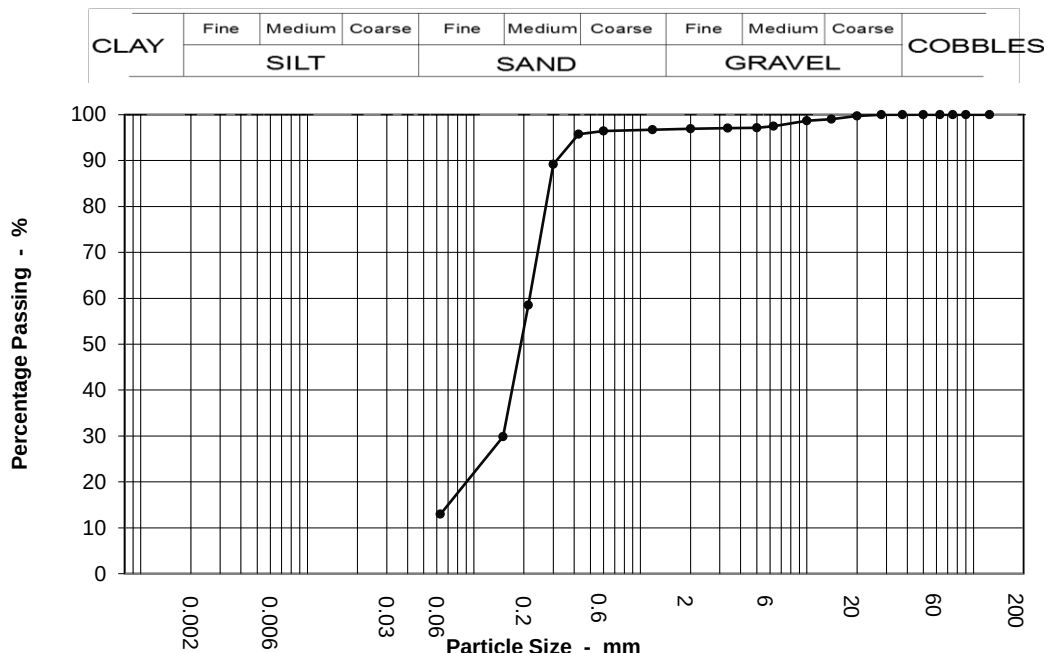
3.00 m

Soil Description

Slightly gravelly silty SAND

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	97		
5	97		
3.35	97		
2	97		
1.18	97		
0.6	96		
0.425	96		
0.3	89		
0.212	59		
0.15	30		
0.063	13		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	3.0
Sand	84.0
Silt & Clay	13.0

Grading Analysis	
D100	28.00
D60	0.22
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH104

Location

Mortarstown WWTP

Sample No

6

Depth

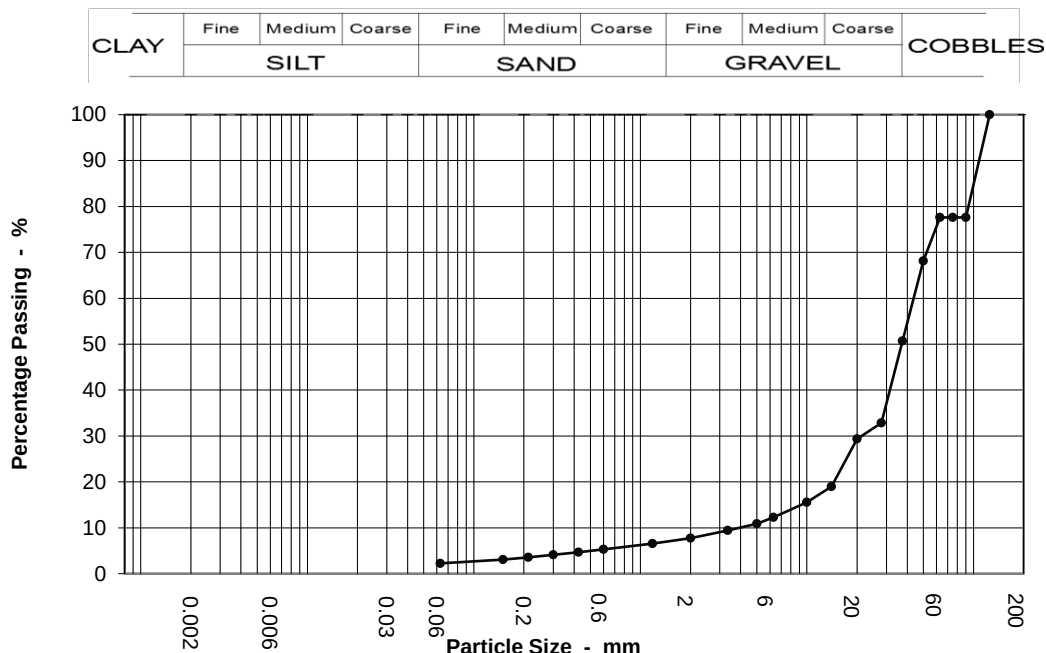
4.60 m

Soil Description

Slightly silty sandy GRAVEL with high cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	78		
75	78		
63	78		
50	68		
37.5	51		
28	33		
20	29		
14	19		
10	16		
6.3	12		
5	11		
3.35	9		
2	8		
1.18	7		
0.6	5		
0.425	5		
0.3	4		
0.212	4		
0.15	3		
0.063	2		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	22.0
Gravel	70.0
Sand	6.0
Silt & Clay	2.0

Grading Analysis	
D100	125.00
D60	43.70
D10	3.91
Uniformity Coefficient	11.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH105

Location

Mortarstown WWTP

Sample No

2

Depth

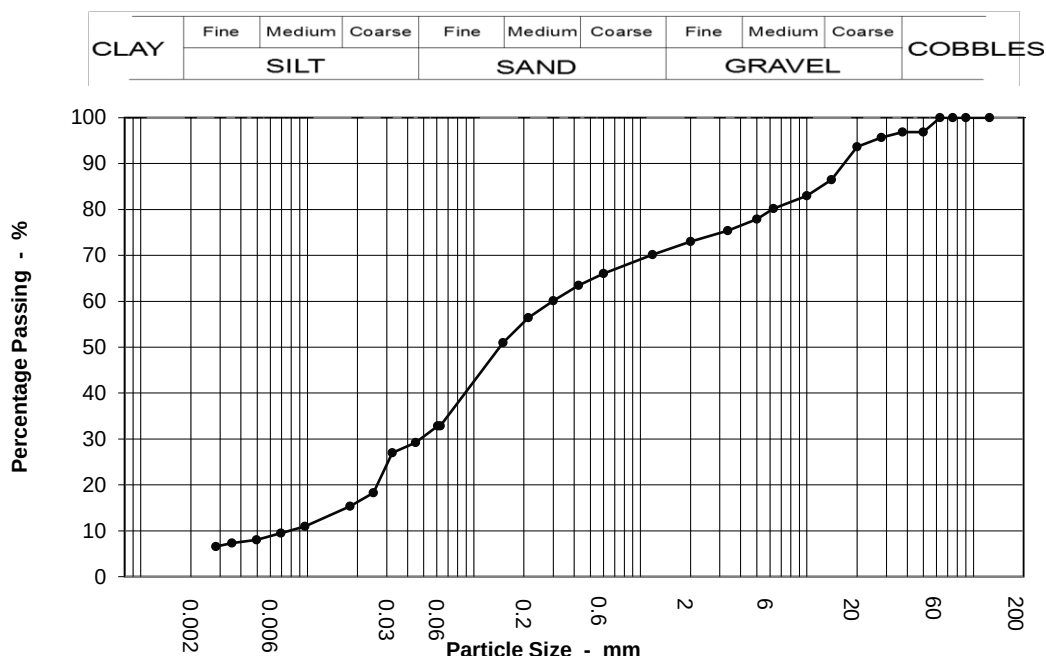
1.00 m

Soil Description

Slightly gravelly sandy SILT

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.061	33
90	100	0.045	29
75	100	0.032	27
63	100	0.025	18
50	97	0.018	15
37.5	97	0.010	11
28	96	0.007	9
20	94	0.005	8
14	87	0.004	7
10	83	0.003	7
6.3	80	0.002	6
5	78		
3.35	75		
2	73		
1.18	70		
0.6	66		
0.425	63		
0.3	60		
0.212	56		
0.15	51		
0.063	33		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	27.0
Sand	40.0
Silt	27.0
Clay	6.0

Grading Analysis	
D100	63.00
D60	0.30
D10	0.01
Uniformity Coefficient	38.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH105

Location

Mortarstown WWTP

Sample No

4

Depth

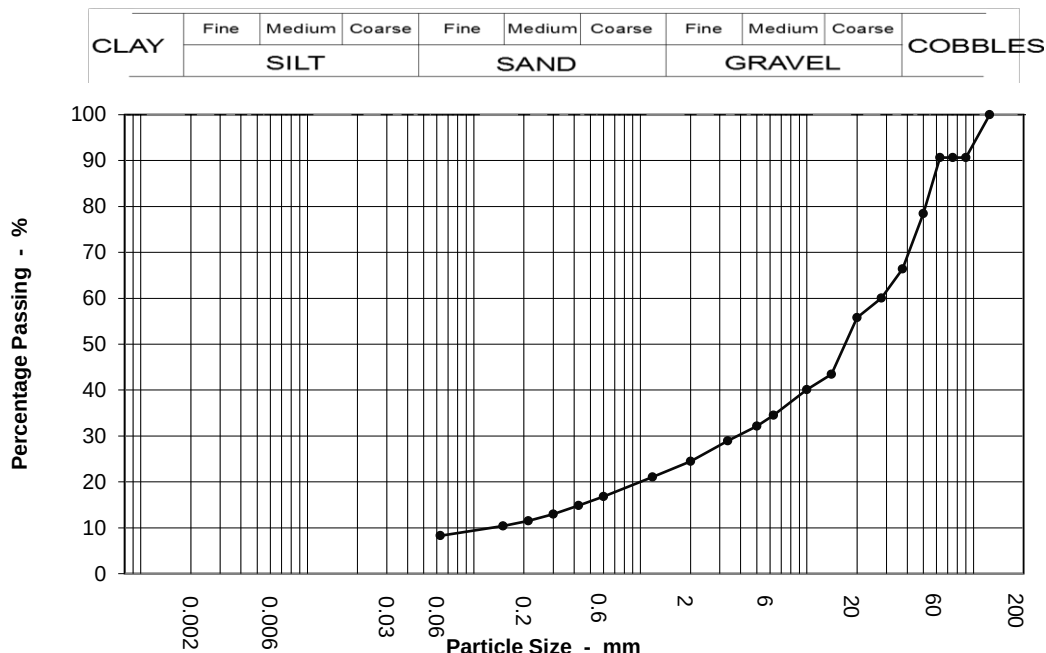
2.80 m

Soil Description

Silty sandy GRAVEL with medium cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	91		
75	91		
63	91		
50	78		
37.5	66		
28	60		
20	56		
14	43		
10	40		
6.3	35		
5	32		
3.35	29		
2	24		
1.18	21		
0.6	17		
0.425	15		
0.3	13		
0.212	12		
0.15	10		
0.063	8		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	9.0
Gravel	66.0
Sand	16.0
Silt & Clay	8.0

Grading Analysis	
D100	125.00
D60	27.90
D10	0.13
Uniformity Coefficient	220.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

BH105

Location

Mortarstown WWTP

Sample No

8

Depth

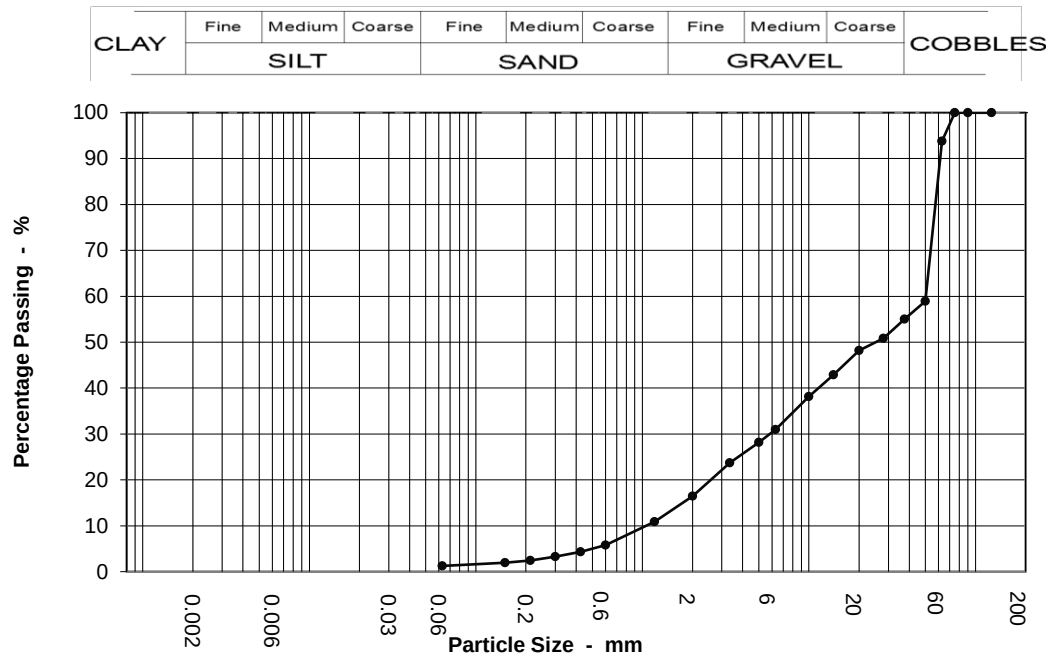
6.00 m

Soil Description

Slightly silty sandy GRAVEL with medium cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	94		
50	59		
37.5	55		
28	51		
20	48		
14	43		
10	38		
6.3	31		
5	28		
3.35	24		
2	16		
1.18	11		
0.6	6		
0.425	4		
0.3	3		
0.212	2		
0.15	2		
0.063	1		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	6.0
Gravel	77.0
Sand	15.0
Silt & Clay	1.0

Grading Analysis	
D100	75.00
D60	50.40
D10	1.05
Uniformity Coefficient	48.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC101

Location

Mortarstown WWTP

Sample No

1

Depth

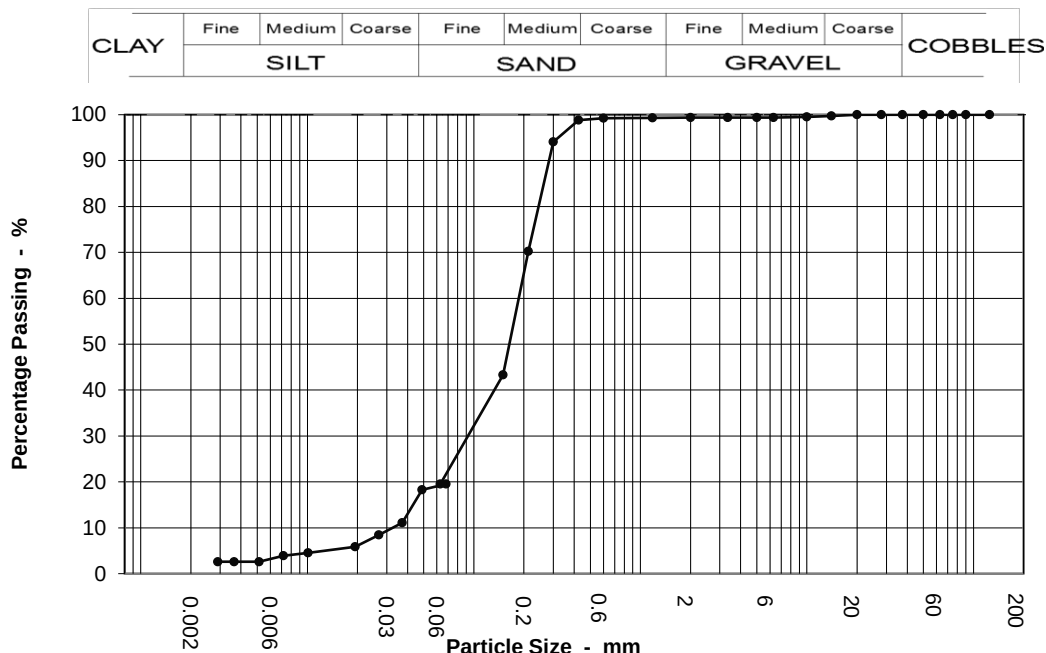
6.00 m

Soil Description

Slightly gravelly silty SAND

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.068	20
90	100	0.049	18
75	100	0.037	11
63	100	0.027	8
50	100	0.019	6
37.5	100	0.010	5
28	100	0.007	4
20	100	0.005	3
14	100	0.004	3
10	100	0.003	3
6.3	99	0.002	2
5	99		
3.35	99		
2	99		
1.18	99		
0.6	99		
0.425	99		
0.3	94		
0.212	70		
0.15	43		
0.063	20		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	1.0
Sand	80.0
Silt	17.0
Clay	2.0

Grading Analysis	
D100	20.00
D60	0.19
D10	0.03
Uniformity Coefficient	5.70

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC101

Location

Mortarstown WWTP

Sample No

4

Depth

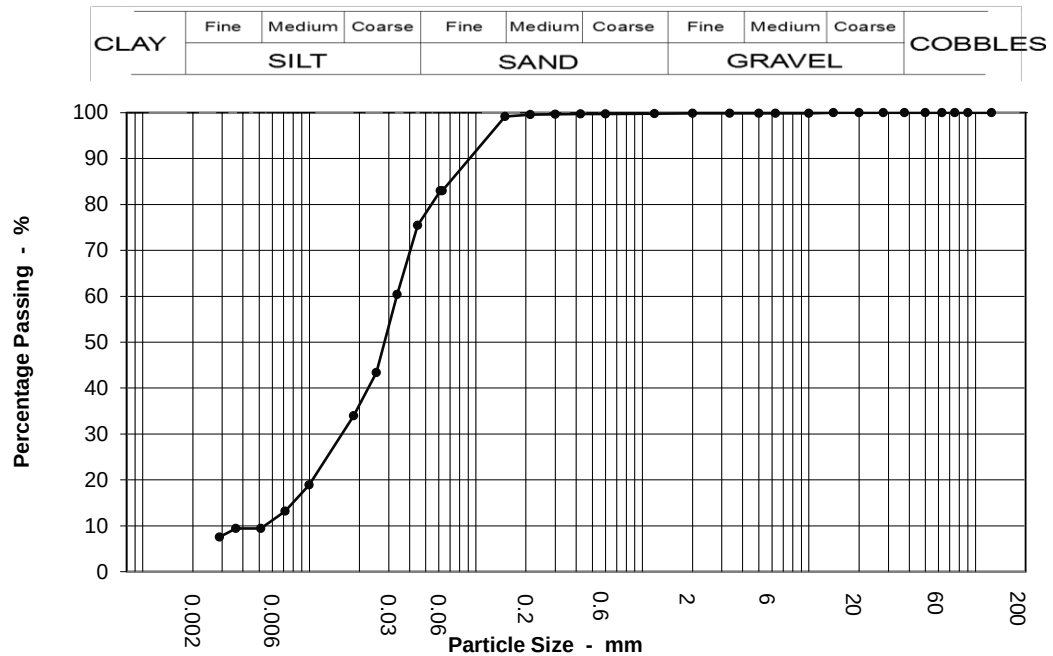
10.50 m

Soil Description

Slightly sandy SILT

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.061	83
90	100	0.045	75
75	100	0.034	60
63	100	0.025	43
50	100	0.018	34
37.5	100	0.010	19
28	100	0.007	13
20	100	0.005	9
14	100	0.004	9
10	100	0.003	8
6.3	100	0.002	8
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	99		
0.063	83		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	17.0
Silt	75.0
Clay	8.0

Grading Analysis	
D100	14.00
D60	0.03
D10	0.01
Uniformity Coefficient	6.20

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC101

Location

Mortarstown WWTP

Sample No

5

Depth

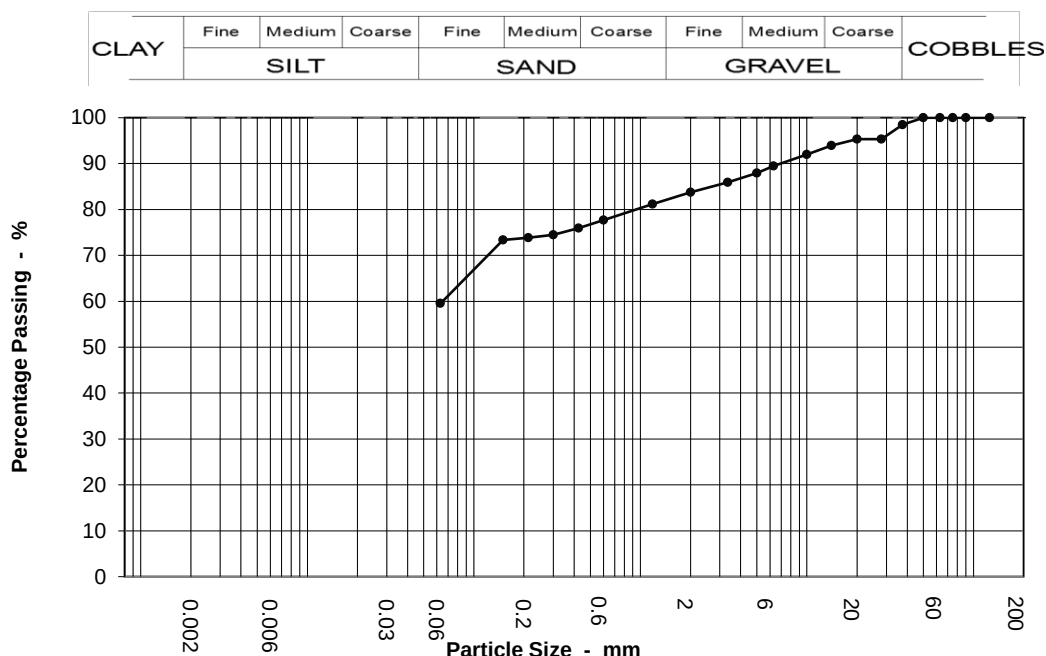
12.00 m

Soil Description

Slightly gravelly slightly sandy SILT

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	98		
28	95		
20	95		
14	94		
10	92		
6.3	89		
5	88		
3.35	86		
2	84		
1.18	81		
0.6	78		
0.425	76		
0.3	75		
0.212	74		
0.15	73		
0.063	60		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	16.0
Sand	24.0
Silt & Clay	60.0

Grading Analysis	
D100	50.00
D60	0.06
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC102

Location

Mortarstown WWTP

Sample No

1

Depth

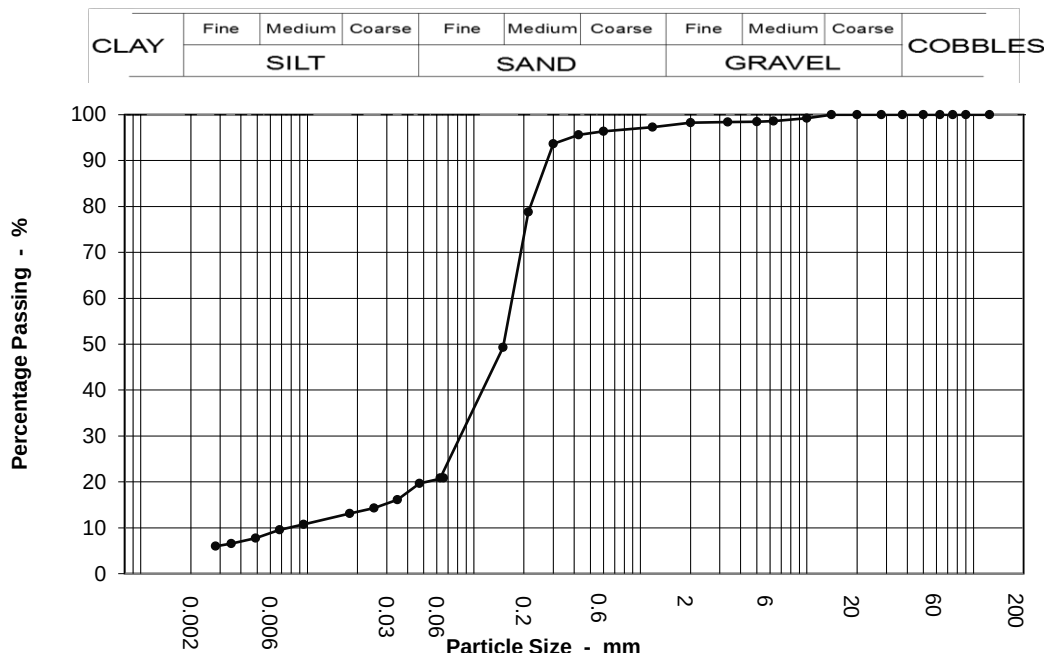
6.00 m

Soil Description

Slightly gravelly silty SAND

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.066	21
90	100	0.047	20
75	100	0.035	16
63	100	0.025	14
50	100	0.018	13
37.5	100	0.010	11
28	100	0.007	10
20	100	0.005	8
14	100	0.004	7
10	99	0.003	6
6.3	99	0.002	4
5	98		
3.35	98		
2	98		
1.18	97		
0.6	96		
0.425	96		
0.3	94		
0.212	79		
0.15	49		
0.063	21		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	2.0
Sand	77.0
Silt	16.0
Clay	5.0

Grading Analysis	
D100	14.00
D60	0.17
D10	0.01
Uniformity Coefficient	22.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC102

Location

Mortarstown WWTP

Sample No

6

Depth

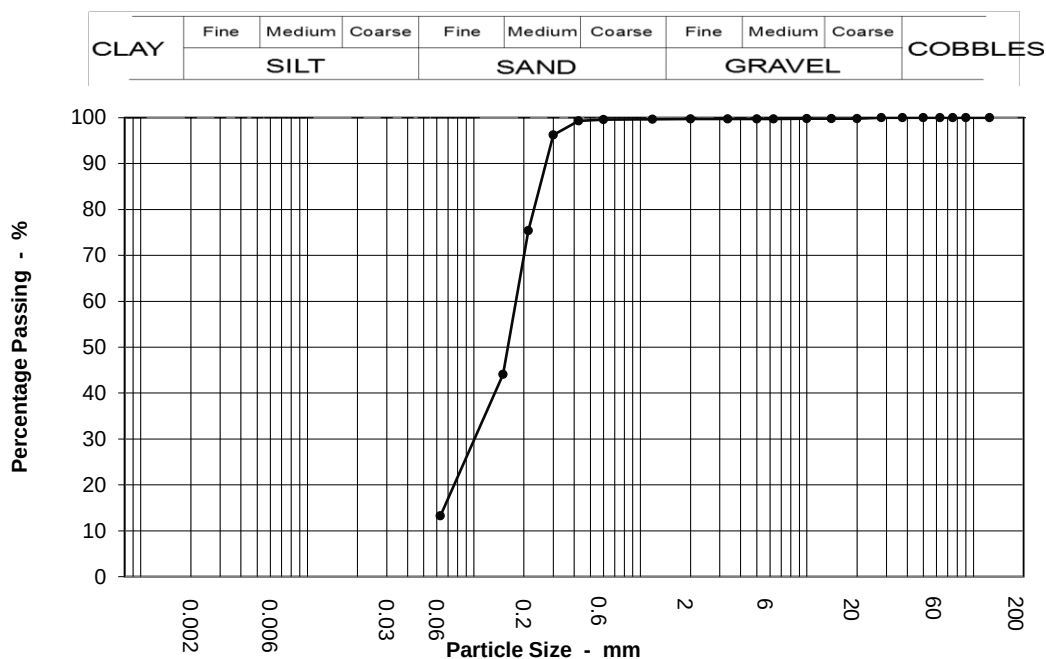
13.50 m

Soil Description

Silty SAND

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	96		
0.212	75		
0.15	44		
0.063	13		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	86.0
Silt & Clay	13.0

Grading Analysis	
D100	28.00
D60	0.18
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC102

Location

Mortarstown WWTP

Sample No

7

Depth

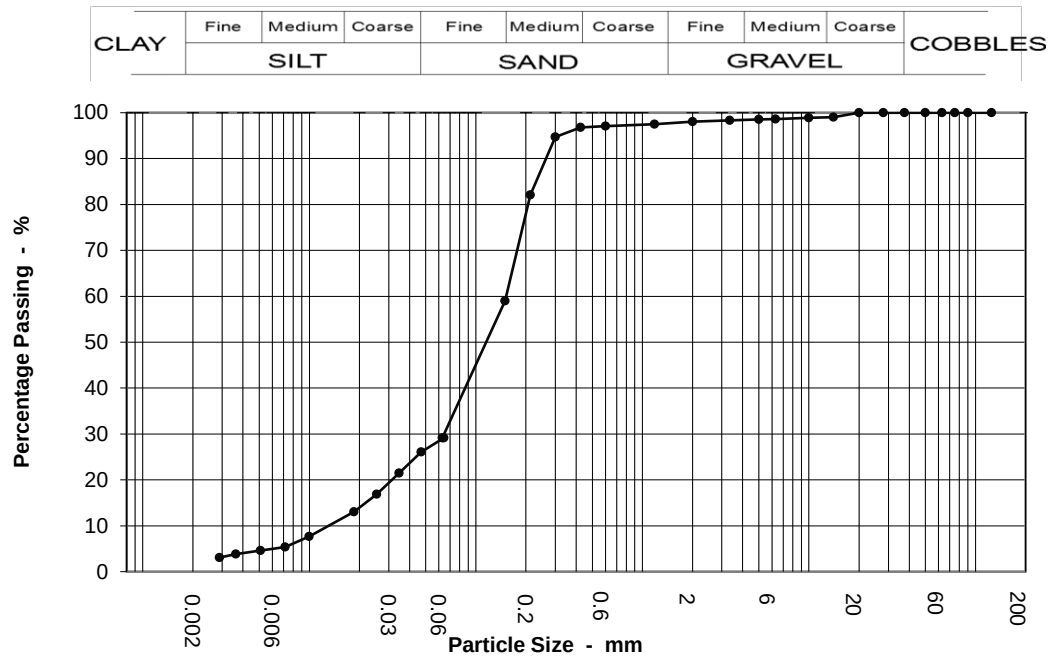
16.50 m

Soil Description

Slightly gravelly very silty SAND

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.064	29
90	100	0.047	26
75	100	0.035	21
63	100	0.025	17
50	100	0.019	13
37.5	100	0.010	8
28	100	0.007	5
20	100	0.005	5
14	99	0.004	4
10	99	0.003	3
6.3	99	0.002	2
5	99		
3.35	98		
2	98		
1.18	97		
0.6	97		
0.425	97		
0.3	95		
0.212	82		
0.15	59		
0.063	29		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	2.0
Sand	69.0
Silt	27.0
Clay	3.0

Grading Analysis	
D100	20.00
D60	0.15
D10	0.01
Uniformity Coefficient	12.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC103

Location

Mortarstown WWTP

Sample No

1

Depth

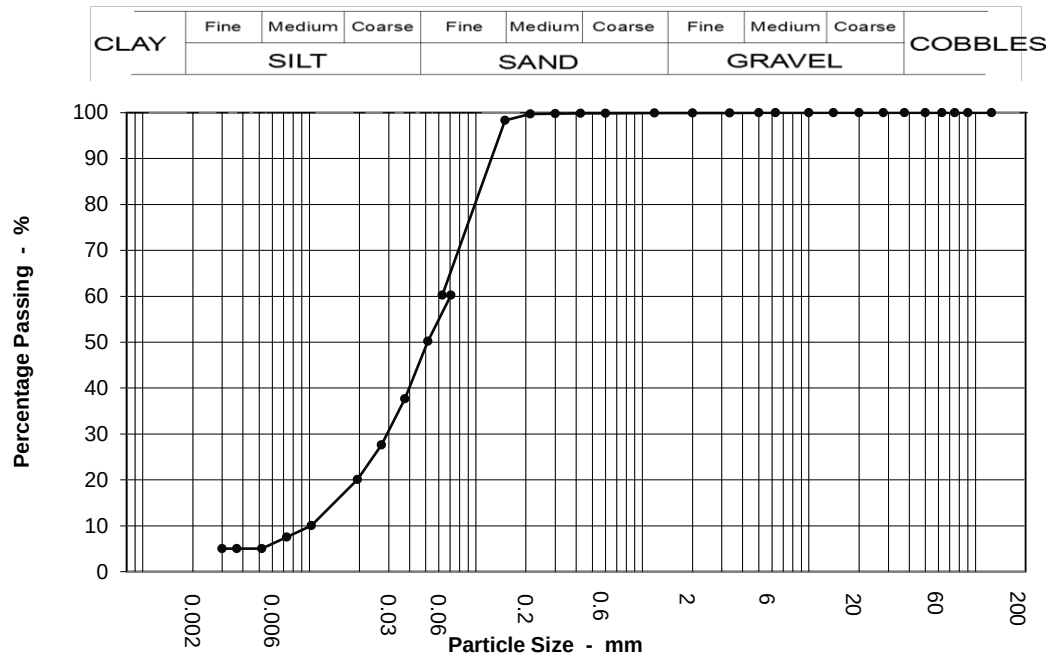
10.50 m

Soil Description

Sandy SILT

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.071	60
90	100	0.051	50
75	100	0.038	38
63	100	0.027	28
50	100	0.019	20
37.5	100	0.010	10
28	100	0.007	8
20	100	0.005	5
14	100	0.004	5
10	100	0.003	5
6.3	100	0.002	5
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	98		
0.063	60		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	40.0
Silt	55.0
Clay	5.0

Grading Analysis	
D100	5.00
D60	0.06
D10	0.01
Uniformity Coefficient	6.10

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC103

Location

Mortarstown WWTP

Sample No

2

Depth

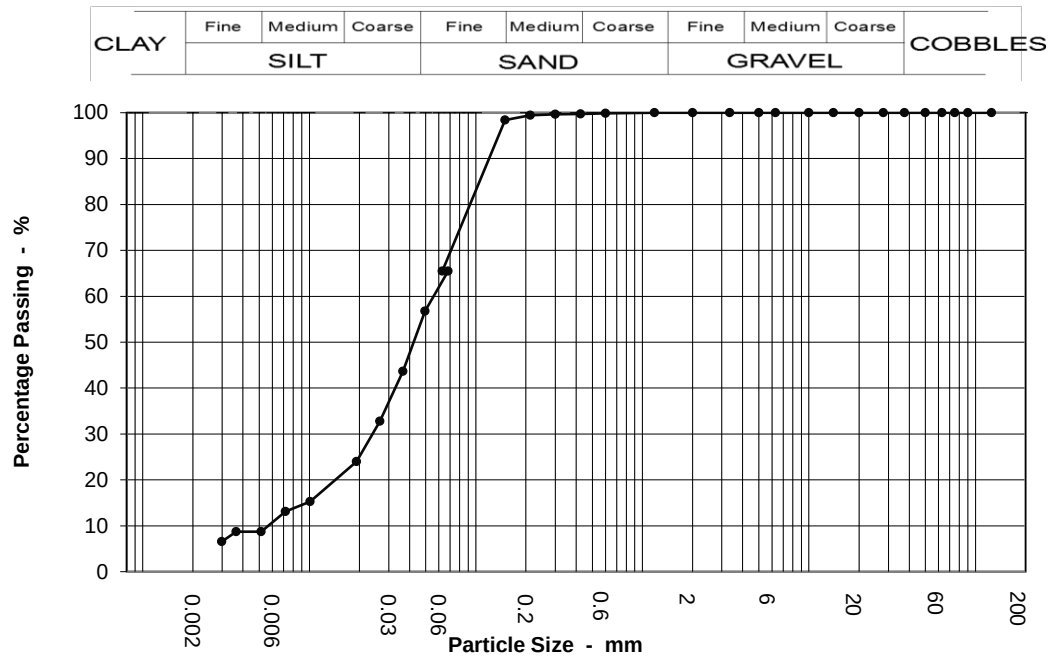
12.00 m

Soil Description

Slightly sandy SILT

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.068	66
90	100	0.050	57
75	100	0.036	44
63	100	0.027	33
50	100	0.019	24
37.5	100	0.010	15
28	100	0.007	13
20	100	0.005	9
14	100	0.004	9
10	100	0.003	7
6.3	100	0.002	7
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	99		
0.15	98		
0.063	66		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	34.0
Silt	59.0
Clay	7.0

Grading Analysis	
D100	2.00
D60	0.05
D10	0.01
Uniformity Coefficient	9.60

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC103

Location

Mortarstown WWTP

Sample No

4

Depth

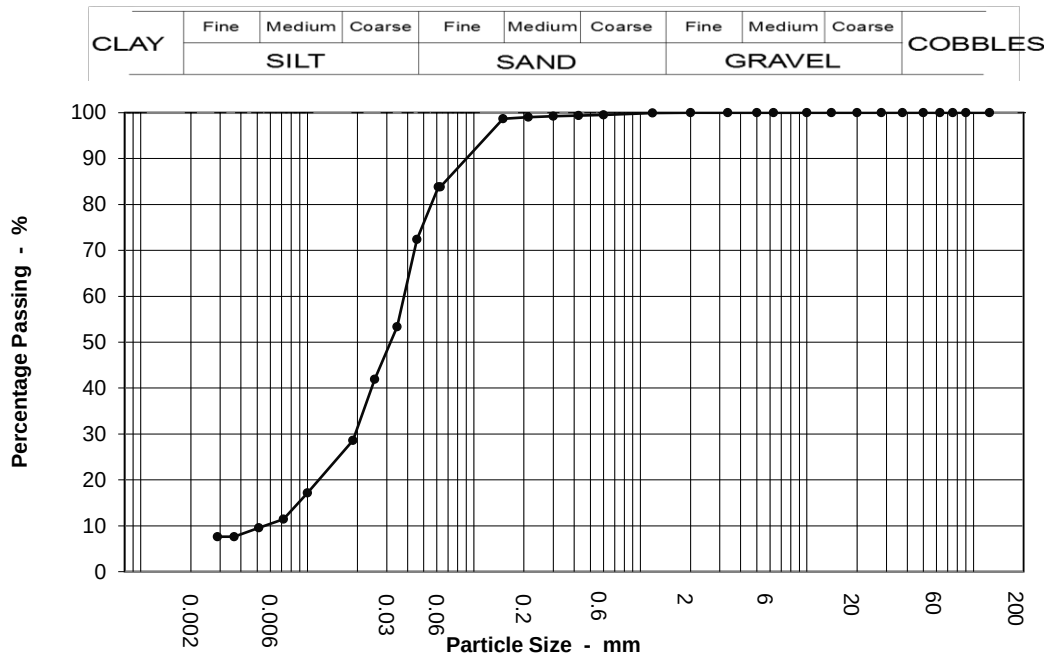
15.00 m

Soil Description

Slightly sandy SILT

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.061	84
90	100	0.045	72
75	100	0.035	53
63	100	0.025	42
50	100	0.019	29
37.5	100	0.010	17
28	100	0.007	11
20	100	0.005	10
14	100	0.004	8
10	100	0.003	8
6.3	100	0.002	6
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	99		
0.212	99		
0.15	99		
0.063	84		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	16.0
Silt	77.0
Clay	6.0

Grading Analysis	
D100	3.35
D60	0.04
D10	0.01
Uniformity Coefficient	6.80

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC104

Location

Mortarstown WWTP

Sample No

1

Depth

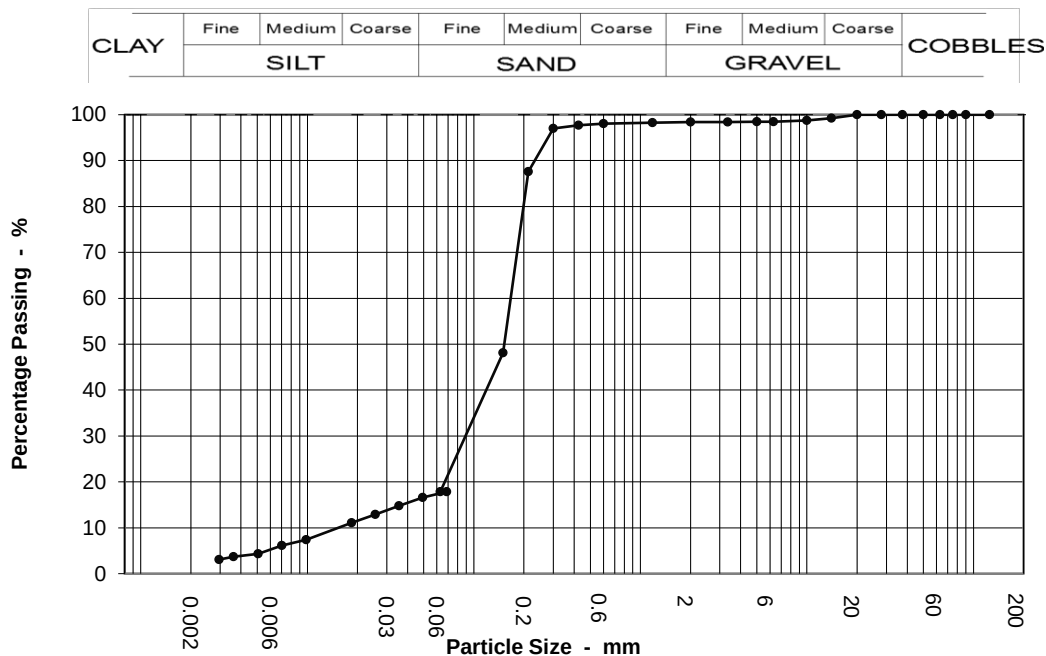
6.00 m

Soil Description

Slightly gravelly silty SAND

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.069	18
90	100	0.049	17
75	100	0.036	15
63	100	0.026	13
50	100	0.018	11
37.5	100	0.010	7
28	100	0.007	6
20	100	0.005	4
14	99	0.004	4
10	99	0.003	3
6.3	98	0.002	2
5	98		
3.35	98		
2	98		
1.18	98		
0.6	98		
0.425	98		
0.3	97		
0.212	88		
0.15	48		
0.063	18		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	2.0
Sand	81.0
Silt	15.0
Clay	3.0

Grading Analysis	
D100	20.00
D60	0.17
D10	0.02
Uniformity Coefficient	11.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC104

Location

Mortarstown WWTP

Sample No

3

Depth

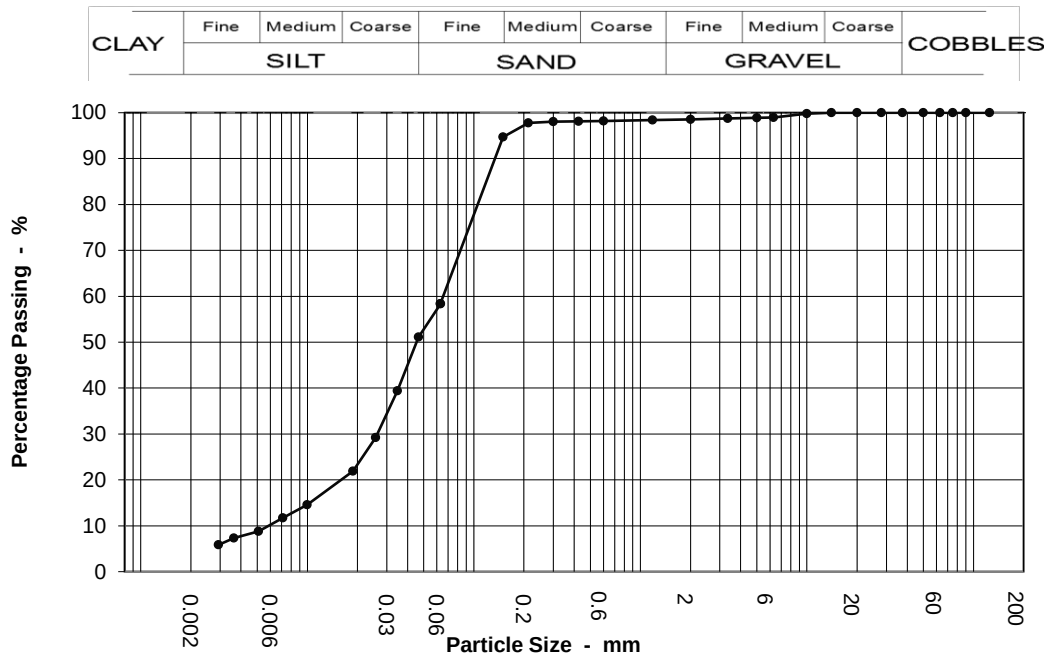
9.00 m

Soil Description

Slightly gravelly sandy SILT

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.063	58
90	100	0.047	51
75	100	0.035	39
63	100	0.026	29
50	100	0.019	22
37.5	100	0.010	15
28	100	0.007	12
20	100	0.005	9
14	100	0.004	7
10	100	0.003	6
6.3	99	0.002	6
5	99		
3.35	99		
2	99		
1.18	98		
0.6	98		
0.425	98		
0.3	98		
0.212	98		
0.15	95		
0.063	58		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	1.0
Sand	40.0
Silt	53.0
Clay	6.0

Grading Analysis	
D100	14.00
D60	0.07
D10	0.01
Uniformity Coefficient	11.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC104

Location

Mortarstown WWTP

Sample No

4

Depth

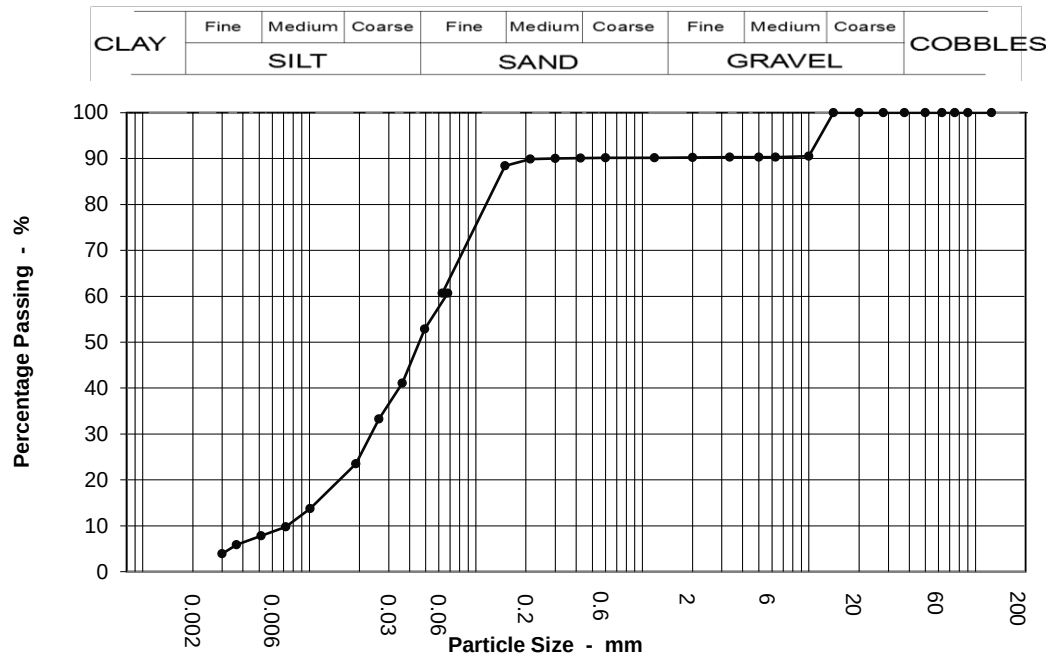
10.50 m

Soil Description

Slightly gravelly slightly sandy SILT

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.068	61
90	100	0.049	53
75	100	0.036	41
63	100	0.026	33
50	100	0.019	23
37.5	100	0.010	14
28	100	0.007	10
20	100	0.005	8
14	100	0.004	6
10	90	0.003	4
6.3	90	0.002	4
5	90		
3.35	90		
2	90		
1.18	90		
0.6	90		
0.425	90		
0.3	90		
0.212	90		
0.15	88		
0.063	61		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	10.0
Sand	30.0
Silt	57.0
Clay	4.0

Grading Analysis	
D100	14.00
D60	0.06
D10	0.01
Uniformity Coefficient	8.40

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC105

Location

Mortarstown WWTP

Sample No

1

Depth

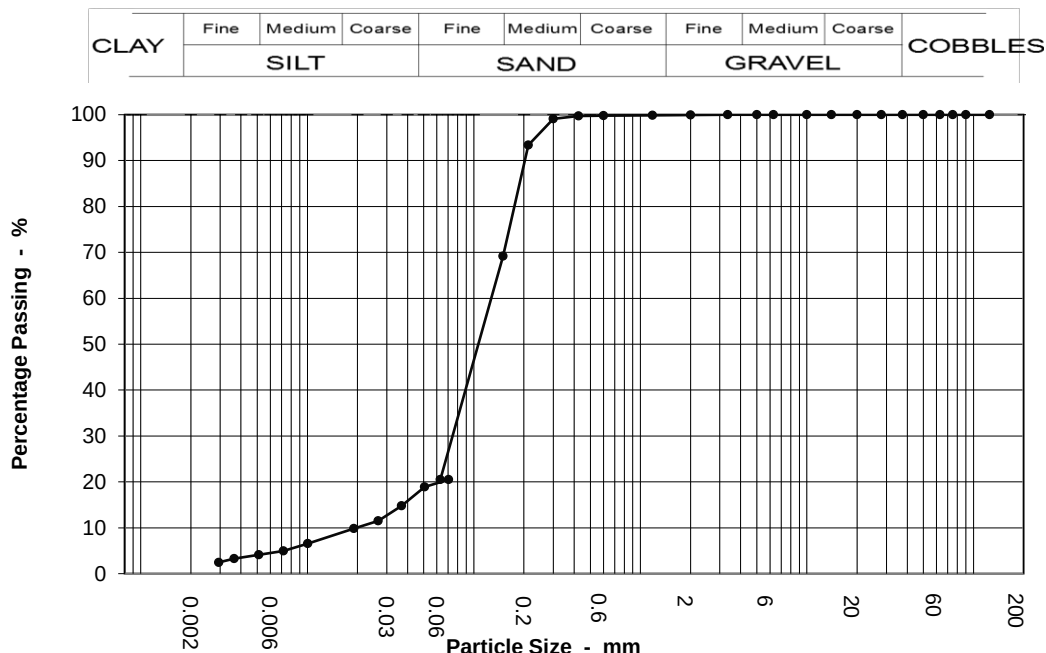
7.50 m

Soil Description

Very silty SAND

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.071	21
90	100	0.051	19
75	100	0.037	15
63	100	0.027	11
50	100	0.019	10
37.5	100	0.010	7
28	100	0.007	5
20	100	0.005	4
14	100	0.004	3
10	100	0.003	2
6.3	100	0.002	2
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	93		
0.15	69		
0.063	21		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	79.0
Silt	19.0
Clay	2.0

Grading Analysis	
D100	6.30
D60	0.13
D10	0.02
Uniformity Coefficient	6.60

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC105

Location

Mortarstown WWTP

Sample No

3

Depth

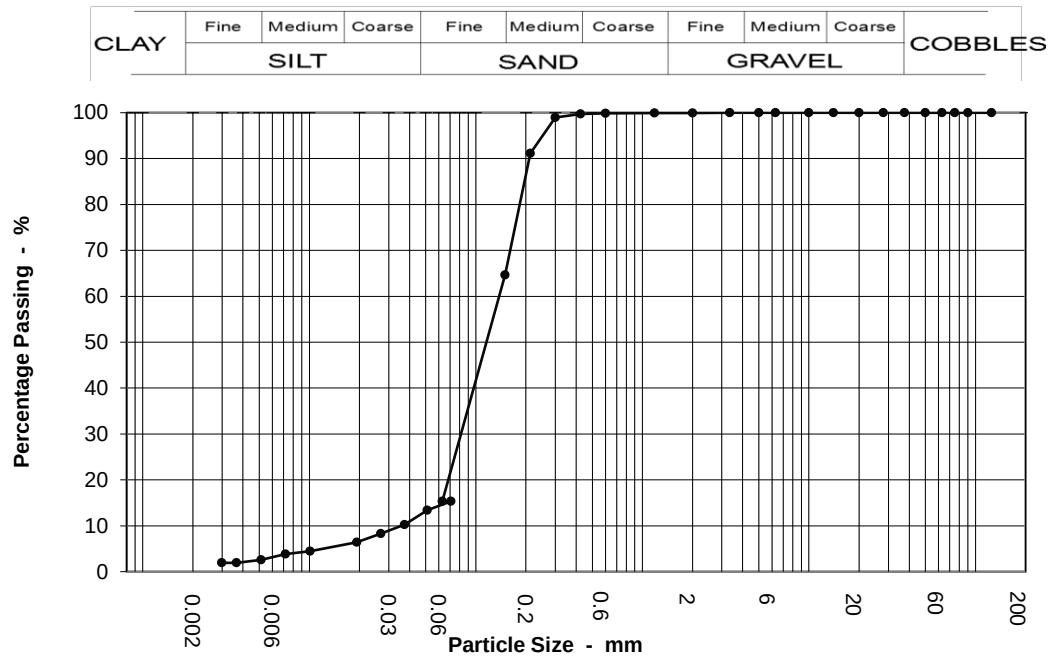
12.00 m

Soil Description

Silty SAND

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.071	15
90	100	0.051	13
75	100	0.037	10
63	100	0.027	8
50	100	0.019	6
37.5	100	0.010	4
28	100	0.007	4
20	100	0.005	3
14	100	0.004	2
10	100	0.003	2
6.3	100	0.002	2
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	91		
0.15	65		
0.063	15		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	85.0
Silt	13.0
Clay	2.0

Grading Analysis	
D100	5.00
D60	0.14
D10	0.04
Uniformity Coefficient	3.90

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC105

Location

Mortarstown WWTP

Sample No

4

Depth

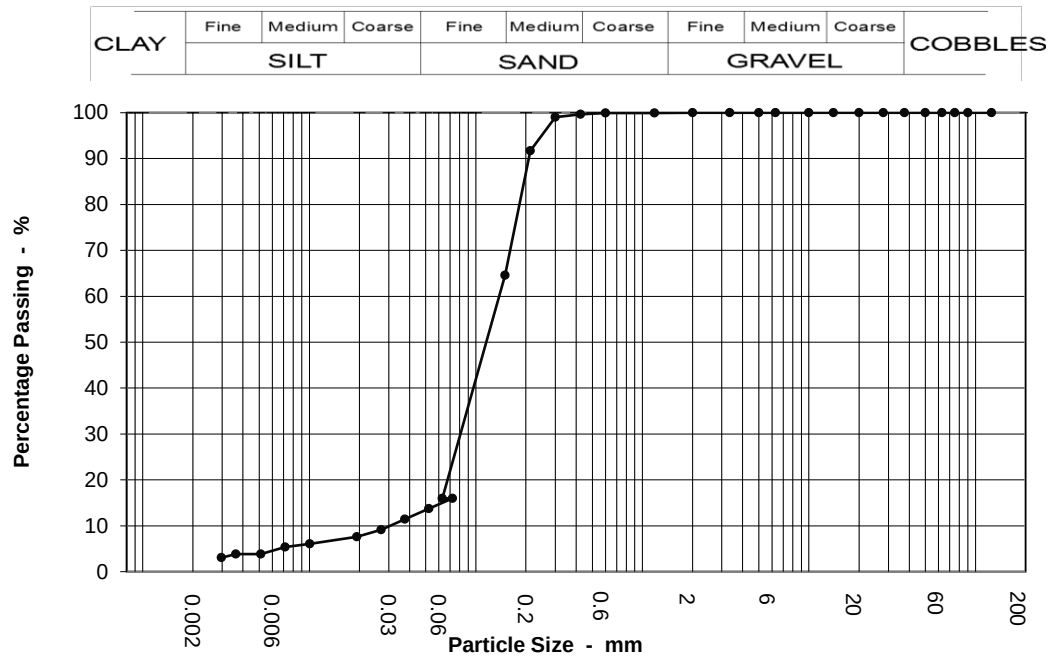
13.50 m

Soil Description

Silty SAND

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.072	16
90	100	0.052	14
75	100	0.038	11
63	100	0.027	9
50	100	0.019	8
37.5	100	0.010	6
28	100	0.007	5
20	100	0.005	4
14	100	0.004	4
10	100	0.003	3
6.3	100	0.002	3
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	92		
0.15	65		
0.063	16		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	84.0
Silt	13.0
Clay	3.0

Grading Analysis	
D100	2.00
D60	0.14
D10	0.03
Uniformity Coefficient	4.60

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

RC105

Location

Mortarstown WWTP

Sample No

5

Depth

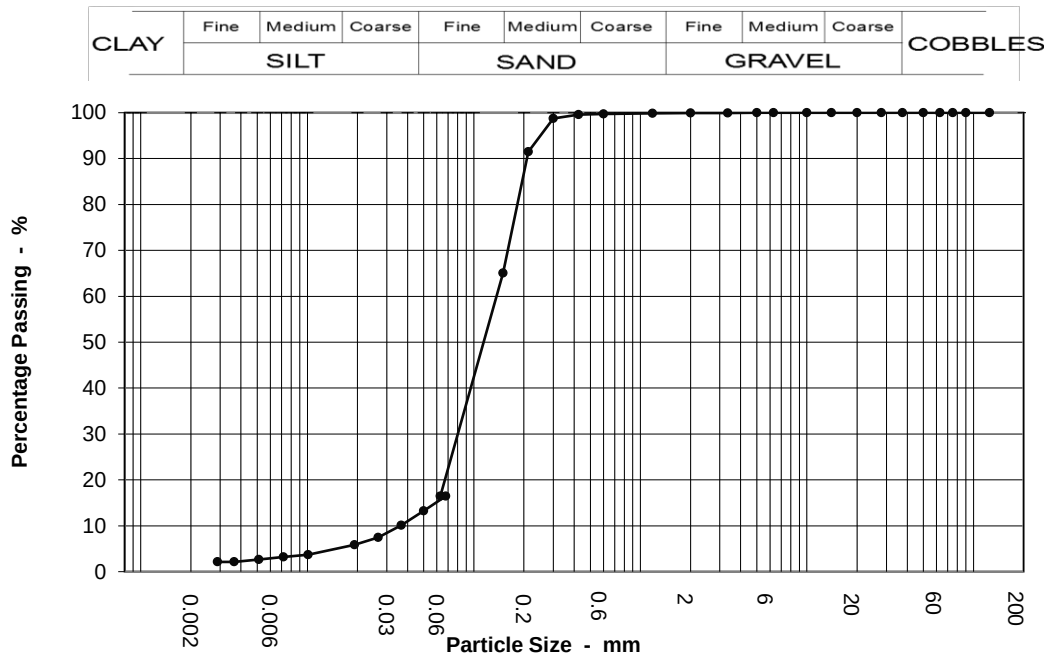
15.00 m

Soil Description

Silty SAND

Sample type

WS



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.068	16
90	100	0.050	13
75	100	0.037	10
63	100	0.027	7
50	100	0.019	6
37.5	100	0.010	4
28	100	0.007	3
20	100	0.005	3
14	100	0.004	2
10	100	0.003	2
6.3	100	0.002	2
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	91		
0.15	65		
0.063	16		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	83.0
Silt	15.0
Clay	2.0

Grading Analysis	
D100	10.00
D60	0.14
D10	0.04
Uniformity Coefficient	3.80

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST101

Location

Mortarstown WWTP

Sample No

1

Depth

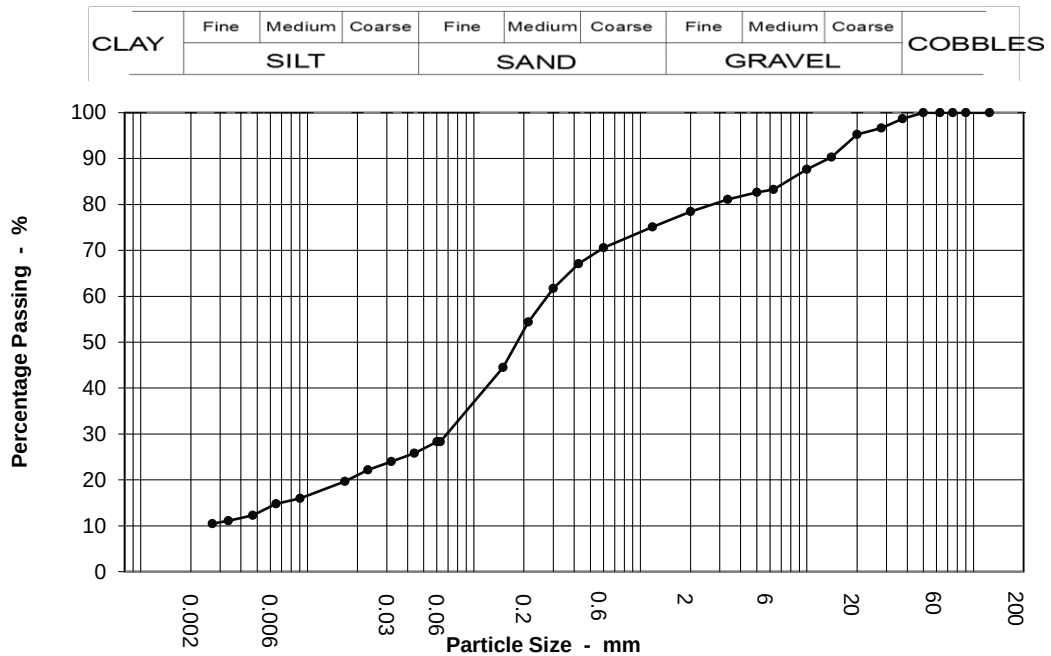
0.30 m

Soil Description

Very gravelly very silty SAND

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.060	28
90	100	0.044	26
75	100	0.032	24
63	100	0.023	22
50	100	0.017	20
37.5	99	0.009	16
28	97	0.006	15
20	95	0.005	12
14	90	0.003	11
10	88	0.003	10
6.3	83	0.001	9
5	83		
3.35	81		
2	78		
1.18	75		
0.6	71		
0.425	67		
0.3	62		
0.212	54		
0.15	45		
0.063	28		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	22.0
Sand	50.0
Silt	19.0
Clay	10.0

Grading Analysis	
D100	50.00
D60	0.28
D10	0.00
Uniformity Coefficient	120.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST101

Location

Mortarstown WWTP

Sample No

3

Depth

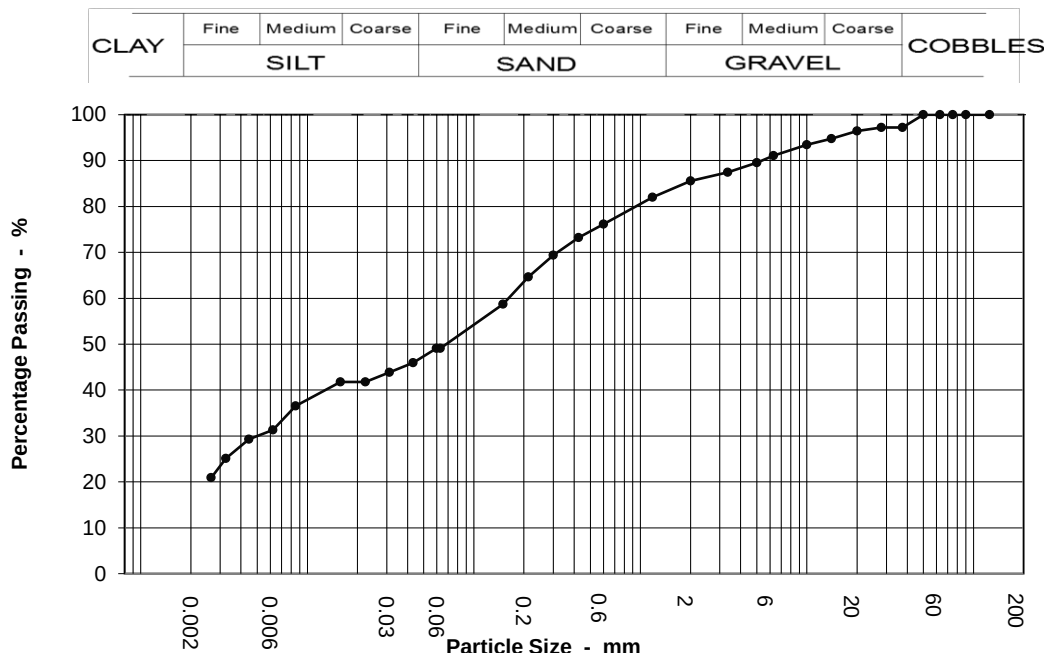
1.50 m

Soil Description

Slightly gravelly sandy SILT

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.060	49
90	100	0.043	46
75	100	0.031	44
63	100	0.022	42
50	100	0.016	42
37.5	97	0.008	37
28	97	0.006	31
20	96	0.004	29
14	95	0.003	25
10	93	0.003	21
6.3	91	0.001	15
5	90		
3.35	87		
2	86		
1.18	82		
0.6	76		
0.425	73		
0.3	69		
0.212	65		
0.15	59		
0.063	49		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	14.0
Sand	36.0
Silt	31.0
Clay	18.0

Grading Analysis	
D100	50.00
D60	0.16
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST102

Location

Mortarstown WWTP

Sample No

1

Depth

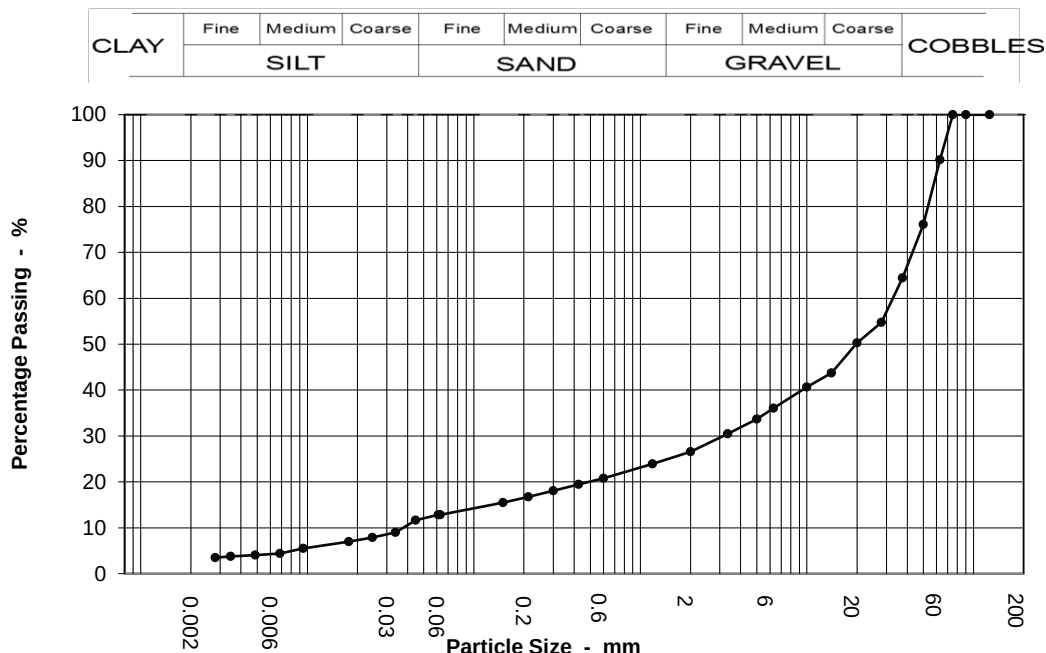
0.40 m

Soil Description

Silty sandy GRAVEL with medium cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.061	13
90	100	0.045	12
75	100	0.034	9
63	90	0.025	8
50	76	0.018	7
37.5	64	0.009	6
28	55	0.007	4
20	50	0.005	4
14	44	0.003	4
10	41	0.003	3
6.3	36	0.002	3
5	34		
3.35	30		
2	27		
1.18	24		
0.6	21		
0.425	19		
0.3	18		
0.212	17		
0.15	16		
0.063	13		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	10.0
Gravel	64.0
Sand	14.0
Silt	10.0
Clay	3.0

Grading Analysis	
D100	75.00
D60	32.80
D10	0.04
Uniformity Coefficient	870.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST102

Location

Mortarstown WWTP

Sample No

3

Depth

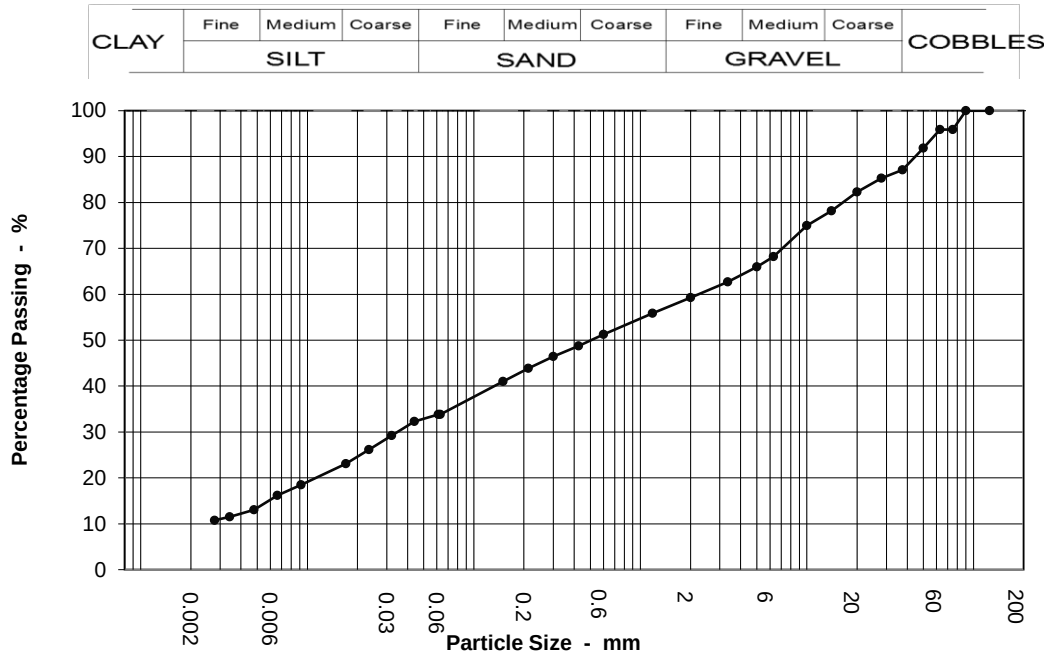
1.50 m

Soil Description

Slightly sandy gravelly CLAY with low cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.061	34
90	100	0.044	32
75	96	0.032	29
63	96	0.023	26
50	92	0.017	23
37.5	87	0.009	18
28	85	0.007	16
20	82	0.005	13
14	78	0.003	12
10	75	0.003	11
6.3	68	0.001	8
5	66		
3.35	63		
2	59		
1.18	56		
0.6	51		
0.425	49		
0.3	46		
0.212	44		
0.15	41		
0.063	34		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	4.0
Gravel	37.0
Sand	25.0
Silt	24.0
Clay	10.0

Grading Analysis	
D100	90.00
D60	2.23
D10	0.00
Uniformity Coefficient	990.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST102A

Location

Mortarstown WWTP

Sample No

1

Depth

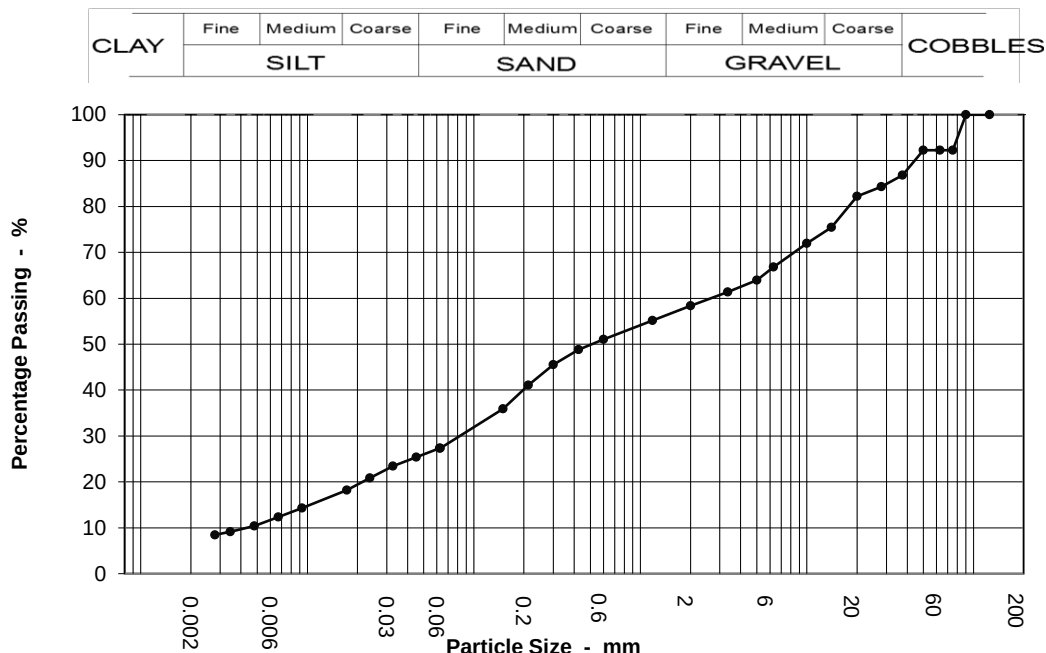
0.50 m

Soil Description

Very clayey very sandy GRAVEL with medium cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.062	27
90	100	0.045	25
75	92	0.033	23
63	92	0.024	21
50	92	0.017	18
37.5	87	0.009	14
28	84	0.007	12
20	82	0.005	10
14	75	0.003	9
10	72	0.003	8
6.3	67	0.002	7
5	64		
3.35	61		
2	58		
1.18	55		
0.6	51		
0.425	49		
0.3	46		
0.212	41		
0.15	36		
0.063	27		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	8.0
Gravel	34.0
Sand	31.0
Silt	20.0
Clay	7.0

Grading Analysis	
D100	90.00
D60	2.65
D10	0.00
Uniformity Coefficient	610.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST103

Location

Mortarstown WWTP

Sample No

1

Depth

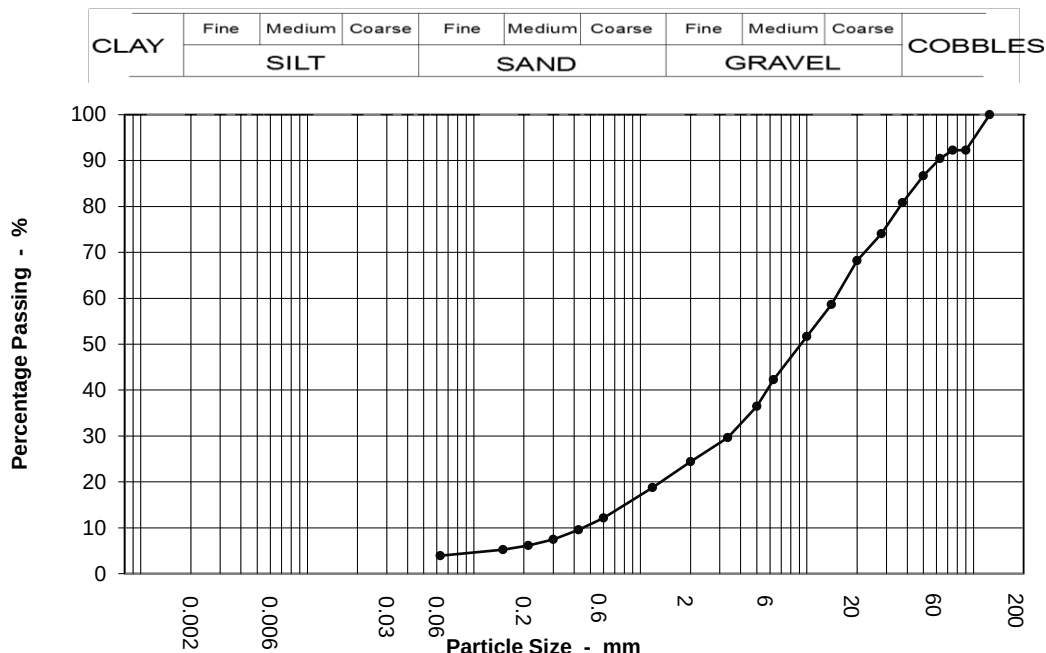
0.50 m

Soil Description

Slightly clayey very sandy GRAVEL with medium cobble content

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	92		
75	92		
63	90		
50	87		
37.5	81		
28	74		
20	68		
14	59		
10	52		
6.3	42		
5	36		
3.35	30		
2	24		
1.18	19		
0.6	12		
0.425	10		
0.3	7		
0.212	6		
0.15	5		
0.063	4		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	10.0
Gravel	66.0
Sand	20.0
Silt & Clay	4.0

Grading Analysis	
D100	125.00
D60	14.70
D10	0.45
Uniformity Coefficient	33.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST104

Location

Mortarstown WWTP

Sample No

1

Depth

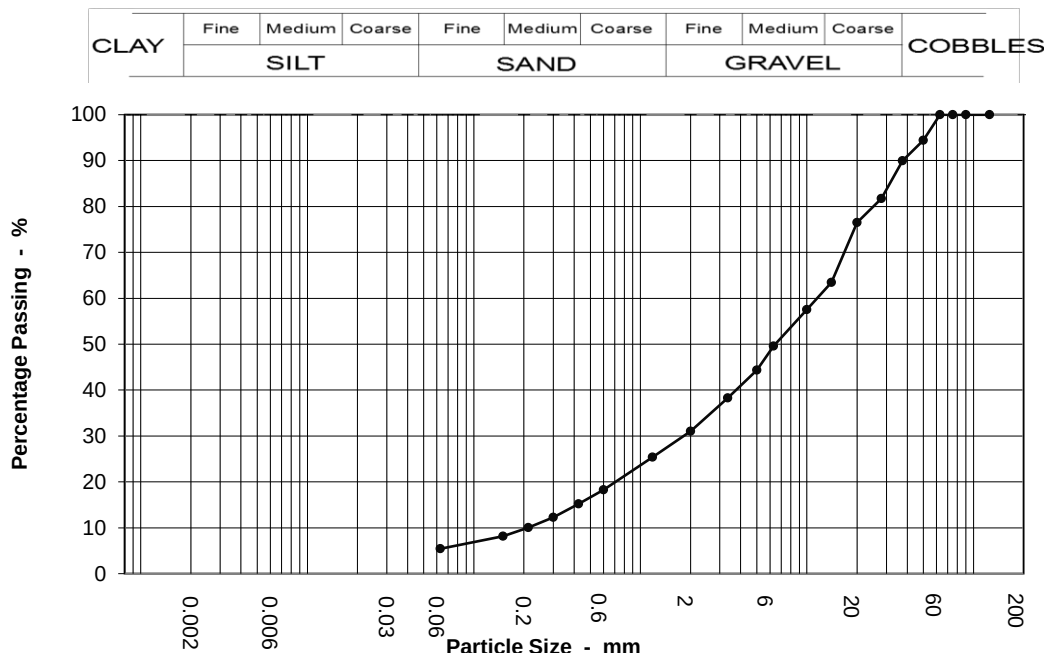
0.10 m

Soil Description

Slightly silty very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	94		
37.5	90		
28	82		
20	76		
14	63		
10	58		
6.3	50		
5	44		
3.35	38		
2	31		
1.18	25		
0.6	18		
0.425	15		
0.3	12		
0.212	10		
0.15	8		
0.063	5		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	69.0
Sand	26.0
Silt & Clay	5.0

Grading Analysis	
D100	63.00
D60	11.50
D10	0.21
Uniformity Coefficient	54.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST106

Location

Mortarstown WWTP

Sample No

1

Depth

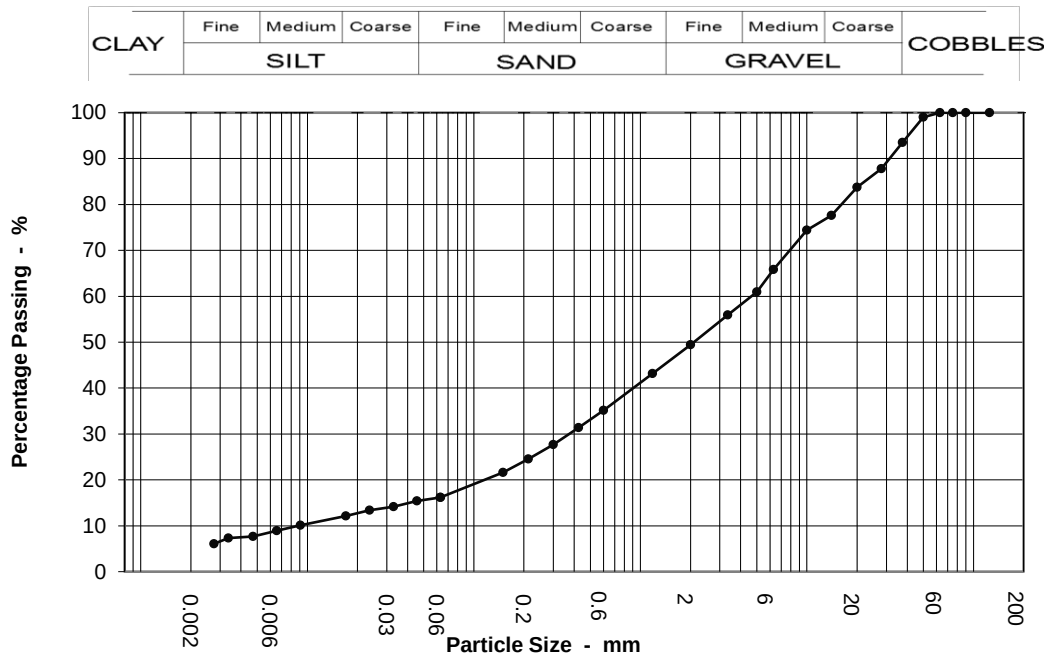
0.50 m

Soil Description

Very clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.063	16
90	100	0.045	15
75	100	0.033	14
63	100	0.024	13
50	99	0.017	12
37.5	94	0.009	10
28	88	0.007	9
20	84	0.005	8
14	78	0.003	7
10	74	0.003	6
6.3	66	0.001	4
5	61		
3.35	56		
2	49		
1.18	43		
0.6	35		
0.425	31		
0.3	28		
0.212	25		
0.15	22		
0.063	16		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	51.0
Sand	33.0
Silt	11.0
Clay	5.0

Grading Analysis	
D100	63.00
D60	4.64
D10	0.01
Uniformity Coefficient	530.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST107

Location

Mortarstown WWTP

Sample No

2

Depth

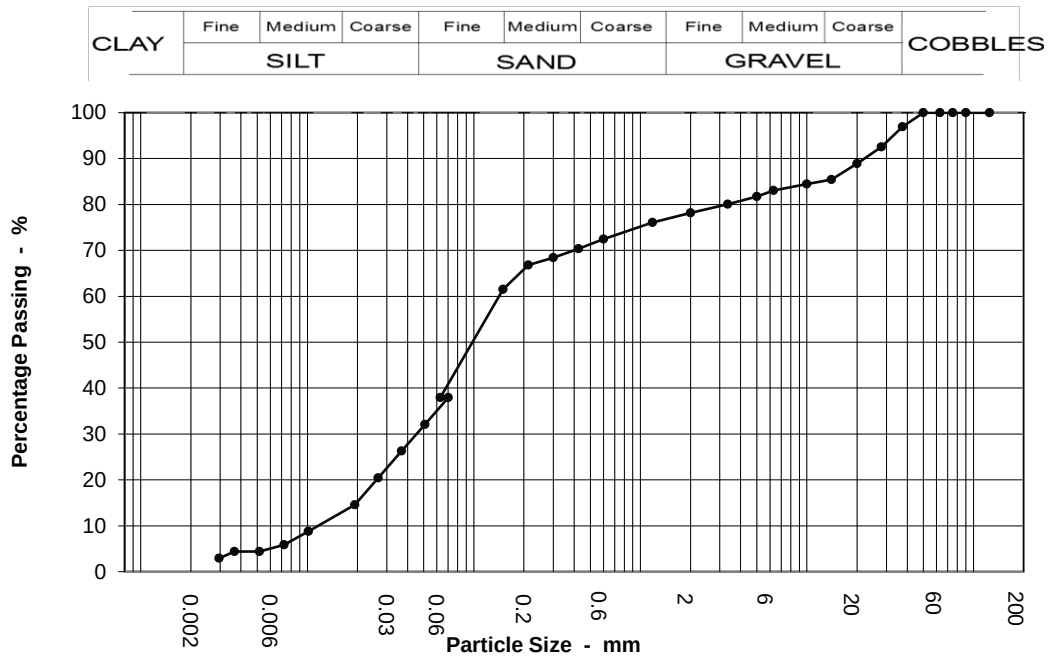
1.10 m

Soil Description

Slightly gravelly sandy CLAY

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.070	38
90	100	0.051	32
75	100	0.037	26
63	100	0.027	20
50	100	0.019	15
37.5	97	0.010	9
28	93	0.007	6
20	89	0.005	4
14	85	0.004	4
10	84	0.003	3
6.3	83	0.002	3
5	82		
3.35	80		
2	78		
1.18	76		
0.6	72		
0.425	70		
0.3	68		
0.212	67		
0.15	62		
0.063	38		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	22.0
Sand	40.0
Silt	35.0
Clay	3.0

Grading Analysis	
D100	50.00
D60	0.14
D10	0.01
Uniformity Coefficient	12.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST108

Location

Mortarstown WWTP

Sample No

1

Depth

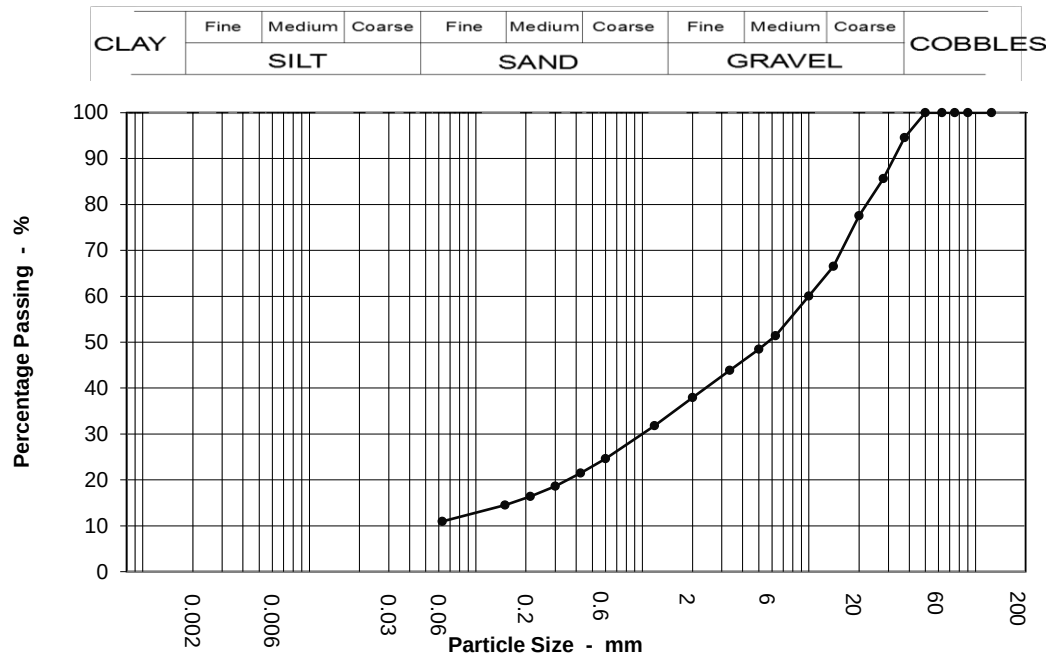
0.50 m

Soil Description

Clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	95		
28	86		
20	78		
14	67		
10	60		
6.3	51		
5	48		
3.35	44		
2	38		
1.18	32		
0.6	25		
0.425	22		
0.3	19		
0.212	16		
0.15	14		
0.063	11		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.3
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	62.0
Sand	27.0
Silt & Clay	11.0

Grading Analysis	
D100	50.00
D60	9.99
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST109

Location

Mortarstown WWTP

Sample No

1

Depth

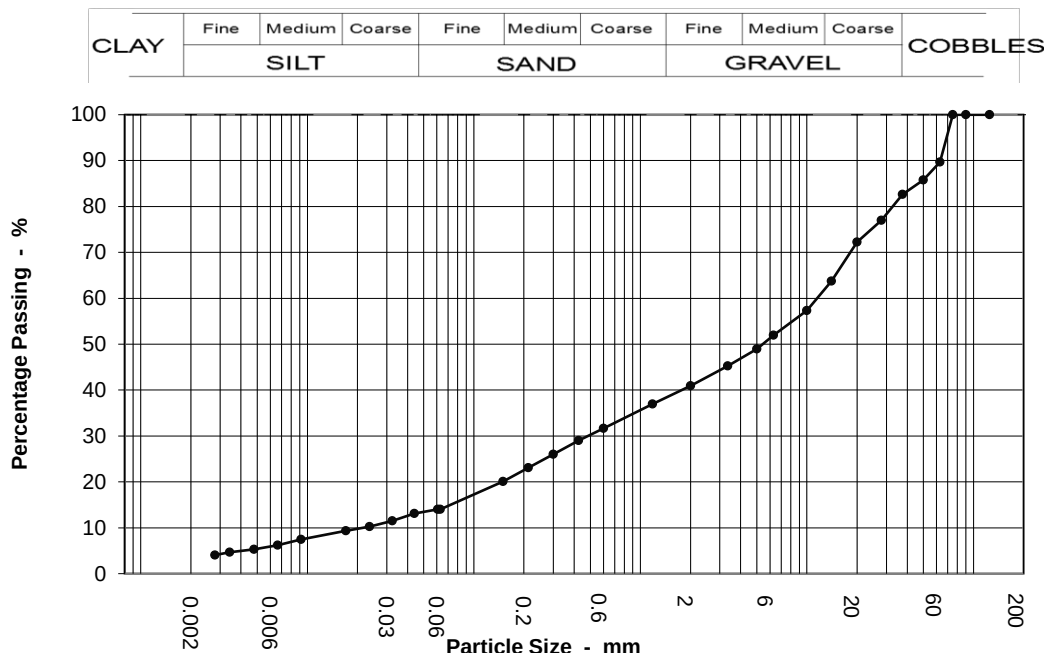
0.50 m

Soil Description

Clayey very sandy GRAVEL

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.061	14
90	100	0.044	13
75	100	0.032	12
63	90	0.024	10
50	86	0.017	9
37.5	83	0.009	7
28	77	0.007	6
20	72	0.005	5
14	64	0.003	5
10	57	0.003	4
6.3	52	0.002	3
5	49		
3.35	45		
2	41		
1.18	37		
0.6	32		
0.425	29		
0.3	26		
0.212	23		
0.15	20		
0.063	14		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	10.0
Gravel	49.0
Sand	27.0
Silt	10.0
Clay	4.0

Grading Analysis	
D100	75.00
D60	11.50
D10	0.02
Uniformity Coefficient	540.00

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST110

Location

Mortarstown WWTP

Sample No

1

Depth

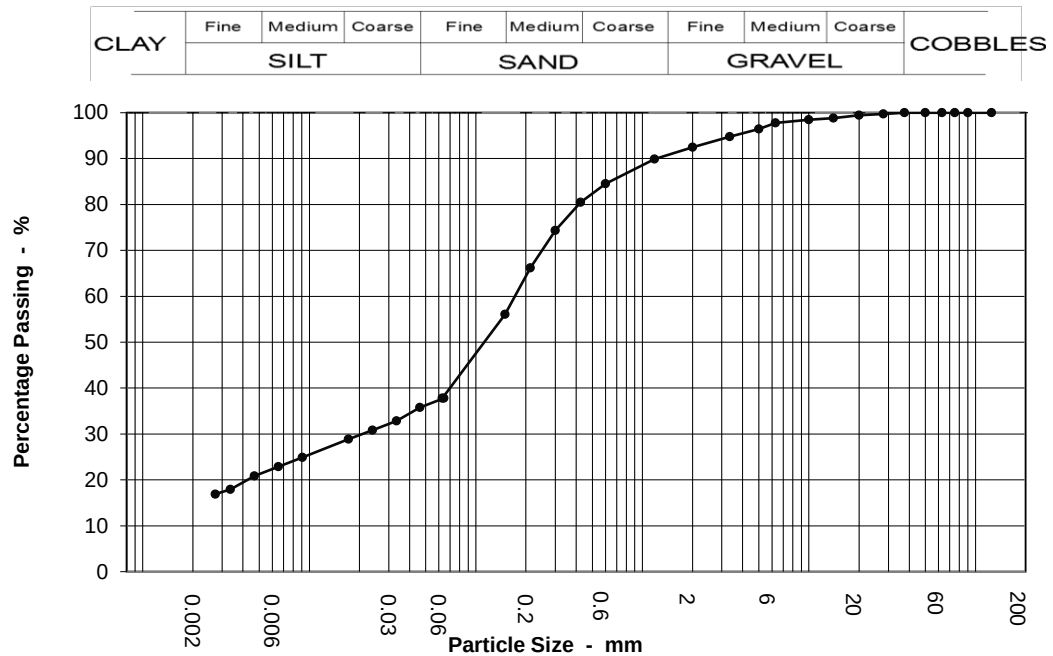
0.65 m

Soil Description

Slightly gravelly sandy CLAY

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.064	38
90	100	0.046	36
75	100	0.033	33
63	100	0.024	31
50	100	0.017	29
37.5	100	0.009	25
28	100	0.007	23
20	99	0.005	21
14	99	0.003	18
10	98	0.003	17
6.3	98	0.001	14
5	96		
3.35	95		
2	92		
1.18	90		
0.6	85		
0.425	80		
0.3	74		
0.212	66		
0.15	56		
0.063	38		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	8.0
Sand	55.0
Silt	22.0
Clay	15.0

Grading Analysis	
D100	37.50
D60	0.17
D10	
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

P22044

Borehole / Pit
No

ST110

Location

Mortarstown WWTP

Sample No

5

Depth

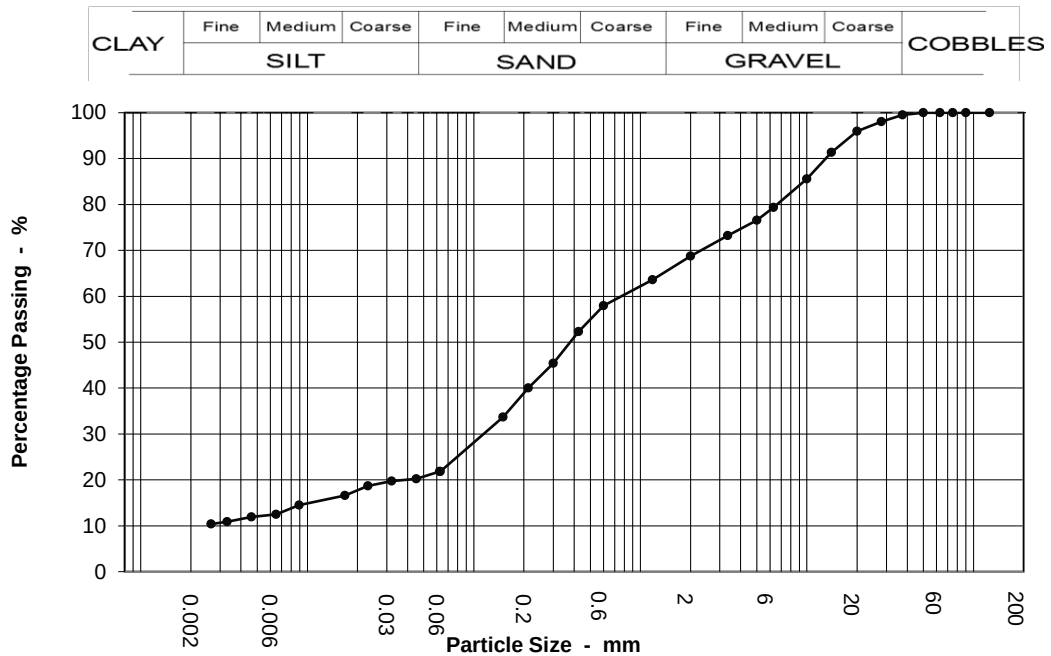
2.50 m

Soil Description

Very silty very gravelly SAND

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.062	22
90	100	0.045	20
75	100	0.032	20
63	100	0.023	19
50	100	0.017	17
37.5	100	0.009	15
28	98	0.006	12
20	96	0.005	12
14	91	0.003	11
10	86	0.003	10
6.3	79	0.001	9
5	77		
3.35	73		
2	69		
1.18	64		
0.6	58		
0.425	52		
0.3	45		
0.212	40		
0.15	34		
0.063	22		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.5
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	31.0
Sand	47.0
Silt	12.0
Clay	10.0

Grading Analysis	
D100	50.00
D60	0.77
D10	0.00
Uniformity Coefficient	360.00

ONE DIMENSIONAL CONSOLIDATION TEST
BS1377:Part 5:1990, clause 3

Job Ref

P22044

Borehole/Pit No.

BH103

Site Name

Mortarstown WWTP

Sample No.

9

Depth

7

Sample Type

U

Sample Description

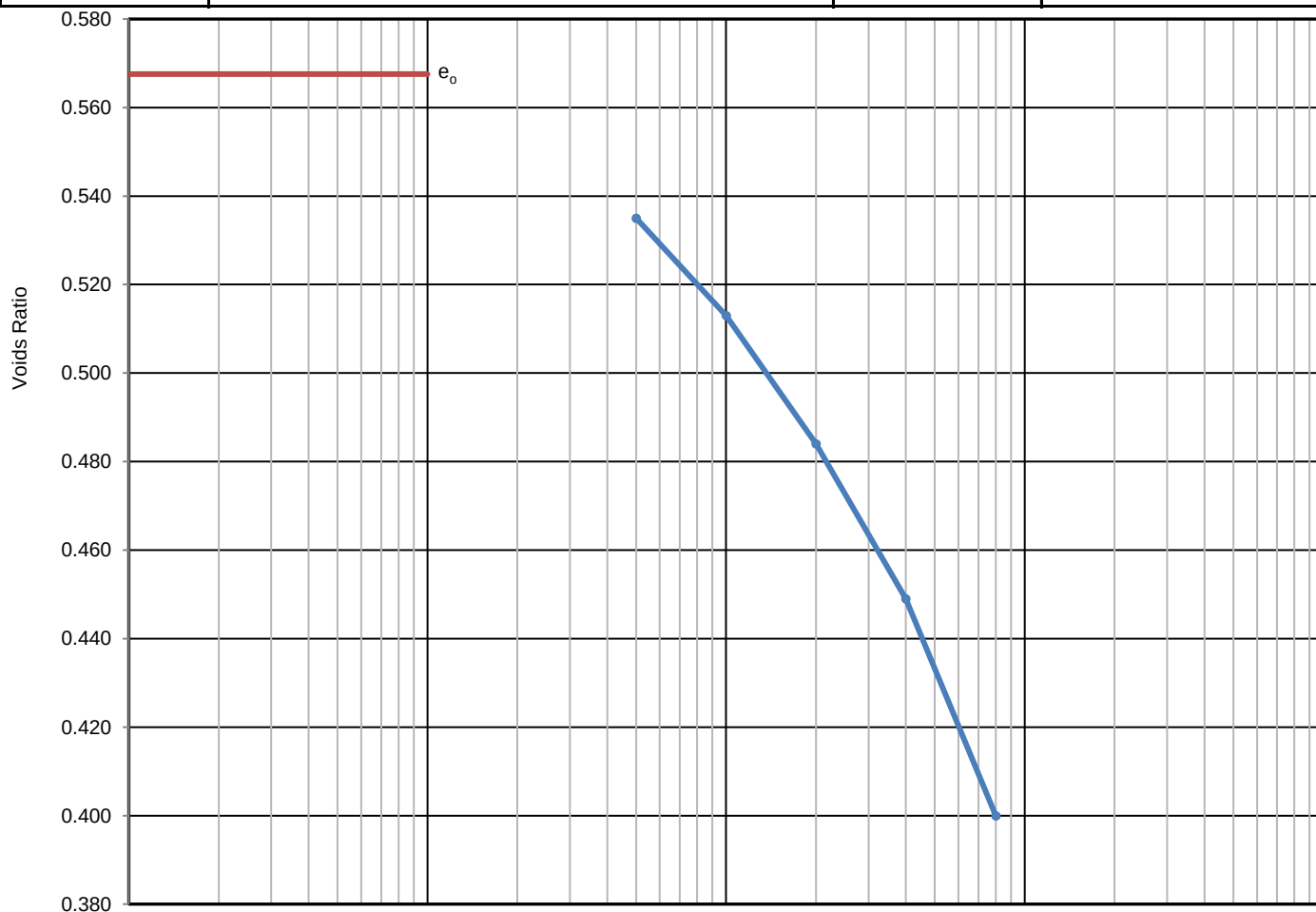
Slightly sandy slightly gravelly CLAY

KeyLAB ID

PGL120220530309

Test Method

BS1377:Part 5:1990, clause 3



Applied Pressure kPa	Voids ratio	M_v m ² /MN	C_v ($t_{90, \text{root}}$) m ² /yr
0.0	0.568	-	-
50	0.535	0.41	40
100	0.513	0.30	490
200	0.484	0.19	680
400	0.449	0.12	660
800	0.400	0.085	44

Preparation

Particle density

2.65 Mg/m³

Specimen details

Diameter

75.00

mm

Height

20.00

mm

Moisture Content

22.6

%

Bulk density

2.07

Mg/m³

Dry density

1.69

Mg/m³

Voids Ratio

0.568

0.400

Saturation

105

128

%

Average temperature for test

20

°C

Swelling Pressure

kPa

Settlement on saturation

%

Remarks

Final values should be used with caution

C_v plotted at mid point of load increments

C_v corrected to 20°C

Printed :

30/08/2022 17:00

Fig. No

1



Final Report

Report No.:	22-30442-1		
Initial Date of Issue:	15-Aug-2022		
Client	Priority Geotechnical Ltd		
Client Address:	Unit 12 Owenacurra Business Park Midleton County Cork Ireland		
Contact(s):	Colette Kelly		
Project	P22044 Mortarstown		
Quotation No.:		Date Received:	10-Aug-2022
Order No.:	14702	Date Instructed:	10-Aug-2022
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	16-Aug-2022
Date Approved:	15-Aug-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: P22044 Mortarstown

Client: Priority Geotechnical Ltd	Chemtest Job No.:				22-30442	22-30442
Quotation No.:	Chemtest Sample ID.:				1485123	1485124
	Sample Location:				ST101	ST104
	Sample Type:				SOIL	SOIL
	Top Depth (m):				1.50	0.65
	Date Sampled:				04-Aug-2022	04-Aug-2022
Determinand	Accred.	SOP	Units	LOD		
Moisture	N	2030	%	0.020	14	6.2
pH	U	2010		4.0		7.7
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010		0.59
Organic Matter	U	2625	%	0.40	2.8	

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
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
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

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

All Asbestos testing is performed at the indicated laboratory

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

Sample Deviation Codes

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

Sample Retention and Disposal

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

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.:	22-25498-1		
Initial Date of Issue:	11-Jul-2022		
Client	Priority Geotechnical Ltd		
Client Address:	Unit 12 Owenacurra Business Park Midleton County Cork Ireland		
Contact(s):	Colette Kelly		
Project	P22044 Mortarstown		
Quotation No.:		Date Received:	06-Jul-2022
Order No.:	14702	Date Instructed:	06-Jul-2022
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	12-Jul-2022
Date Approved:	11-Jul-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: P22044 Mortarstown

Client: Priority Geotechnical Ltd	Chemtest Job No.:			22-25498	22-25498	
Quotation No.:	Chemtest Sample ID.:			1462915	1462916	
	Sample Location:			BH104	BH103	
	Sample Type:			SOIL	SOIL	
	Top Depth (m):			6.00	10.50	
	Date Sampled:			04-Jul-2022	04-Jul-2022	
Determinand	Accred.	SOP	Units	LOD		
Moisture	N	2030	%	0.020	17	20
pH	U	2010		4.0	9.0	8.7
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	0.010
Chloride (Water Soluble)	U	2220	g/l	0.010	< 0.010	< 0.010

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
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
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.

Report Information

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- D - Broken Container
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All water samples will be retained for 14 days from the date of receipt

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If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.:	22-24872-1		
Initial Date of Issue:	07-Jul-2022		
Client	Priority Geotechnical Ltd		
Client Address:	Unit 12 Owenacurra Business Park Midleton County Cork Ireland		
Contact(s):	Colette Kelly		
Project	P22044 Mortarstown		
Quotation No.:		Date Received:	01-Jul-2022
Order No.:	14702	Date Instructed:	01-Jul-2022
No. of Samples:	5		
Turnaround (Wkdays):	5	Results Due:	07-Jul-2022
Date Approved:	07-Jul-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: P22044 Mortarstown

Client: Priority Geotechnical Ltd	Chemtest Job No.:					22-24872	22-24872	22-24872	22-24872	22-24872
Quotation No.:	Chemtest Sample ID.:					1459786	1459787	1459788	1459789	1459790
	Sample Location:					BH101	BH101	BH103	BH105	BH101
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.00	3.00	1.00	7.50	10.50
	Date Sampled:					29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
Determinand	Accred.	SOP	Units	LOD						
Moisture	N	2030	%	0.020	20	4.8	15	17	8.3	
pH	U	2010		4.0		9.2		8.8	8.8	
Sulphate (2:1 Water Soluble) as SO ₄	U	2120	g/l	0.010		< 0.010		< 0.010	< 0.010	
Chloride (Water Soluble)	U	2220	g/l	0.010		< 0.010		< 0.010		
Organic Matter	U	2625	%	0.40	3.3		1.5			

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
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
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.

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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

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If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.:	22-23327-1		
Initial Date of Issue:	28-Jun-2022		
Client	Priority Geotechnical Ltd		
Client Address:	Unit 12 Owenacurra Business Park Midleton County Cork Ireland		
Contact(s):	Colette Kelly		
Project	P22044 Mortarstown		
Quotation No.:	Q17-09116	Date Received:	22-Jun-2022
Order No.:	14702	Date Instructed:	22-Jun-2022
No. of Samples:	5		
Turnaround (Wkdays):	5	Results Due:	28-Jun-2022
Date Approved:	28-Jun-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Leachate

Project: P22044 Mortarstown

Client: Priority Geotechnical Ltd	Chemtest Job No.:					22-23327	22-23327	22-23327
Quotation No.: Q17-09116	Chemtest Sample ID.:					1453359	1453361	1453362
Order No.: 14702	Client Sample Ref.:					ENV1	ENV1	ENV1
	Sample Location:					ST110	ST106	ST104
	Sample Type:					SOIL	SOIL	SOIL
	Top Depth (m):					0.70	0.50	0.65
	Date Sampled:					13-Jun-2022	15-Jun-2022	15-Jun-2022
Determinand	Accred.	SOP	Type	Units	LOD			
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	0.053	0.071
Ammonium	N	1220	10:1	mg/kg	0.10	0.39	0.65	0.87

Results - Soil

Project: P22044 Mortarstown

Client: Priority Geotechnical Ltd	Chemtest Job No.:				22-23327	22-23327	22-23327	22-23327	22-23327
Quotation No.: Q17-09116	Chemtest Sample ID.:				1453358	1453359	1453360	1453361	1453362
Order No.: 14702	Client Sample Ref.:					ENV1	ENV1	ENV1	ENV1
	Sample Location:				ST110	ST110	ST108	ST106	ST104
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.70	0.50	0.50	0.65
	Date Sampled:				13-Jun-2022	13-Jun-2022	15-Jun-2022	15-Jun-2022	15-Jun-2022
	Asbestos Lab:					DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD					
ACM Type	U	2192		N/A		-	-	-	-
Asbestos Identification	U	2192		N/A		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	3.8	7.7	7.5	4.6	5.3
pH	M	2010		4.0		8.3	8.3	8.7	8.3
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40		< 0.40		0.53	< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010			0.044		
Sulphur (Elemental)	M	2180	mg/kg	1.0		2.6		4.1	8.5
Cyanide (Total)	M	2300	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50		0.76		6.5	2.3
Sulphate (Total)	U	2430	%	0.010		0.033		0.035	0.062
Arsenic	M	2455	mg/kg	0.5		5.7	6.6	6.6	7.4
Boron	N	2455	mg/kg	50.00			< 50		
Barium	M	2455	mg/kg	0		28		21	32
Cadmium	M	2455	mg/kg	0.10		0.62	0.65	0.63	0.73
Chromium	M	2455	mg/kg	0.5		8.8	11	9.9	12
Molybdenum	M	2455	mg/kg	0.5		1.0		1.6	1.5
Antimony	N	2455	mg/kg	2.0		< 2.0		< 2.0	< 2.0
Copper	M	2455	mg/kg	0.50		12	21	14	26
Mercury	M	2455	mg/kg	0.05		0.05	< 0.05	< 0.05	0.05
Nickel	M	2455	mg/kg	0.50		15	15	17	17
Lead	M	2455	mg/kg	0.50		25	22	26	40
Selenium	M	2455	mg/kg	0.25		0.62		0.57	0.71
Zinc	M	2455	mg/kg	0.50		41	68	45	59
Chromium (Trivalent)	N	2490	mg/kg	1.0		8.8		9.9	12
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50		< 0.50	< 0.50
Organic Matter	M	2625	%	0.40			3.6		
Total Organic Carbon	M	2625	%	0.20		0.75		0.71	1.9
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10		76		200	170
Total TPH >C6-C40	M	2670	mg/kg	10			30		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0		76		200	170
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0

Results - Soil

Project: P22044 Mortarstown

Client: Priority Geotechnical Ltd	Chemtest Job No.:				22-23327	22-23327	22-23327	22-23327	22-23327
Quotation No.: Q17-09116	Chemtest Sample ID.:				1453358	1453359	1453360	1453361	1453362
Order No.: 14702	Client Sample Ref.:					ENV1	ENV1	ENV1	ENV1
	Sample Location:				ST110	ST110	ST108	ST106	ST104
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.70	0.50	0.50	0.65
	Date Sampled:				13-Jun-2022	13-Jun-2022	15-Jun-2022	15-Jun-2022	15-Jun-2022
	Asbestos Lab:					DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD					
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0		76		200	170
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0		140		120	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		140		120	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		220		320	170
Naphthalene	M	2700	mg/kg	0.10	1.2		< 0.10		
Acenaphthylene	M	2700	mg/kg	0.10	0.30		< 0.10		
Acenaphthene	M	2700	mg/kg	0.10	2.1		< 0.10		
Fluorene	M	2700	mg/kg	0.10	1.7		< 0.10		
Phenanthrene	M	2700	mg/kg	0.10	14		< 0.10		
Anthracene	M	2700	mg/kg	0.10	4.0		< 0.10		
Fluoranthene	M	2700	mg/kg	0.10	19		< 0.10		
Pyrene	M	2700	mg/kg	0.10	20		< 0.10		
Benzo[a]anthracene	M	2700	mg/kg	0.10	7.7		< 0.10		
Chrysene	M	2700	mg/kg	0.10	9.1		< 0.10		
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	10		< 0.10		
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	3.4		< 0.10		
Benzo[a]pyrene	M	2700	mg/kg	0.10	9.4		< 0.10		
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	6.1		< 0.10		
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	1.7		< 0.10		
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	6.0		< 0.10		
Coronene	N	2700	mg/kg	0.10	< 0.10		< 0.10		
Total Of 17 PAH's	N	2700	mg/kg	2.0	120		< 2.0		
Benzene	M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10

Results - Soil

Project: P22044 Mortarstown

Client: Priority Geotechnical Ltd	Chemtest Job No.:				22-23327	22-23327	22-23327	22-23327	22-23327
Quotation No.: Q17-09116	Chemtest Sample ID.:				1453358	1453359	1453360	1453361	1453362
Order No.: 14702	Client Sample Ref.:					ENV1	ENV1	ENV1	ENV1
	Sample Location:				ST110	ST110	ST108	ST106	ST104
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.70	0.50	0.50	0.65
	Date Sampled:				13-Jun-2022	13-Jun-2022	15-Jun-2022	15-Jun-2022	15-Jun-2022
	Asbestos Lab:					DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD					
Fluorene	M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10		1.1		0.32	0.72
Anthracene	M	2800	mg/kg	0.10		0.13		0.13	0.25
Fluoranthene	M	2800	mg/kg	0.10		1.9		2.4	5.1
Pyrene	M	2800	mg/kg	0.10		1.5		2.2	4.7
Benzo[a]anthracene	M	2800	mg/kg	0.10		0.69		1.5	3.1
Chrysene	M	2800	mg/kg	0.10		0.62		1.6	3.3
Benzo[b]fluoranthene	M	2800	mg/kg	0.10		< 0.10		2.1	5.4
Benzo[k]fluoranthene	M	2800	mg/kg	0.10		< 0.10		1.0	2.2
Benzo[a]pyrene	M	2800	mg/kg	0.10		< 0.10		2.2	6.1
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10		< 0.10		< 0.10	3.2
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10		< 0.10		< 0.10	0.54
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10		< 0.10		< 0.10	3.4
Coronene	N	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10
PCB 28	U	2815	mg/kg	0.010		< 0.010		< 0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010		< 0.010		< 0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010		< 0.010		< 0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010		< 0.010		< 0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010		< 0.010		< 0.010	< 0.010
PCB 138	U	2815	mg/kg	0.010		< 0.010		< 0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010		< 0.010		< 0.010	< 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10		< 0.10		< 0.10	< 0.10
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10

Results - Single Stage WAC

Project: P22044 Mortarstown

Chemtest Job No: 22-23327					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1453359					Limits		
Sample Ref: ENV1					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: ST110							
Top Depth(m): 0.70							
Bottom Depth(m):							
Sampling Date: 13-Jun-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.75	3	5	6
Loss On Ignition	2610	M	%	1.7	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	220	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	5.9	100	--	--
pH					--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.061	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455	U	0.0019	0.019	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0030	0.030	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	0.0006	0.0065	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	7.9	79	800	15000	25000
Fluoride	1220	U	0.070	< 1.0	10	150	500
Sulphate	1220	U	6.3	63	1000	20000	50000
Total Dissolved Solids	1020	N	91	910	4000	60000	100000
Phenol Index	1920	U	0.41	4.1	1	-	-
Dissolved Organic Carbon	1610	U	58	580	500	800	1000

Solid Information

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

Waste Acceptance Criteria

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

Results - Single Stage WAC

Project: P22044 Mortarstown

Chemtest Job No: 22-23327					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1453361					Limits		
Sample Ref: ENV1					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: ST106							
Top Depth(m): 0.50							
Bottom Depth(m):							
Sampling Date: 15-Jun-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.71	3	5	6
Loss On Ignition	2610	M	%	1.4	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	320	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	14	100	--	--
pH					--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0011	0.011	0.5	2	25
Barium	1455	U	0.006	0.056	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0014	0.014	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0004	0.0043	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0014	0.014	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.003	0.030	4	50	200
Chloride	1220	U	1.6	16	800	15000	25000
Fluoride	1220	U	0.070	< 1.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	52	520	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	8.5	85	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	4.6

Waste Acceptance Criteria

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

Results - Single Stage WAC

Project: P22044 Mortarstown

Chemtest Job No: 22-23327					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1453362					Limits		
Sample Ref: ENV1					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: ST104							
Top Depth(m): 0.65							
Bottom Depth(m):							
Sampling Date: 15-Jun-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.9	3	5	6
Loss On Ignition	2610	M	%	2.8	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	170	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	38	100	--	--
pH					--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0009	0.0085	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0013	0.013	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0011	0.011	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0010	0.0096	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.8	18	800	15000	25000
Fluoride	1220	U	0.075	< 1.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	52	520	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	9.7	97	500	800	1000

Solid Information

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

Waste Acceptance Criteria

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

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	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, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	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
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline 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.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
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

Test Methods

SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
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*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

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

All Asbestos testing is performed at the indicated laboratory

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

Sample Deviation Codes

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

Sample Retention and Disposal

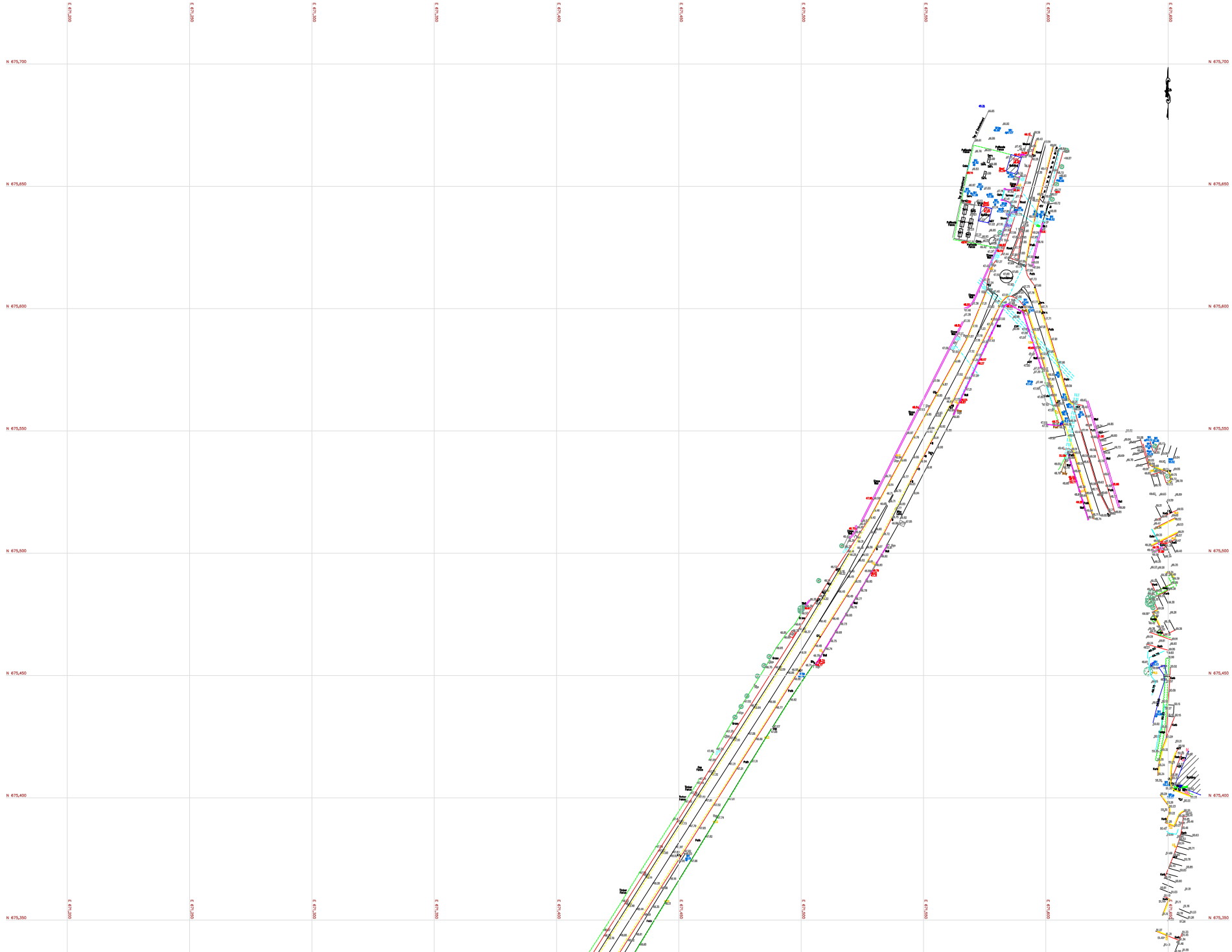
All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



NOTES:
1. All levels are relative to Ordnance Datum
Main Road
2. 20m sq grid relative to Irish Transverse Mercator
co-ordinate reference system
3. Contours are at 0.25m intervals

Symbol	Feature	Color	Line Type
1	Boundary	Red	Solid
2	Boundary	Red	Dashed
3	Boundary	Red	Dotted
4	Boundary	Red	Long Dash
5	Boundary	Red	Short Dash
6	Boundary	Red	Long Dash
7	Boundary	Red	Short Dash
8	Boundary	Red	Long Dash
9	Boundary	Red	Short Dash
10	Boundary	Red	Long Dash
11	Boundary	Red	Short Dash
12	Boundary	Red	Long Dash
13	Boundary	Red	Short Dash
14	Boundary	Red	Long Dash
15	Boundary	Red	Short Dash
16	Boundary	Red	Long Dash
17	Boundary	Red	Short Dash
18	Boundary	Red	Long Dash
19	Boundary	Red	Short Dash
20	Boundary	Red	Long Dash
21	Boundary	Red	Short Dash
22	Boundary	Red	Long Dash
23	Boundary	Red	Short Dash
24	Boundary	Red	Long Dash
25	Boundary	Red	Short Dash
26	Boundary	Red	Long Dash
27	Boundary	Red	Short Dash
28	Boundary	Red	Long Dash
29	Boundary	Red	Short Dash
30	Boundary	Red	Long Dash
31	Boundary	Red	Short Dash
32	Boundary	Red	Long Dash
33	Boundary	Red	Short Dash
34	Boundary	Red	Long Dash
35	Boundary	Red	Short Dash
36	Boundary	Red	Long Dash
37	Boundary	Red	Short Dash
38	Boundary	Red	Long Dash
39	Boundary	Red	Short Dash
40	Boundary	Red	Long Dash
41	Boundary	Red	Short Dash
42	Boundary	Red	Long Dash
43	Boundary	Red	Short Dash
44	Boundary	Red	Long Dash
45	Boundary	Red	Short Dash
46	Boundary	Red	Long Dash
47	Boundary	Red	Short Dash
48	Boundary	Red	Long Dash
49	Boundary	Red	Short Dash
50	Boundary	Red	Long Dash
51	Boundary	Red	Short Dash
52	Boundary	Red	Long Dash
53	Boundary	Red	Short Dash
54	Boundary	Red	Long Dash
55	Boundary	Red	Short Dash
56	Boundary	Red	Long Dash
57	Boundary	Red	Short Dash
58	Boundary	Red	Long Dash
59	Boundary	Red	Short Dash
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63	Boundary	Red	Short Dash
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94	Boundary	Red	Long Dash
95	Boundary	Red	Short Dash
96	Boundary	Red	Long Dash
97	Boundary	Red	Short Dash
98	Boundary	Red	Long Dash
99	Boundary	Red	Short Dash
100	Boundary	Red	Long Dash

Symbol	Feature	Color	Line Type
1	Boundary	Red	Solid
2	Boundary	Red	Dashed
3	Boundary	Red	Dotted
4	Boundary	Red	Long Dash
5	Boundary	Red	Short Dash
6	Boundary	Red	Long Dash
7	Boundary	Red	Short Dash
8	Boundary	Red	Long Dash
9	Boundary	Red	Short Dash
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90	Boundary	Red	Long Dash
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92	Boundary	Red	Long Dash
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94	Boundary	Red	Long Dash
95	Boundary	Red	Short Dash
96	Boundary	Red	Long Dash
97	Boundary	Red	Short Dash
98	Boundary	Red	Long Dash
99	Boundary	Red	Short Dash
100	Boundary	Red	Long Dash

No.	Date	Description

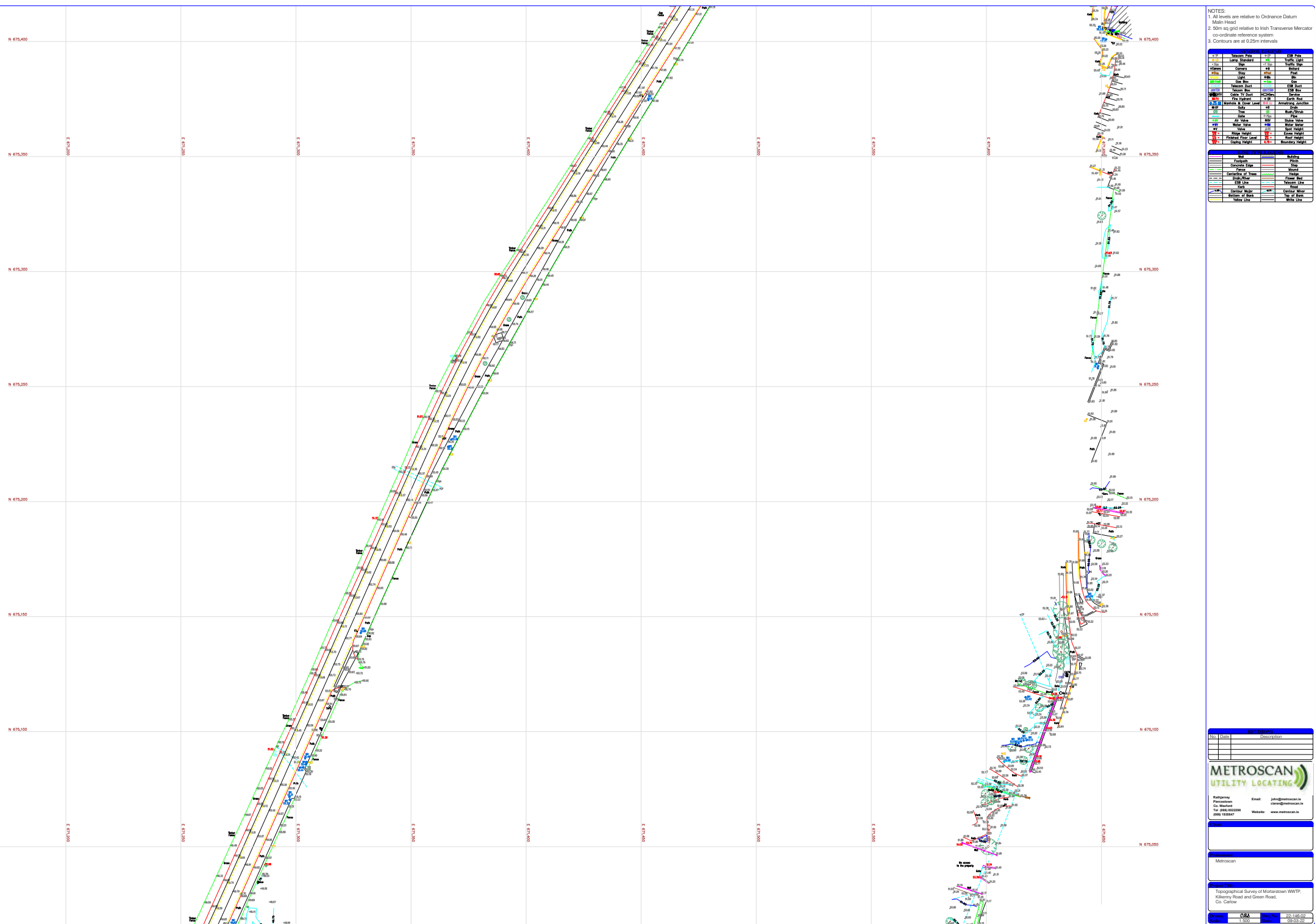
METROSCAN
UTILITY LOCATING

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Metroscan

Topographical Survey of Metastown WWTP,
Kilnenny Road and Green Road,
Co. Carlow

Scale: 1:500 Date: 22-10-2010
Drawn: CBA



NOTES:

1. All levels are relative to Ordnance Datum
Malin Head
2. 50m sq grid relative to Irish Transverse Mercator
co-ordinate reference system
3. Contours are at 0.25m intervals

1000+ BUREAU FACTORS			
0-9	Season Pass	0-9	ESR Rate
0-10	Lamp Standard	0-1	Traffic Light
0-15	Clashes	0-1	Signal
0-20	Clashes	0-1	Post
0-25	Sign	0-1	Shin
0-30	Sign Box	0-1	ESR Cost
0-35	Season Box	0-1	ESR Box
0-40	Cable TV Unit	0-1	Service
0-45	Top Signal	0-1	Service
0-50	Warning & Cover Level	0-1	Armstrong Junction
0-55	Gully	0-1	Shin
0-60	Tree	0-1	ESR/Signal
0-65	Value	0-1	Shin Value
0-70	Motor Value	0-1	Motor Value
0-75	Value	0-1	Shin Value
0-80	Value	0-1	Shin Value
0-85	Finished Floor Level	0-1	Roof Height

Coping Height		4.75	Boundary Height
LINE TYPE LEGEND			
	Wall		Building
	Fireproof		Roof
	Concrete Edge		Step
	Fence		Mound
	Centerline of Trees		Hedge
	Snake/River		Flower Bed
	ESB Line		Telecom Line
	Kerb		Road
	Contour Major		Contour Minor
	Bottom of Bank		Top of Bank

REVISIONS		
No.	Date	Description



Ruth Jarvey
 Pleasanton
 Co. WA 94566
 Tel (906) 8522298
 (006) 1935847

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cieran@metroscan.ie

Website: www.metroscan.ie

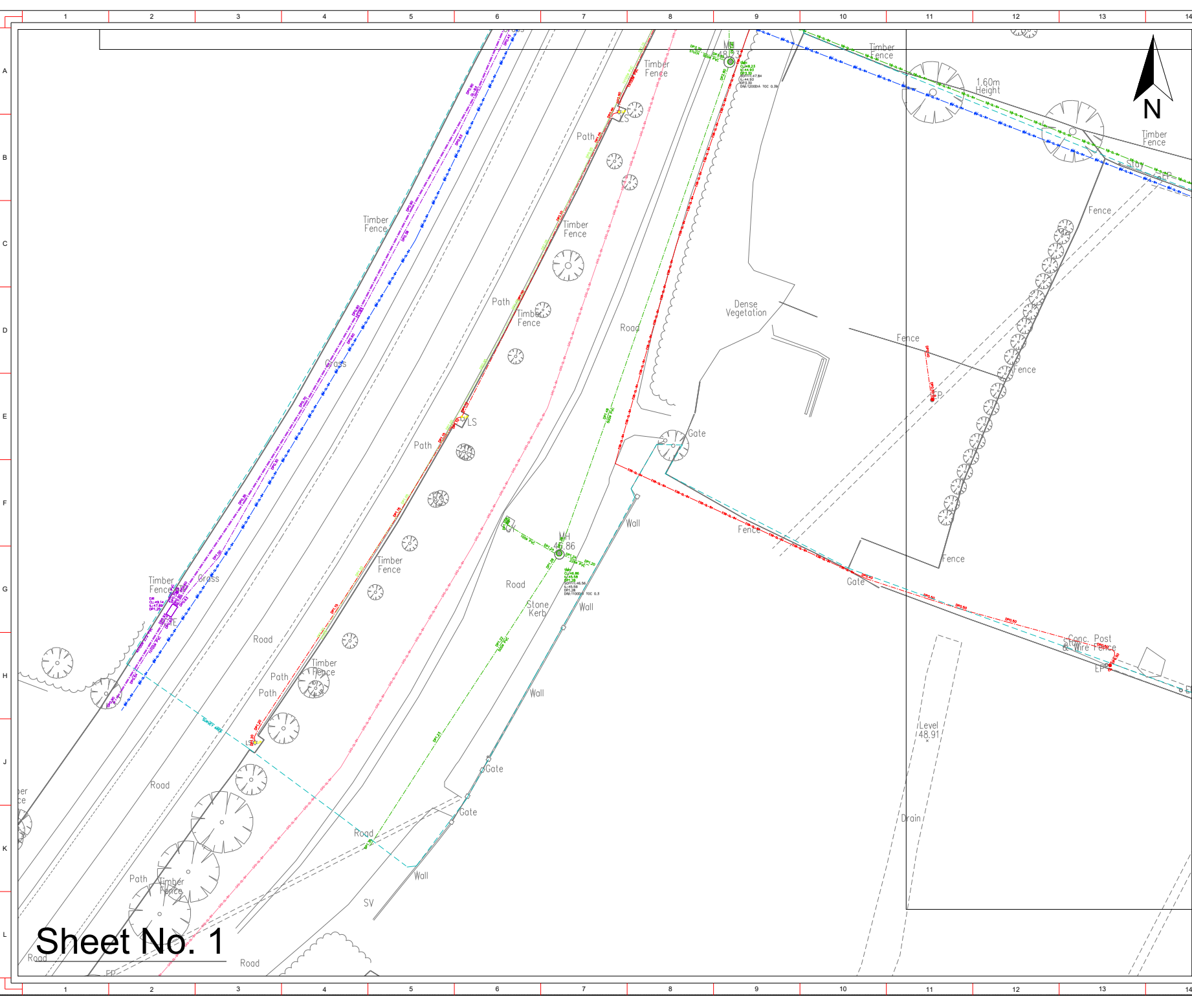
METROSCAN
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Website: www.metroscan.ie

Client:	
Professional:	
Metroscan	
Project Title:	
Topographical Survey of Montastown WWTP, Kilmealy Road and Green Road, Co. Carlow	
Drawn By:	Proj No:
CBA 1:500	22-146-02 09-03-22



Sheet No. 1

SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		TRENCH
	OVERHEAD LINE WITH POLE		STORM DRAINAGE
	OVERHEAD ELECTRIC		STORM DRAINAGE MANHOLE
	ON HIGH STREET LIGHT		COMBINED DRAINAGE
	MINI PILE		COMBINED DRAINAGE MANHOLE
	GAS ELECTRIC TRAFFIC CONTROL		PRODUCT DRAINAGE
	TRAFFIC CONTROL MANHOLE		CHEMICAL LINE
	EIR		CHEMICAL MANHOLE
	EIR CHAMBER		ROAD GULLY
	OVERHEAD LINE WITH POLE		GULLY TRAP
	TRENCH		WATER MAIN
	TRENCH CHAMBER		SLUICE VALVE
	COPPS		FIRE HYDRANT
	COPPS CHAMBER		WATER METER
	VIRGIN		SEWER VALVE
	VIRGIN CHAMBER		WATER METER
	FIBRE		AIR VALVE
	FIBRE CHAMBER		PRESSURE RELEASE VALVE
	AURORA TELECOM		NON-RETURN VALVE
	AURORA TELECOM CHAMBER		FUEL LINE/TANK
	CATV		GAS SV
	CATV CHAMBER		GAS HIGH PRESSURE LINE
	STESAT		GAS SV
	STESAT CHAMBER		GAS SV
	SISO FIBRE		GAS SV
	SISO CHAMBER		GAS SV
	UNIDENTIFIED SERVICE		GAS SV
	EARTH LINE AND RODS		GAS SV
	TRAFFIC SENSORS		GAS SV
	CATV POLE		GAS SV
	UTILITIES CORRIDOR		GAS SV

Notes

- GPR scanning frequency 200 and 700 mhz
- Depth of investigation 2.5m, self calibrating
- Radio detection equipment: Vixta Metrotech VixtaLoc2 / RD7000
- GPR scanning limited to smooth surfaces only no obstruction
- Survey area marked on drawing
- All depths stated are an indication of depth
- caution required when excavating
- All Utilities are classified QL - B2 unless noted otherwise.

PAS 128

Service Type	Depth (m)	Location	Notes
1	0.5	Underground	Gas SV
2	0.5	Underground	Gas SV
3	0.5	Underground	Gas SV
4	0.5	Underground	Gas SV
5	0.5	Underground	Gas SV
6	0.5	Underground	Gas SV
7	0.5	Underground	Gas SV
8	0.5	Underground	Gas SV
9	0.5	Underground	Gas SV
10	0.5	Underground	Gas SV
11	0.5	Underground	Gas SV
12	0.5	Underground	Gas SV
13	0.5	Underground	Gas SV
14	0.5	Underground	Gas SV
15	0.5	Underground	Gas SV
16	0.5	Underground	Gas SV

Client : Priority

Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow

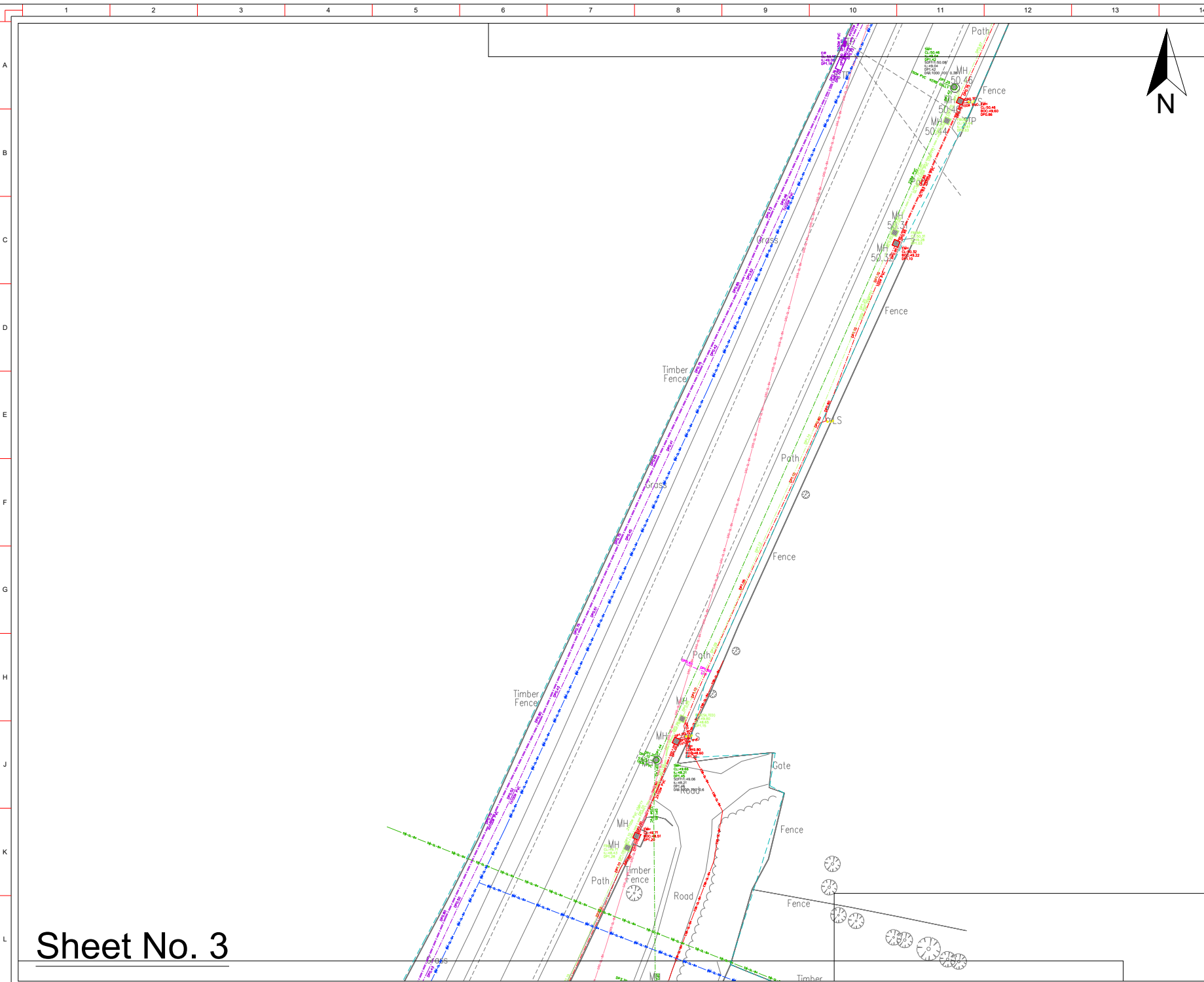
Drawing Title: MUL1080_Priority_Mortarstown_2D	Drwg No: 1
Site Completion Date: 23/02/2022	Sheet No: 1
Scale: 1:200 @ A1	Coordinates: ITM
Revision No:	

METROSCAN
UTILITY LOCATING

Address: Rathjarney, Piercestown, Co. Wexford, Tel: (086) 8522298, (086) 1935847

Email: john@metroscan.ie, claran@metroscan.ie

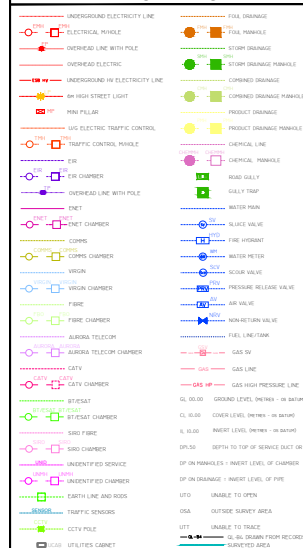
Website: www.metroscan.ie



Sheet No. 3



SERVICES LEGEND



Please note that the absence of services on this drawing is not solid proof that these services are not present in the ground. While every method of underground utility locating has been adhered to in this survey, some services may be outside the range of the GPR and electro-magnetic locating signal. Poor ground conditions and/or services situated underneath other services can also be responsible to locate. Only the Contractor and not the Utility Service Plans were provided to the contractor. The contractor is responsible for any services that have not been identified. The contractor should not assume that all services have been identified and must exercise a duty of care when excavating. Hand / vacuum excavation is advised to determine exact depth and position of service prior to excavation commencing. Please note that the drawing provided is valid for 90 days from date stated below.

Accuracy Level

In ideal conditions the accuracy levels of the EML is +/-5% whilst the GPR outputs accuracy levels of 10% up to 2.5m depth. These accuracy levels can vary depending on ground conditions, depths of services, congestion of services (may cause signal bleed on to other services).

Depth noted on drawings should be taken as indicative and hand / vacuum excavation is advised where exact depth are not known.
Diameter of services will be given where direct access is available through visual inspection, eg manhole.
All Cover level elevations for Manholes / Inspection Chambers will be taken from topographical survey if supplied

Survey Limited
Non-conductible

They can easily be traced when placed in a conduit by the means of a sonde or cobra reel.
PE gas mains can also prove difficult to identify.

If Metroscan cannot get an accurate signal from a service, it will be noted on the drawing that the service is "Taken from reel."

QL-54'.
If manholes cannot be opened on site, they will be marked on the drawing as UTO (unable to open).

Note

1. GPR scanning frequency 250 and 700 mhz
Depth of investigation 2.5m, self calibrating.
2. Radio detection equipment:
Vivax Metrotech VproLoc2 / RD7000
3. GPR scanning limited to smooth surfaces only no obstruction
Survey area marked on drawing
4. All depths stated are an indication of depth
caution required when excavating.
5. All Utilities are classified QL-B2 unless noted otherwise.

PAS 128

[illegible]

Client : Priority

Site Address : Mortarstown Kilkenny Rd,
Moanacurragh, Carlow

Drawing Title: MUL1080_ Priority_Mortarstown_2D	Drwg No:	
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Site Completion Date: 23/02/2022	Sheet No:	
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Scale: 1:200 @ A1	Coordinates: ITM	Revision No:
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METROSCAN
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ciaran@metroscan.ie

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Sheet No. 4



SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		TIDAL DRAINAGE
	ELECTRICAL MANHOLE		STORM DRAINAGE
	OVERHEAD LINE WITH POLE		STORM DRAINAGE MANHOLE
	OVERHEAD ELECTRIC		COMBINED DRAINAGE
	ON HIGH STREET LIGHT		COMBINED DRAINAGE MANHOLE
	MINI PILLAR		PRODUCT DRAINAGE
	USG ELECTRIC TRAFFIC CONTROL		PRODUCT DRAINAGE MANHOLE
	TRAFFIC CONTROL MANHOLE		CHEMICAL LINE
	EWI		CHEMICAL MANHOLE
	EIR CHAMBER		ROAD GULLY
	OVERHEAD LINE WITH POLE		GULLY TRAP
	TNET		WATER MAIN
	TNET CHAMBER		SLUICE VALVE
	COPPS		FIRE HYDRANT
	COPPS CHAMBER		WATER METER
	VIRCON		SCUR VALVE
	VIRCON CHAMBER		WATER METER
	FIBRE		AIR VALVE
	FIBRE CHAMBER		PRESSURE RELEASE VALVE
	ALURORA TELECOM		FUEL LINE/TANK
	ALURORA TELECOM CHAMBER		GAS SV
	CATV		GAS LINE
	CATV CHAMBER		GAS HIGH PRESSURE LINE
	STESAT		GAS SV
	STESAT CHAMBER		GAS SV
	SIRD FIBRE		GAS SV
	SIRD CHAMBER		GAS SV
	UNIDENTIFIED SERVICE		GAS SV
	UNIDENTIFIED CHAMBER		GAS SV
	EARTH LINE AND RODS		GAS SV
	TRAFFIC SENSORS		GAS SV
	CTV POLE		GAS SV
	UTILITIES CABLE		GAS SV

Please note that the absence of services on this drawing is not proof that these services are not present in the ground. While every effort is made to ensure that the drawing is as accurate as possible, the drawing is not a guarantee of the GPR and electro-magnetic location signal. Please ground conditions and/or services situated underneath other services can also present themselves in the ground. Due to the fact that not all GPR services have been provided to MetroScan by the contractor, MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that services are able to be located without exception. The location of services is not a guarantee of the location of services. Please note that the drawing provided is valid for 60 days from date stated below. Drawing is intended solely for use of the contractor named below.

Accuracy Levels
To ideal conditions the accuracy levels of the GPR is $\pm 10\%$ within the GPR's accuracy levels of 10% up to 2.5m depth. Please accuracy levels can vary depending on ground conditions, depth of services, composition of services, time taken signal to travel on to other services.
Depth of services is not a guarantee of the location of services. Please note that the drawing provided is valid for 60 days from date stated below. Drawing is intended solely for use of the contractor named below.

Service Location
Please note that the drawing provided is not a guarantee of the location of services. Please note that the drawing provided is valid for 60 days from date stated below. Drawing is intended solely for use of the contractor named below.

Notes
1. GPR scanning frequency 200 and 700 mhz
Depth of investigation 2.5m, self-calibrating
2. Radio detection equipment:
Vixor Metrotech VixorLoc2 / RD7000
3. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
4. All depths stated are an indication of depth
caution required when excavating
5. All Utilities are classified QL - B2 unless otherwise stated.

PAS 128

Service Type	Depth (m)	Condition	Location	Supporting Data
1	0.15	Condition	Location	Supporting Data
2	0.15	Condition	Location	Supporting Data
3	0.15	Condition	Location	Supporting Data
4	0.15	Condition	Location	Supporting Data
5	0.15	Condition	Location	Supporting Data
6	0.15	Condition	Location	Supporting Data
7	0.15	Condition	Location	Supporting Data
8	0.15	Condition	Location	Supporting Data
9	0.15	Condition	Location	Supporting Data
10	0.15	Condition	Location	Supporting Data
11	0.15	Condition	Location	Supporting Data
12	0.15	Condition	Location	Supporting Data
13	0.15	Condition	Location	Supporting Data
14	0.15	Condition	Location	Supporting Data
15	0.15	Condition	Location	Supporting Data
16	0.15	Condition	Location	Supporting Data

Client : Priority

Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow

Drawing Title: MUL1080_Priority_Mortarstown_2D

Site Completion Date: 23/02/2022

Scale: 1:200 @ A1

Coordinates: ITM

Revision No:

Drwg No: 1

Sheet No: 4

Scale: 1:200 @ A1

Coordinates: ITM

Revision No:

Drwg No: 1

Sheet No: 4

Scale: 1:200 @ A1

Coordinates: ITM

Revision No:

Drwg No: 1

Sheet No: 4

Scale: 1:200 @ A1

Coordinates: ITM

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Revision No:

Sheet No. 5



SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		TIDAL DRAINAGE
	ELECTRICAL MANHOLE		STORM DRAINAGE
	OVERHEAD LINE WITH POLE		STORM DRAINAGE MANHOLE
	OVERHEAD ELECTRIC		COMBINED DRAINAGE
	8m HIGH STREET LIGHT		COMBINED DRAINAGE MANHOLE
	MINI PYLON		PRODUCT DRAINAGE
	UIC ELECTRIC TRAFFIC CONTROL		PRODUCT DRAINAGE MANHOLE
	TRAFFIC CONTROL MANHOLE		CHEMICAL LINE
	EWI		CHEMICAL MANHOLE
	EIR CHAMBER		ROAD GULLY
	OVERHEAD LINE WITH POLE		GULLY TRAP
	TNET		WATER MAIN
	TNET CHAMBER		SLUICE VALVE
	COPPS		FIRE HYDRANT
	COPPS CHAMBER		WATER METER
	VISION		SCVR VALVE
	VISION CHAMBER		PRESSURE RELEASE VALVE
	FIBRE		AIR VALVE
	FIBRE CHAMBER		NON-RETURN VALVE
	AURORA TELECOM		FUEL LINE/TANK
	AURORA TELECOM CHAMBER		GAS SV
	CATV		GAS LINE
	CATV CHAMBER		GAS HIGH PRESSURE LINE
	STESAT		GROUND LEVEL (DIN 4761) - IN SURFACE
	STESAT CHAMBER		COVER LEVEL (DIN 4761) - IN SURFACE
	SISO FIBRE		INSET LEVEL (DIN 4761) - IN SURFACE
	SISO CHAMBER		DEPTH TO TOP OF SERVICE DUCT OR CABLE
	UNIDENTIFIED SERVICE		OP ON MANHOLES - INSET LEVEL OF CHAMBER
	EARTH LINE AND RODS		OP ON DRAINAGE - INSET LEVEL OF PIPE
	TRAFFIC SENSORS		UNABLE TO OPEN
	CCTV POLE		OUTSIDE SURVEY AREA
	UTILITIES CANNY		UNABLE TO TRACE
			GROUND FROM RECORDS

Please note that the presence of services on this drawing is not a guarantee that the services are not present in the ground. While every effort has been made to ensure the accuracy of the drawing, the contractor is not responsible for the accuracy of the GPR and electro-magnetic sensor signal. Please ground conditions and/or services situated underneath other services can also present a possibility to locate. Due to the fact that not all GPR services have been provided to MetroScan by the contractor, MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that services are able to be located. The contractor should not assume that all services have been identified and that services are able to be located. The contractor should not assume that all services have been identified and that services are able to be located. Please note that the drawing provided is valid for 60 days from date stated below. Drawing is intended solely for use of the contractor named below.

Accuracy Levels
To ideal conditions the accuracy levels of the GPR is <+1% when the GPR obtains accuracy levels of 10% up to 2.5m depth. Please accuracy levels can vary depending on ground conditions, depth of services, composition of services, time taken signal to travel on to other services.
Quality of data or drawings should be taken as indicative and final accuracy is achieved where exact depth are required.
Accuracy of data or drawings of the ground where services are located through ground conditions, eg. manholes, etc.
All Cover level elevations for Manholes/Inspection Chambers will be taken from topographical survey if supplied.

Service Location
Please note that the drawing provided is not a guarantee that the services are not present in the ground. While every effort has been made to ensure the accuracy of the drawing, the contractor is not responsible for the accuracy of the GPR and electro-magnetic sensor signal. Please ground conditions and/or services situated underneath other services can also present a possibility to locate. Due to the fact that not all GPR services have been provided to MetroScan by the contractor, MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that services are able to be located. The contractor should not assume that all services have been identified and that services are able to be located. The contractor should not assume that all services have been identified and that services are able to be located. Please note that the drawing provided is valid for 60 days from date stated below. Drawing is intended solely for use of the contractor named below.

Notes
1. GPR scanning frequency 200 and 700 mhz
Depth of investigation 2.5m, self calibrating
2. Radio detection equipment:
Viva Metrotech VproLoc2 / RD7000
3. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
4. All depths stated are an indication of depth
caution required when excavating
5. All Utilities are classified CL - B2 unless noted otherwise.

PAS 128

Service Type	Depth (m)	Condition	Location	Supporting Data
1. Water main (100mm dia)	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other utilities, topographic information and/or other data.
2. Gas (100mm dia)	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other utilities, topographic information and/or other data.
3. Sewer (100mm dia)	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other utilities, topographic information and/or other data.
4. Storm (100mm dia)	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other utilities, topographic information and/or other data.
5. Electric (100mm dia)	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other utilities, topographic information and/or other data.
6. Cable (100mm dia)	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other utilities, topographic information and/or other data.
7. Fibre (100mm dia)	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other utilities, topographic information and/or other data.
8. Other (100mm dia)	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other utilities, topographic information and/or other data.

Client : Priority
Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow

Drawing Title: MUL1080_Priority_Mortarstown_2D
Drwg No: 1

Site Completion Date: 23/02/2022
Sheet No: 5

Scale: 1:200 @ A1
Coordinates: ITM
Revision No:



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Website: www.metroscan.ie

Sheet No. 6

SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		TRENCH
	ELECTRICAL MANHOLE		TRENCH MANHOLE
	OVERHEAD LINE WITH POLE		STORM DRAINAGE
	OVERHEAD ELECTRIC		STORM DRAINAGE MANHOLE
	6m HIGH STREET LIGHT		COMBINED DRAINAGE
	MINI PILLAR		COMBINED DRAINAGE MANHOLE
	GAS ELECTRIC TRAFFIC CONTROL		PRODUCT DRAINAGE
	EIR CHAMBER		CHEMICAL LINE
	OVERHEAD LINE WITH POLE		CHEMICAL MANHOLE
	TRENCH		ROAD GULLY
	TRENCH CHAMBER		GULLY TRAP
	COWPS		WATER MAIN
	COWPS CHAMBER		SLUICE VALVE
	VIRGIN		FIRE HYDRANT
	VIRGIN CHAMBER		WATER METER
	FIBRE CHAMBER		SEWER VALVE
	AURORA TELECOM CHAMBER		WATER PEEPER
	CATV		AIR VALVE
	CATV CHAMBER		PRESSURE RELEASE VALVE
	STESAT		NON-RETURN VALVE
	STESAT CHAMBER		FUEL LINE/TANK
	SISO FIBRE		GAS SV
	SISO CHAMBER		GAS HIGH PRESSURE LINE
	UNIDENTIFIED SERVICE		GAS VALVE
	EARTH LINE AND RODS		GAS VALVE
	TRAFFIC SENSORS		GAS VALVE
	CCTV POLE		GAS VALVE
	UTILITIES CORRIDOR		GAS VALVE
			GAS VALVE

Please note that the absence of services on this drawing is not a guarantee that the services are not present in the ground. Any services not shown on this drawing may be present in the ground. The contractor is responsible for the accuracy of the GPR and electro-magnetic location signal. Please ground conditions and/or services situated underneath other services can also present themselves in the ground. Due to the fact that not all GPR services have been provided to MetroScan by the contractor, MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that services are able to be located. The contractor should not assume that all services have been identified and that services are able to be located. The contractor should not assume that all services have been identified and that services are able to be located. Please note that the drawing provided is valid for 60 days from date stated below. Drawing is intended solely for use of the contractor named below.

Accuracy Levels
To ideal conditions the accuracy levels of the GPR is <10% within the GPR's accuracy levels of 10% up to 2.5m depth. Please note accuracy levels can vary depending on ground conditions, depth of services, composition of services, time taken signal to travel on to other services.
Depth of services on the ground where shown should be taken as indicative and hand/ vacuum excavation is advised where exact depth are required.
Absence of services on the ground where shown should be taken as indicative and hand/ vacuum excavation is advised where exact depth are required.
All Cover level elevations for Manholes/ Inspection Chambers will be taken from topographical survey if supplied.

Service Location
Please note that the absence of services on this drawing is not a guarantee that the services are not present in the ground. Any services not shown on this drawing may be present in the ground. The contractor is responsible for the accuracy of the GPR and electro-magnetic location signal. Please ground conditions and/or services situated underneath other services can also present themselves in the ground. Due to the fact that not all GPR services have been provided to MetroScan by the contractor, MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that services are able to be located. The contractor should not assume that all services have been identified and that services are able to be located. Please note that the drawing provided is valid for 60 days from date stated below. Drawing is intended solely for use of the contractor named below.

Notes
1. GPR scanning frequency 200 and 700 mhz
Depth of investigation 2.5m, self-calibrating
2. Radio detection equipment:
Viva Metrotech VproLoc2 / RD7000
3. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
4. All depths stated are an indication of depth
caution required when excavating
5. All Utilities are classified QL - B2 unless noted otherwise.

Notes

- GPR scanning frequency 200 and 700 mhz
Depth of investigation 2.5m, self-calibrating
- Radio detection equipment:
Viva Metrotech VproLoc2 / RD7000
- GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
- All depths stated are an indication of depth
caution required when excavating
- All Utilities are classified QL - B2 unless noted otherwise.

PAS 128

Service Type	Depth (m)	Condition	Location	Supporting Data
1. Gas Main	0.5	Good	10m	10m
2. Gas Main	0.5	Good	10m	10m
3. Gas Main	0.5	Good	10m	10m
4. Gas Main	0.5	Good	10m	10m
5. Gas Main	0.5	Good	10m	10m
6. Gas Main	0.5	Good	10m	10m
7. Gas Main	0.5	Good	10m	10m
8. Gas Main	0.5	Good	10m	10m
9. Gas Main	0.5	Good	10m	10m
10. Gas Main	0.5	Good	10m	10m

Client : Priority
Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow

Drawing Title: MUL1080_Priority_Mortarstown_2D
Drwg No: 1

Site Completion Date: 23/02/2022
Sheet No: 6

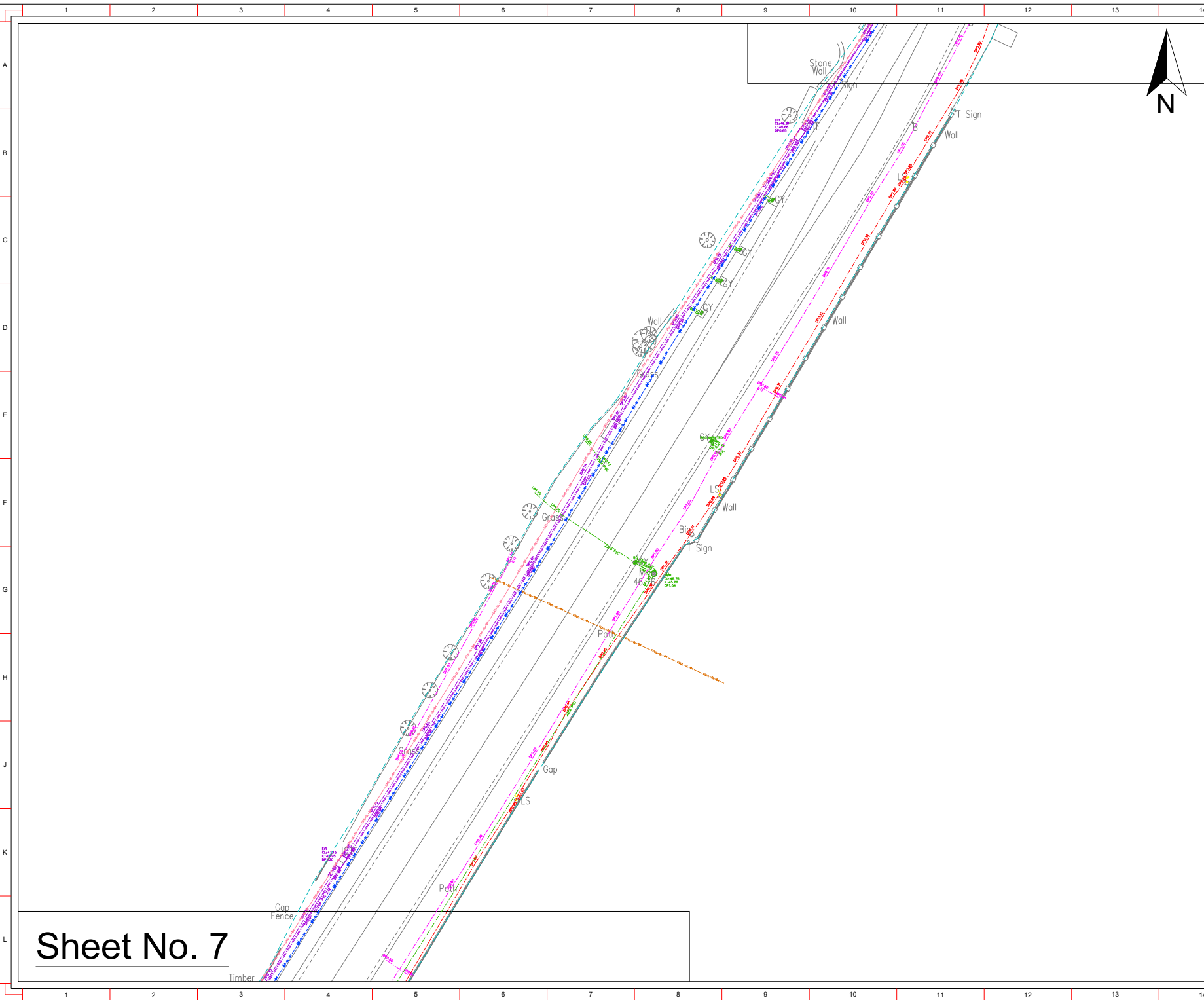
Scale: 1:200 @ A1
Coordinates: ITM
Revision No:

METROSCAN
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Website: www.metroscan.ie



SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		FOUL DRAINAGE
	ELECTRIC MANHOLE		TOILET DRAINAGE
	OVERHEAD LINE WITH POLE		STORM DRAINAGE
	OVERHEAD ELECTRIC		STORM DRAINAGE MANHOLE
	UNDERGROUND IN ELECTRICITY LINE		CORRODED DRAINAGE MANHOLE
	20' HIGH STREET LIGHT		PRODUCT DRAINAGE
	MIN FILL PILE		CORRODED DRAINAGE MANHOLE
	ULC ELECTRIC TRAFFIC CONTROL		PRODUCT DRAINAGE
	TRAFFIC CONTROL MANHOLE		CORRODED DRAINAGE MANHOLE
	ER		CHEMICAL LINE
	ER CHAMBER		CHEMICAL MANHOLE
	OVERHEAD LINE WITH POLE		ROAD GULLY
	ENET		GULLY TRAP
	-NET CHAMBER		MOTOR PUMP
	COMPS		SLICE VALVE
	COMPS CHAMBER		FLY WINDMILL
	VIGON		MOTOR METER
	VIGON CHAMBER		SCOUR VALVE
	FIBRE		PSV
	FIBRE CHAMBER		PRESSURE RELEASE VALVE
	AURORA TELECOM		AIR VALVE
	AURORA TELECOM CHAMBER		NON-RETURN VALVE
	CATV		FEEL LINE/FAN
	CATV CHAMBER		GAZ SV
	BT/ST/ST/ST		GAZ LV
	BT/ST/ST/ST		GAZ LV HIGH PRESSURE LINE
	S&B FIBRE		GL 90.00
	S&B CHAMBER		GROUND LEVEL (FINISH - IN BATH)
	UNIDENTIFIED SERVICE		GL 0.00
	UNIDENTIFIED SERVICE		COVER LEVEL (FINISH - IN BATH)
	EARTH LINE AND RODS		GL 0.00
	TRAFFIC SERVICES		INSET LEVEL (FINISH - IN BATH)
	GLTS PILE		GL 0.00
	GLTS PILE		DEPTH TO TOP OF SERVICE DUCT OF CABLE
	GLTS PILE		OP IN MANHOLES - INSET LEVEL OF CHAMBER
	GLTS PILE		OP IN DRAINAGE - INSET LEVEL OF PIPE
	GLTS PILE		UNABLE TO OPEN
	GLTS PILE		GLTS PILE
	GLTS PILE		GLTS PILE
	GLTS PILE		GLTS PILE
	GLTS PILE		GLTS PILE
	GLTS PILE		GLTS PILE
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	GLTS PILE</		

Please note that the absence of services on this drawing is not solid proof that these services are not present in the ground. While every method of underground utility locating has been adhered to in this survey, some services may be outside the range of the GPR and electronic magnetic locator signal. Poor ground conditions and/or services situated underneath other services can also prove impossible to locate. Due to the fact that not all Utility Service Plans were provided to Metrotrans by the contractor, Metrotrans can be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and must exercise a duty of care when excavating.

Hand / vacuum excavation is advised to determine the exact depth and position of service prior to excavation commencing.

Please note that the drawing provided is valid for 60 days from date stated below.

Drawing is intended solely for use of the contractor named below.

Accuracy Levels

To ideal conditions the accuracy levels of the EIM is $\pm 0.5\%$ whilst the GPR outputs accuracy levels of 10% up to 2.5m depth. These accuracy levels can vary depending on ground conditions, depths of services, congestion of services (may cause signal to bleed on to other services).
 Depths noted on drawings should be taken as indicative and hand / vacuum excavation is advised where exact depth are required. Diameter of services will be given where direct access is available through visual inspection, eg manhole.
 All Cover level elevations for Manholes / Inspection Chambers will be taken from topographical survey if supplied

Survey Limitations
Non-conductible w

They can easily be traced when placed in a conduit by the means of a sonde or cobra reel.
PE gas mains can also prove difficult to identify.

If Metroscan cannot get an accurate signal from a service, it will be noted on the drawing that the service is "Taken from records QL-84".
If manholes cannot be opened on site, they will be marked on the drawing as UTO (unable to open).
Excluded from the survey unless otherwise stated:

Notes

1. GPR scanning frequency 250 and 700 mhz
Depth of investigation 2.5m, self calibrating.
2. Radio detection equipment:
Vivax Metrotech VproLo2 / RD7000
3. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
4. All depths stated are an indication of depth
caution required when excavating.
5. All Utilities are classified QL- B2 unless noted otherwise.

PAS 128

Index type	Index name	Index structure		Indexing type
		structured	unstructured	
1	Index on table and space	yes	no	no
2	Index on dimension	yes	no	no
3	Descriptor	yes	yes	yes
4	Index on table	yes	yes	yes
5	Index on table and space	yes	yes	yes
6	Index on dimension	yes	yes	yes
7	Index on table	yes	yes	yes
8	Index on table and space	yes	yes	yes
9	Index on dimension	yes	yes	yes
10	Index on table	yes	yes	yes
11	Index on table and space	yes	yes	yes
12	Index on dimension	yes	yes	yes
13	Index on table	yes	yes	yes
14	Index on table and space	yes	yes	yes
15	Index on dimension	yes	yes	yes
16	Index on table	yes	yes	yes
17	Index on table and space	yes	yes	yes
18	Index on dimension	yes	yes	yes
19	Index on table	yes	yes	yes
20	Index on table and space	yes	yes	yes
21	Index on dimension	yes	yes	yes
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25	Index on table	yes	yes	yes
26	Index on table and space	yes	yes	yes
27	Index on dimension	yes	yes	yes
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95	Index on table and space	yes	yes	yes
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98	Index on table and space	yes	yes	yes
99	Index on dimension	yes	yes	yes
100	Index on table	yes	yes	yes

Client : Priority

Site Address : Mortarstown Kilkenny Rd,
Moanacurragh, Carlow

Drawing Title: MUL1080_ Priority_Mortarstown_2D	Drwg No:	1
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Site Completion Date: 23/02/2022	Sheet No:	7
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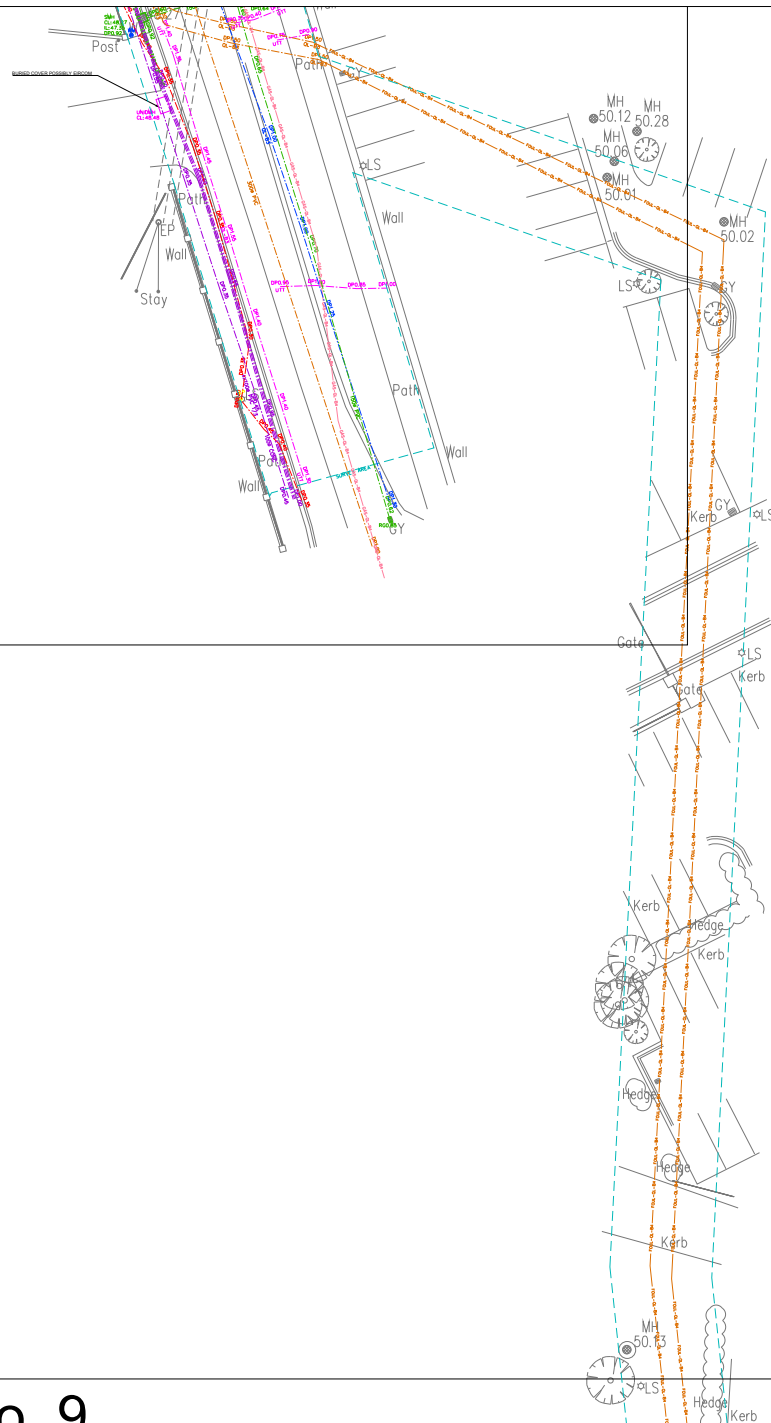
Scale: 1:200 @ A1	Coordinates: ITM	Revision No:	
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METROSCAN
UTILITY LOCATING

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Tel (086) 8522298
(086) 1935847

Email: john@metroscan.ie
claran@metroscan.ie

Website: www.metroscan.ie



SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		FUEL DRAINAGE
	ELECTRICAL PIVOTAL		FUEL DRAINAGE
	OVERHEAD LINE WITH POLE		SEWAGE DRAINAGE
	OVERHEAD ELECTRIC		SEWAGE DRAINAGE PIVOTAL
	UNDERGROUND IN ELECTRICITY LINE		COPPER DRAINAGE
	40 HIGH STREET LIGHT		COPPER DRAINAGE PIVOTAL
	MIN PILLAR		PROTECT DRAINAGE
	UGC ELECTRIC TRAFFIC CONTROL		PROTECT DRAINAGE PIVOTAL
	TRAFFIC CONTROL PIVOTAL		CHEMICAL LINE
	ER		CHEMICAL PIVOTAL
	ER CHAMBER		ROCK GULLY
	OVERHEAD LINE WITH POLE		GULLY TRAP
	ENET		WATER MAIN
	ENET CHAMBER		SLURGE VALVE
	COMPS		FIRE HYDRANT
	COMPS CHAMBER		WATER METER
	VEION		SCOUR VALVE
	VEION CHAMBER		PRESSURE RELEASE VALVE
	FIBRE		SHR VALVE
	FIBRE CHAMBER		NON-RETURN VALVE
	AURORA TELECOM		FUEL LINE/STATION
	AURORA TELECOM CHAMBER		GAS BY
	CITY		GAS LINE
	CITY CHAMBER		GAS HP
	BT/ST		GAS HIGH PRESSURE LINE
	BT/ST CHAMBER		GL 90.00
	S&D FIBRE		GROUND LEVEL (METER - IN METER)
	UNIDENTIFIED SERVICE		CL 0.00
	UNIDENTIFIED CHAMBER		COVER LEVEL (METER - IN METER)
	EARTH LINE AND RODS		SL 0.00
	SENSOR		INSET LEVEL (METER - IN METER)
	CITY PILE		SP.50
	UTILITY CABINET		DEPTH TO TOP OF SERVICE DUTY OF CABLE
			DP OF PIVOTALS - INSET LEVEL OF CHAMBER
			DP OF DRAINAGE - INSET LEVEL OF PIPE
			DP UNABLE TO OPEN
			OSA
			OUTSIDE SURVEY AREA
			UTT
			UNABLE TO TRACE
			GL 90.00 FROM TOP RECORDS SURVEY AREA

Please note that the absence of services on this drawing is not solid proof that these services are not present in the ground. While every method of underground utility locating has been adhered to in this survey, some services may be outside the range of all GPR and electro-magnetic locational signals. Poor ground conditions and/or services situated underneath other services can also prove impossible to locate. Due to the fact that not all Utility Service Plans were provided to Medford, the contractor, Medford cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and must exercise a duty of care when excavating. Hand / vacuum excavation is advised to determine exact depth and position of services prior to excavation commencing. Please note that the drawing provided is valid for 60 days from date stated below.

Accuracy Levels

In ideal conditions the accuracy levels of the EIM, is +/-5% whilst the GPR outputs accuracy levels of 10% up to 2.5m depth. These accuracy levels can vary depending on ground conditions, depths of services, congestion of services (may cause signal to bleed on to other services).

Depths noted on drawings should be taken as indicative and hand / vacuum excavation is advised where exact depth are required.

Diameter of services will be given where direct access is available through visual inspection, eg manholes.

All Cover level elevations for Manholes / Inspection Chambers will be taken from topographical survey if supplied

Survey Limitations
Non-conductible...

PE gas mains can also prove difficult to identify.

If Metroscan cannot get an accurate signal from a service, it will be noted on the drawing that the service is 'Taken from records'

Notes

1. GPR scanning frequency 250 and 700 mhz
Depth of investigation 2.5m, self calibrating.
2. Radio detection equipment:
Vivax Metrotech VproLoc2 / RD7000
3. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
4. All depths stated are an indication of depth
calculation required when excavating.
5. All Utilities are classified QL- B2 unless noted otherwise.

PAS 128

Survey type	Survey area	Relative Accuracy		Appropriateness	
		horizontal	vertical		
1	Online survey and search	12.6	undefined	undefined	
2	New low-cost sensor	12.6	undefined	undefined	Analysis of utility values has been demonstrated by some research to be cost-effective, although this is not a general conclusion.
3	Detector	12.99	undefined	undefined	A methodology which is suggested might not have been tested yet; therefore there is no reported data.
		12.99	undefined	undefined (on vehicle only)	Horizontal location error of the vehicle depends on the geographical location of the vehicle.
		12.99	undefined	undefined	
		12.99	undefined	undefined	
		12.99	undefined	undefined	
4	Detector	12.99	undefined	undefined	Horizontal and vertical accuracy of the utility detectors used in the geographical location of the vehicle.
		12.99	undefined	undefined	
		12.99	undefined	undefined	
5	Classification	12.99	undefined	undefined	Horizontal and vertical accuracy of the utility detectors used in the geographical location of the vehicle.

Client : Priority

Site Address : Mortarstown Kilkenny Rd,
Moanacurragh, Carlow

Drawing Title: MUL1080_ Priority_Mortarstown_2D	Drwg No:	1
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Site Completion Date: 23/02/2022	Sheet No:	9
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Scale: 1:200 @ A1	Coordinates: ITM	Revision No:	
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METROSCAN
UTILITY LOCATING

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ciaran@metroscan.ie

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Sheet No. 9

Sheet No. 10



SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		TRENCH DRAINAGE
	ELECTRICAL MANHOLE		STORM DRAINAGE
	OVERHEAD LINE WITH POLE		STORM DRAINAGE MANHOLE
	OVERHEAD ELECTRIC		COMBINED DRAINAGE
	UNDERGROUND HV ELECTRICITY LINE		COMBINED DRAINAGE MANHOLE
	ON HIGH STREET LIGHT		PRODUCT DRAINAGE
	MINI PYLON		PRODUCT DRAINAGE MANHOLE
	HV ELECTRIC TRAFFIC CONTROL		CHEMICAL LINE
	TRAFFIC CONTROL MANHOLE		CHEMICAL MANHOLE
	EWI		ROAD GULLY
	EIR CHAMBER		GULLY TRAP
	OVERHEAD LINE WITH POLE		WATER MAIN
	TRENCH		SLUICE VALVE
	TRENCH CHAMBER		FIRE HYDRANT
	COPPS		WATER METER
	COPPS CHAMBER		SEWER VALVE
	VIRGIN		WATER METER
	VIRGIN CHAMBER		SEWER VALVE
	FIBRE		AIR VALVE
	FIBRE CHAMBER		PRESSURE RELEASE VALVE
	AURORA TELECOM		NON-RETURN VALVE
	AURORA TELECOM CHAMBER		FUEL LINE/TANK
	CATV		GAS SV
	CATV CHAMBER		GAS LINE
	STESAT		GAS HP
	STESAT CHAMBER		GAS HP
	SISO FIBRE		GAS HP
	SISO CHAMBER		GAS HP
	UNIDENTIFIED SERVICE		GAS HP
	UNIDENTIFIED CHAMBER		GAS HP
	EARTH LINE AND RODS		GAS HP
	TRAFFIC SENSORS		GAS HP
	CCTV POLE		GAS HP
	UTILITIES CABINET		GAS HP
			GAS HP

Please note that the absence of services on this drawing is not a guarantee that the same services are not present in the ground.
While every effort is made to ensure that the drawing is as accurate as possible, the drawing is not a guarantee of the accuracy of the GPR and electro-magnetic location signal. Please ground conditions and/or services situated underneath other services can also present themselves in the ground. Due to the fact that not all GPR services have been provided to MetroScan by the contractor MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that services are a depth of one metre maximum.
MetroScan is not responsible for the accuracy of the drawing and the position of services prior to excavation commencing.
Please note that the drawing provided is valid for 90 days from date stated below.
Drawing is intended solely for use of the contractor named below.

Accuracy Levels

In ideal conditions the accuracy levels of the GPR is $\pm 10\%$ within the GPR's maximum accuracy levels of 10% up to 2.5m depth.
These accuracy levels can vary depending on ground conditions, depth of services, composition of services, time taken signal to travel on to other services.
Depth of services can be indicated and hand/ vacuum excavation is advised where exact depth are required.
Accuracy of services on the ground where services are installed through ground conditions, eg. manholes, etc.
All Cover level elevations for Manholes/ Inspection Chambers will be taken from topographical survey if supplied.

Service Location

Many services are not visible on the drawing and are difficult to identify. Direct buried fibre optic cables are difficult to identify with GPR.
Many services are not visible on the drawing and are difficult to identify. Direct buried fibre optic cables are difficult to identify with GPR.
Many services are not visible on the drawing and are difficult to identify. Direct buried fibre optic cables are difficult to identify with GPR.

If MetroScan cannot get an accurate signal from a service, it will be noted on the drawing that the service is 'taken from records' or 'not located'.
If a service cannot be located on the drawing, it will be noted on the drawing that the service is 'taken from records' or 'not located'.
If a service cannot be located on the drawing, it will be noted on the drawing that the service is 'taken from records' or 'not located'.
If a service cannot be located on the drawing, it will be noted on the drawing that the service is 'taken from records' or 'not located'.

Excluded from the survey unless otherwise stated:
Services shown above ground.
Services shown below ground.
Services shown below ground.
Services shown below ground.

Notes

1. GPR scanning frequency 200 and 700 mhz
2. Depth of investigation 2.5m, self-calibrating
3. Radio detection equipment:
Viva Metrotech VproLoc2 / RD7000
4. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
5. All depths stated are an indication of depth
caution required when excavating
6. All Utilities are classified QL - B2 unless noted otherwise.

PAS 128

Service Type	Depth (mm)	Condition	Location	Supporting Data
1. Gas Main	10-15	Good	Underground	1. Gas Main
2. Gas Main	10-15	Good	Underground	2. Gas Main
3. Gas Main	10-15	Good	Underground	3. Gas Main
4. Gas Main	10-15	Good	Underground	4. Gas Main
5. Gas Main	10-15	Good	Underground	5. Gas Main
6. Gas Main	10-15	Good	Underground	6. Gas Main
7. Gas Main	10-15	Good	Underground	7. Gas Main
8. Gas Main	10-15	Good	Underground	8. Gas Main
9. Gas Main	10-15	Good	Underground	9. Gas Main
10. Gas Main	10-15	Good	Underground	10. Gas Main

Client : Priority
Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow

Drawing Title: MUL1080_Priority_Mortarstown_2D
Drwg No: 1

Site Completion Date: 23/02/2022
Sheet No: 10

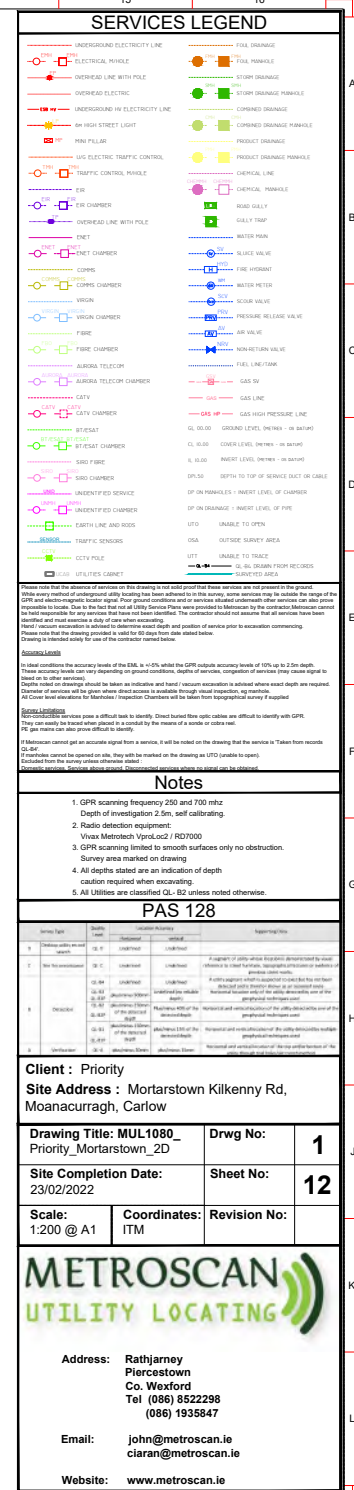
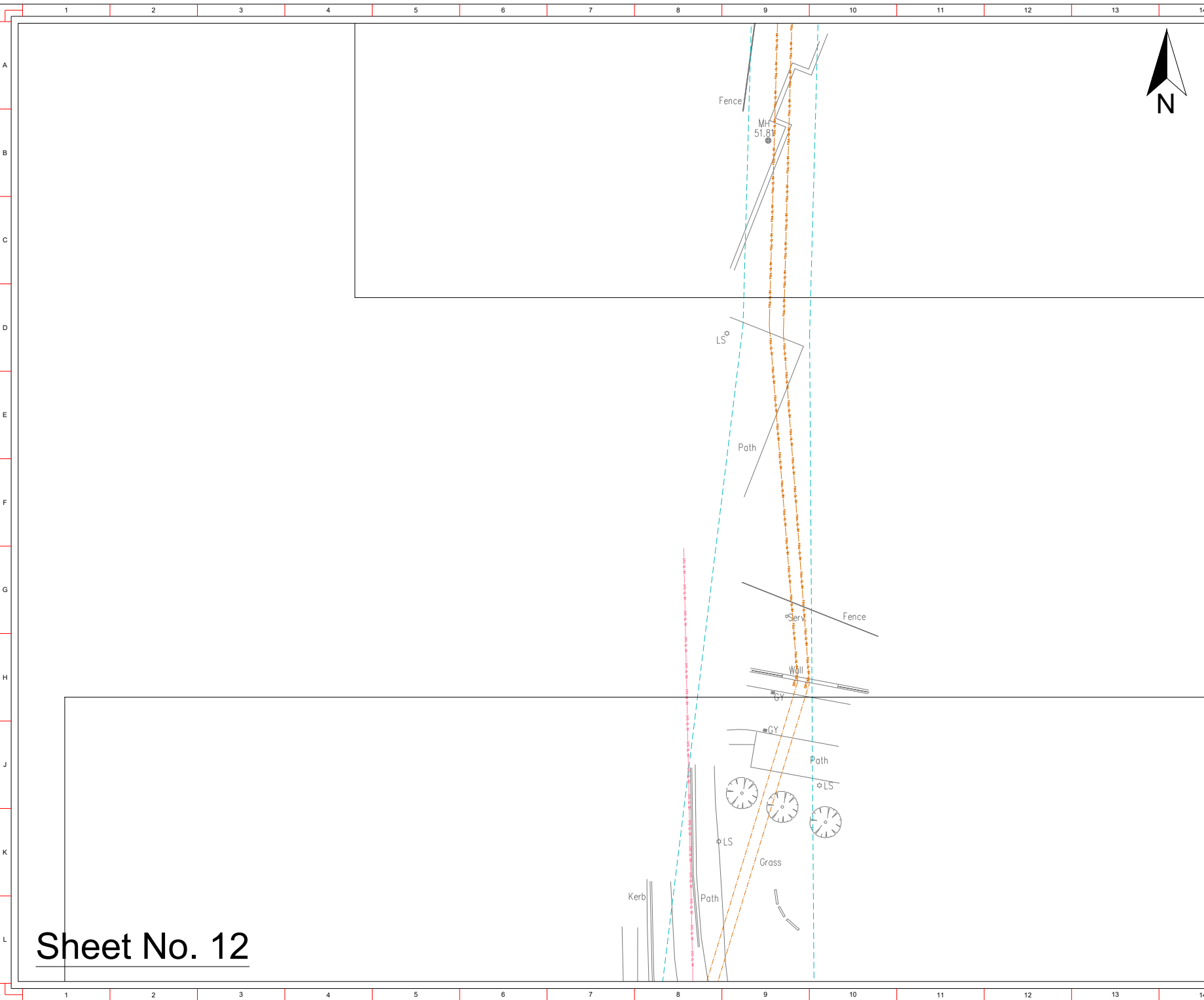
Scale: 1:200 @ A1
Coordinates: ITM
Revision No:

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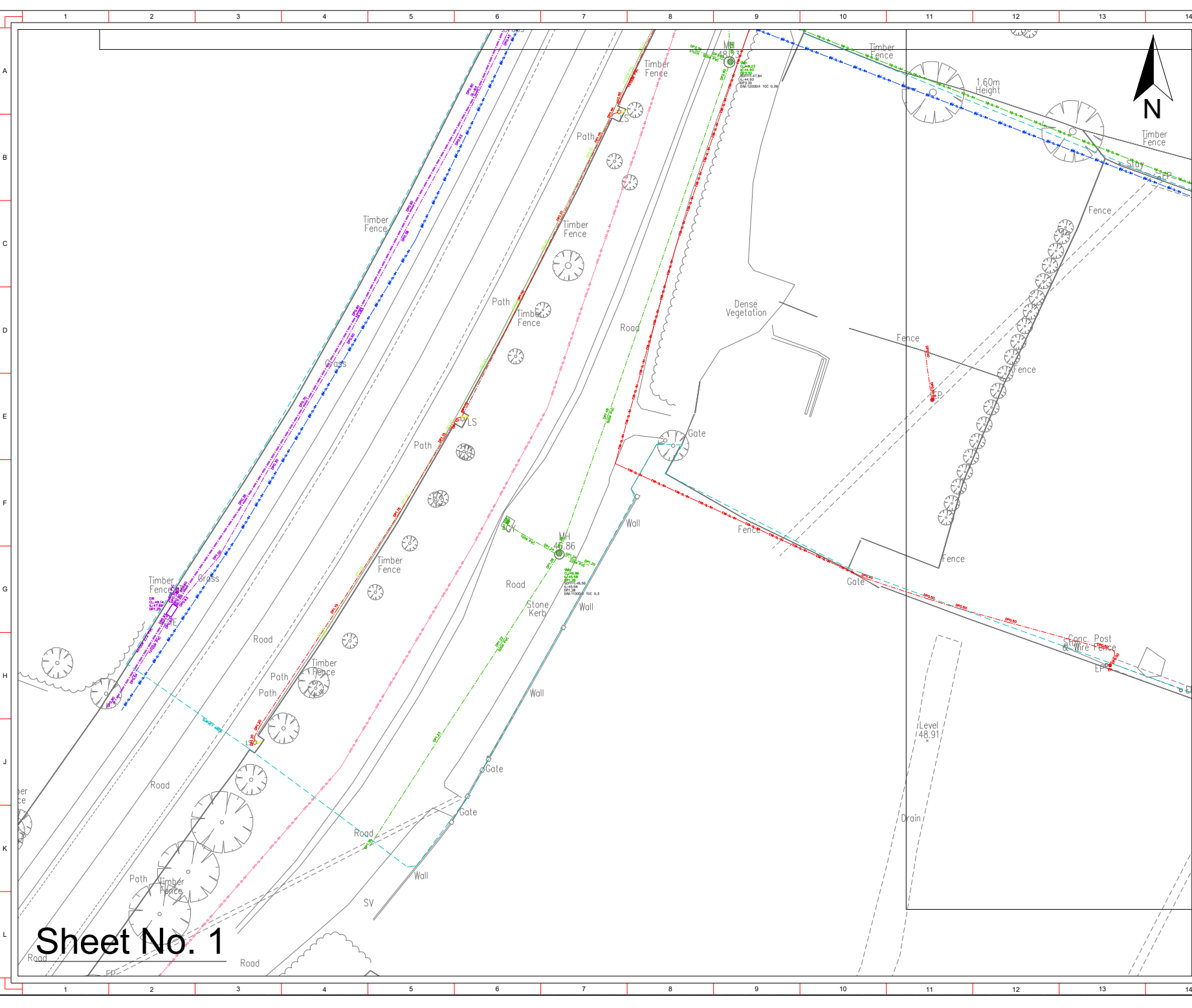


Sheet No. 16



SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		FUEL DRAINAGE
	ELECTRICAL MANHOLE		STORM DRAINAGE
	OVERHEAD LINE WITH POLE		STORM DRAINAGE MANHOLE
	OVERHEAD ELECTRIC		COMBINED DRAINAGE
	UNDERGROUND HV ELECTRICITY LINE		COMBINED DRAINAGE MANHOLE
	ON HIGH STREET LIGHT		PRODUCT DRAINAGE
	MINI PILLAR		PRODUCT DRAINAGE MANHOLE
	LV ELECTRIC TRAFFIC CONTROL		CHEMICAL LINE
	EHV		CHEMICAL MANHOLE
	EHV CHAMBER		ROAD GULLY
	OVERHEAD LINE WITH POLE		GULLY TRAP
	TRENCH		WATER MAIN
	TRENCH CHAMBER		SLUDGE VALVE
	COPPS		FIRE HYDRANT
	COPPS CHAMBER		WATER METER
	VIRGIN		SEWER VALVE
	VIRGIN CHAMBER		WATER METER
	FIBRE		AIR VALVE
	FIBRE CHAMBER		PRESSURE RELEASE VALVE
	AURORA TELECOM		NON-RETURN VALVE
	AURORA TELECOM CHAMBER		FUEL LINE/TANK
	CATV		GAS SV
	CATV CHAMBER		GAS LINE
	STESAT		GAS HIGH PRESSURE LINE
	STREET CHAMBER		GROUND LEVEL, OVERHEAD - in Baffle
	SSO FIBRE		COVER LEVEL, OVERHEAD - in Baffle
	SSO CHAMBER		INVERT LEVEL, OVERHEAD - in Baffle
	UNIDENTIFIED SERVICE		DEPTH TO TOP OF SERVICE DUCT OR CABLE
	EARTH LINE AND RODS		DEPTH OF CHAMBER
	TRAFFIC SENSORS		DEPTH OF PIPE
	CCTV POLE		UNABLE TO OPEN
	UTILITIES CABINET		OUTSIDE SURVEY AREA
			UNABLE TO TRACE



Sheet No. 1

SERVICES LEGEND

UNDERGROUND ELECTRICITY LINE	WATER MAIN
ELECTRICITY PIVOT	WATER PIVOT
OVERHEAD LINE WITH POLE	STORM DRAINAGE
OVERHEAD ELECTRIC	STORM DRAINAGE PIVOT
ON HIGH STREET LIGHT	COMBINED DRAINAGE
MINI PILLAR	COMBINED DRAINAGE PIVOT
USG ELECTRIC TRAFFIC CONTROL	PRODUCT DRAINAGE
TRAFFIC CONTROL PIVOT	PRODUCT DRAINAGE PIVOT
EW	CHEMICAL LINE
EW CHAMBER	CHEMICAL PIVOT
OVERHEAD LINE WITH POLE	ROAD DAILY
ENET	DAILY TRAP
ENET CHAMBER	WATER MAIN
COPIES	SLUCE VALVE
COPIES CHAMBER	FIRE HYDRANT
VERION	WATER METER
VERION CHAMBER	SCOUR VALVE
FIBRE	WATER PIVOT
AURORA TELECOM	AIR VALVE
AURORA TELECOM CHAMBER	PRESSURE RELEASE VALVE
CATV	NON-RETURN VALVE
CATV CHAMBER	FUEL LINE/TANK
STESAT	GAS SV
STESAT CHAMBER	GAS SV
SSED FIBRE	GAS HIGH PRESSURE LINE
SSED CHAMBER	GAS SV
UNIDENTIFIED SERVICE	CL 90.00 GROUND LEVEL (INTERVAL - IN BAY)
EARTH LINE AND RODS	CL 90.00 COVER LEVEL (INTERVAL - IN BAY)
TRAFFIC SENSORS	CL 90.00 INVERT LEVEL (INTERVAL - IN BAY)
CITY POLE	DPLSD DEPTH TO TOP OF SERVICE DUCT OR CABLE
UTILITIES CANYON	OP ON MANHOLES - INVERT LEVEL OF CHAMBERS
	OP ON MANHOLES - INVERT LEVEL OF PIPE
	UNABLE TO OPEN
	UNABLE TO TRACE
	UNABLE TO TRACE

Notes

- GPR scanning frequency 200 and 700 mhz
- Depth of investigation 2.5m, self calibrating
- Radio detection equipment: Vixia Metrotech VixiaLoc2 / RD7000
- GPR scanning limited to smooth surfaces only no obstruction
- Survey area marked on drawing
- All depths stated are an indication of depth
- caution required when excavating
- All Utilities are classified CL - B2 unless noted otherwise.

PAS 128

Service Type	Depth (m)	Location	Notes
Water Main	0.5	Under Road	Refer to site plan for location of water main
Water Main	0.5	Under Road	Refer to site plan for location of water main
Water Main	0.5	Under Road	Refer to site plan for location of water main
Water Main	0.5	Under Road	Refer to site plan for location of water main
Water Main	0.5	Under Road	Refer to site plan for location of water main

Client : Priority
Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow

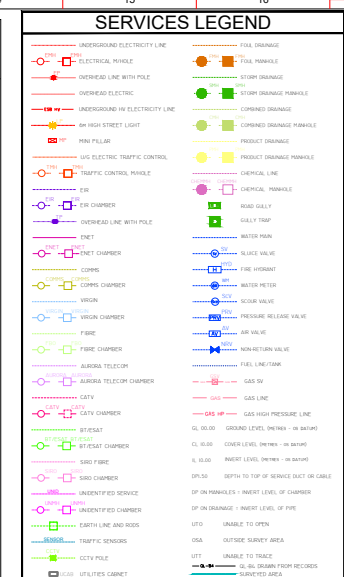
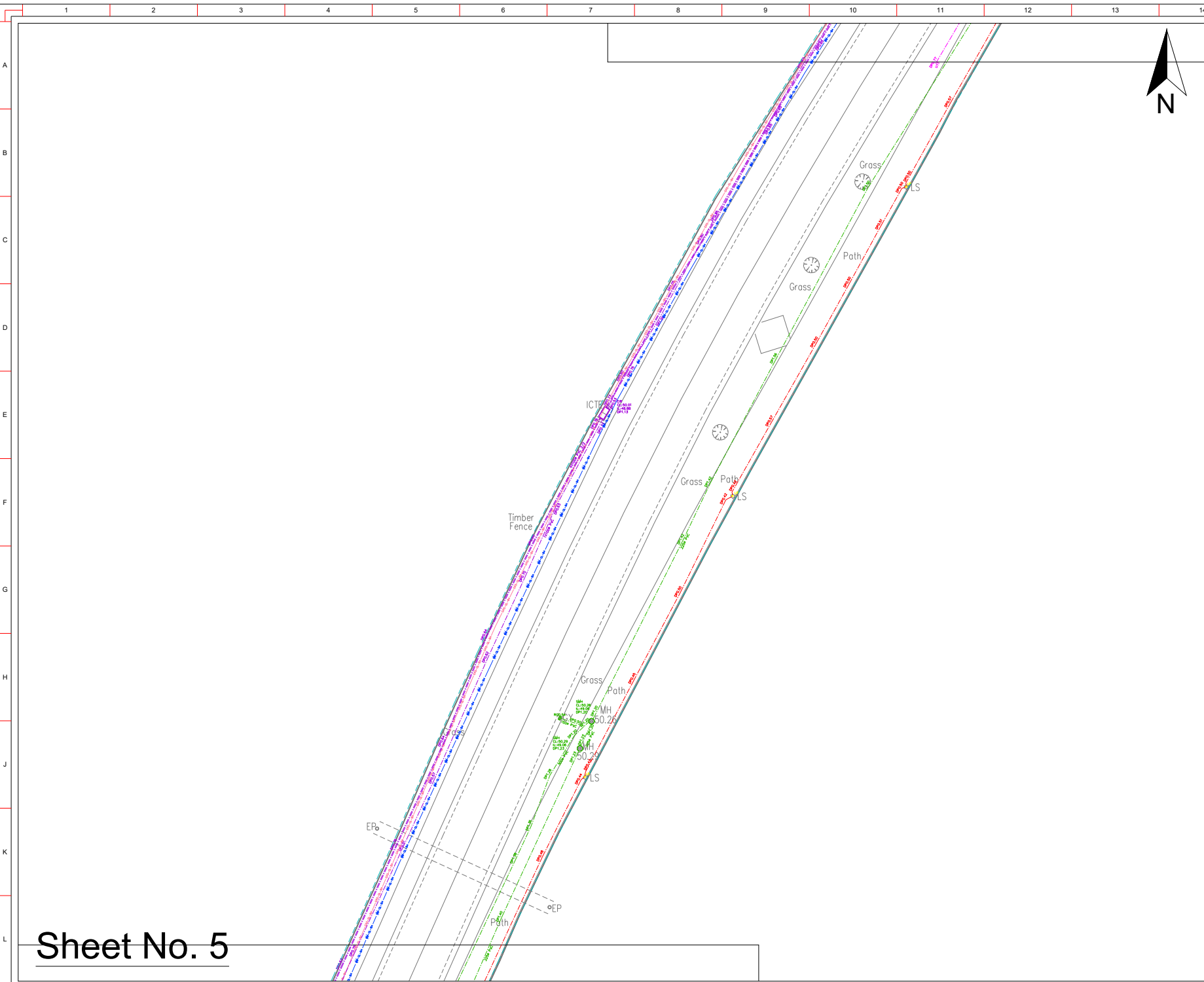
Drawing Title: MUL1080_Priority_Mortarstown_2D	Drwg No: 1
Site Completion Date: 23/02/2022	Sheet No: 1
Scale: 1:200 @ A1	Coordinates: ITM
Revision No: 2	

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Please note that the absence of services on this drawing is not real proof that these services are not present in the ground.
Every method of underground utility locating has been addressed to in the survey, some services may be outside the range of the GPR and therefore not shown on this drawing. All ground conditions and all services installed underneath other services can also prove responsible to locate. Due to the fact that not all Utility Service Plans were provided to the contractor, the contractor cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and must exercise a duty of care when excavating.
Hired / excavator excavation is advised to determine exact depth and position of services prior to excavation commencing.
Please note that the drawing period is valid for up to 60 days from date stated below.
Drawing is intended solely for use of the contractor named below.

Accuracy Levels

In ideal conditions the accuracy levels of the ERM is +/-5% whilst the GPR outputs accuracy levels of 10% up to 2.5m depth. Accuracy levels can vary depending on ground conditions, depths of services, congestion of services (may cause signal to bleed on to other services).

Depths noted on drawings should be taken as indicative and hand / vacuum excavation is advised where exact depth are required. Diameter of services will be given where direct access is available through visual inspection, eg manholes.

All Cover level elevations for Manholes / Inspection Chambers will be taken from topographical survey if supplied

Survey Limitations

Non-conductive services pose a difficult task to identify. Direct buried fibre optic cables are difficult to identify with GPR. They can easily be traced when placed in a conduit by the means of a sonde or cobra rod. PE gas mains can also prove difficult to identify.

If Motracan cannot get an accurate signal from a service, it will be noted on the drawing that the service is "Taken from records (C-4)".

If manholes cannot be opened on site, they will be marked on the drawing as UTO (unable to open).

Excluded from the survey unless otherwise stated :

Notes

1. GPR scanning frequency 250 and 700 mhz
Depth of investigation 2.5m, self calibrating.
2. Radio detection equipment:
Vivax Metrotech VproLoc2 / RD7000
3. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
4. All depths stated are an indication of depth
caution required when excavating.
5. All Utilities are classified QL-B2 unless noted otherwise.

PAS 128

activity type	activity label	relation identifier		signature/notes
		operation	control	
1	Indicates activity and its support	12.1.1	unconstrained	unconstrained
2	Set to non-relevant	12.1.2	unconstrained	unconstrained A subset of 12.1.1, only those attributes determined to be relevant to clinical features, biological processes or pathways of interest
3	DISEASE	12.1.3	unconstrained	unconstrained A biological system exposed to a disease may not have any associated diseases
		12.1.3.1	unconstrained	unconstrained A subset of 12.1.3, only the activity determined to be pathological
		12.1.3.2	unconstrained	unconstrained Hereditary and/or infectious diseases
		12.1.3.3	unconstrained	unconstrained Hereditary and/or infectious diseases and the physiological processes
4	DISEASE	12.1.4	unconstrained	unconstrained Hereditary and/or infectious diseases
		12.1.4.1	unconstrained	unconstrained Hereditary and/or infectious diseases and the physiological processes
5	Unaffected	12.1.5	unconstrained	unconstrained Hereditary and/or infectious diseases

Client : Priority
Site Address : Mortarstown Kilkenny Rd,
Moanacurragh, Carlow

Drawing Title: MUL1080_ Priority_Mortarstown_2D		Drwg No:	1
Site Completion Date: 23/02/2022		Sheet No:	5
Scale: 1:200 @ A1	Coordinates: ITM	Revision No:	2

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Sheet No. 6

SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		TIDAL DRAINAGE
	ELECTRICAL MANHOLE		STORM DRAINAGE
	OVERHEAD LINE WITH POLE		STORM DRAINAGE MANHOLE
	OVERHEAD ELECTRIC		COMBINED DRAINAGE
	6M HIGH STREET LIGHT		COMBINED DRAINAGE MANHOLE
	MINI PYLON		PRODUCT DRAINAGE
	USG ELECTRIC TRAFFIC CONTROL		PRODUCT DRAINAGE MANHOLE
	EIR CHAMBER		CHEMICAL LINE
	OVERHEAD LINE WITH POLE		CHEMICAL MANHOLE
	TNET		ROAD GULLY
	TNET CHAMBER		GULLY TRAP
	COWPS		WATER MAIN
	COWPS CHAMBER		SLUICE VALVE
	VIRGIN		FIRE HYDRANT
	VIRGIN CHAMBER		WATER METER
	FIBRE CHAMBER		SEWER VALVE
	AURORA TELECOM		WATER PEEPER
	AURORA TELECOM CHAMBER		AIR VALVE
	CATV		PRESSURE RELEASE VALVE
	CATV CHAMBER		NON-RETURN VALVE
	STESAT		FUEL LINE/TANK
	STESAT CHAMBER		GAS SV
	SISO FIBRE		GAS HIGH PRESSURE LINE
	SISO CHAMBER		GAS LINE
	UNIDENTIFIED SERVICE		GAS VALVE
	EARTH LINE AND RODS		GROUND LEVEL (DIN 451) - in situ
	TRAFFIC SENSORS		COVER LEVEL (DIN 451) - in situ
	CCTV POLE		INVERT LEVEL (DIN 451) - in situ
	UTILITIES CORRIDOR		DEPTH TO TOP OF SERVICE DUCT OR CABLE
			OP ON MANHOLES - INVERT LEVEL OF CHAMBER
			OP ON DRAINAGE - INVERT LEVEL OF PIPE
			UTO - UNABLE TO OPEN
			OSA - OUTSIDE SURVEY AREA
			UTT - UNABLE TO TRACE
			ULS - UNABLE FROM RECORDS
			SURVEYED AREA

Please note that the absence of services on this drawing is not a statement that the service is not present in the ground. It is only a statement that the service has not been detected by the methods used in this survey. The absence of services on this drawing is not a statement that the service is not present in the ground. It is only a statement that the service has not been detected by the methods used in this survey.

Accuracy Levels
To ideal conditions the accuracy levels of the GPR is $\pm 10\%$ within the GPR's accuracy levels of 10% up to 2.5m depth. These accuracy levels can vary depending on ground conditions, depth of services, composition of services, time taken signal to travel on to other services.
Depth of investigation 2.5m, self-calibrating.
Radio detection equipment:
VivaX Metrotech VproLoc2 / RD7000
3. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing.
4. All depths stated are an indication of depth
caution required when excavating.
5. All Utilities are classified QL - B2 unless noted otherwise.

Service Locations
If a service cannot get an accurate signal from a service, it will be noted on the drawing that the service is "Taken from records".
If a service cannot get an accurate signal from a service, it will be noted on the drawing that the service is "Taken from records".
If a service cannot get an accurate signal from a service, it will be noted on the drawing that the service is "Taken from records".

Service Locations
If a service cannot get an accurate signal from a service, it will be noted on the drawing that the service is "Taken from records".
If a service cannot get an accurate signal from a service, it will be noted on the drawing that the service is "Taken from records".
If a service cannot get an accurate signal from a service, it will be noted on the drawing that the service is "Taken from records".

Notes

1. GPR scanning frequency 200 and 700 mhz
2. Depth of investigation 2.5m, self-calibrating.
3. Radio detection equipment:
VivaX Metrotech VproLoc2 / RD7000
4. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing.
5. All depths stated are an indication of depth
caution required when excavating.
6. All Utilities are classified QL - B2 unless noted otherwise.

PAS 128

Service Type	Depth (m)	Condition	Location	Supporting Data
1. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.
2. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.
3. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.
4. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.
5. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.
6. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.
7. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.
8. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.
9. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.
10. Gas High Pressure Line	0.5	Good	Underground	Diagram of utility shows location determined by means of reference to other features, topographic information or evidence of service within records.

Client : Priority
Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow

Drawing Title: MUL1080_Priority_Mortarstown_2D
Drwg No: 1

Site Completion Date: 23/02/2022
Sheet No: 6

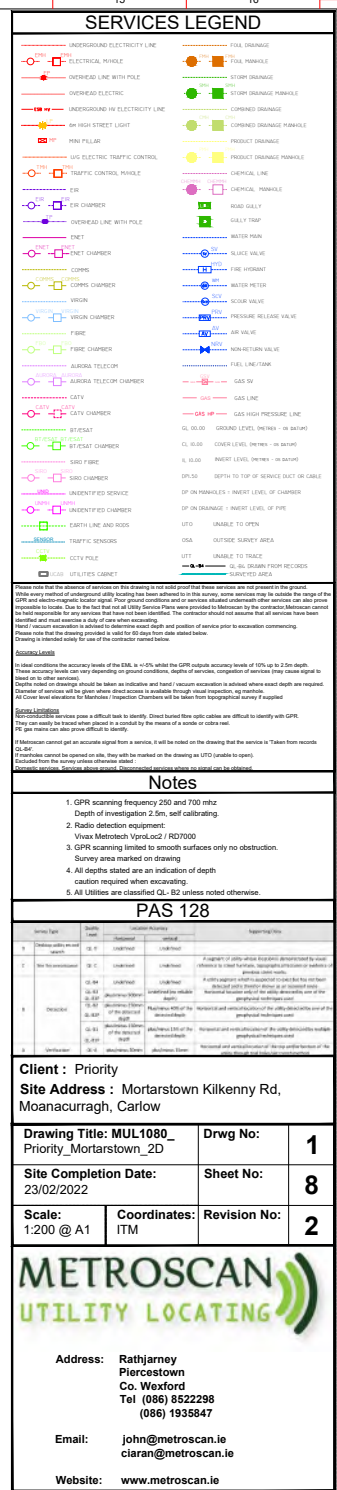
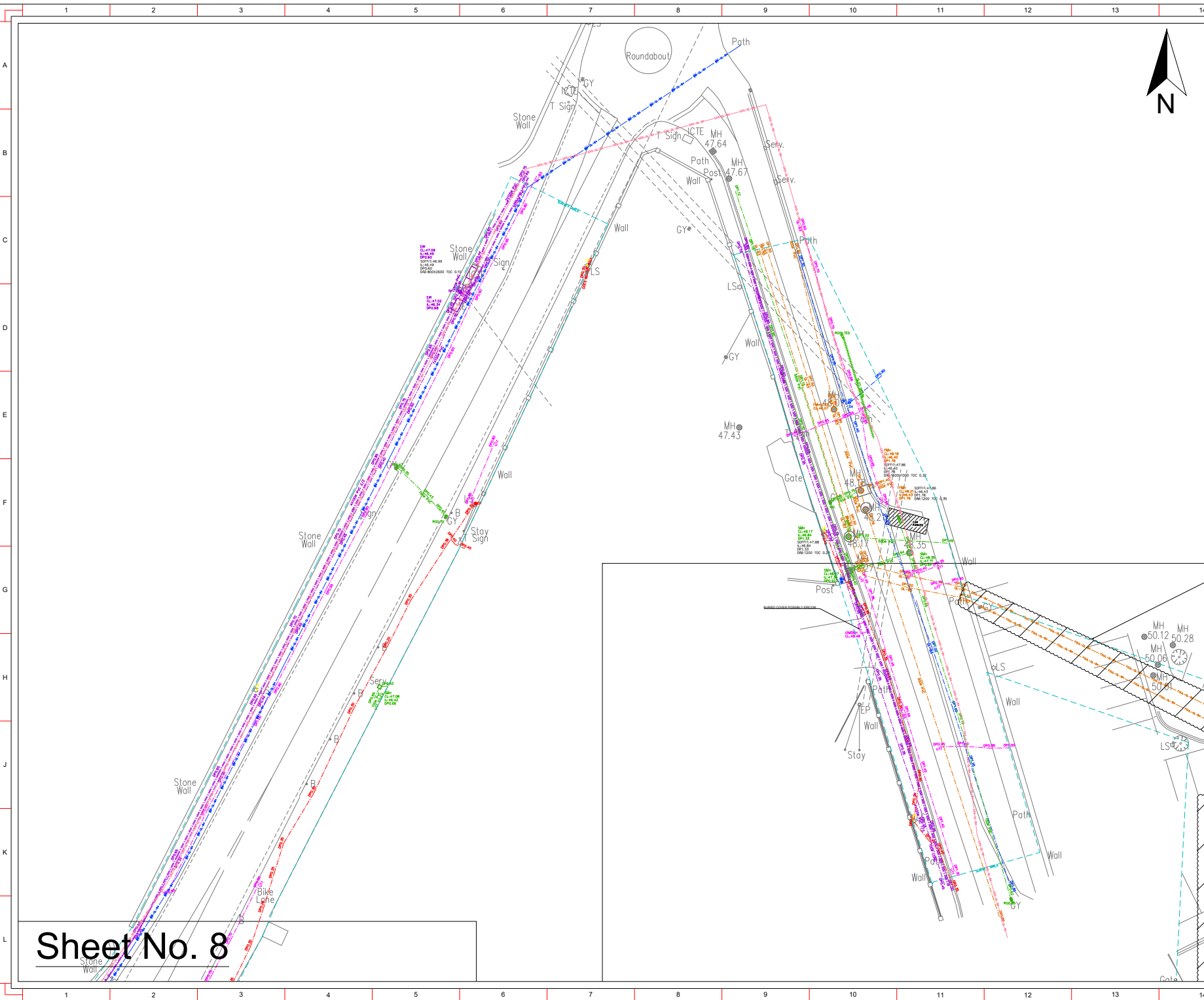
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Coordinates: ITM
Revision No: 2

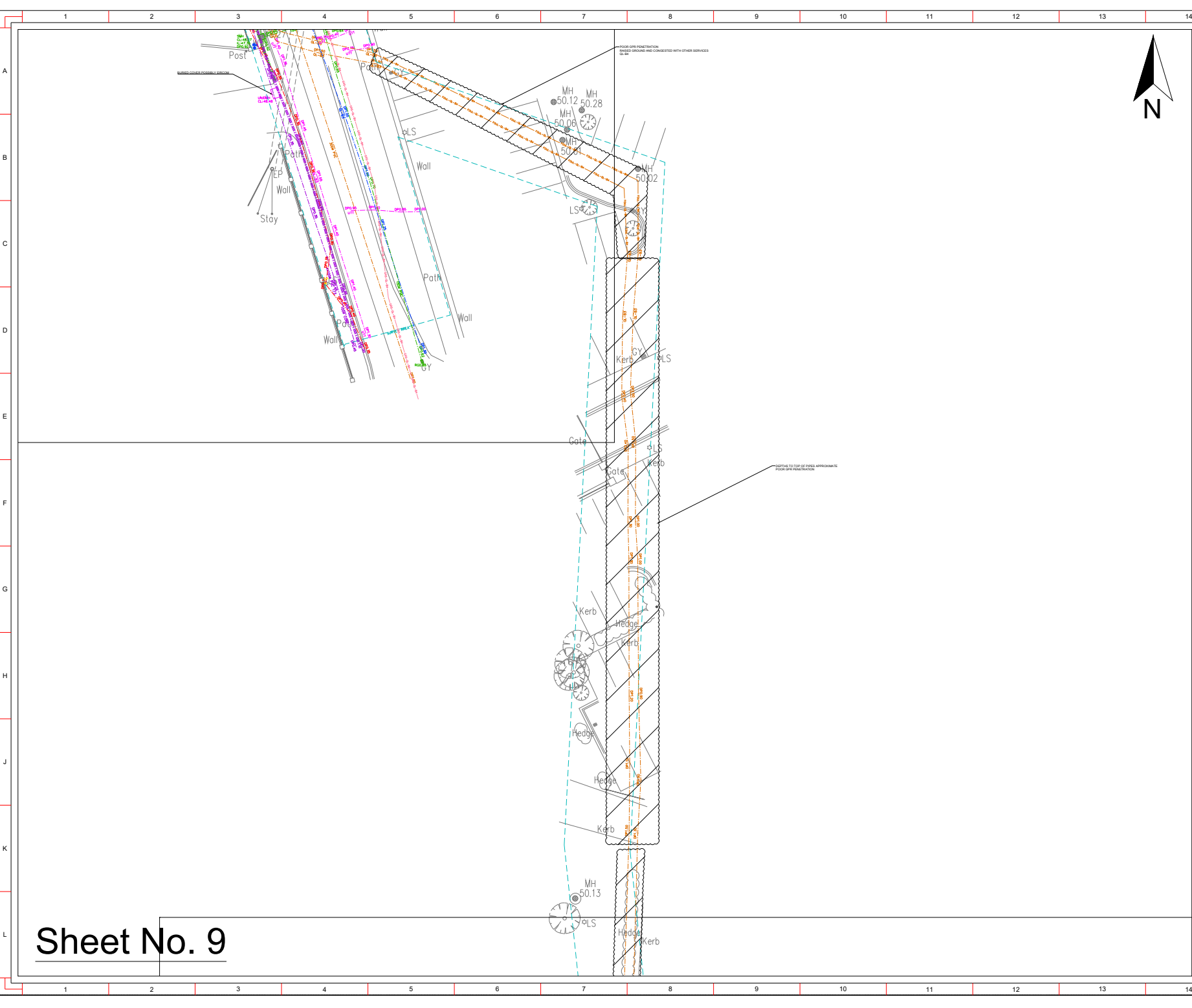
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SERVICES LEGEND

UNDERGROUND ELECTRICITY LINE	TRENCH DRAINAGE
ELECTRICAL MANHOLE	STORM DRAINAGE
OVERHEAD LINE WITH POLE	STORM DRAINAGE MANHOLE
OVERHEAD ELECTRIC	COMBINED DRAINAGE
8m HIGH STREET LIGHT	COMBINED DRAINAGE MANHOLE
150mm MANHOLE	PRODUCT DRAINAGE
USG ELECTRIC TRAFFIC CONTROL	CHEMICAL LINE
EWI	CHEMICAL MANHOLE
EWI CHAMBER	ROAD GULLY
OVERHEAD LINE WITH POLE	GULLY TRAP
TRENCH	WATER MAIN
TRENCH CHAMBER	SLUICE VALVE
COPPS	FIRE HYDRANT
COPPS CHAMBER	WATER METER
VIRGIN CHAMBER	SEWER VALVE
FIBRE	WATER METER CHAMBER
FIBRE CHAMBER	AIR VALVE
AURORA TELECOM	PRESSURE RELEASE VALVE
AURORA TELECOM CHAMBER	NON-RETURN VALVE
CATV	FUEL LINE/TANK
CATV CHAMBER	GAS SV
STESAT	GAS HIGH PRESSURE LINE
STESAT CHAMBER	GAS VALVE
SSO FIBRE	GAS VALVE CHAMBER
SSO CHAMBER	GAS VALVE CHAMBER CHAMBER
UNIDENTIFIED SERVICE	GAS VALVE CHAMBER CHAMBER CHAMBER
EARTH LINE AND RODS	GAS VALVE CHAMBER CHAMBER CHAMBER CHAMBER
TRAFFIC SENSORS	GAS VALVE CHAMBER CHAMBER CHAMBER CHAMBER CHAMBER
CCTV POLE	GAS VALVE CHAMBER CHAMBER CHAMBER CHAMBER CHAMBER CHAMBER
UTILITIES CABINET	GAS VALVE CHAMBER CHAMBER CHAMBER CHAMBER CHAMBER CHAMBER CHAMBER

Notes

- GPR scanning frequency 200 and 700 mhz
- Depth of investigation 2.5m, self calibrating
- Radio detection equipment:
Vixor Metrotech VixorLoc2 / RD7000
- GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
- All depths stated are an indication of depth
caution required when excavating
- All Utilities are classified QL - B2 unless noted otherwise.

PAS 128

Service Type	Depth (m)	Condition	Location	Remarks
1. Gas	0.5	Good	Underground	Gas main, 150mm diameter, 10m length
2. Water	0.5	Good	Underground	Water main, 150mm diameter, 10m length
3. Sewer	0.5	Good	Underground	Sewer main, 150mm diameter, 10m length
4. Storm	0.5	Good	Underground	Storm main, 150mm diameter, 10m length
5. Electric	0.5	Good	Underground	Electric main, 150mm diameter, 10m length
6. Gas	0.5	Good	Underground	Gas main, 150mm diameter, 10m length
7. Water	0.5	Good	Underground	Water main, 150mm diameter, 10m length
8. Sewer	0.5	Good	Underground	Sewer main, 150mm diameter, 10m length
9. Storm	0.5	Good	Underground	Storm main, 150mm diameter, 10m length
10. Electric	0.5	Good	Underground	Electric main, 150mm diameter, 10m length

Client : Priority
Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow

Drawing Title: MUL1080_Priority_Mortarstown_2D	Drwg No:	1
Site Completion Date: 23/02/2022	Sheet No:	9
Scale: 1:200 @ A1	Coordinates: ITM	Revision No: 2

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Sheet No. 10



SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		TIDAL DRAINAGE
	ELECTRICAL MANHOLE		STORM DRAINAGE
	OVERHEAD LINE WITH POLE		STORM DRAINAGE MANHOLE
	OVERHEAD ELECTRIC		COMBINED DRAINAGE
	UNDERGROUND HV ELECTRICITY LINE		COMBINED DRAINAGE MANHOLE
	ON HIGH STREET LIGHT		PRODUCT DRAINAGE
	MINI PYLON		PRODUCT DRAINAGE MANHOLE
	LV ELECTRIC TRAFFIC CONTROL		CHEMICAL LINE
	TRAFFIC CONTROL MANHOLE		CHEMICAL MANHOLE
	EWI		ROAD GULLY
	EIR CHAMBER		GULLY TRAP
	OVERHEAD LINE WITH POLE		WATER MAIN
	TNET		SLUICE VALVE
	TNET CHAMBER		FIRE HYDRANT
	COPPS		WATER METER
	COPPS CHAMBER		SCVR VALVE
	VIRCON		WATER RELEASE VALVE
	VIRCON CHAMBER		AIR VALVE
	FIBRE		NON-RETURN VALVE
	FIBRE CHAMBER		FUEL LINE/TANK
	AURORA TELECOM		GAS SV
	AURORA TELECOM CHAMBER		GAS SV
	CATV		GAS SV
	CATV CHAMBER		GAS SV
	STESAT		GAS SV
	STESAT CHAMBER		GAS SV
	SISO FIBRE		GAS SV
	SISO CHAMBER		GAS SV
	UNIDENTIFIED SERVICE		GAS SV
	UNIDENTIFIED CHAMBER		GAS SV
	EARTH LINE AND RODS		GAS SV
	TRAFFIC SENSORS		GAS SV
	CCTV POLE		GAS SV
	CCTV POLE		GAS SV
	UTILITIES CABLE		GAS SV
	UTILITIES CABLE		GAS SV

Please note that the absence of services on this drawing is not proof that these services are not present in the ground. While every effort has been made to ensure that the drawing is as accurate as possible, the contractor should not assume that all services have been identified. Due to the fact that not all GPR services have been provided to MetroScan by the contractor, MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that there is a duty of care when excavating. The contractor should not assume that all services have been identified and that there is a duty of care when excavating. The contractor should not assume that all services have been identified and that there is a duty of care when excavating. Please note that the drawing provided is valid for 90 days from date stated below. Drawing is intended solely for use of the contractor named below.

Accuracy Levels
To ideal conditions the accuracy levels of the GPR is $\pm 10\%$ when the GPR outputs accuracy levels of 10% up to 2.5m depth. These accuracy levels can vary depending on ground conditions, depth of services, composition of services, time taken signal to travel on to other services.
Depth of services can be indicated by the GPR, but not the depth of services. The contractor should not assume that all services have been identified and that there is a duty of care when excavating. The contractor should not assume that all services have been identified and that there is a duty of care when excavating. The contractor should not assume that all services have been identified and that there is a duty of care when excavating. All Cover level elevations for Manholes/Inspection Chambers will be taken from topographical survey if supplied.

Service Location
Please note that the drawing provided is not proof that these services are not present in the ground. While every effort has been made to ensure that the drawing is as accurate as possible, the contractor should not assume that all services have been identified. Due to the fact that not all GPR services have been provided to MetroScan by the contractor, MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that there is a duty of care when excavating. The contractor should not assume that all services have been identified and that there is a duty of care when excavating. The contractor should not assume that all services have been identified and that there is a duty of care when excavating. Please note that the drawing provided is valid for 90 days from date stated below. Drawing is intended solely for use of the contractor named below.

Notes
1. GPR scanning frequency 200 and 700 mhz
Depth of investigation 2.5m, self-calibrating
2. Radio detection equipment:
Viva Metrotech VproLoc2 / RD7000
3. GPR scanning limited to smooth surfaces only no obstruction.
Survey area marked on drawing
4. All depths stated are an indication of depth
caution required when excavating
5. All Utilities are classified QL - B2 unless noted otherwise.

PAS 128
PAS 128 is a standard for the design and construction of underground services. It covers the design, construction, and maintenance of underground services, including the use of materials, methods, and equipment. The standard is intended to ensure that underground services are designed and constructed to meet the requirements of the relevant regulatory bodies and to provide a safe and reliable service to the public.

Client : Priority
Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow
Drawing Title: MUL1080_Priority_Mortarstown_2D
Drwg No: 1
Site Completion Date: 23/02/2022
Sheet No: 10
Scale: 1:200 @ A1
Coordinates: ITM
Revision No: 2
Website: www.metroscan.ie

Service Type	Depth (m)	Condition	Location	Supporting Data
1. Gas	0.5	Good	Carlow	1. Gas
2. Water	0.5	Good	Carlow	2. Water
3. Sewer	0.5	Good	Carlow	3. Sewer
4. Storm	0.5	Good	Carlow	4. Storm
5. Electric	0.5	Good	Carlow	5. Electric
6. Telecom	0.5	Good	Carlow	6. Telecom
7. Cable	0.5	Good	Carlow	7. Cable
8. Other	0.5	Good	Carlow	8. Other

Client : Priority
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METROSCAN
UTILITY LOCATING

Address: Rathjarney
Piercestown
Co. Wexford
Tel (086) 8522298
(086) 1935847

Email: john@metroscan.ie
claran@metroscan.ie

Website: www.metroscan.ie

Sheet No. 11



SERVICES LEGEND

	UNDERGROUND ELECTRICITY LINE		TRENCH
	ELECTRICAL MANHOLE		TRENCH MANHOLE
	OVERHEAD LINE WITH POLE		STORM DRAINAGE
	OVERHEAD ELECTRIC		STORM DRAINAGE MANHOLE
	ON HIGH STREET LIGHT		COMBINED DRAINAGE
	MAN PIT/LID		COMBINED DRAINAGE MANHOLE
	GAS ELECTRIC TRAFFIC CONTROL		PRODUCT DRAINAGE
	TRAFFIC CONTROL MANHOLE		CHEMICAL LINE
	EWI		CHEMICAL MANHOLE
	EWI CHAMBER		ROAD GULLY
	OVERHEAD LINE WITH POLE		GULLY TRAP
	TRENCH		WATER MAIN
	TRENCH CHAMBER		SLUICE VALVE
	COPPS		FIRE HYDRANT
	COPPS CHAMBER		WATER METER
	VIRGIN		SEWER VALVE
	VIRGIN CHAMBER		WATER METER
	FIBRE		AIR VALVE
	FIBRE CHAMBER		PRESSURE RELEASE VALVE
	AURORA TELECOM		NON-RETURN VALVE
	AURORA TELECOM CHAMBER		FUEL LINE/TANK
	CATV		GAS SV
	CATV CHAMBER		GAS HIGH PRESSURE LINE
	STESAT		GAS SV
	STESAT CHAMBER		GAS SV
	SSO FIBRE		GAS SV
	SSO FIBRE CHAMBER		GAS SV
	UNIDENTIFIED SERVICE		GAS SV
	EARTH LINE AND RODS		GAS SV
	TRAFFIC SENSORS		GAS SV
	CTV POLE		GAS SV
	UTILITIES CABINET		GAS SV
			GAS SV

Please note that the absence of services on this drawing is not a statement that the services are not present in the ground. While every effort is made to ensure that the drawing is as accurate as possible, the drawing is not a guarantee of the accuracy of the GPR and electro-magnetic location signal. Please ground conditions and/or services situated underneath other services can also present a risk to the location. Due to the fact that not all GPR services have been provided to MetroScan by the contractor, MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that services are able to be located without exception. The location of services is not a guarantee of the location of services and the location of services is not a guarantee of the location of services. Please note that the drawing provided is valid for 90 days from date stated below. Drawing is intended solely for use of the contractor named below.

Accuracy Levels
To ideal conditions the accuracy levels of the GPR is $\pm 10\%$ within the GPR's accuracy levels of 10% up to 2.5m depth. Please accuracy levels can vary depending on ground conditions, depth of services, composition of services and the accuracy of the GPR and electro-magnetic location signal. Please ground conditions and/or services situated underneath other services can also present a risk to the location. Due to the fact that not all GPR services have been provided to MetroScan by the contractor, MetroScan cannot be held responsible for any services that have not been identified. The contractor should not assume that all services have been identified and that services are able to be located without exception. The location of services is not a guarantee of the location of services and the location of services is not a guarantee of the location of services. Please note that the drawing provided is valid for 90 days from date stated below. Drawing is intended solely for use of the contractor named below.

Service Location
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Notes
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PAS 128

Service Type	Depth (m)	Condition	Location	Supporting Data
1. Gas Main	0.5	Good	0.5	0.5
2. Gas Main	0.5	Good	0.5	0.5
3. Gas Main	0.5	Good	0.5	0.5
4. Gas Main	0.5	Good	0.5	0.5
5. Gas Main	0.5	Good	0.5	0.5
6. Gas Main	0.5	Good	0.5	0.5
7. Gas Main	0.5	Good	0.5	0.5
8. Gas Main	0.5	Good	0.5	0.5
9. Gas Main	0.5	Good	0.5	0.5
10. Gas Main	0.5	Good	0.5	0.5
11. Gas Main	0.5	Good	0.5	0.5
12. Gas Main	0.5	Good	0.5	0.5
13. Gas Main	0.5	Good	0.5	0.5
14. Gas Main	0.5	Good	0.5	0.5
15. Gas Main	0.5	Good	0.5	0.5
16. Gas Main	0.5	Good	0.5	0.5

Client : Priority

Site Address : Mortarstown Kilkenny Rd, Moanacurragh, Carlow

Drawing Title: MUL1080_Priority_Mortarstown_2D

Drwg No: 1

Site Completion Date: 23/02/2022

Sheet No: 11

Scale: 1:200 @ A1

Coordinates: ITM

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