
S.I. Ltd Contract No: 6646

Client: Óglaigh na hÉireann
Contractor: Site Investigations Ltd

Hangar Extension,
Gormanstown Camp,
Gormanstown, Co. Meath
Site Investigation Report

Prepared by:

Setch

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Stephen Letch

Issue Date:	19/03/2026
Status	Final
Revision	0

<u>Contents:</u>	Page No.
1. Introduction	1
2. Site Location	1
3. Fieldwork	1
4. Laboratory Testing	3
5. Ground Conditions	3
6. Recommendations and Conclusions	4

Appendices:

1. Cable Percussive Borehole Logs
 2. Dynamic Probe Logs
 3. Geotechnical Laboratory Test Results
 4. Environmental Laboratory Test Results
 5. Waste Classification Report
 6. Soil Recovery Facility Report
 7. Survey Data
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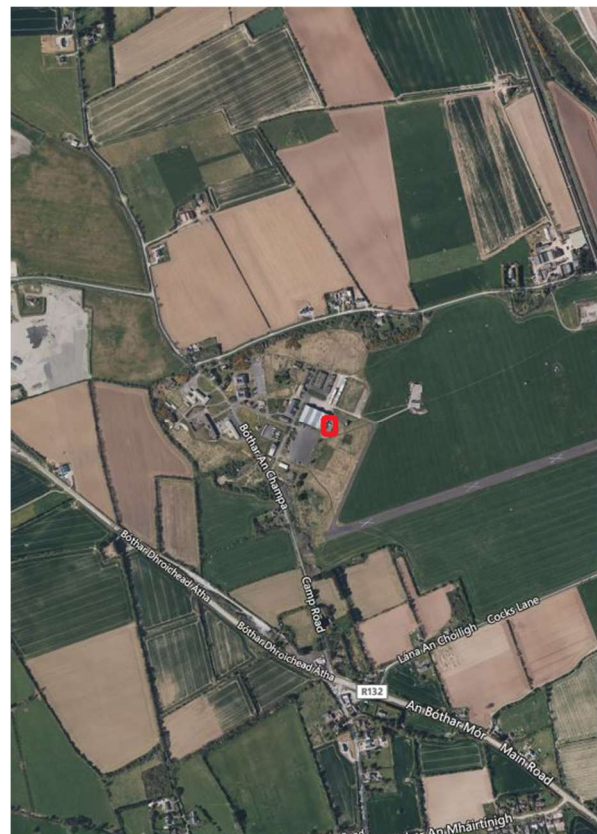
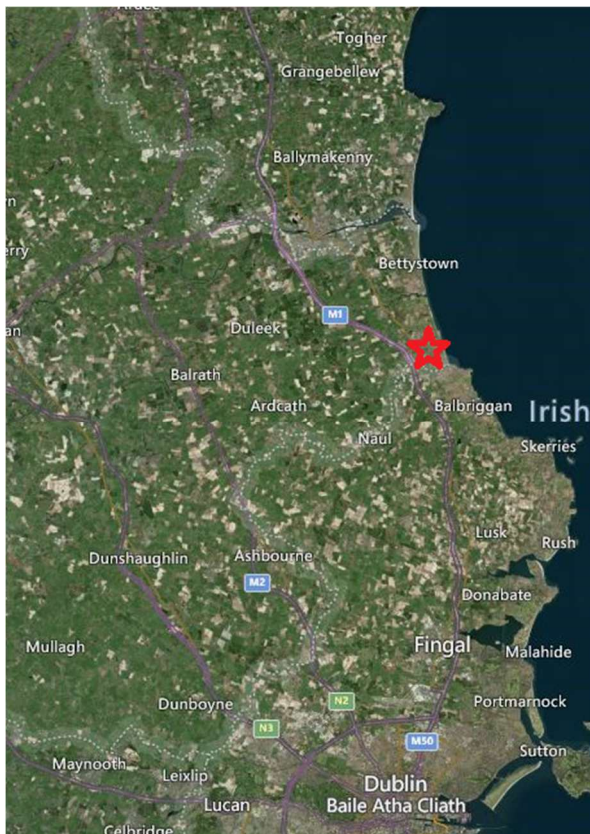
1. Introduction

On the instructions of Óglaigh na hÉireann, Site Investigations Ltd (SIL) was appointed to complete a ground investigation at Gormanstown Camp, Gormanstown, Co. Meath. The investigation was for an extension to an existing hangar and the fieldworks were completed in October 2025.

This report presents the factual geotechnical data obtained from the field and laboratory testing with interpretation of the ground conditions discussed.

2. Site Location

Gormanstown Camp is located just to the north of the Dublin – Meath border between Balbriggan and Drogheda on the east coast of Ireland. The map on the left below shows the location of Gormanstown to the north of Dublin and the second map shows the site location.



3. Fieldwork

All fieldwork was carried out in accordance with BS 5930:2015, Engineers Ireland GI Specification and Related Document 2nd Edition 2016 and Eurocode 7: Geotechnical Design. The fieldworks comprised of the following:

- 3 No. cable percussive boreholes
- 6 No. dynamic probes

3.1. Cable Percussive Boreholes

Cable percussion boring was undertaken at 3 No. locations using a Dando 2000 rig and constructed 200mm diameter boreholes. The boreholes reached similar depths of 7.30mbgl, 7.40mbgl and 6.80mbgl and they were terminated after an hour and a half of chiselling was completed with no further progress. It was possible to collect undisturbed samples due to the granular soils encountered so bulk disturbed samples were recovered at regular intervals.

To test the strength of the stratum, Standard Penetration Tests (SPT's) were performed at 1.00m intervals in accordance with BS 1377 (1990). In soils with high gravel and cobble content it is appropriate to use a solid cone (60°) (CPT) instead of the split spoon and this was used throughout the testing. The test is completed over 450mm and the cone is driven 150mm into the stratum to ensure that the test is conducted over an undisturbed zone. The cone is then driven the remaining 300mm and the blows recorded to report the N-Value. The report shows the N-Value with the 75mm incremental blows listed in brackets (e.g., BH01 at 1.00mbgl where N=29-(4,6/6,7,8,8)). Where refusal of 50 blows across the test zone was achieved during testing, the penetration depth is also reported (e.g., BH01 at 2.00mbgl where N=50(6,8/50 for 275mm)).

The cable percussive borehole logs are presented in Appendix 1.

3.2. Dynamic Probes

At 6 No. locations, dynamic probes were completed using a track mounted Competitor 130 machine. The testing complies with the requirements of BS1377: Part 9 (1990) and Eurocode 7: Part 3. The configuration utilised standard DPH (Heavy) probing method comprising a 50kg weight, 500mm drop height and a 50mm diameter (90°) cone. The number of blows required to drive the cone each 100mm increment into the sub soil is recorded in accordance with the standards. The dynamic probe provides no information regarding soil type or groundwater conditions.

The dynamic probe results can be used to analyse the strength of the soil strata encountered by the probe. 'Proceedings of the Trinity College Dublin Symposium of Field and Laboratory Testing of Soils for Foundations and Embankments' presents a paper by Foibart that is most relevant to Irish soil conditions and within this paper the following equations were included:

Granular Soils: $DPH N_{100} \times 2.5 = SPT N \text{ value}$

Cohesive Soils: $C_u = 15 \times DPH N_{100} + 30 \text{ kN/m}^2$

These equations present a relationship between the probe N_{100} value and the SPT N value for granular soils and the undrained shear strength of cohesive soils.

The dynamic probe logs are presented in Appendix 2.

3.3. Surveying

Following completion of all the fieldworks, a survey of the exploratory hole locations was completed using a GeoMax GPS Rover. The data is supplied on each individual log and along with a site plan in Appendix 7.

4. Laboratory Testing

4.1. Geotechnical Testing

Geotechnical laboratory testing was completed on representative soil samples in accordance with BS 1377 (1990). Testing included:

- 6 No. Particle size gradings
- 3 No. pH and sulphate content

The geotechnical laboratory test results are presented in Appendix 3.

4.2. Environmental Testing

Environmental testing was completed by ALS Environmental Ltd. and consists of the following:

- 2 No. Suite I analysis with 1 No. Asbestos Quantification

The environmental test results are reported in Appendix 4, a Waste Classification Report in Appendix 5 and Soil Recovery Facility Report in Appendix 6.

5. Ground Conditions

5.1. Overburden

MADE GROUND was recorded in the three boreholes to between 0.80mbgl and 0.90mbgl. The material was logged as a thin layer of thin granular gravel overlying cohesive brown sandy gravelly silty clay.

The natural ground conditions are dominated by granular silty very sandy GRAVEL soils with cobbles recorded at varying depths. BH01 and BH03 also recorded a thin layer of brown silty gravelly SAND from 2.50mbgl and 2.90mbgl at BH01 and 2.30mbgl to 2.80mbgl at BH03.

The boreholes recorded high SPT N-values of 29, 39 and 32 at 1.00mbgl before the tests either recorded refusals of 50 blows over the test zone or values of 44 and above.

The laboratory tests confirm the granular soils dominate the site with the particle size distribution graphs showing 61% to 79% GRAVEL content.

5.2. Groundwater

No groundwater was recorded in the boreholes during the fieldworks period.

6. Recommendations and Conclusions

Please note the following caveats:

The recommendations given, and opinions expressed in this report are based on the findings as detailed in the exploratory hole records. Where an opinion is expressed on the material between the exploratory hole locations or below the final level of excavation, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for adjacent unexpected conditions that have not been revealed by the exploratory holes. It is further recommended that all bearing surfaces when excavated should be inspected by a suitably qualified Engineer to verify the information given in this report.

Excavated surfaces in clay strata should be kept dry to avoid softening prior to foundation placement. Foundations should always be taken to a minimum depth of 0.50mBGL to avoid the effects of frost action and possible seasonal shrinkage/swelling.

If it is intended that on-site materials are to be used as fill, then the necessary laboratory testing should be specified by the Client to confirm the suitability. Also, relevant lab testing should be specified where stability of side slopes to excavations is a concern, or where contamination may be an issue.

6.1. Shallow Foundations

Due to the unknown depth of foundation and no longer-term groundwater information, this analysis assumes the groundwater will not influence the construction or performance of these foundations.

MADE GROUND was encountered in the boreholes to a maximum depth of 0.90mbgl. SIL do not recommend that narrow shallow foundations are placed on fill material due to the unknown compaction methods used during laying of man-made material. This unknown could result in softer spots and differential settlement once construction is completed. If shallow foundations are to be used and man-made soils are encountered below foundation level, then the soil should be removed and replaced with engineered fill which is compacted to the required standard.

In granular soils, the SPT N-value can then be used to calculate the allowable bearing capacity, as per Terzaghi and Peck, using the correlation of $SPT\ N\text{-value} \times 10 = ABC$. Therefore, using the lowest value of 29 at 1.00mbgl, this indicates a high allowable bearing capacity of 290kN/m².

For analysis of bearing capacities from the dynamic probes, the N_{100} value is used to correlate the SPT N-value. As above, the SPT N-value can then be used to calculate the allowable bearing capacity.

The table below shows the allowable bearing capacities for N_{100} values 1 to 10 at 1.00mbgl and these can be used provide the allowable bearing capacity at each probe location.

N_{100} Value	Granular Soils	
	SPT N-value	ABC
1	2.5	25
2	5	50
3	7.5	75
4	10	100
5	12.5	125
6	15	150
7	17.5	175
8	20	200
9	22.5	225
10	250	250

All capacities shown are in kN/m².

The probes recorded slightly different N_{100} values at 1.00mbgl and indicate that the strength of the soils vary slightly across the site with values of 4 and 5 recorded at 4 No. locations and high values recorded at DP04 and DP06. Therefore, it would be important that the final formation soils are inspected by a suitably qualified engineer.

The following assumptions were made as part of these analyses. If any of these assumptions are not in accordance with detailed design or observations made during construction these recommendations should be re-evaluated.

- Foundations are to be constructed on a level formation of uniform material type.
- All man-made or filled material is to be removed prior to construction.
- The bulk unit weight of the material in this stratum has a minimum density of 19kN/m³.
- Based on groundwater observations this analysis assumes the groundwater will not influence the construction or performance of these foundations.
- All bearing capacity calculations allow for 25mm settlement.

6.2. Groundwater

The caveats below relating to interpretation of groundwater levels should be noted:

There is always considerable uncertainty as to the likely rates of water ingress into excavations in clayey soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water.

Furthermore, water levels noted on the borehole and trial pit logs do not generally give an accurate indication of the actual groundwater conditions as the borehole or trial pit is rarely left open for sufficient time for the water level to reach equilibrium.

Also, during boring procedures, a permeable stratum may have been sealed off by the borehole casing, or water may have been added to aid drilling. Therefore, an extended period of groundwater monitoring using any constructed standpipes is required to provide more accurate information regarding groundwater conditions. Finally, groundwater levels vary with time of year, rainfall or any nearby construction sites.

Pumping tests would be required to determine likely seepage rates and persistence into excavations taken below the groundwater level. Deep trial pits also aid estimation of seepage rates.

As discussed previously, no groundwater was recorded during the fieldworks period.

There is always considerable uncertainty as to the likely rates of water ingress into excavations in cohesive soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water. The site is dominated by high permeable granular soils and this provides good drainage for the site.

If groundwater is encountered during excavations then mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

6.3. Contamination

Environmental testing was carried out on two samples from the investigation and the results are shown in Appendix 4. For material to be removed from site, Suite I testing was carried out to determine if the material is hazardous or non-hazardous and then the leachate results were compared with the published waste acceptance limits of BS EN 12457-2 to determine whether the material on the site could be accepted as 'inert material' by an Irish landfill.

Asbestos identification testing was completed as part of the Suite of tests and asbestos was identified in the sample from BH01. The quantification of the asbestos was then completed and this was less than 0.001%.

The Waste Classification Report in Appendix 5, created using HazWasteOnline™ software, shows that the material tested can be classified as non-hazardous material with waste code 17-05-04.

Following this analysis of the solid test results, the leachate WAC analysis results were analysed in accordance with 2003/33/EC inert criteria and this shows that the soils can be treated as inert.

Finally, as the soils are non-hazardous and inert, a soil recovery facility screening has been completed and this is provided in Appendix 6. Due to the presence of asbestos in BH01 and failing other specification in both BH01 and BH03, the samples would fail the Soil Recovery Facility specification and therefore need to be sent to the appropriate landfill.

Two samples were tested for analysis but it cannot be discounted that any localised contamination may have been missed. Any MADE GROUND excavated on site should be stockpiled separately to natural soils to avoid any potential cross contamination of the soils. Additional testing of these soils may be requested by the individual landfill before acceptance and a testing regime designed by an environmental engineer would be recommended to satisfy the landfill.

6.4. Aggressive Ground Conditions


The chemical test results in Appendix 3 indicate a general pH value between 7.94 and 8.21, which is close to neutral and below the level of 9.

The maximum value obtained for water soluble sulphate was 124mg/l as SO₃. The BRE Special Digest 1:2005 – ‘Concrete in Aggressive Ground’ guidelines require SO₄ values and after conversion (SO₄ = SO₃ x 1.2), the maximum value of 149mg/l. This shows that DS-1 conditions apply from Table C1 in the Special Digest.

Appendix 1
Cable Percussive Borehole Logs

Contract No: 6646		Cable Percussion Borehole Log							Borehole No: BH01											
Contract:		Hangar Extension			Easting:		716655.797		Date Started:		24/02/2026									
Location:		Gormanstown Camp, Gormanstown, Co. Meath			Northing:		767797.033		Date Completed:		24/02/2026									
Client:		Óglaigh na hÉireann			Elevation:		20.09		Drilled By:		B. Higgenbotham									
Engineer:		-			Borehole Diameter:		200mm		Status:		FINAL									
Depth (m)		Stratum Description			Legend	Level (mOD)		Samples and Insitu Tests				Water Strike	Backfill							
Scale	Depth					Scale	Depth	Depth	Type	Result										
0.20	0.20	MADE GROUND: grey sandy gravel.				20.0	19.89													
0.5	0.5	MADE GROUND: brown sandy gravelly silty clay.				19.5	19.5	0.50	ES	GM01										
1.0	0.90	Medium dense becoming dense brown silty very sandy GRAVEL with low cobble content.				19.0	19.19	1.00	B	GM02										
1.5	1.5					18.5	1.00	C	N=29 (4,6/6,7,8,8)											
2.0	2.0					18.0	2.00	B	GM03											
2.5	2.50	Brown silty gravelly SAND.				17.5	17.59	2.00	C	N=50 (6,8/50 for 275mm)										
3.0	2.90	Dense brown slightly silty very sandy GRAVEL with low cobble content.				17.0	17.19	3.00	B	GM04										
3.5	3.5					16.5	3.00	C	N=50 (7,10/50 for 250mm)											
4.0	4.0					16.0	4.00	B	GM05											
4.5	4.50	Dense brown slightly silty very sandy GRAVEL.				15.5	15.59	4.00	C	50 (8,11/50 for 225mm)										
5.0	5.0					15.0	5.00	B	GM06											
5.5	5.5					14.5	5.00	C	N=46 (6,7/9,10,12,15)											
6.0	6.0					14.0	6.00	B	GM07											
6.5	6.50	Dense brown slightly silty very sandy GRAVEL with low cobble content.				13.5	13.59	6.00	C	N=50 (7,9/50 for 230mm)										
7.0	7.0					13.0	7.00	B	GM08											
7.5	7.20	Obstruction - boulders.				12.89	7.00	C	50 (25 for 125mm/50 for 30mm)											
	7.30	End of Borehole at 7.30m				12.79	7.30	C	50 (25 for 5mm/50 for 5mm)											
						12.5														
		Chiselling:			Water Strikes:			Water Details:			Installation:			Backfill:			Remarks:			Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT
		From:	To:	Time:	Depth:	Rose (20min):	Depth Sealed:	Date:	Hole Depth:	Water Depth:	From:	To:	Pipe:	From:	To:	Type:	Cable percussive borehole terminated at 7.30mbgl due to obstruction.			
		7.20	7.30	01:30				07/05	7.30	Dry				0.00	7.30	Arisings				

Contract No: 6646		Cable Percussion Borehole Log						Borehole No: BH02				
Contract:		Hangar Extension		Easting:		716650.391		Date Started:		20/02/2026		
Location:		Gormanstown Camp, Gormanstown, Co. Meath		Northing:		767780.677		Date Completed:		20/02/2026		
Client:		Óglaigh na hÉireann		Elevation:		19.96		Drilled By:		B. Higgenbotham		
Engineer:		-		Borehole Diameter:		200mm		Status:		FINAL		
Depth (m)		Stratum Description		Legend	Level (mOD)		Samples and Insitu Tests			Water Strike	Backfill	
Scale	Depth				Scale	Depth	Depth	Type	Result			
	0.10	MADE GROUND: grey sandy gravel.				19.86						
		MADE GROUND: brown sandy gravelly silty clay.										
0.5					19.5		0.50	ES	GM09			
	0.80	Dense brown slightly silty very sandy GRAVEL with low cobble content.			19.16							
1.0					19.0		1.00	B	GM10			
							1.00	C	N=39 (5,6/6,8,12,13)			
1.5					18.5							
2.0					18.0		2.00	B	GM11			
							2.00	C	N=50 (6,8/50 for 245mm)			
2.5					17.5							
3.0					17.0		3.00	B	GM12			
							3.00	C	50 (7,14/50 for 215mm)			
3.5					16.5							
4.0					16.0		4.00	B	GM13			
							4.00	C	50 (8,12/50 for 200mm)			
4.5	4.40	Dense brown slightly silty very sandy GRAVEL.			15.56							
5.0					15.0		5.00	B	GM14			
							5.00	C	N=50 (6,9/50 for 275mm)			
5.5					14.5							
6.0					14.0		6.00	B	GM15			
							6.00	C	N=50 (7,9/50 for 255mm)			
6.5					13.5							
7.0	6.60	Dense brown slightly silty very sandy GRAVEL with low cobble content.			13.36							
					13.0		7.00	B	GM16			
							7.00	C	50 (9,14/50 for 125mm)			
7.5	7.30	Obstruction - boulders.			12.66							
	7.40	End of Borehole at 7.40m			12.56		7.40	C	50 (25 for 5mm/50 for 5mm)			

	Chiselling:			Water Strikes:			Water Details:			Installation:			Backfill:			Remarks:		Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT
	From:	To:	Time:	Depth:	Rose (20min):	Depth Sealed:	Date:	Hole Depth:	Water Depth:	From:	To:	Pipe:	From:	To:	Type:	Cable percussive borehole terminated at 7.40mbgl due to obstruction.		
	7.30	7.40	01:30				08/05	7.40	Dry				0.00	7.40	Arisings			

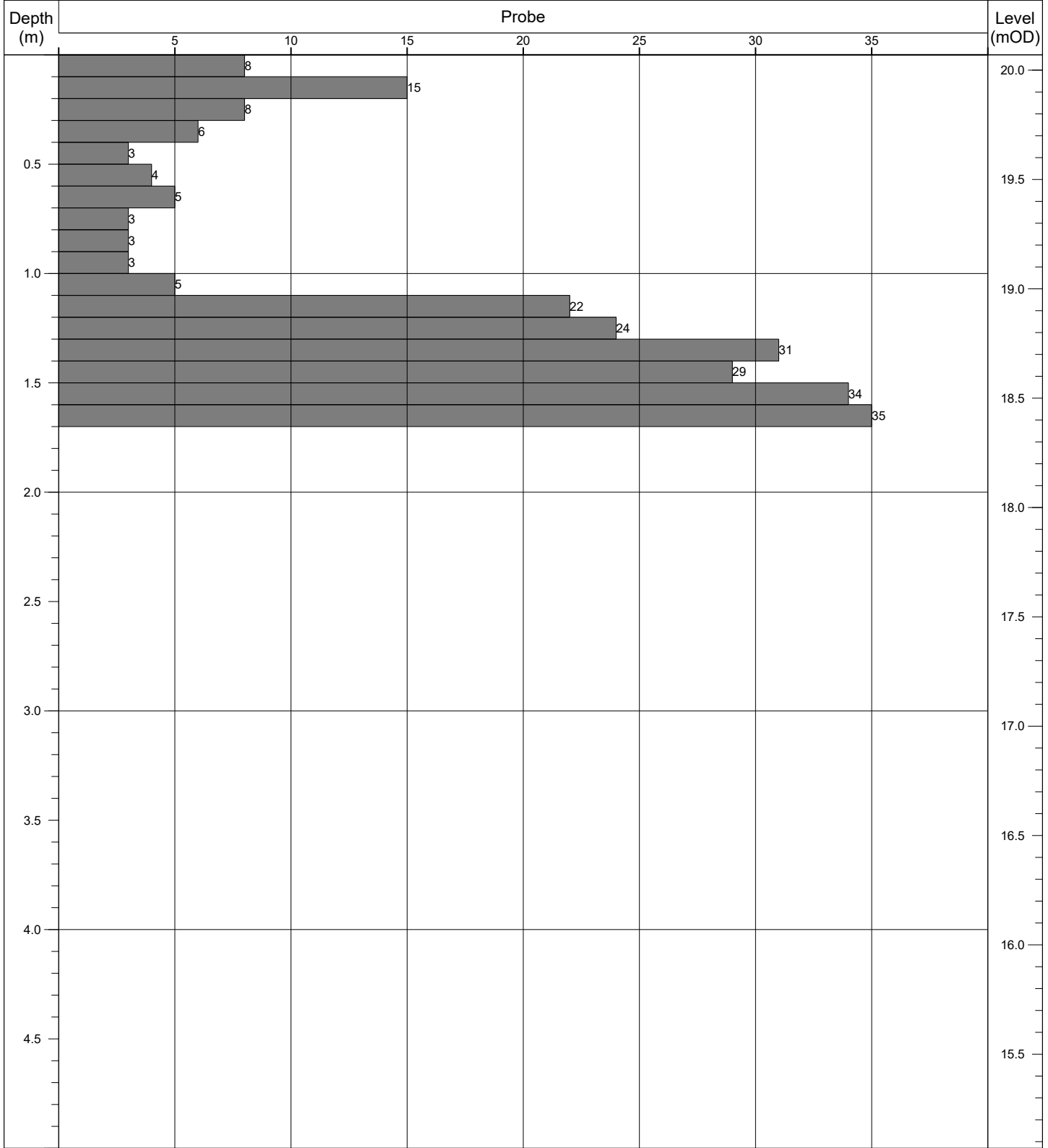
Contract No: 6646		Cable Percussion Borehole Log							Borehole No: BH03			
Contract:		Hangar Extension			Easting:		716643.282	Date Started:		18/02/2026		
Location:		Gormanstown Camp, Gormanstown, Co. Meath			Northing:		767763.305	Date Completed:		18/02/2026		
Client:		Óglaigh na hÉireann			Elevation:		19.97	Drilled By:		B. Higgenbotham		
Engineer:		-			Borehole Diameter:		200mm	Status:		FINAL		
Depth (m)		Stratum Description			Legend	Level (mOD)		Samples and Insitu Tests			Water Strike	Backfill
Scale	Depth					Scale	Depth	Depth	Type	Result		
0.15	MADE GROUND: grey sandy gravel.		19.82									
	MADE GROUND: brown sandy gravelly silty clay.											
0.5			19.5	0.50		ES	GM17					
0.90	Dense brown silty very sandy GRAVEL with low cobble content.		19.07	1.00		B	GM18					
			19.0	1.00		C	N=32 (4,6/7,8,8,9)					
1.5			18.5									
2.0			18.0	2.00		B	GM19					
			18.0	2.00		C	N=50 (6,9/10,11,14,15)					
2.30	Brown silty gravelly SAND.		17.67									
2.5			17.5									
2.80	Dense brown slightly silty very sandy GRAVEL with low cobble content.		17.17									
3.0			17.0	3.00		B	GM20					
			17.0	3.00		C	N=44 (7,9/9,10,12,13)					
3.5			16.5									
4.0			16.0	4.00		B	GM21					
			16.0	4.00		C	N=50 (8,10/50 for 250mm)					
4.20	Dense brown slightly silty very sandy GRAVEL.		15.77									
4.5			15.5									
5.0			15.0	5.00		B	GM22					
			15.0	5.00		C	N=47 (5,7/9,11,12,15)					
5.5			14.5									
6.0			14.0	6.00		B	GM23					
			14.0	6.00		C	N=50 (8,10/50 for 265mm)					
6.20	Dense brown slightly silty very sandy GRAVEL with low cobble content.		13.77									
6.5			13.5									
6.70	Obstruction - boulders.		13.27									
6.80	End of Borehole at 6.80m		13.17	6.80		C	50 (25 for 5mm/50 for 5mm)					
7.0			13.0									
7.5			12.5									


	Chiselling:			Water Strikes:			Water Details:			Installation:			Backfill:			Remarks:		Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT
	From:	To:	Time:	Depth:	Rose (20min):	Depth Sealed:	Date:	Hole Depth:	Water Depth:	From:	To:	Pipe:	From:	To:	Type:	Cable percussive borehole terminated at 6.80mbgl due to obstruction.		
	6.70	6.80	01:30				06/05	6.80	Dry				0.00	6.80	Arisings			

Appendix 2

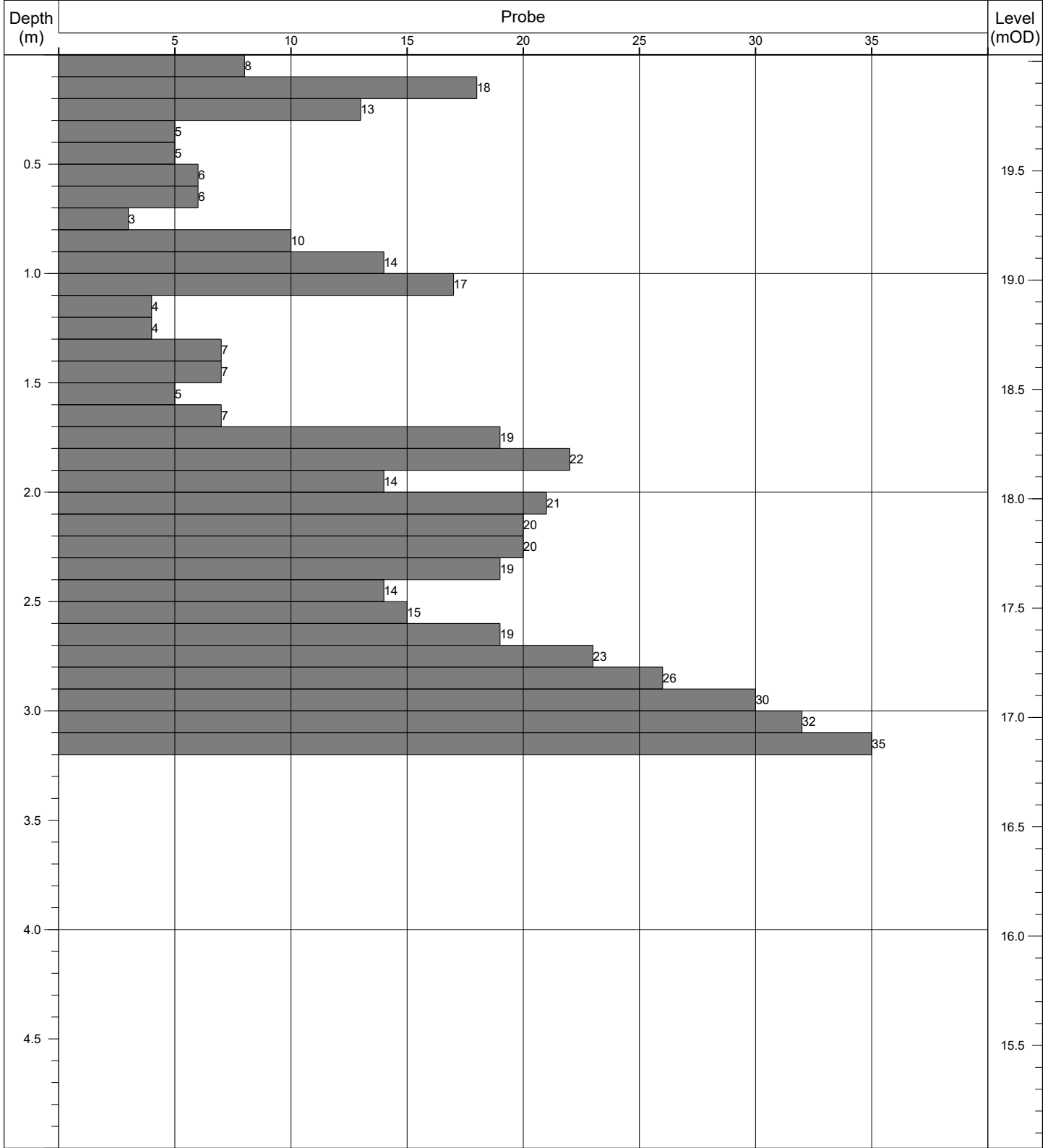
Dynamic Probe Logs


Contract No: 6646	Dynamic Probe Log			Probe No: DP01
Contract:	Hangar Extension	Easting:	716654.864	Date Started: 11/02/2026
Location:	Gormanstown Camp, Gormanstown, Co. Meath	Northing:	767795.681	Logged By: D.Clarke
Client:	Óglaigh na hÉireann	Elevation:	20.07	Scale: 1:25
Engineer:	-	Rig Type:	Competitor130	Sheet No: Sheet 1 of 1



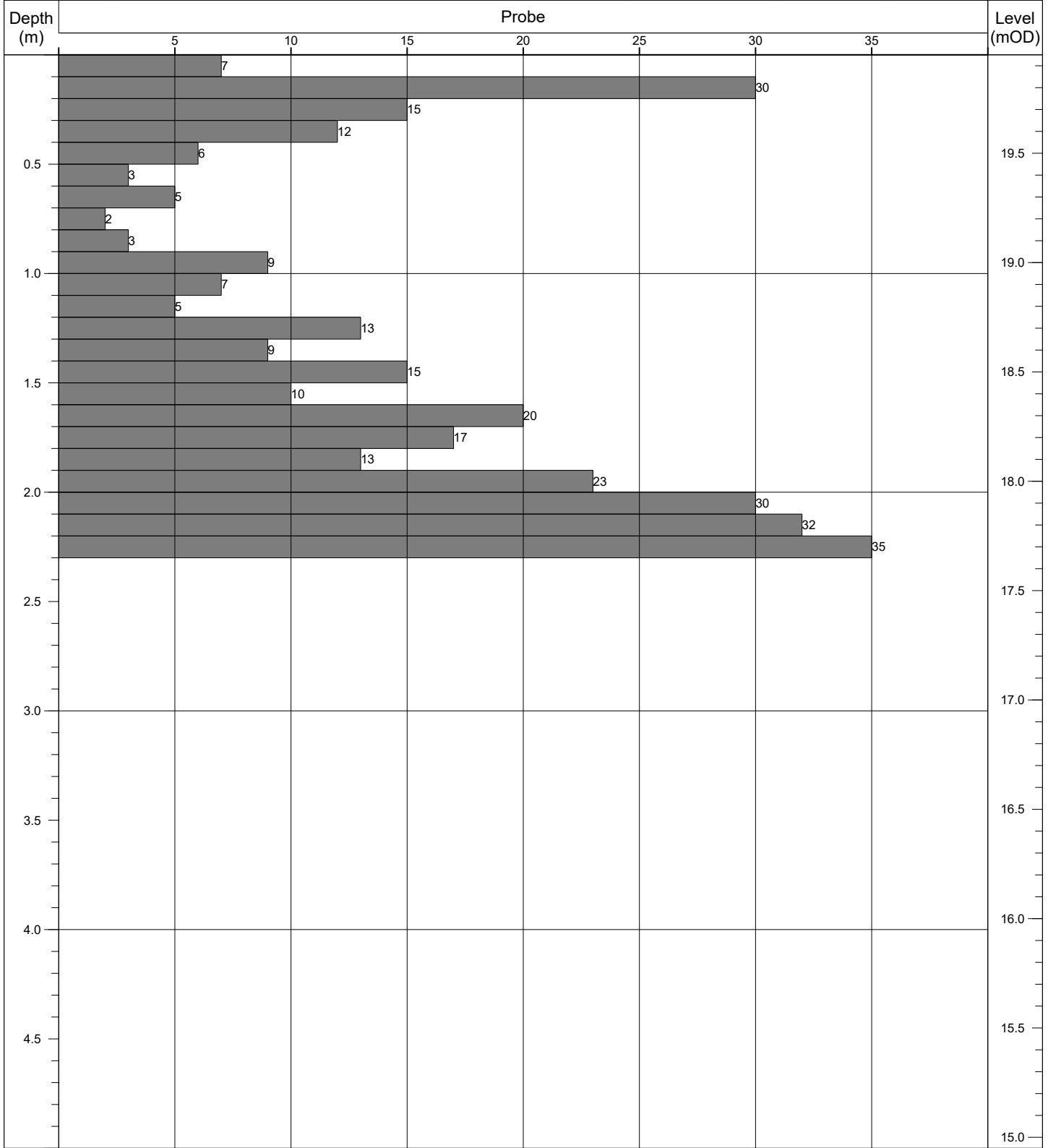
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	-
	1.70m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 6646	Dynamic Probe Log			Probe No: DP02
Contract:	Hangar Extension	Easting:	716653.408	Date Started: 11/02/2026
Location:	Gormanstown Camp, Gormanstown, Co. Meath	Northing:	767788.939	Logged By: D.Clarke
Client:	Óglaigh na hÉireann	Elevation:	20.03	Scale: 1:25
Engineer:	-	Rig Type:	Competitor130	Sheet No: Sheet 1 of 1



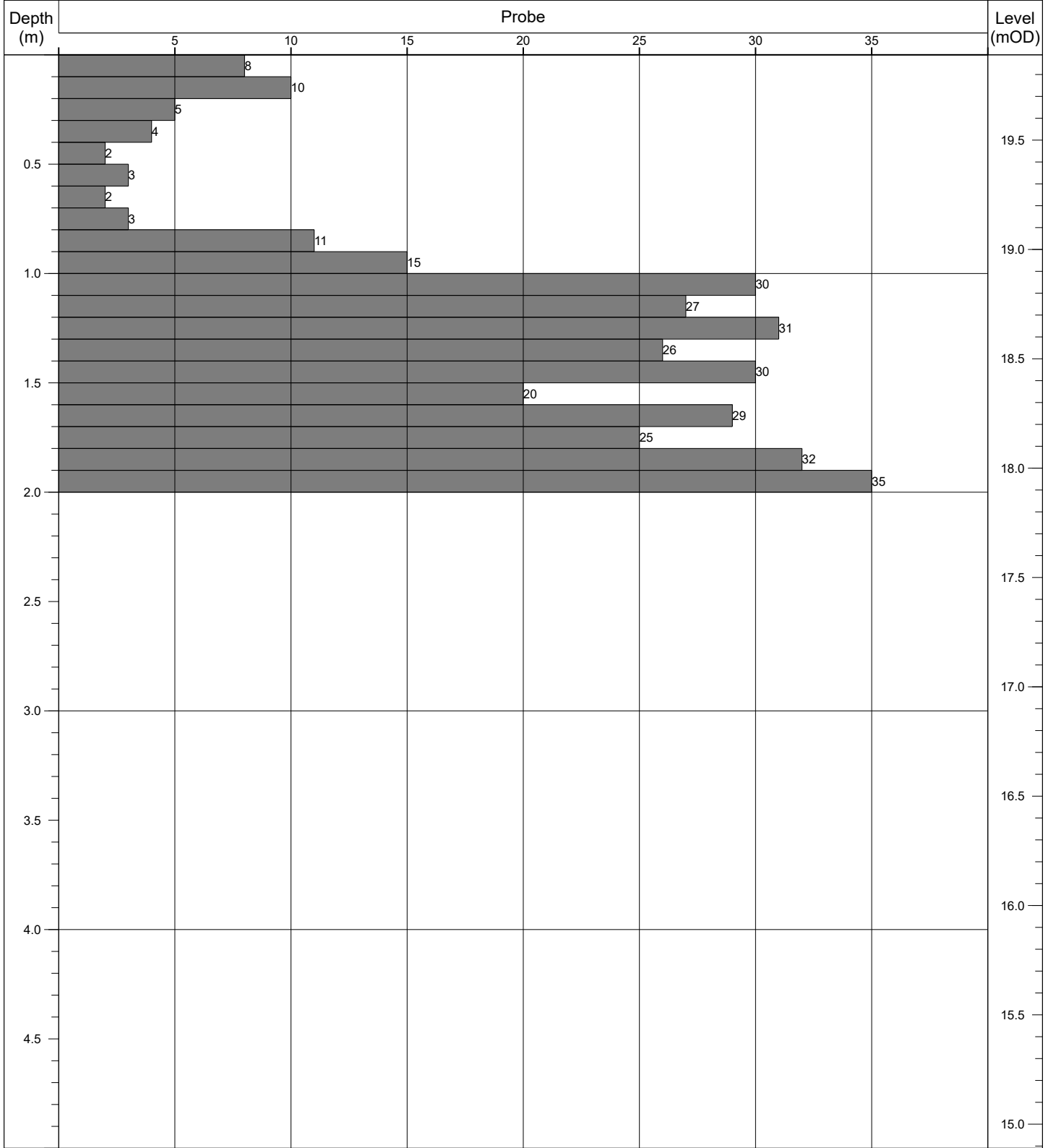
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	Depth:	Reason:	Type:	Mass	Drop:	-
	3.20m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 6646	Dynamic Probe Log			Probe No: DP03
Contract:	Hangar Extension	Easting:	716650.000	Date Started: 11/02/2026
Location:	Gormanstown Camp, Gormanstown, Co. Meath	Northing:	767783.756	Logged By: D.Clarke
Client:	Óglaigh na hÉireann	Elevation:	19.95	Scale: 1:25
Engineer:	-	Rig Type:	Competitor130	Sheet No: Sheet 1 of 1



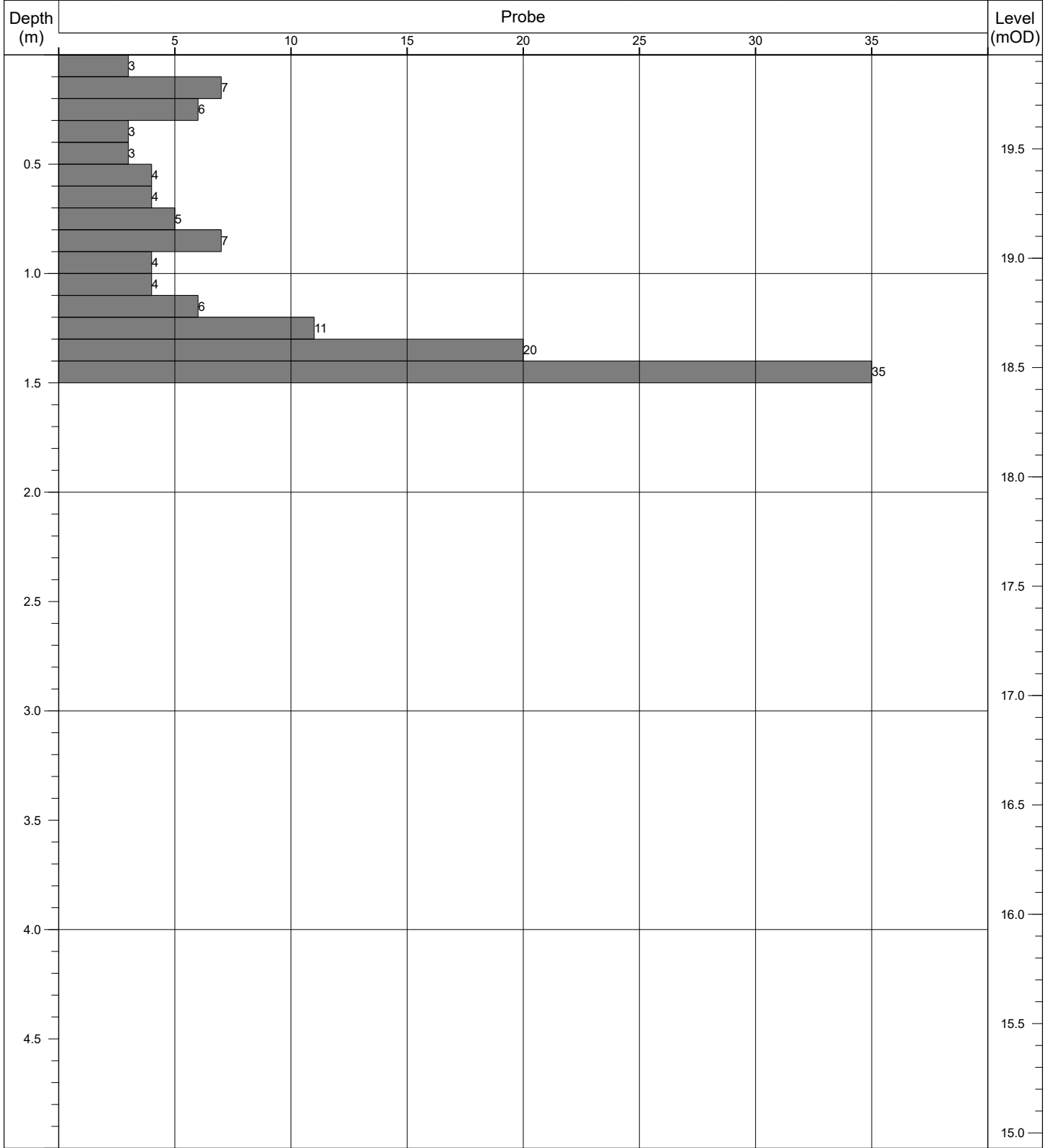
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	-
	2.30m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 6646	Dynamic Probe Log			Probe No: DP04
Contract:	Hangar Extension	Easting:	716648.905	Date Started: 11/02/2026
Location:	Gormanstown Camp, Gormanstown, Co. Meath	Northing:	767776.820	Logged By: D. Clarke
Client:	Óglaigh na hÉireann	Elevation:	19.89	Scale: 1:25
Engineer:	-	Rig Type:	Competitor130	Sheet No: Sheet 1 of 1



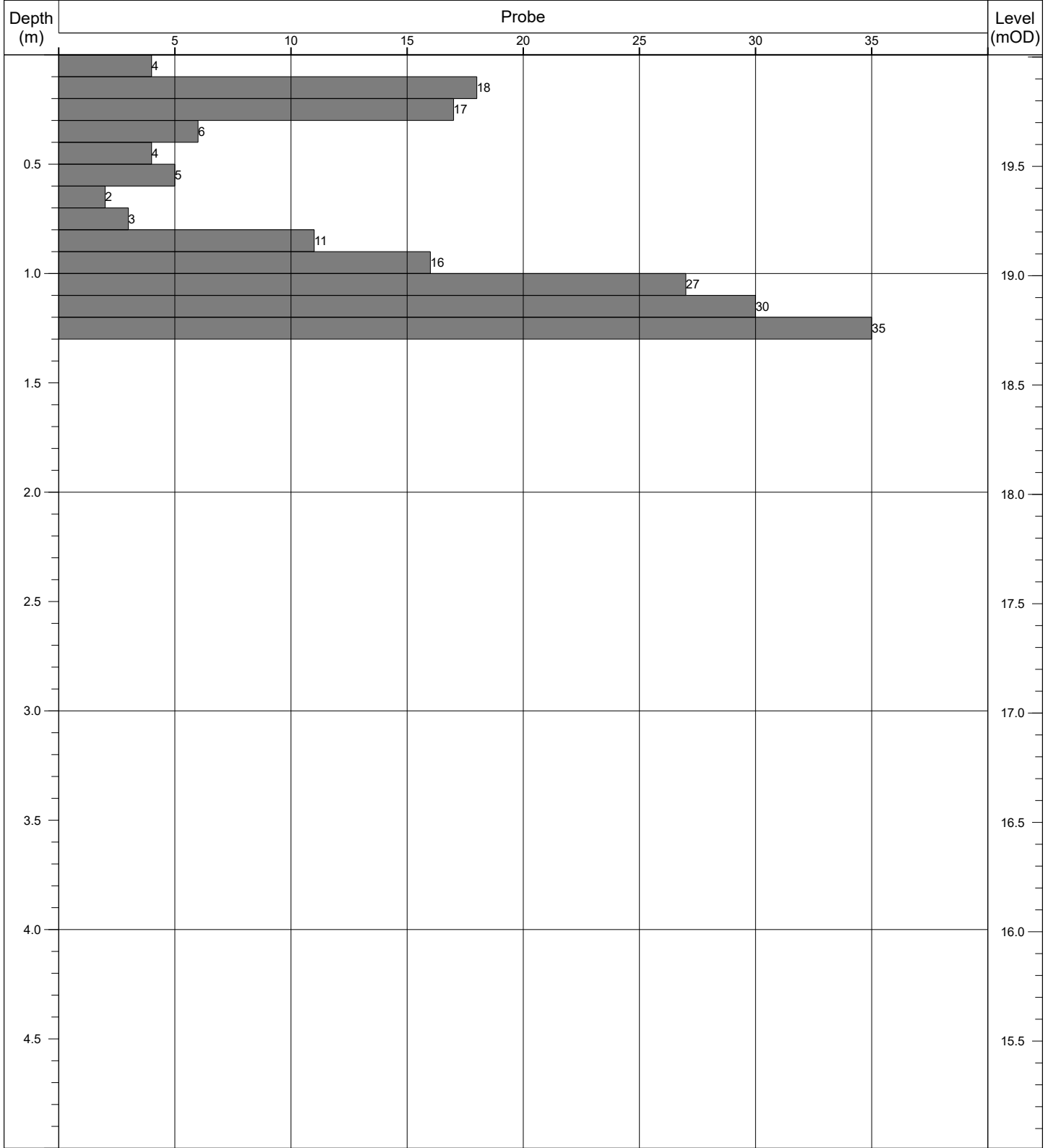
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass:	Drop:	-
	2.00m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 6646	Dynamic Probe Log			Probe No: DP05
Contract:	Hangar Extension	Easting:	716645.482	Date Started: 11/02/2026
Location:	Gormanstown Camp, Gormanstown, Co. Meath	Northing:	767771.649	Logged By: D.Clarke
Client:	Óglaigh na hÉireann	Elevation:	19.93	Scale: 1:25
Engineer:	-	Rig Type:	Competitor130	Sheet No: Sheet 1 of 1



	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass:	Drop:	-
	1.50m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 6646	Dynamic Probe Log				Probe No: DP06
Contract:	Hangar Extension	Easting:	716641.307	Date Started:	11/02/2026
Location:	Gormanstown Camp, Gormanstown, Co. Meath	Northing:	767761.846	Logged By:	D.Clarke
Client:	Óglaigh na hÉireann	Elevation:	20.01	Scale:	1:25
Engineer:	-	Rig Type:	Competitor130	Sheet No:	Sheet 1 of 1

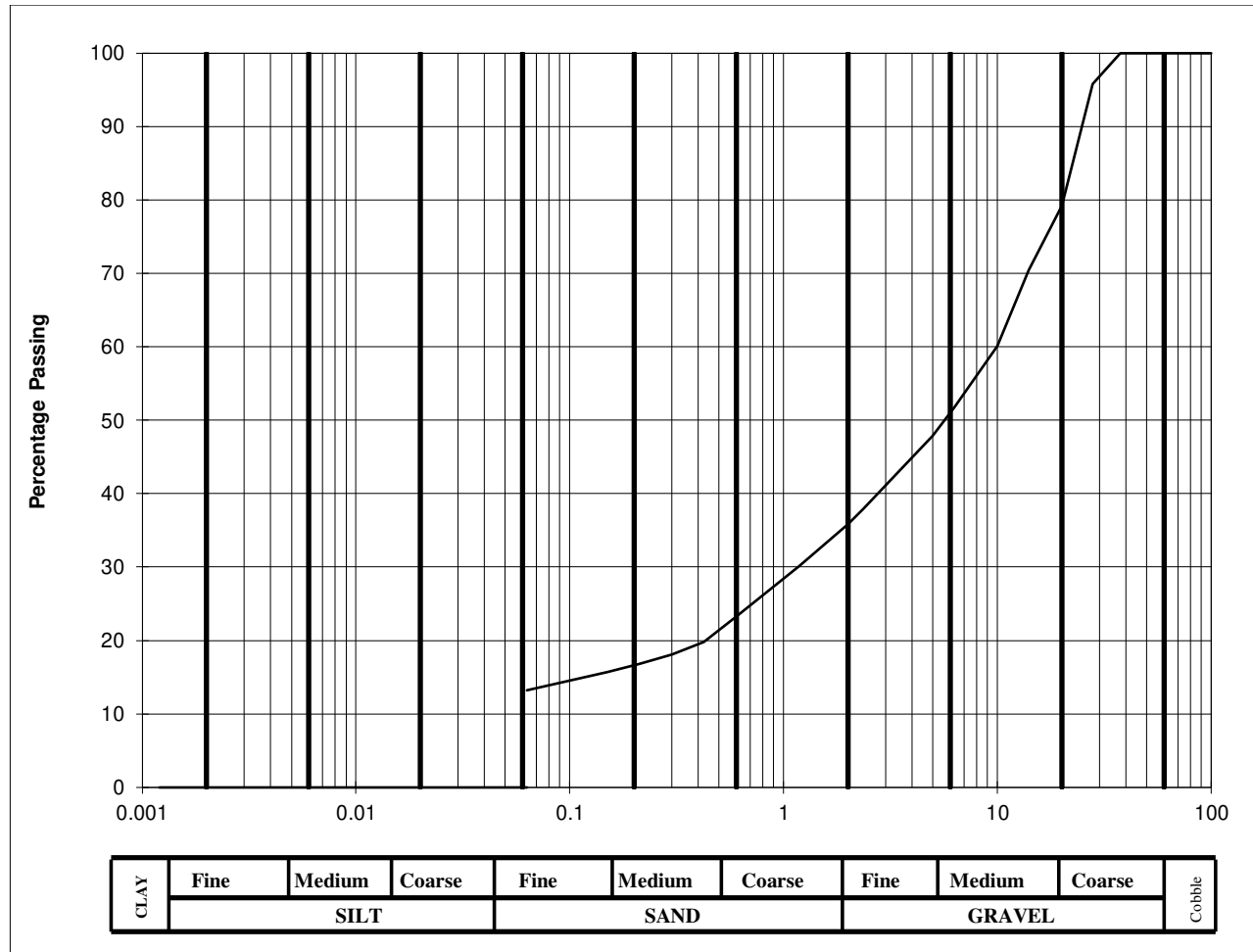


	Termination:		Probe Details:			Remarks: -
	Depth:	Reason:	Type:	Mass:	Drop:	
	1.30m	Obstruction - boulders.	DPH	50kg	500mm	

Appendix 3
Geotechnical Laboratory Test Results

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	0.0630	
90	100	0.0200	
75	100	0.0060	
63	100	0.0020	
50	100		
37.5	100		
28	95.8		
20	79.2		
14	70.4		
10	60.1		
6.3	51.8		
5.0	47.9		
2.36	37.9		
2.00	35.8		
1.18	30.1		
0.600	23.2		
0.425	19.8		
0.300	18.1		
0.212	16.8		
0.150	15.7		
0.063	13		

Cobbles, %	0
Gravel, %	64
Sand, %	23
Clay / Silt, %	13



Engineer :	Oglaigh na hEireann
Project :	Gormanstown Camp - Hanger

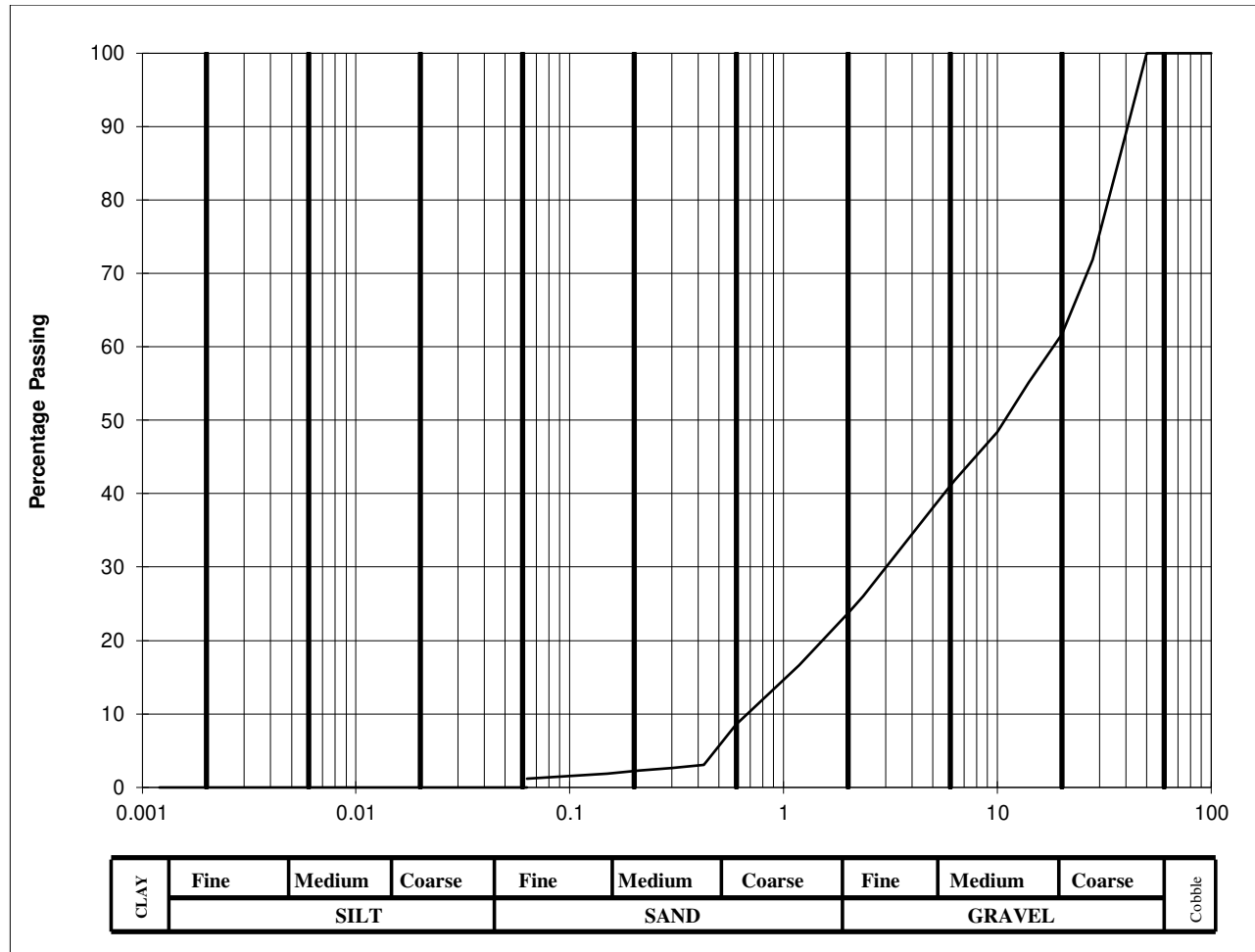
Lab. No :	26/411
Sample No :	BH02

Hole ID :	BH 01
Depth, m :	1.00

Material description :	silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	0.0630	
90	100	0.0200	
75	100	0.0060	
63	100	0.0020	
50	100		
37.5	86.1		
28	71.9		
20	61.7		
14	55.1		
10	48.4		
6.3	41.8		
5.0	38.1		
2.36	26		
2.00	23.7		
1.18	16.6		
0.600	8.5		
0.425	3.1		
0.300	2.6		
0.212	2.3		
0.150	1.9		
0.063	1		

Cobbles, %	0
Gravel, %	76
Sand, %	23
Clay / Silt, %	1



Engineer :	Oglaigh na hEireann
Project :	Gormanstown Camp - Hanger

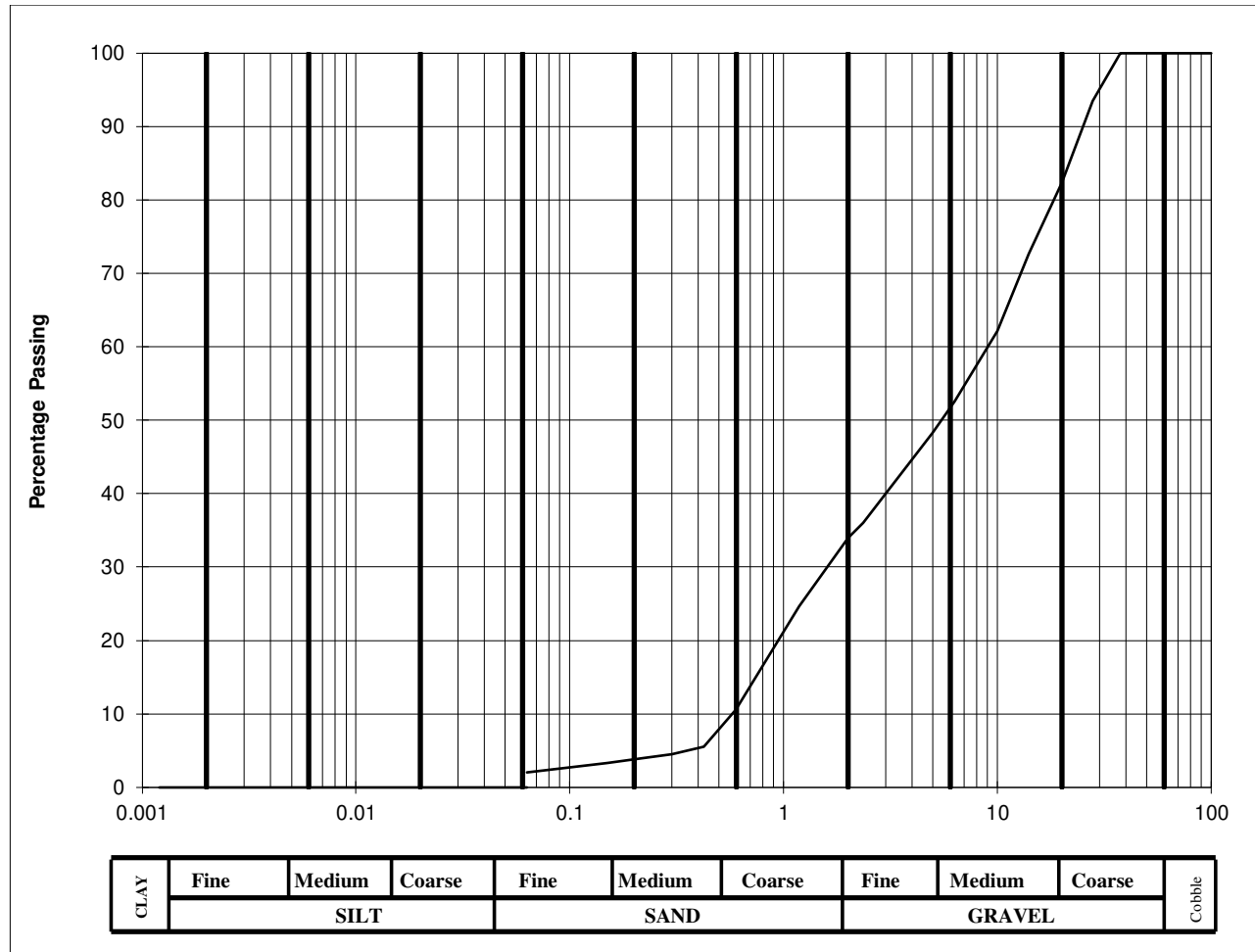
Lab. No :	26/412
Sample No :	BH03

Hole ID :	BH 01
Depth, m :	2.00

Material description :	slightly silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	0.0630	
90	100	0.0200	
75	100	0.0060	
63	100	0.0020	
50	100		
37.5	100		
28	93.5		
20	82.4		
14	72.6		
10	62.1		
6.3	52.6		
5.0	48.3		
2.36	36		
2.00	34		
1.18	24.7		
0.600	10.6		
0.425	5.5		
0.300	4.5		
0.212	3.9		
0.150	3.3		
0.063	2		

Cobbles, %	0
Gravel, %	66
Sand, %	32
Clay / Silt, %	2



Engineer :	Oglaigh na hEireann
Project :	Gormanstown Camp - Hanger

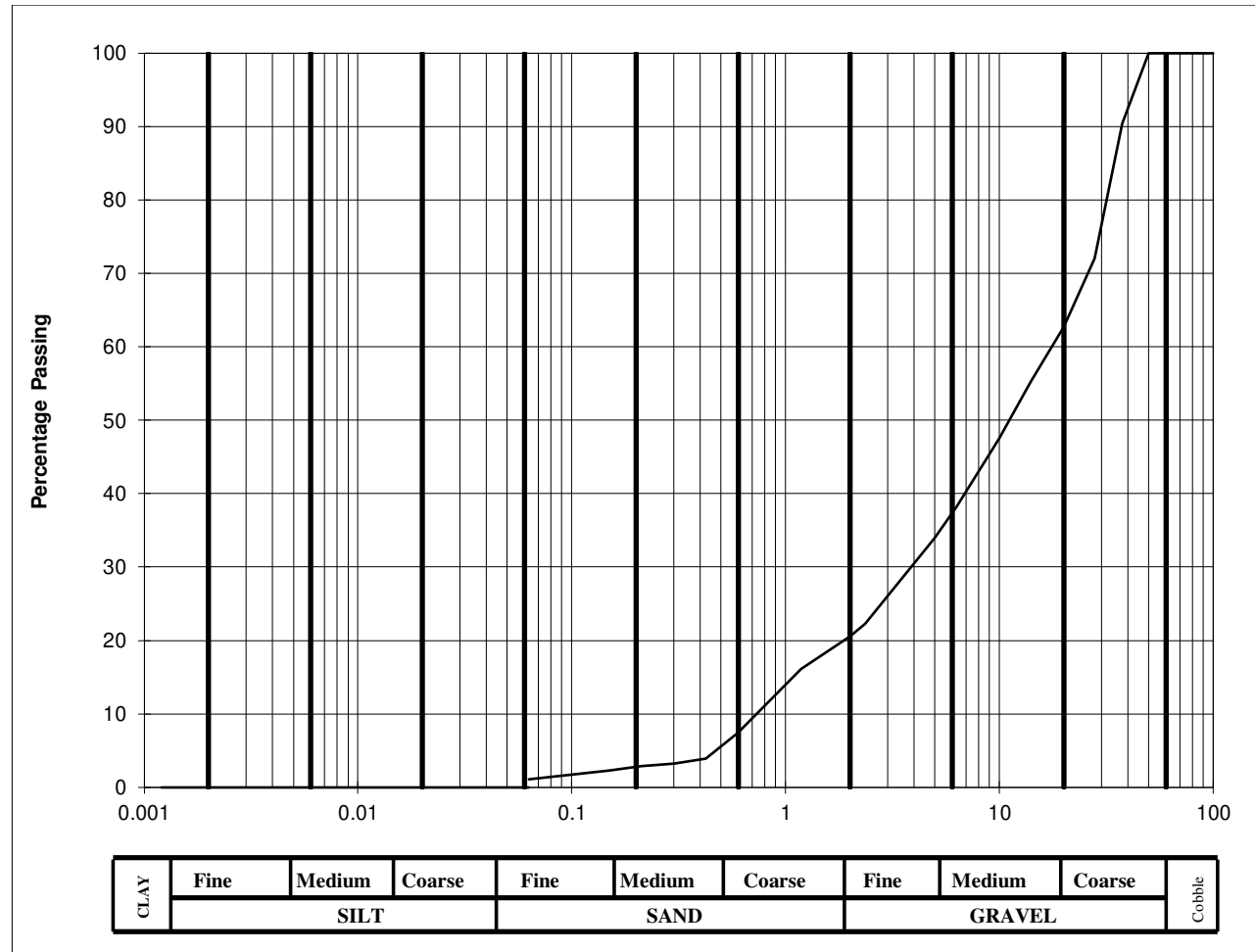
Lab. No :	26/413
Sample No :	BH09

Hole ID :	BH 02
Depth, m :	1.00

Material description :	slightly silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	0.0630	
90	100	0.0200	
75	100	0.0060	
63	100	0.0020	
50	100		
37.5	90.4		
28	72		
20	62.7		
14	55.2		
10	47.5		
6.3	38.2		
5.0	34		
2.36	22.3		
2.00	20.6		
1.18	16.1		
0.600	7.4		
0.425	3.9		
0.300	3.2		
0.212	2.9		
0.150	2.3		
0.063	1		

Cobbles, %	0
Gravel, %	79
Sand, %	20
Clay / Silt, %	1



Engineer :	Oglaigh na hEireann
Project :	Gormanstown Camp - Hanger

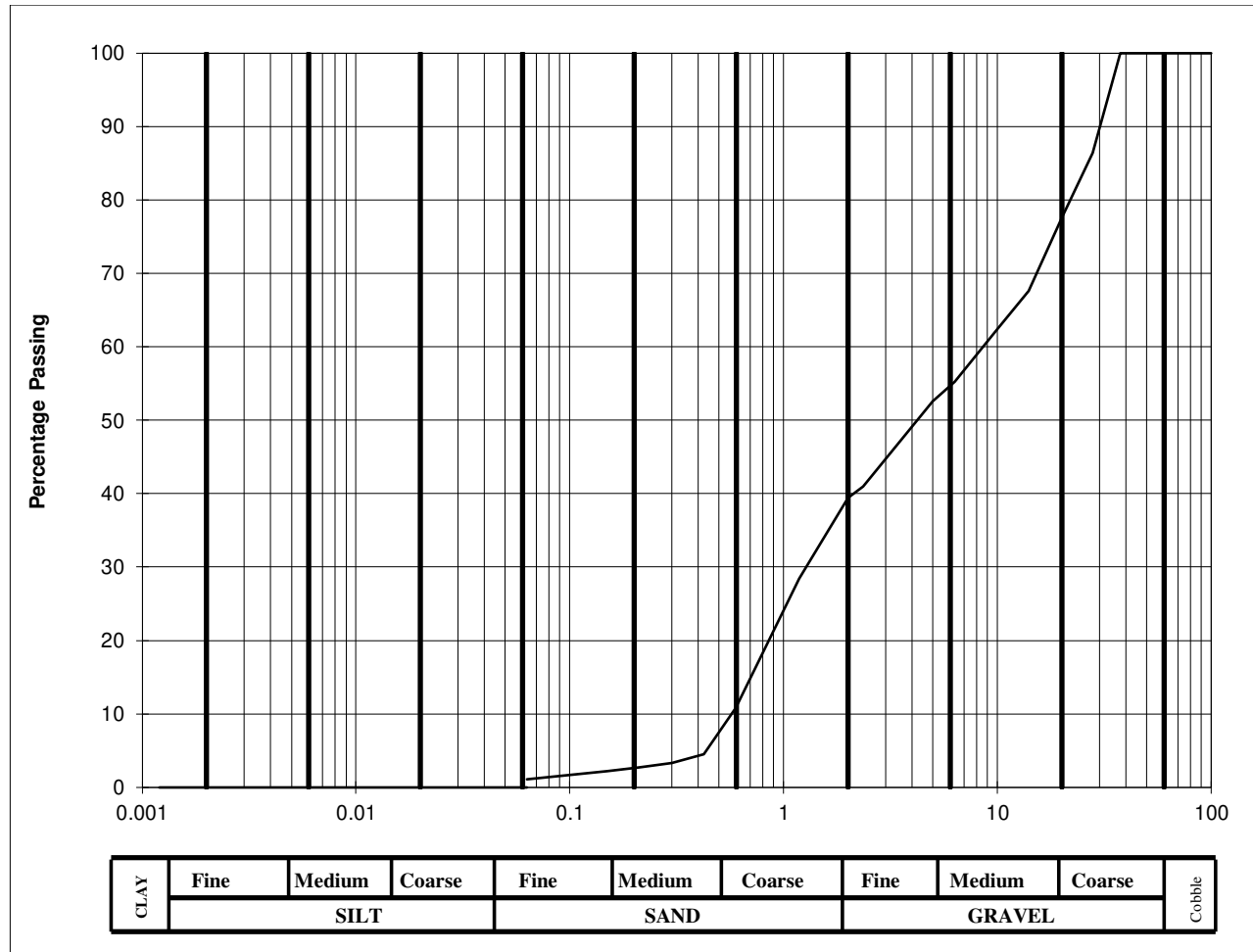
Lab. No :	26/414
Sample No :	BH13

Hole ID :	BH 02
Depth, m :	5.00

Material description :	slightly silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	0.0630	
90	100	0.0200	
75	100	0.0060	
63	100	0.0020	
50	100		
37.5	100		
28	86.4		
20	77.6		
14	67.6		
10	62.4		
6.3	55.2		
5.0	52.6		
2.36	41		
2.00	39.4		
1.18	28.4		
0.600	10.8		
0.425	4.5		
0.300	3.3		
0.212	2.7		
0.150	2.2		
0.063	1		

Cobbles, %	0
Gravel, %	61
Sand, %	38
Clay / Silt, %	1



Engineer :	Oglaigh na hEireann
Project :	Gormanstown Camp - Hanger

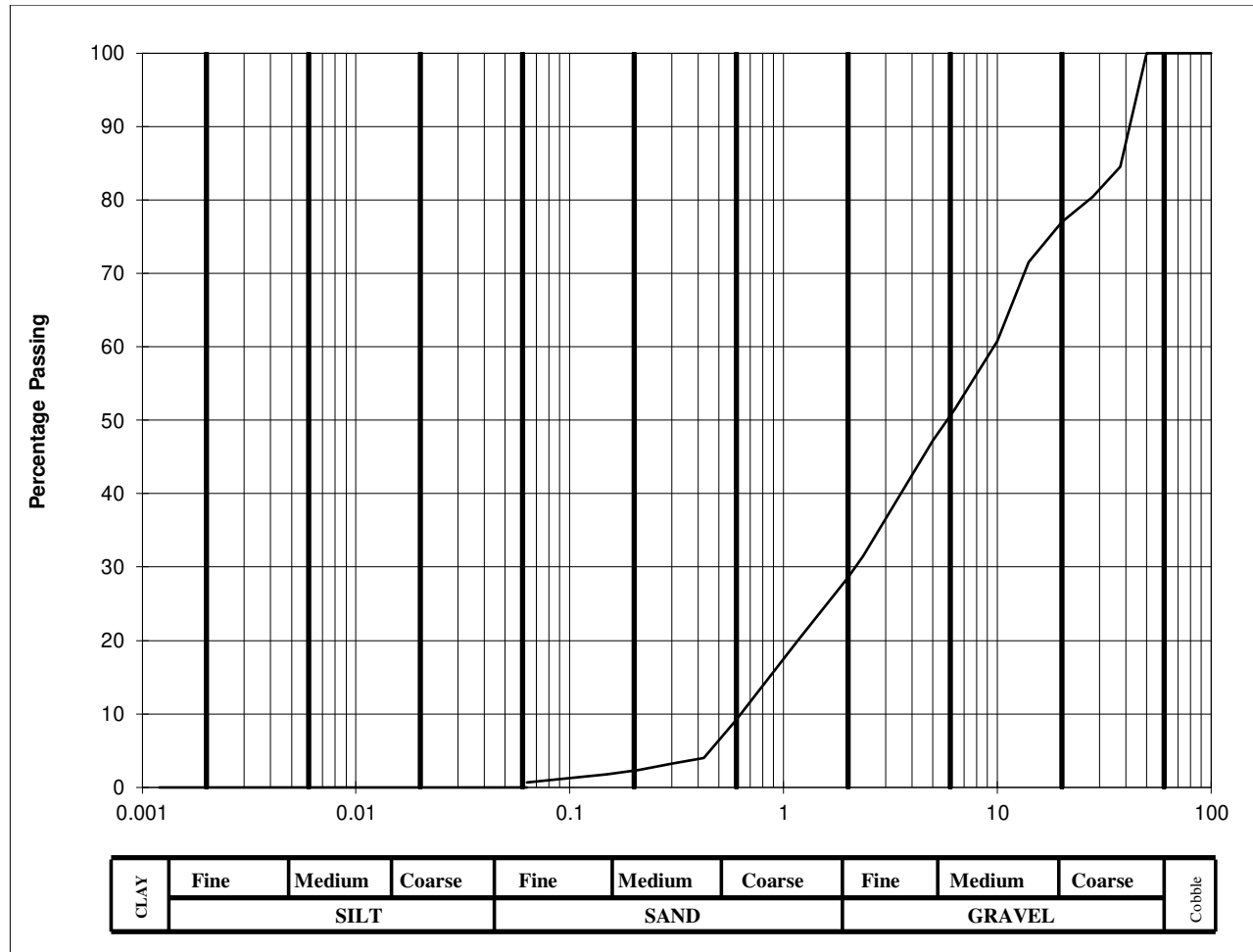
Lab. No :	26/415
Sample No :	BH17

Hole ID :	BH 03
Depth, m :	1.00

Material description :	slightly silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	0.0630	
90	100	0.0200	
75	100	0.0060	
63	100	0.0020	
50	100		
37.5	84.5		
28	80.4		
20	77		
14	71.5		
10	60.8		
6.3	51.5		
5.0	47.2		
2.36	31.5		
2.00	28.6		
1.18	20.2		
0.600	9.1		
0.425	4		
0.300	3.2		
0.212	2.4		
0.150	1.8		
0.063	1		

Cobbles, %	0
Gravel, %	71
Sand, %	28
Clay / Silt, %	1



Engineer :	Oglaigh na hEireann
Project :	Gormanstown Camp - Hanger

Lab. No :	26/416
Sample No :	BH19

Hole ID :	BH 03
Depth, m :	3.00

Material description :	slightly silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

Chemical Testing
In accordance with BS 1377: Part 3

Client	Oglaigh na hEireann
Site	Gormanstown Camp
S.I. File No	6646 / 26
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	18th March 2026

Hole Id	Depth (mBGL)	Sample No	Lab Ref	pH Value	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO ₃) g/L	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO ₃) %	Acid Soluble Sulphate Content (2:1 Water-soil extract) (SO ₃) g/L	Acid Soluble Sulphate Content (2:1 Water-soil extract) (SO ₃) %	Chloride ion Content (water:soil ratio 2:1) %	% passing 2mm
BH01	1.00	BH02	26/411	7.94	0.124	0.045				35.8
BH02	1.00	BH09	26/412	8.14	0.123	0.042				34.0
BH03	1.00	BH17	26/413	8.21	0.122	0.048				39.4

Appendix 4
Environmental Laboratory Test Results



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Site Investigations Ltd
The Grange
Carhugar
12th Lock Road
Lucan
Co. Dublin

Attention: Stephen Letch

CERTIFICATE OF ANALYSIS

Date of report Generation: 18 March 2026
Customer: Site Investigations Ltd
Sample Delivery Group (SDG): 260306-138
Your Reference: 6646
Location: GORMANSTOWN CAMP
Report No: 795444
Order Number: 06/B/26

This report has been revised and directly supersedes 794987 in its entirety.

We received 2 samples on Friday March 06, 2026 and 2 of these samples were scheduled for analysis which was completed on Wednesday March 18, 2026. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Justin Keeton
Business Unit Leader - Land





CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
33031385	BH01		0.50	04/03/2026
33031386	BH03		0.50	04/03/2026

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type											
							33031385	33031386	BH01	BH03	0.50	0.50	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other																	
Anions by Kone (w)	All	NDPs: 0 Tests: 2															
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2															
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1															
CEN Readings	All	NDPs: 0 Tests: 2															
Chromium III	All	NDPs: 0 Tests: 2															
Coronene	All	NDPs: 0 Tests: 2															
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2															
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 2															
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2															
EPH CWG GC (S)	All	NDPs: 0 Tests: 2															
Fluoride	All	NDPs: 0 Tests: 2															
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2															
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2															
Loss on Ignition in soils	All	NDPs: 0 Tests: 2															
Mercury Dissolved	All	NDPs: 0 Tests: 2															



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Results Legend	Lab Sample No(s)		33031385		33031386		
	Customer Sample Reference		BH01		BH03		
AGS Reference							
Depth (m)		0.50		0.50			
Container		1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type		S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X			X	
PAH 16 & 17 Calc	All	NDPs: 0 Tests: 2	X			X	
PAH by GCMS	All	NDPs: 0 Tests: 2	X			X	
PCBs by GCMS	All	NDPs: 0 Tests: 2	X			X	
pH	All	NDPs: 0 Tests: 2	X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 2	X		X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 2	X		X		
Sample description	All	NDPs: 0 Tests: 1	X				
Total Organic Carbon	All	NDPs: 0 Tests: 2	X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 2	X			X	
VOC MS (S)	All	NDPs: 0 Tests: 2		X			X



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
33031385	BH01	0.50	Dark Brown	Sandy Loam	Stones	Vegetation
33031386	BH03	0.50	Dark Brown	Sandy Clay Loam	Vegetation	Concrete/Aggregate

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Results Legend			Customer Sample Ref.		BH01	BH03				
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference							
M	mCERTS accredited.			0.50	0.50					
aq	Aqueous / settled sample.			Soil/Solid (S)	Soil/Solid (S)					
diss.filt	Dissolved / filtered sample.			04/03/2026	04/03/2026					
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			06/03/2026	06/03/2026					
***	6.2 FTAB (see appendix)			260306-138	260306-138					
1-4*\$	Sample deviation (see appendix)			33031385	33031386					
Component	LOD/Units	Method								
Moisture Content Ratio (% of as received sample)	%	PM024	12	14						
Loss on ignition	<0.7 %	TM018	3.49	2.69						
			M	M						
Organic Carbon, Total	<0.2 %	TM132	1.2	0.432						
			M	M						
pH	1 pH Units	TM133	8.5	8.17						
			M	M						
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6						
			M	M						
PCB congener 28	<3 µg/kg	TM168	<15	<3						
			M	M						
PCB congener 52	<3 µg/kg	TM168	<15	<3						
			M	M						
PCB congener 101	<3 µg/kg	TM168	<15	<3						
			M	M						
PCB congener 118	<3 µg/kg	TM168	<15	<3						
			M	M						
PCB congener 138	<3 µg/kg	TM168	<15	<3						
			M	M						
PCB congener 153	<3 µg/kg	TM168	<15	<3						
			M	M						
PCB congener 180	<3 µg/kg	TM168	<15	<3						
			M	M						
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<105	<21						
Chromium, Trivalent	<0.9 mg/kg	TM181	6.82	46.1						
Antimony	<0.6 mg/kg	TM181	1.52	1.19						
			#	#						
Arsenic	<0.6 mg/kg	TM181	11.5	23.9						
			M	M						
Barium	<0.6 mg/kg	TM181	131	84.9						
			#	#						
Cadmium	<0.02 mg/kg	TM181	0.22	1.51						
			M	M						
Chromium	<0.9 mg/kg	TM181	6.82	46.1						
			M	M						
Copper	<1.4 mg/kg	TM181	23.4	24.5						
			M	M						
Lead	<0.7 mg/kg	TM181	53.8	16.5						
			M	M						
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1						
			M	M						
Molybdenum	<0.1 mg/kg	TM181	1.39	2.72						
			#	#						
Nickel	<0.2 mg/kg	TM181	24.8	73.8						
			M	M						
Selenium	<1 mg/kg	TM181	<1	<1						
			#	#						
Zinc	<1.9 mg/kg	TM181	429	108						
			M	M						
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304	<0.001							
			#							
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304	<0.001							
			#							
Additional Asbestos Components (Using TM048)		TM304	None							
			#							
Analysts Comments		TM304	N/A							
Asbestos Quantification - Total - %	<0.001 %	TM304	<0.001							
			#							
PAH total 17 (inclusive of Coronene)	<1 mg/kg	TM410	61.7	<1						
Coronene	<200 µg/kg	TM410	534	<200						



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

TPH CWG (S)

Results Legend		Customer Sample Ref.	BH01	BH03				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		0.50	0.50				
aq	Aqueous / settled sample.		Soil/Solid (S)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.		04/03/2026	04/03/2026				
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		06/03/2026	06/03/2026				
***	6.2 FTAB (see appendix)		260306-138	260306-138				
1-4**	@Sample deviation (see appendix)		33031385	33031386				
****	AGS Reference							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	93.4	104				
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	<10				
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	315	<10				
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	37.3	<10				
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	<1000				
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	<1000	#	#		
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	<1000	#	#		
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	2840	1500	#	#		
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	1700	<1000				
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000	<5000				
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	317000	<10000				
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	<10				
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	15.8	<10				
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	24.9	<10				
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	<1000	#	#		
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	2600	<1000	#	#		
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	55700	<1000	#	#		
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	213000	1240	#	#		
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	46300	<1000				
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	11500	<1000				
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	317000	<5000				
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	323000	<10000				
GRO >C5-C6 (HS_1D)	<20 µg/kg	TM089	<20	<20				
GRO >C6-C7 (HS_1D)	<20 µg/kg	TM089	162	<20				
GRO >C7-C8 (HS_1D)	<20 µg/kg	TM089	168	<20				
GRO >C8-C10 (HS_1D)	<20 µg/kg	TM089	63.3	<20				
GRO >C10-C12 (HS_1D)	<20 µg/kg	TM089	22.6	<20				
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	353	<50				
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	<50				
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	353	<20				



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.

1-5&#@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH01 0.50 SOLID 04/03/2026 00:00:00 06/03/2026 11:10:00 260306-138 33031385 TM048	13/03/2026	Barbara Urbanek-Walsh	ACM debris in soil.	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH03 0.50 SOLID 04/03/2026 00:00:00 06/03/2026 11:10:00 260306-138 33031386 TM048	13/03/2026	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Asbestos Quantification - Full

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.

1-5$ Sample deviation (see appendix)

		Additional Asbestos Components (Not detected through Identification method TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref.	BH01	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.50					
Sample Type	SOLID					
Date Sampled	04/03/2026 00:00:00					
Date Received	06/03/2026 11:10:00					
SDG	260306-138					
Original Sample Method Number	33031385 TM304					



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference	
Mass Sample taken (kg)	0.107
Mass of dry sample (kg)	0.090
Particle Size <4mm	>95%

Site Location	GORMANSTOWN CAMP
Natural Moisture Content (%)	15.3
Dry Matter Content (%)	86.8

Case	
SDG	260306-138
Lab Sample Number(s)	33031385
Sampled Date	04-Mar-2026
Customer Sample Ref.	BH01
Depth (m)	0.50

Landfill Waste Acceptance Criteria Limits

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Solid Waste Analysis	Result
Total Organic Carbon (%)	1.2
Loss on Ignition (%)	3.49
Sum of BTEX (mg/kg)	<0.07
Sum of 7 PCBs (mg/kg)	<0.105
Mineral Oil (mg/kg) (EH_2D_AL)	27.9
PAH Sum of 17 (mg/kg)	61.7
pH (pH Units)	8.5
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.0227	<0.0002	0.227	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00904	<0.001	0.0904	<0.01	0.5	10	70
Copper	0.00162	<0.0003	0.0162	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00448	<0.003	0.0448	<0.03	0.5	10	30
Nickel	0.000437	<0.0004	0.00437	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.003	<0.001	0.03	<0.01	4	50	200
Chloride	2.9	<2	29	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	76.3	<10	763	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.33	<3	43.3	<30	500	800	1000

Leach Test Information

Date Prepared	09-Mar-2026
pH (pH Units)	8.62
Conductivity (µS/cm)	100
Volume Leachant (Litres)	0.887

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C). Prepared leachates do not hold ISO17025 accreditation.
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

18/03/2026 14:47:12

14:46:56 18/03/2026



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference	
Mass Sample taken (kg)	0.104
Mass of dry sample (kg)	0.090
Particle Size <4mm	>95%

Site Location	GORMANSTOWN CAMP
Natural Moisture Content (%)	19.6
Dry Matter Content (%)	83.6

Case	
SDG	260306-138
Lab Sample Number(s)	33031386
Sampled Date	04-Mar-2026
Customer Sample Ref.	BH03
Depth (m)	0.50

Landfill Waste Acceptance Criteria Limits

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Solid Waste Analysis	Result
Total Organic Carbon (%)	0.432
Loss on Ignition (%)	2.69
Sum of BTEX (mg/kg)	<0.007
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg) (EH_2D_AL)	<5
PAH Sum of 17 (mg/kg)	<1
pH (pH Units)	8.17
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.00821	<0.0002	0.0821	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00144	<0.0003	0.0144	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000908	<0.0004	0.00908	<0.004	0.4	10	40
Lead	0.000278	<0.0002	0.00278	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00177	<0.001	0.0177	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	39.1	<10	391	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	6.13	<3	61.3	<30	500	800	1000

Leach Test Information

Date Prepared	09-Mar-2026
pH (pH Units)	8.04
Conductivity (µS/cm)	51
Volume Leachant (Litres)	0.883

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C). Prepared leachates do not hold ISO17025 accreditation.
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

18/03/2026 14:47:12

14:46:56 18/03/2026



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM018	Determination of Loss on Ignition
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM151	Determination of Hexavalent Chromium using Kone analyser
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM304	Asbestos Quantification in Soil: Fibres identified by morphology only
TM410	Determination of Coronene in soils by GCMS
TM048	Identification of Asbestos in Bulk Material
TM104	Determination of Fluoride using the Kone Analyser
TM152	Analysis of Aqueous Samples by ICP-MS
TM168	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	The determination of PAH in soil samples by GC-MS
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 260306-138
Client Ref.: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	33031385	33031386
	BH01	BH03
AGS Ref.		
Depth	0.50	0.50
Type	Soil/Solid (S)	Soil/Solid (S)
Anions by Kone (w)	12-Mar-2026	12-Mar-2026
Asbestos ID in Solid Samples	13-Mar-2026	13-Mar-2026
Asbestos Quantification - Full	18-Mar-2026	
CEN 10:1 Leachate (1 Stage)	10-Mar-2026	10-Mar-2026
CEN Readings	12-Mar-2026	12-Mar-2026
Chromium III	12-Mar-2026	13-Mar-2026
Coronene	11-Mar-2026	11-Mar-2026
Dissolved Metals by ICP-MS	12-Mar-2026	12-Mar-2026
Dissolved Organic/Inorganic Carbon	12-Mar-2026	12-Mar-2026
EPH by GCxGC-FID	13-Mar-2026	12-Mar-2026
EPH CWG GC (S)	11-Mar-2026	11-Mar-2026
Fluoride	12-Mar-2026	12-Mar-2026
GRO by GC-FID (S)	11-Mar-2026	11-Mar-2026
Hexavalent Chromium (s)	11-Mar-2026	11-Mar-2026
Loss on Ignition in soils	13-Mar-2026	12-Mar-2026
Mercury Dissolved	13-Mar-2026	13-Mar-2026
Metals in solid samples by OES	12-Mar-2026	13-Mar-2026
Moisture at 105C	09-Mar-2026	09-Mar-2026
PAH 16 & 17 Calc	11-Mar-2026	11-Mar-2026
PAH by GCMS	11-Mar-2026	11-Mar-2026
PCBs by GCMS	11-Mar-2026	11-Mar-2026
pH	11-Mar-2026	11-Mar-2026
pH Value of Filtered Water	12-Mar-2026	12-Mar-2026
Phenols by HPLC (W)	13-Mar-2026	13-Mar-2026
Sample description	09-Mar-2026	09-Mar-2026
Total Organic Carbon	12-Mar-2026	13-Mar-2026
TPH CWG GC (S)	11-Mar-2026	11-Mar-2026
VOC MS (S)	13-Mar-2026	12-Mar-2026



CERTIFICATE OF ANALYSIS

SDG: 260306-138
Client Ref: 6646

Report Number: 795444
Location: GORMANSTOWN CAMP

Superseded Report: 794987

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur - e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' is reported.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

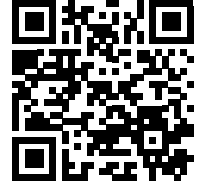
Appendix 5
Waste Classification Report



Waste Classification Report

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

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



D7N8Q-TA1JZ-091RL

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

Report is invalid if pages are removed.

Job name

6646

Description/Comments

Client: Óglaigh na hÉireann

Project

Hangar Extension

Site

Gormanstown Camp, Gormanstown, Co. Meath

Classified by

Name: **Stephen Letch**
Date: **18 Mar 2026 16:43 GMT**
Telephone: **00353 86817 9449**
Company: **Site Investigations Ltd**
The Grange
12th Lock Road
Lucan
K78 F598

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

HazWasteOnline™ Certification:	CERTIFIED
Course	Date
Hazardous Waste Classification	09 Oct 2019
Most recent 3 year Refresher	02 Dec 2025

Next 3 year Refresher due by Dec 2028

Purpose of classification

2 - Material Characterisation

Address of the waste

Camp Lane, Gormanston, Julianstown ED, County Meath, The Municipal District of Laytown — Bettystown, Ireland, **Post Code** K32 H635

Description of industry/producer giving rise to the waste

Site Investigation

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

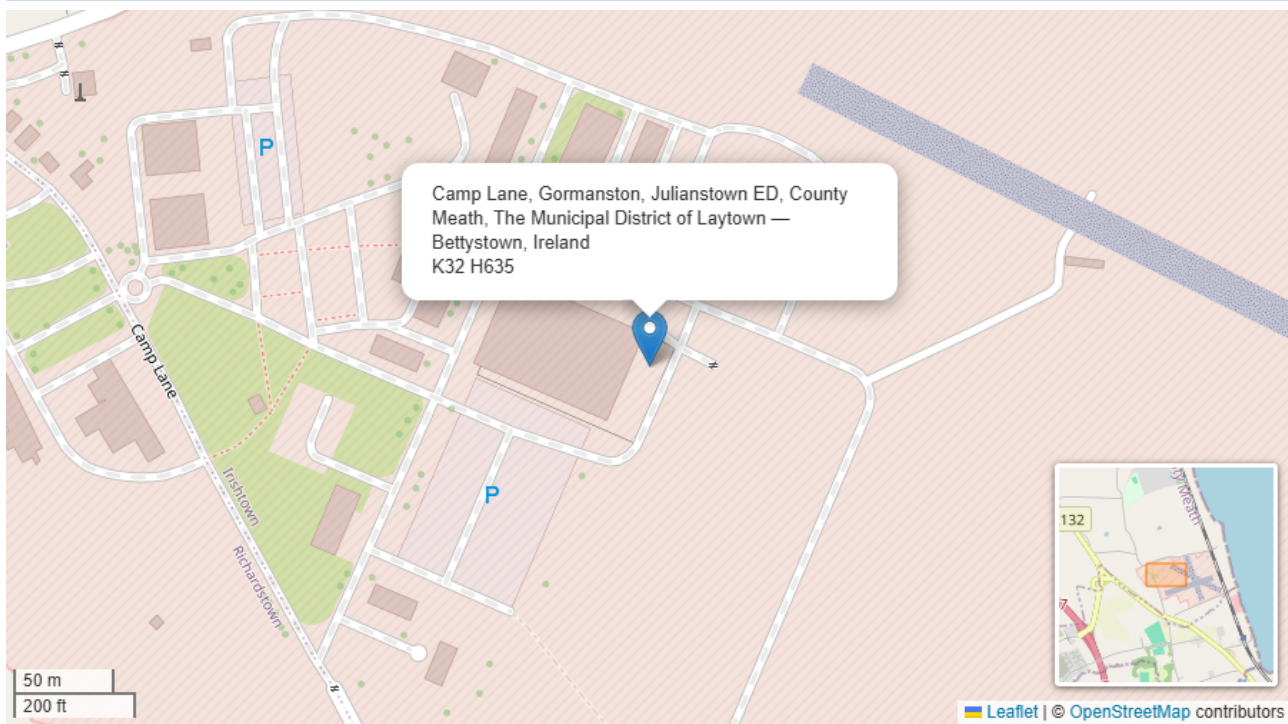
Soils recovered for environmental testing

Description of the waste

Natural soils



Waste Location



Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results		Page
					Inert	Non Haz	
1	BH01-0.50	0.50	Non Hazardous	Pass	Pass	5	
2	BH03-0.50	0.50	Non Hazardous	Pass	Pass	9	

Related documents

#	Name	Description
1	260306-138.hwol	ALS Hawarden .hwol file used to populate the Job
2	Rilta Suite ALS	waste stream template used to create this Job

WAC Results

WAC Settings: samples in this job constitute a single population.

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

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

Report

Created by: Stephen Letch

Created date: 18 Mar 2026 16:43 GMT

Appendices	Page
Appendix A: Classifier defined and non EU CLP determinands	13
Appendix B: Rationale for selection of metal species	15
Appendix C: Version	16



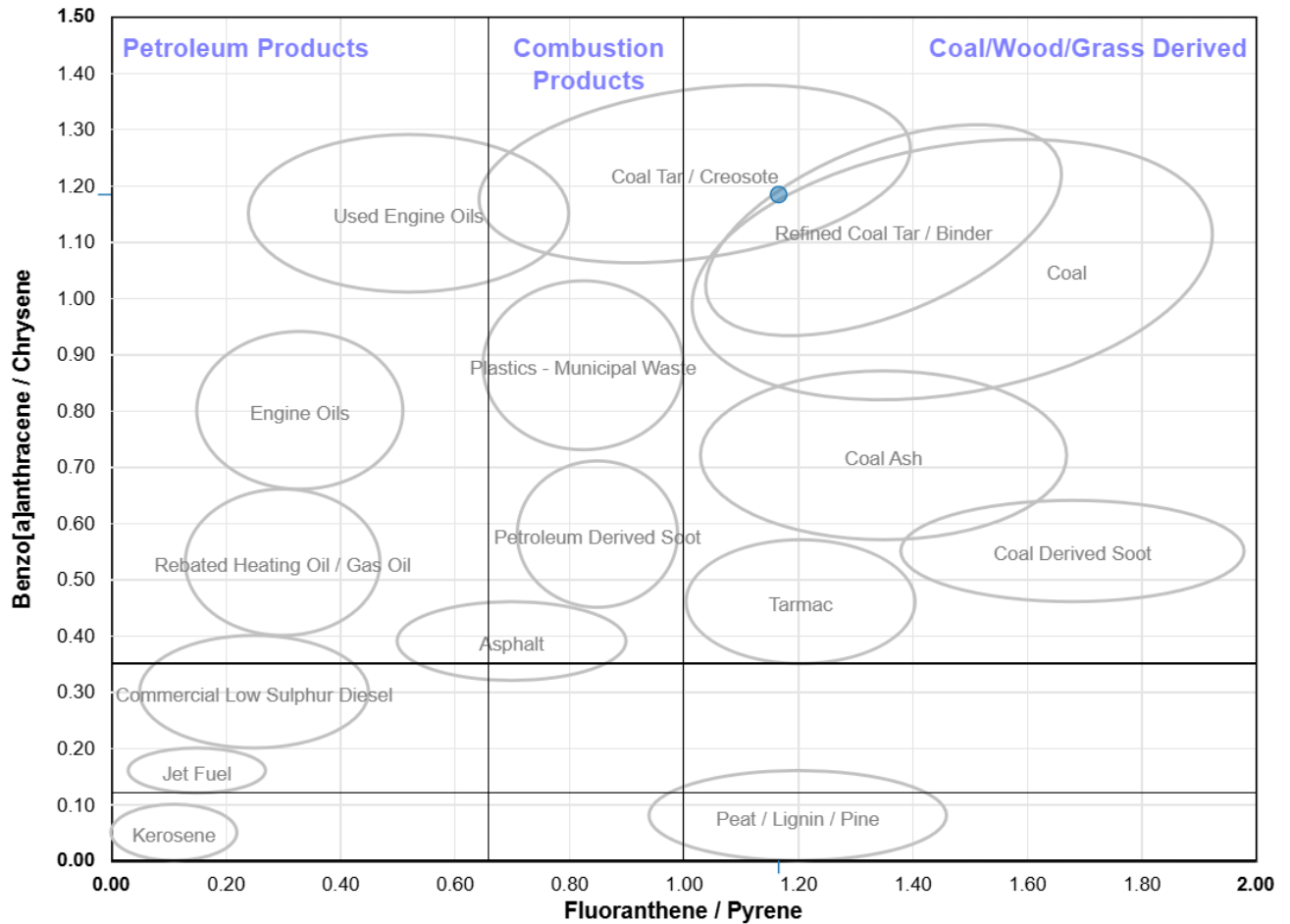
PAH Double Ratio plots

Disclaimer

The domains, oval areas and the plotted points are **indicators only** and must be combined with other lines of evidence to form conclusions. Samples marked with an empty circle are not plotted as they fall outside of the graph's boundaries

Credits

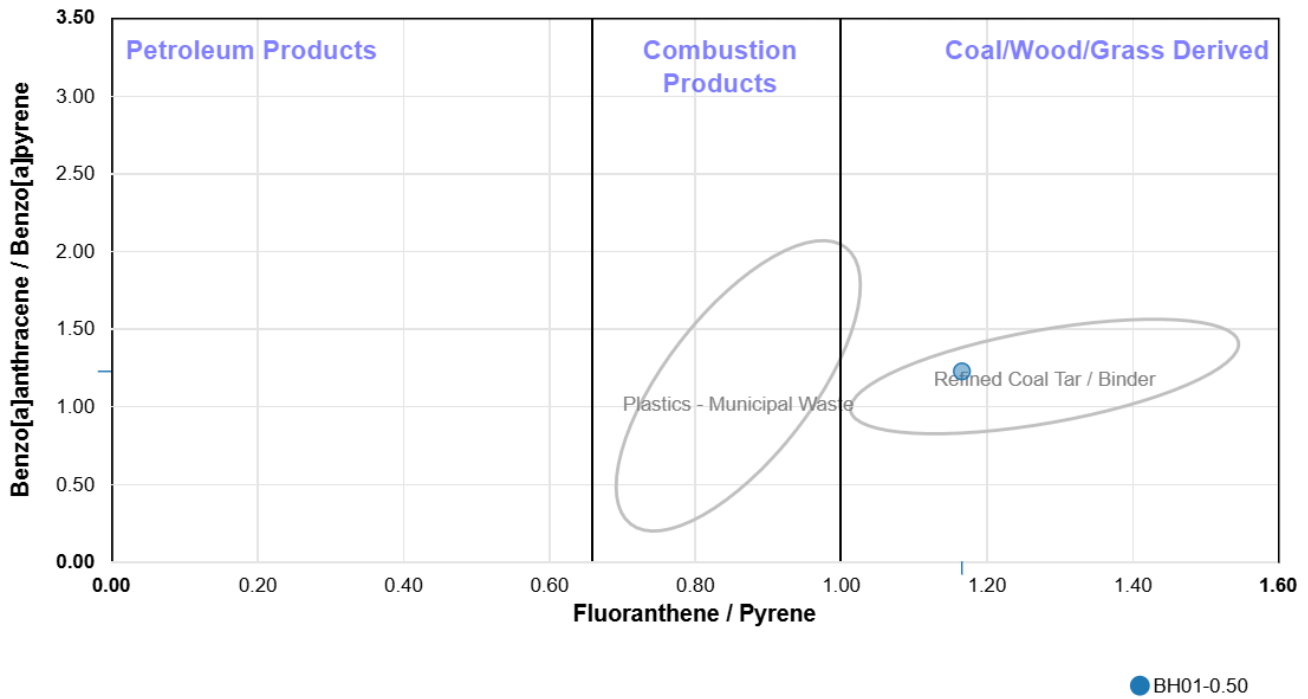
The domains and the horizontal and vertical lines are derived from Yunker et al. 2002 (Organic Geochemistry 33, 489-515)



● BH01-0.50

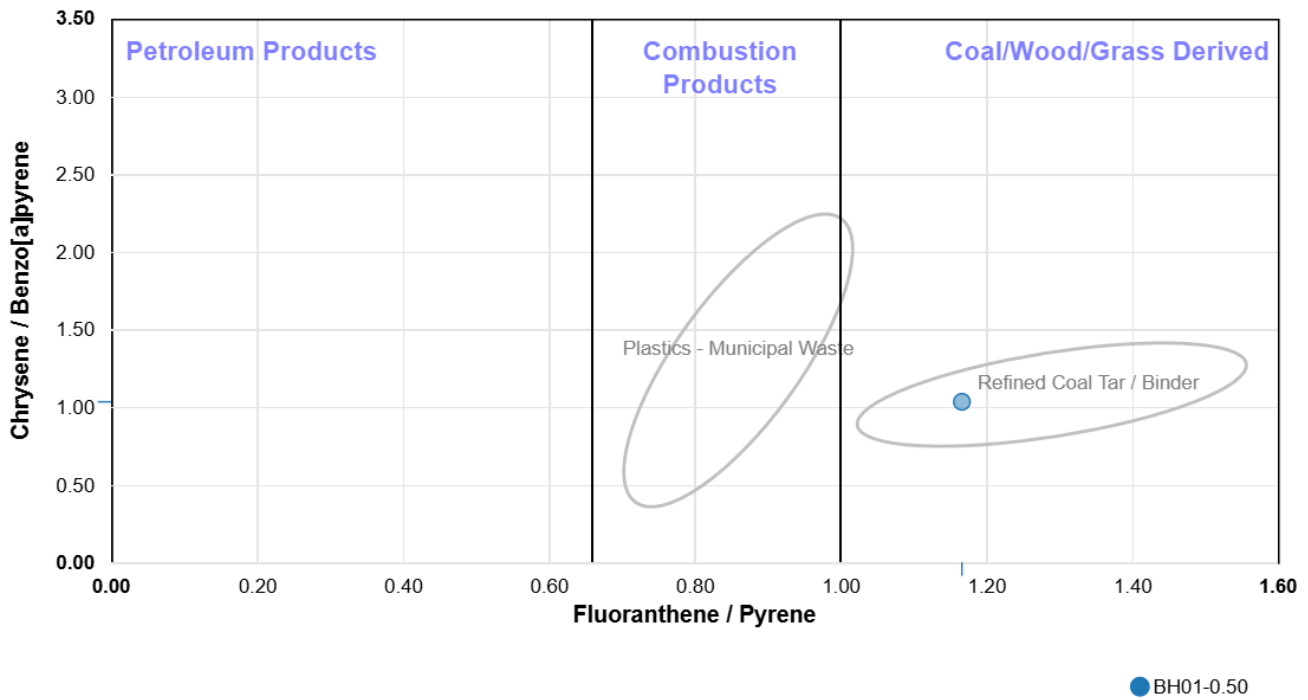
Credits for the oval areas and labels

HazWasteOnline, 2023; Jones Environmental Forensics, 2014



Credits for the oval areas and labels

HazWasteOnline, 2023



Credits for the oval areas and labels

HazWasteOnline, 2023



Classification of sample: BH01-0.50

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

Sample details

Sample name:	LoW Code:	
BH01-0.50	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m		
Moisture content:		
12%		
(wet weight correction)		

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	pH				8.5 pH		8.5 pH	8.5 pH		
2	TPH (C6 to C40) petroleum group				323 mg/kg		284.24 mg/kg	0.0284 %	✓	
3	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
4	asbestos fibres detected (Yes/No)				Yes					
5	asbestos	650-013-00-6	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
6	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9		1	1.52 mg/kg		1.338 mg/kg	0.000134 %	✓	
7	arsenic { arsenic compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5		1	11.5 mg/kg		10.12 mg/kg	0.00101 %	✓	
8	barium { barium oxide }	215-127-9	1304-28-5		131 mg/kg	1.117	128.711 mg/kg	0.0129 %	✓	
9	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5		1	0.22 mg/kg		0.194 mg/kg	0.0000194 %	✓	
10	copper { dicopper oxide; copper (II) oxide }	029-002-00-X	215-270-7	1317-39-1	23.4 mg/kg	1.126	23.184 mg/kg	0.00232 %	✓	



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	53.8 mg/kg		47.344 mg/kg	0.00473 %	✓	
	082-001-00-6									
12	mercury { mercury difulminate }				<0.1 mg/kg	1.419	<0.142 mg/kg	<0.0000142 %		<LOD
	080-005-00-2	211-057-8	628-86-4							
13	molybdenum { molybdenum(VI) oxide }				1.39 mg/kg	1.5	1.835 mg/kg	0.000184 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
14	nickel { nickel(II) oxide (nickel monoxide) }				24.8 mg/kg	1.273	27.773 mg/kg	0.00278 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
15	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8									
16	zinc { zinc oxide }				429 mg/kg	1.245	469.904 mg/kg	0.047 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
17	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }				6.82 mg/kg	1.462	8.772 mg/kg	0.000877 %	✓	
		215-160-9	1308-38-9							
18	chromium in Cr(VI) compounds { chromium(VI) oxide }				<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
19	naphthalene				<0.045 mg/kg		<0.045 mg/kg	<0.0000045 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				0.849 mg/kg		0.747 mg/kg	0.0000747 %	✓	
		205-917-1	208-96-8							
21	acenaphthene				0.11 mg/kg		0.0968 mg/kg	0.00000968 %	✓	
		201-469-6	83-32-9							
22	fluorene				0.403 mg/kg		0.355 mg/kg	0.0000355 %	✓	
		201-695-5	86-73-7							
23	phenanthrene				6.57 mg/kg		5.782 mg/kg	0.000578 %	✓	
		201-581-5	85-01-8							
24	anthracene				1.95 mg/kg		1.716 mg/kg	0.000172 %	✓	
		204-371-1	120-12-7							
25	fluoranthene				11.9 mg/kg		10.472 mg/kg	0.00105 %	✓	
		205-912-4	206-44-0							
26	pyrene				10.2 mg/kg		8.976 mg/kg	0.000898 %	✓	
		204-927-3	129-00-0							
27	benzo[a]anthracene				5.81 mg/kg		5.113 mg/kg	0.000511 %	✓	
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				4.91 mg/kg		4.321 mg/kg	0.000432 %	✓	
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				5.79 mg/kg		5.095 mg/kg	0.00051 %	✓	
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				2.17 mg/kg		1.91 mg/kg	0.000191 %	✓	
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				4.75 mg/kg		4.18 mg/kg	0.000418 %	✓	
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				2.54 mg/kg		2.235 mg/kg	0.000224 %	✓	
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				0.561 mg/kg		0.494 mg/kg	0.0000494 %	✓	
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				2.63 mg/kg		2.314 mg/kg	0.000231 %	✓	
		205-883-8	191-24-2							
35	polychlorobiphenyls; PCB				<0.105 mg/kg		<0.105 mg/kg	<0.0000105 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
36	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
37	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
38	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
39	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
40	coronene				0.534 mg/kg		0.47 mg/kg	0.000047 %	✓	
		205-881-7	191-07-1							
41	o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-022-00-9	202-422-2 [1]	95-47-6 [1]							
		203-396-5 [2]	106-42-3 [2]							
		203-576-3 [3]	108-38-3 [3]							
		215-535-7 [4]	1330-20-7 [4]							
42	< 2% non-natural materials (Yes/No)				Yes					
			NONNAT_MAT							
Total:								0.106 %		

Key

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 1000 mg/kg (0.1%) because: HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0284%)



WAC results for sample: BH01-0.50

WAC Settings: samples in this job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits		
#	Determinand Header		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.2	3	-
2	LOI (loss on ignition)	%	3.49	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.07	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.105	1	-
5	Mineral oil (C10 to C40)	mg/kg	27.9	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	61.7	100	-
7	pH	pH	8.5	-	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.005	0.5	2
10	barium	mg/kg	0.227	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	0.0904	0.5	10
13	copper	mg/kg	0.0162	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	0.0448	0.5	10
16	nickel	mg/kg	0.0043	0.4	10
17	lead	mg/kg	<0.002	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.03	4	50
21	chloride	mg/kg	29	800	15000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	<20	1000	20000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	43.3	500	800
26	TDS (total dissolved solids)	mg/kg	763	4000	60000

Key

User supplied data



Classification of sample: BH03-0.50

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

Sample details

Sample name:	LoW Code:	
BH03-0.50	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m		
Moisture content:		
14%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	pH				8.17 pH		8.17 pH	8.17 pH		
2	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
3	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
4	asbestos fibres detected (Yes/No)				No					
5	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }			1	1.19 mg/kg		1.023 mg/kg	0.000102 %	✓	
6	arsenic { arsenic compounds, with the exception of those specified elsewhere in this Annex }			1	23.9 mg/kg		20.554 mg/kg	0.00206 %	✓	
7	barium { barium oxide }				84.9 mg/kg	1.117	81.521 mg/kg	0.00815 %	✓	
8	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }			1	1.51 mg/kg		1.299 mg/kg	0.00013 %	✓	
9	copper { dicopper oxide; copper (I) oxide }				24.5 mg/kg	1.126	23.722 mg/kg	0.00237 %	✓	
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	16.5 mg/kg		14.19 mg/kg	0.00142 %	✓	
11	mercury { mercury difulminate }				<0.1 mg/kg	1.419	<0.142 mg/kg	<0.0000142 %		<LOD
12	molybdenum { molybdenum(VI) oxide }				2.72 mg/kg	1.5	3.509 mg/kg	0.000351 %	✓	



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
13	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3] 1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		73.8 mg/kg	1.273	80.769 mg/kg	0.00808 %	✓	
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8			<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
15	zinc { zinc oxide }	030-013-00-7	215-222-5 1314-13-2		108 mg/kg	1.245	115.609 mg/kg	0.0116 %	✓	
16	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9 1308-38-9		46.1 mg/kg	1.462	57.945 mg/kg	0.00579 %	✓	
17	chromium in Cr(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8 1333-82-0		<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %		<LOD
18	naphthalene	601-052-00-2	202-049-5 91-20-3		<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %		<LOD
19	acenaphthylene		205-917-1 208-96-8		<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
20	acenaphthene		201-469-6 83-32-9		<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %		<LOD
21	fluorene		201-695-5 86-73-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
22	phenanthrene		201-581-5 85-01-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
23	anthracene		204-371-1 120-12-7		<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %		<LOD
24	fluoranthene		205-912-4 206-44-0		<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %		<LOD
25	pyrene		204-927-3 129-00-0		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
26	benzo[a]anthracene	601-033-00-9	200-280-6 56-55-3		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
27	chrysene	601-048-00-0	205-923-4 218-01-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
28	benzo[b]fluoranthene	601-034-00-4	205-911-9 205-99-2		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
29	benzo[k]fluoranthene	601-036-00-5	205-916-6 207-08-9		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
30	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5 50-32-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
31	indeno[123-cd]pyrene		205-893-2 193-39-5		<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %		<LOD
32	dibenz[a,h]anthracene	601-041-00-2	200-181-8 53-70-3		<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %		<LOD
33	benzo[ghi]perylene		205-883-8 191-24-2		<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %		<LOD
34	polychlorobiphenyls; PCB	602-039-00-4	215-648-1 1336-36-3		<0.021 mg/kg		<0.021 mg/kg	<0.0000021 %		<LOD
35	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1 1634-04-4		<0.0005 mg/kg		<0.0005 mg/kg	<0.00000005 %		<LOD
36	benzene	601-020-00-8	200-753-7 71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
37	toluene	601-021-00-3	203-625-9 108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
38	ethylbenzene	601-023-00-4	202-849-4 100-41-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
39	coronene		205-881-7 191-07-1		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
40	o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
	601-022-00-9	202-422-2 [1]	95-47-6 [1]							
		203-396-5 [2]	106-42-3 [2]							
		203-576-3 [3]	108-38-3 [3]							
		215-535-7 [4]	1330-20-7 [4]							
41	<input checked="" type="checkbox"/> < 2% non-natural materials (Yes/No)				Yes					
			NONNAT_MAT							
Total:								0.04 %		

Key

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



WAC results for sample: BH03-0.50

WAC Settings: samples in this job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits		
#	Determinand Header		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.432	3	-
2	LOI (loss on ignition)	%	2.69	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	1	-
5	Mineral oil (C10 to C40)	mg/kg	<5	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-
7	pH	pH	8.17	-	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.005	0.5	2
10	barium	mg/kg	0.0821	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	<0.01	0.5	10
13	copper	mg/kg	0.0144	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	<0.03	0.5	10
16	nickel	mg/kg	0.009	0.4	10
17	lead	mg/kg	0.0027	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0177	4	50
21	chloride	mg/kg	<20	800	15000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	<20	1000	20000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	61.3	500	800
26	TDS (total dissolved solids)	mg/kg	391	4000	60000

Key

User supplied data



Appendix A: Classifier defined and non EU CLP determinands

• pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

• TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Unknown Oil

Hazard statements taken from WM3 1st Edition 2015

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226, Asp. Tox. 1; H304, STOT RE 2; H373, Muta. 1B; H340, Carc. 1B; H350, Repr. 2; H361d, Aquatic Chronic 2; H411

• confirm TPH has NOT arisen from diesel or petrol (CAS Number: TPH_CONFIRM)

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

• asbestos fibres detected (Yes/No) (CAS Number: ACM_FIBRES)

Description/Comments: not classified, information only

Data source: N/A

Data source date: 15 Jan 2020

Hazard Statements: None.

• arsenic compounds, with the exception of those specified elsewhere in this Annex

EU CLP index number: 033-002-00-5

Description/Comments: Worst Case: IARC considers arsenic compounds Group 1; Carcinogenic to humans

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

03 Jun 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

• barium oxide (EC Number: 215-127-9, CAS Number: 1304-28-5)

Description/Comments: Data from ECHA's C&L Inventory Database, Sigma Aldrich SDS dated 6/2/20

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/88825>

Data source date: 02 Apr 2020

Hazard Statements: Acute Tox. 3; H301, Skin Corr. 1B; H314, Eye Dam. 1; H318, Acute Tox. 1; H332

• cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex

EU CLP index number: 048-001-00-5

Description/Comments: Worst Case: IARC considers cadmium compounds Group 1; Carcinogenic to humans

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

29 Sep 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

• lead compounds with the exception of those specified elsewhere in this Annex (worst case)

EU CLP index number: 082-001-00-6

Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

03 Jun 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

• chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332, Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Resp. Sens. 1; H334, Skin Sens. 1; H317, Repr. 1B; H360FD, Aquatic Acute 1; H400, Aquatic Chronic 1; H410



• **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

• **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

• **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

• **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

• **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

EU CLP index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

29 Sep 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012



• **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

EU CLP index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

03 Jun 2015 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

• **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.

Data source: <http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en>

Data source date: 16 Jun 2014

Hazard Statements: STOT SE 2; H371

• **< 2% non-natural materials (Yes/No)** (CAS Number: NONNAT_MAT)

Description/Comments: not classified, information only

anthropogenic or man-made substances such as rubble, concrete, bricks, metal and bitumen that are non-natural to the environment from which the material was extracted

Data source: N/A

Data source date: 15 Jan 2020

Hazard Statements: None.

Appendix B: Rationale for selection of metal species

antimony {antimony compounds, with the exception of the tetroxide (Sb₂O₄), pentoxide (Sb₂O₅), trisulphide (Sb₂S₃), pentasulphide (Sb₂S₅) and those specified elsewhere in this Annex}

Worst Case Scenario.

arsenic {arsenic compounds, with the exception of those specified elsewhere in this Annex}

Chromium VI at limits of detection. Arsenic compounds used as the next most hazardous species. No chromate present.

barium {barium oxide}

Chromium VI at limits of detection. Barium oxide used as the next most hazardous species. No chromate present.

cadmium {cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex}

Chromium VII at limits of detection. Cadmium compounds used as the next most hazardous species. No chromate present.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Worst case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Chromium VI at limits of detection. Lead compounds used as the next most hazardous species. No chromate present.

mercury {mercury difulminate}

Worst case CLP species based on hazard statements/molecular weight

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel(II) oxide (nickel monoxide)}

Chromium VI at limits of detection. Nickel oxide used as the next most hazardous species. No chromate present.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

zinc {zinc oxide}

Chromium VI at limits of detection. Zinc oxide used as the next most hazardous species. No chromate present.

chromium in Cr(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

chromium in Cr(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments.



Appendix C: Version

HazWasteOnline Classification Engine: **EU WM3 1st Edition v1.1.NI using the EU LoW**
HazWasteOnline Classification Engine Version: 2026.56.7002.12617 (25 Feb 2026)
HazWasteOnline Database: 2026.56.7002.12617 (25 Feb 2026)

This classification utilises the following guidance and legislation:

WM3 v1.1.NI - Waste Classification - 1st Edition v1.1.NI - Jan 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020

17th ATP - Regulation (EU) 2021/849 of 11 March 2021

18th ATP - Regulation (EU) 2022/692 of 16 February 2022

POPs Amendment 2022 - Regulation (EU) 2022/2400 of 23 November 2022

19th ATP - Regulation (EU) 2023/1434 of 25 April 2023

20th ATP - Regulation (EU) 2023/1435 of 2 May 2023

21st ATP - Regulation (EU) 2024/197 of 19 October 2023

22nd ATP - Regulation (EU) 2024/2564 of 19th June 2024

23rd ATP - Regulation (EU) 2025/1222 of 2nd April 2025

Appendix 6
Soil Recovery Facility Report



Soil Recovery Sites Screening Report



3T8FI-SWYUU-OLW42

Job name

6646

Description/Comments

Client: Óglaigh na hÉireann

Project

Hangar Extension

Site

Gormanstown Camp, Gormanstown, Co. Meath

Classified by

Name: **Stephen Letch**
Date: **18 Mar 2026 16:43 GMT**
Telephone: **00353 86817 9449**
Company: **Site Investigations Ltd**
The Grange
12th Lock Road
Lucan
K78 F598

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

HazWasteOnline™ Certification: **CERTIFIED**
Course **Date**
Hazardous Waste Classification 09 Oct 2019
Most recent 3 year Refresher 02 Dec 2025

Next 3 year Refresher due by Dec 2028

Purpose of classification

2 - Material Characterisation

Address of the waste

Camp Lane, Gormanston, Julianstown ED, County Meath, The Municipal District of Laytown — Bettystown, Post Code K32 H635
Ireland

Description of industry/producer giving rise to the waste

Site Investigation

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

Soils recovered for environmental testing

Description of the waste

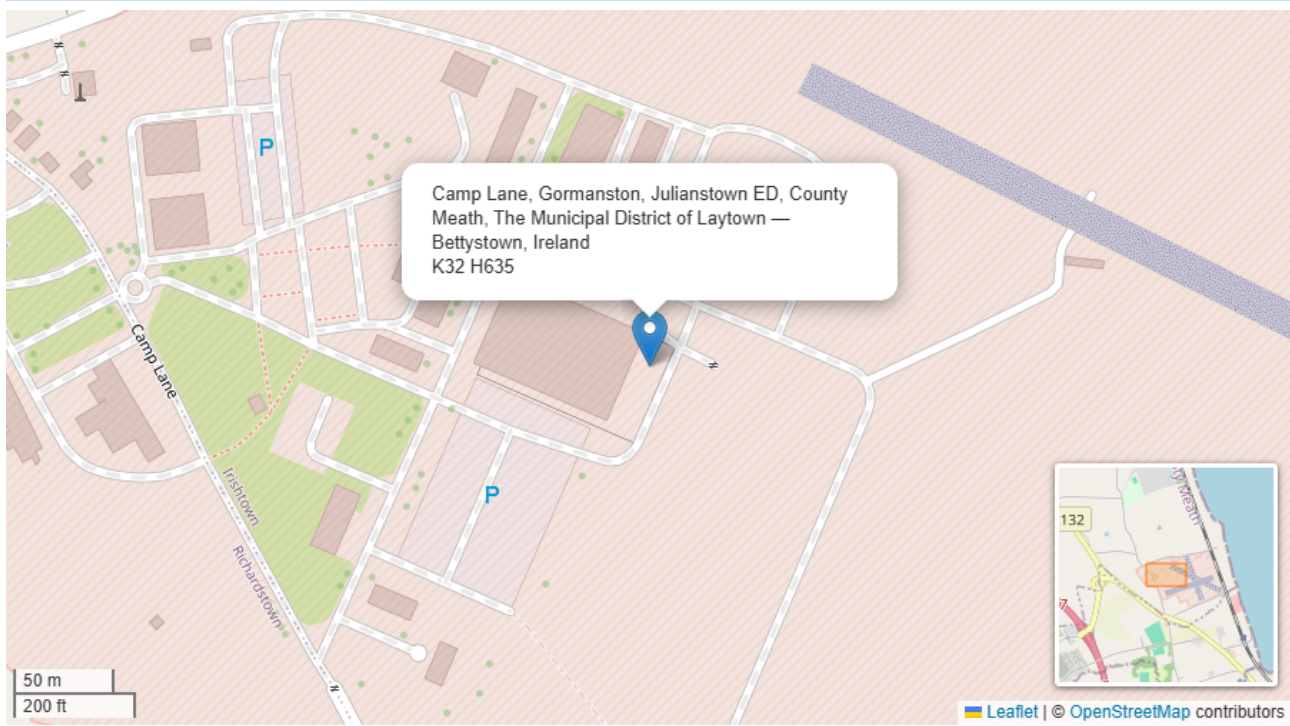
Natural soils

Screening Summary

#	Sample name	Depth [m]	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6	Domain 7	Page
1	BH01-0.50	0.50	⚠ Fail	⚠ Fail	⚠ Fail	⚠ Fail	⚠ Fail	⚠ Fail	⚠ Fail	3
2	BH03-0.50	0.50	⚠ Fail	✅ Pass	✅ Pass	⚠ Fail	✅ Pass	⚠ Fail	⚠ Fail	8



Waste Location





Soil Recovery Sites Screening results for sample: BH01-0.50

⚠ Sample "BH01-0.50" fails the "Domain 1" limits

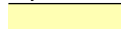
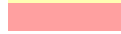
#	Determinand		User entered data	Domain 1 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	11.5	15.6	mg/kg
4	cadmium	mg/kg	0.22	1.5	mg/kg
5	chromium in Cr(III) compounds	mg/kg	6.82	51.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	23.4	51.2	mg/kg
8	mercury	mg/kg	<0.1	0.254	mg/kg
9	nickel	mg/kg	24.8	47.8	mg/kg
10	lead	mg/kg	53.8	48.3	mg/kg
11	zinc	mg/kg	429	137	mg/kg
12	TOC (total organic carbon)	%	1.2	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.07	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	27.9	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	61.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.105	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	Yes	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "BH01-0.50" fails the "Domain 2" limits

#	Determinand		User entered data	Domain 2 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	11.5	24.9	mg/kg
4	cadmium	mg/kg	0.22	3.28	mg/kg
5	chromium in Cr(III) compounds	mg/kg	6.82	50.3	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	23.4	63.5	mg/kg
8	mercury	mg/kg	<0.1	0.36	mg/kg
9	nickel	mg/kg	24.8	61.9	mg/kg
10	lead	mg/kg	53.8	86.1	mg/kg
11	zinc	mg/kg	429	197	mg/kg
12	TOC (total organic carbon)	%	1.2	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.07	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	27.9	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	61.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.105	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	Yes	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a



Key

-  User supplied data
-  Value above the screening limit/trigger level



⚠ Sample "BH01-0.50" fails the "Domain 3" limits

#	Determinand		User entered data	Domain 3 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	11.5	38.1	mg/kg
4	cadmium	mg/kg	0.22	1.6	mg/kg
5	chromium in Cr(III) compounds	mg/kg	6.82	47.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	23.4	56.9	mg/kg
8	mercury	mg/kg	<0.1	0.457	mg/kg
9	nickel	mg/kg	24.8	54.4	mg/kg
10	lead	mg/kg	53.8	81.3	mg/kg
11	zinc	mg/kg	429	237	mg/kg
12	TOC (total organic carbon)	%	1.2	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.07	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	27.9	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	61.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.105	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	Yes	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "BH01-0.50" fails the "Domain 4" limits

#	Determinand		User entered data	Domain 4 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	11.5	32.3	mg/kg
4	cadmium	mg/kg	0.22	0.97	mg/kg
5	chromium in Cr(III) compounds	mg/kg	6.82	51.7	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	23.4	80.4	mg/kg
8	mercury	mg/kg	<0.1	0.285	mg/kg
9	nickel	mg/kg	24.8	50.3	mg/kg
10	lead	mg/kg	53.8	91.4	mg/kg
11	zinc	mg/kg	429	155	mg/kg
12	TOC (total organic carbon)	%	1.2	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.07	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	27.9	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	61.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.105	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	Yes	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

	User supplied data
	Value above the screening limit/trigger level



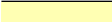

 **Sample "BH01-0.50" fails the "Domain 5" limits**

#	Determinand		User entered data	Domain 5 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	11.5	41.5	mg/kg
4	cadmium	mg/kg	0.22	1.42	mg/kg
5	chromium in Cr(III) compounds	mg/kg	6.82	73.2	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	23.4	77.6	mg/kg
8	mercury	mg/kg	<0.1	0.302	mg/kg
9	nickel	mg/kg	24.8	65.7	mg/kg
10	lead	mg/kg	53.8	109	mg/kg
11	zinc	mg/kg	429	224	mg/kg
12	TOC (total organic carbon)	%	1.2	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.07	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	27.9	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	61.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.105	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	Yes	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

 **Sample "BH01-0.50" fails the "Domain 6" limits**

#	Determinand		User entered data	Domain 6 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	11.5	85.8	mg/kg
4	cadmium	mg/kg	0.22	2.38	mg/kg
5	chromium in Cr(III) compounds	mg/kg	6.82	54	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	23.4	40	mg/kg
8	mercury	mg/kg	<0.1	0.527	mg/kg
9	nickel	mg/kg	24.8	28.2	mg/kg
10	lead	mg/kg	53.8	108	mg/kg
11	zinc	mg/kg	429	168	mg/kg
12	TOC (total organic carbon)	%	1.2	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.07	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	27.9	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	61.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.105	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	Yes	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

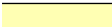

	User supplied data
	Value above the screening limit/trigger level



 **Sample "BH01-0.50" fails the "Domain 7" limits**

#	Determinand		User entered data	Domain 7 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	11.5	30.9	mg/kg
4	cadmium	mg/kg	0.22	0.542	mg/kg
5	chromium in Cr(III) compounds	mg/kg	6.82	57.6	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	23.4	83.1	mg/kg
8	mercury	mg/kg	<0.1	0.262	mg/kg
9	nickel	mg/kg	24.8	35.7	mg/kg
10	lead	mg/kg	53.8	61.1	mg/kg
11	zinc	mg/kg	429	122	mg/kg
12	TOC (total organic carbon)	%	1.2	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.07	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	27.9	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	61.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.105	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	Yes	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

	User supplied data
	Value above the screening limit/trigger level



Soil Recovery Sites Screening results for sample: BH03-0.50

 **Sample "BH03-0.50" fails the "Domain 1" limits**




#	Determinand		User entered data	Domain 1 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.9	15.6	mg/kg
4	cadmium	mg/kg	1.51	1.5	mg/kg
5	chromium in Cr(III) compounds	mg/kg	46.1	51.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	24.5	51.2	mg/kg
8	mercury	mg/kg	<0.1	0.254	mg/kg
9	nickel	mg/kg	73.8	47.8	mg/kg
10	lead	mg/kg	16.5	48.3	mg/kg
11	zinc	mg/kg	108	137	mg/kg
12	TOC (total organic carbon)	%	0.432	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

 **Sample "BH03-0.50" passes the "Domain 2" limits**

#	Determinand		User entered data	Domain 2 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.9	24.9	mg/kg
4	cadmium	mg/kg	1.51	3.28	mg/kg
5	chromium in Cr(III) compounds	mg/kg	46.1	50.3	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	24.5	63.5	mg/kg
8	mercury	mg/kg	<0.1	0.36	mg/kg
9	nickel	mg/kg	73.8	61.9	mg/kg
10	lead	mg/kg	16.5	86.1	mg/kg
11	zinc	mg/kg	108	197	mg/kg
12	TOC (total organic carbon)	%	0.432	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a



Key

	User supplied data
	Value above the screening limit/trigger level
	"For metals, the analytical results for up to three parameters [...] may exceed the respective maximum concentration and/or soil trigger level. However, no individual result should exceed 1.5 times the respective maximum concentration and/or soil trigger level."



✔ Sample "BH03-0.50" passes the "Domain 3" limits




#	Determinand		User entered data	Domain 3 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.9	38.1	mg/kg
4	cadmium	mg/kg	1.51	1.6	mg/kg
5	chromium in Cr(III) compounds	mg/kg	46.1	47.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	24.5	56.9	mg/kg
8	mercury	mg/kg	<0.1	0.457	mg/kg
9	nickel	mg/kg	73.8	54.4	mg/kg
10	lead	mg/kg	16.5	81.3	mg/kg
11	zinc	mg/kg	108	237	mg/kg
12	TOC (total organic carbon)	%	0.432	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "BH03-0.50" fails the "Domain 4" limits

#	Determinand		User entered data	Domain 4 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.9	32.3	mg/kg
4	cadmium	mg/kg	1.51	0.97	mg/kg
5	chromium in Cr(III) compounds	mg/kg	46.1	51.7	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	24.5	80.4	mg/kg
8	mercury	mg/kg	<0.1	0.285	mg/kg
9	nickel	mg/kg	73.8	50.3	mg/kg
10	lead	mg/kg	16.5	91.4	mg/kg
11	zinc	mg/kg	108	155	mg/kg
12	TOC (total organic carbon)	%	0.432	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a



Key

	User supplied data
	Value above the screening limit/trigger level
	"For metals, the analytical results for up to three parameters [...] may exceed the respective maximum concentration and/or soil trigger level. However, no individual result should exceed 1.5 times the respective maximum concentration and/or soil trigger level."



✔ Sample "BH03-0.50" passes the "Domain 5" limits




#	Determinand		User entered data	Domain 5 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.9	41.5	mg/kg
4	cadmium	mg/kg	1.51	1.42	mg/kg
5	chromium in Cr(III) compounds	mg/kg	46.1	73.2	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	24.5	77.6	mg/kg
8	mercury	mg/kg	<0.1	0.302	mg/kg
9	nickel	mg/kg	73.8	65.7	mg/kg
10	lead	mg/kg	16.5	109	mg/kg
11	zinc	mg/kg	108	224	mg/kg
12	TOC (total organic carbon)	%	0.432	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "BH03-0.50" fails the "Domain 6" limits

#	Determinand		User entered data	Domain 6 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.9	85.8	mg/kg
4	cadmium	mg/kg	1.51	2.38	mg/kg
5	chromium in Cr(III) compounds	mg/kg	46.1	54	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	24.5	40	mg/kg
8	mercury	mg/kg	<0.1	0.527	mg/kg
9	nickel	mg/kg	73.8	28.2	mg/kg
10	lead	mg/kg	16.5	108	mg/kg
11	zinc	mg/kg	108	168	mg/kg
12	TOC (total organic carbon)	%	0.432	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a



Key

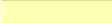

	User supplied data
	Value above the screening limit/trigger level
	"For metals, the analytical results for up to three parameters [...] may exceed the respective maximum concentration and/or soil trigger level. However, no individual result should exceed 1.5 times the respective maximum concentration and/or soil trigger level."



 **Sample "BH03-0.50" fails the "Domain 7" limits**

#	Determinand		User entered data	Domain 7 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.9	30.9	mg/kg
4	cadmium	mg/kg	1.51	0.542	mg/kg
5	chromium in Cr(III) compounds	mg/kg	46.1	57.6	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	24.5	83.1	mg/kg
8	mercury	mg/kg	<0.1	0.262	mg/kg
9	nickel	mg/kg	73.8	35.7	mg/kg
10	lead	mg/kg	16.5	61.1	mg/kg
11	zinc	mg/kg	108	122	mg/kg
12	TOC (total organic carbon)	%	0.432	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

	User supplied data
	Value above the screening limit/trigger level

Screening utilises the following:



EPA Ireland: Guidance on waste acceptance criteria at authorised soil recovery facilities - January 2020

Appendix 7
Survey Data

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Cable Percussive Boreholes					
BH01	716655.797	767797.033	20.09	316730.016	267778.044
BH02	716650.391	767780.677	19.96	316724.609	267761.684
BH03	716643.282	767763.305	19.97	316717.498	267744.309
Dynamic Probes					
DP01	716654.864	767795.681	20.07	316729.083	267776.692
DP02	716653.408	767788.939	20.03	316727.626	267769.948
DP03	716650.000	767783.756	19.95	316724.218	267764.764
DP04	716648.905	767776.820	19.89	316723.122	267757.826
DP05	716645.482	767771.649	19.93	316719.699	267752.654
DP06	716641.307	767761.846	20.01	316715.523	267742.849

Legend Key

-  Locations By Type - CP
-  Locations By Type - DP



Contract No:	6646
Contract Name:	Gormanstown Camp
Location:	Gormanstown, Co. Meath
Client:	Óglaigh na hÉireann
Engineer:	-
Title:	Site Plan
Scale:	1:750
Drawn By:	SL



Site Investigations Ltd
The Grange
12th Lock Road
Lucan
Co. Dublin
T: 01 6108768
e: info@siteinvestigations.ie



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30 Metres	
100 Feet	