A2292
Geotechnical Report

Ponsharden Cemeteries
Falmouth Road, Falmouth, Cornwall

AGS Ground Solutions Ltd

For

PDP Green Consulting Ltd, Calenick House, Truro Technology Park, Newham, Truro, Cornwall, TR1 2XN

March 2021
Report Number: A2292-1

AGS Ground Solutions Ltd
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DOCUMENT CONTROL

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1. INTRODUCTION

AGS Ground Solutions (AGS) were commissioned by PDP Green Consulting Ltd (The Client), to undertake a geotechnical site investigation at Ponsharden Cemeteries, Falmouth.

It is understood that the development will comprise the construction of soil nails / rock bolts to help stabilise a retaining wall forming the northern boundary of the site.

The aim of the investigation was to:

- Determine the ground profile.
- Provide information for the design of foundations for the new structures on the site.

Our general Terms and Conditions are applicable to this report.

2. SITE LOCATION AND LAYOUT

The site is located in Falmouth, Cornwall and is centred approximately on Ordnance Survey Grid Reference SW 794 388. See Figure 1 for Site Location Plan.

A walkover survey was undertaken on the 2nd March 2021, details of which are presented below.

Access to the site was via a gate from an unnamed road to the west of Falmouth road. The site was secured with locked gates.

The site is a sensitive monument site containing multiple cemeteries, that previously was open to the public for viewing. At the time of the walkover survey the site comprised of an irregular shape containing the multiple cemeteries with many headstones and grave mounds. Access gates to the north-eastern and north-western boundaries are observed, with tracks to walk around the site. A retaining wall on the northern boundary is seen showing weathered rock, and tree stumps. A small rectangle concrete building is seen to the south-western edge of site.

The site was in poor condition with decaying headstones, overgrown grassed areas and a previous trial pit with pea gravel located in the centre of the northern boundary.

Geomorphologically the site was fairly level however there were steep man-made slopes to the north and west and it was clear that the site had been artificially cut into the rock, with the south east part of the site apparently having been raised. The natural ground level sloped steeply to the west.

The following features surrounded the site:

- **To the north**; the site was bound by a steep rockface sloping down to Falmouth road. Commercial building, boats and the sea are found beyond.
- **To the east**; the site was bound Ponsharden Industrial Estate, with North Parade and industrial buildings beyond.
- **To the south**; the site was bound by an unnamed road that lead to Sainsbury supermarket, with residential properties and fields found beyond.
- **To the west**; the site was bound by a steep downward slope, trees and fields, with an industrial estate and fields beyond.

A photographic record of the site walkover survey and siteworks are presented in Appendix 1.

3. ENVIRONMENTAL SETTING

3.1 GEOLOGY

Reference to the British Geological Survey 1:50,000 scale geological map of the area shows the site to be underlain by The Mylor Slate Formation (MRSL)

No superficial deposits were recorded on the site.

Around 50 m to the north-west of site, is shown to be underlain by Superficial deposits of Alluvium – Clay, silt sand, and gravel (ALV), which is underlain by The Mylor Slate Formation (MRSL).

Around 150 m to the north-east of site, is shown to be underlain by Superficial deposits of Tidal Flat Deposits (TFD), which is underlain by The Mylor Slate Formation (MRSL).

The British Geological survey provides the following geological descriptions. Contains British Geological Survey materials © NERC 2021:

Alluvium (ALV)

Description: Alluvium - Clay, Silt, Sand And Gravel. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by rivers (U).

Setting: rivers (U). These sedimentary deposits are fluvial in origin. They are detrital, ranging from coarse- to fine-grained and form beds and lenses of deposits reflecting the channels, floodplains and levees of a river or estuary (if in a coastal setting).

Tidal Flat Deposits (TFD).

Description: Tidal Flat Deposits - Clay And Silt. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by shorelines (U).

Setting: shorelines (U). These sedimentary deposits are shallow-marine in origin. They are detrital, generally coarse-grained forming beaches and bars in a coastal setting.

Mylor Slate Formation (MRSL).

Description: Mylor Slate Formation - Hornfelsed Slate And Hornfelsed Siltstone. Metamorphic Bedrock formed approximately 359 to 383 million years ago in the Devonian Period. Originally sedimentary rocks formed in open seas by pelagite deposits. Later altered by high temperatures of igneous intrusion.

Setting: Originally sedimentary rocks formed in open seas by pelagite deposits. These rocks were sedimentary in origin, possibly in a deep-marine (pelagic) environment, but have subsequently undergone metamorphism.

4. INTRUSIVE INVESTIGATION

4.1 FIELDWORK

Site works were carried out on the 2nd and 3rd March 2021 and comprised the following:

- Excavation of 5 no. Window Sample Holes to depths of 5.45 m.

The positions of the above works on the site are indicated on Figures 4 - 6, Exploratory Hole Location Plans.

Window Sample Holes

Six Window Sample Holes were excavated on the site on 2nd and 3rd March 2021.

Window sample holes WS1 to WS6 were excavated on the site using an hand-portable cut down windowless sample rig.

The window sample holes were excavated to examine the ground, and to establish the thickness of each of the soil horizons. The resulting cores were examined by an engineer.

Standard Penetration Tests (SPTs) were performed every 1.0 m intervals in all of the window sample holes.

An hand shear vane was used to gather information on mass shear strength within the window sample arisings.

Samples were recovered for laboratory analysis.

Window Sample Hole Logs are presented in Appendix 2.

4.2 GROUNDWATER

Groundwater was not encountered in any of the window sample holes.

It should be noted that the absence of groundwater is not necessarily indicative of the absence of a groundwater table in view of the short period the trial excavations remained open. Groundwater levels may vary due to seasonal fluctuations in rainfall, but in the shorter term can be affected by antecedent weather conditions or other causes.

5. LABORATORY TESTING

5.1 GEOTECHNICAL TESTING

The following range of laboratory tests was scheduled:

Moisture Content of soil	12 no.
Liquid and Plastic Limits of soil	12 no.
Particle Size Distribution (Wet Sieve)	12 no.
Sedimentation	12 no.

The results of geotechnical testing are presented in Appendix 3.

6. EVALUATION OF GROUND CONDITIONS AND ENGINEERING PROPERTIES

6.1 SOIL PROFILE

During the site investigation, three main soil / rock layers were identified on the site. An upper layer of Made Ground (MGR) was encountered which was found to overlay Weathered Mylor Slate Formation (MRSL) and The Mylor Slate Formation (MRSL).

Made Ground (MGR)

Made Ground (MGR) was the uppermost layer encountered on the site. The layer comprised a layer of concrete over sandy gravelly clay.

The Made Ground (MGR) was encountered in all excavations and was found to be between 0.30 m deep in Window Sample Hole WS1, WS2, WS3, WS5, and WS6, and 0.75 m in window sample hole WS4.

Weathered Mylor Slate Formation (MRSL)

The Weathered Mylor Slate Formation (MRSL) was situated immediately beneath the Made Ground (MGR).

The layer comprised a stiff brown grey gravelly clay, transitioning to a moderately weak to moderately strong grey brown metamudstone. Very thin laminae (1 – 4 mm) and rare quartz gravelly observed. Arising as clayey gravel at depth.

The Weathered Mylor Slate Formation was encountered in all locations and varied in thickness from 1.70 m in window sample hole WS2 to 3.70 m in window sample hole WS1.

Mylor Slate Formation (MRSL)

The Mylor Slate Formation (MRSL) was the layer on which all of the window sample holes refused. Although not observed, observations during drilling suggest that the material is intact rock.

A summary of the strata, as discussed above, is presented in the table below.

Stratum	Depth to top of Layer (m)	Thickness (m) – Where proven	Depth to base of Layer (m) – Where encountered
Made Ground (MGR)	0.00	0.30 – 0.75	0.30 – 0.75
Weathered Mylor Slate Formation (MRSL)	0.30 – 0.75	1.70 – 3.70	2.00 – 4.00
Mylor Slate Formation (MRSL)	Not Encountered	Not proven	Not Encountered

6.2 ENGINEERING PROPERTIES

The engineering properties of the principal strata are presented in the table below.

Made Ground (MGR)

The maximum thickness of the Made Ground was 0.75 m, and the layer was only typically 0.30 m thick. The layer will therefore provide insufficient resistance for soil nails and no soil properties have been presented.

Weathered Mylor Slate Formation (MRSL)

The Weathered Mylor Slate Formation was observed to comprise a residual soil, comprising clayey gravel or gravelly clay.

The results of particle size distribution testing are presented in the table below

Grain Size	Min %	Max %
Very Coarse	0	0
Gravel	34	68
Sand	15	33
Silt	10	33
Clay	1	7

The results of laboratory testing show that the layer was typically a silty sandy gravel.

The results of liquid & plastic limits tests are shown below.

Depth (m)	Borehole	Soil type	Plasticity	Plasticity Index (%)	Modified Plasticity Index (%)	Shrinkage Potential
1.4 – 1.6	WS2	Silt	High	30	6.9	No hazard
	WS6	Silt	Medium	32	4.8	No hazard
1.5 – 1.7	WS1	Silt	Medium	28	5.3	No hazard
	WS3	Silt	Medium	31	5.3	No hazard
	WS4	Silt	High	31	8.4	No hazard
	WS5	Silt	Medium	31	5.6	No hazard
2.4 – 2.6	WS4	Silt	Medium	29	5.8	No hazard
2.5 – 2.7	WS1	Silt	Medium	28	4.8	No hazard
2.7 – 3.0	WS6	Silt	Medium	28	4.8	No hazard
2.8 – 3.0	WS1	Clay	Medium	25	5.8	No hazard
	WS3	Silt	Medium	29	5.5	No hazard
	WS5	Silt	Medium	30	5.4	No hazard
3.8 – 4.0	WS1	Silt	Medium	29	6.1	No hazard

Overall, the soil is of medium plasticity.

Given that cohesion was observed by the engineer on site, the soils have been treated as cohesive, however, the volume of clay and silt within the soil means that the cohesion is likely to be low.

Overall, the soil has a very low shrinkage potential.

A number of Standard Penetration Tests (SPTs) were carried out within the Weathered Mylor Slate Formation (MRSL). The results show that 'N' values of between 2 and 37 can be expected within this unit.

SPT 'N' values can be related to mass shear strength by means of a conversion factor. For a soil with a plasticity of 10 %, the factor (f_1) would be 5.0.

Depth (m)	Test Location	SPT 'N' value	Conversion Factor	Mass Shear Strength (c) kN/m²	Note	Modulus of Compressibility (M_v) m²/MN
1.0	WS1	12	5.0	60	Firm	0.17
	WS2	22	5.0	110	Stiff	0.09

	WS3	17	5.0	85	Stiff	0.12
	WS4	5	5.0	25	Soft	0.40
	WS5	12	5.0	60	Firm	0.17
	WS6	2	5.0	10	Very Soft	1.00
2.0	WS1	22	5.0	110	Stiff	0.09
	WS3	21	5.0	105	Stiff	0.09
	WS4	21	5.0	105	Stiff	0.09
	WS5	28	5.0	140	Stiff	0.07
	WS6	27	5.0	135	Stiff	0.07
3.0	WS1	37	5.0	185	Hard	0.05

For engineering design purposes, the following values may be used:

At 1.0 m:

Bulk Unit Mass - 1.8 Mg/m^3 (assumed)

Mass Shear Strength - 45 kN/m^2 (firm)

Coefficient of Compressibility (m_v) - 0.25 m^2/MN (medium)

At 2.0 m:

Bulk Unit Mass - 2.0 Mg/m^3 (assumed)

Mass Shear Strength - 110 kN/m^2 (firm)

Coefficient of Compressibility (m_v) - 0.09 m^2/MN (medium)

Mylor Slate Formation (MRSL)

The Mylor Slate Formation (MRSL) was the layer on which all of the window sample holes refused.

Indications are that the layer is an intact rock mass.

A conservative estimate of uniaxial compressive strength would indicate that the rock mass would be in the region of 0.80 MN/m^2.

A conservative estimate of density would be around 2.4 Mg/m^3.

7. ENGINEERING DESIGN

7.1 SOIL PROPERTIES FOR SOIL NAILS / ROCK BOLTS

For the purposes of establishing a soil nail / rock bolt design the following soil properties should be used

Depth (m)	Bulk Unit Mass (Mg/m^3)	Angle of shearing resistance (°)	Mass Shear Strength (kN/m^2)	Uniaxial Compressive Strength (MN/m^2)	Note
0.0 – 1.0	-	-	-	-	Not suitable for anchorages
1.0 – 2.0	1.8	-	45	-	Suitable for soil nails
2.0 – 3.0	2.0	-	110	-	Suitable for soil nails
> 3.0	2.4	-	-	0.8	Suitable for rock bolts

It should be noted that isolated soft spots may exist due to the location of graves on the site.

It should be noted that isolated soft spots may exist within the Mylor Slate Formation due to the action of tree roots.

Where soft spots do occur, soil nails or rock bolts should be extended and or redesigned to take account of the soft spots.

The depth to rock may increase close to the southern boundary of the site, as the natural ground profile slopes to the south.

8. CONCLUSIONS AND RECOMMENDATIONS

Based on the intrusive investigation and subsequent laboratory testing, the following conclusions and recommendations have been drawn up in respect to Ponsharden Cemetery, Falmouth.

- The ground investigation identified an upper layer of Made Ground (MGR) to be underlain by Weathered Mylor Slate Formation, with Mylor Slate Formation at depth.
- Groundwater was not encountered within any of the boreholes.
- The ground between 1.0 m and 3.0 m would appear to be suitable for soil nails.
- The ground beyond 3.0 m would appear to be suitable for rock bolts.
- Design parameters for soil nails and rock bolts are presented in chapter 7.

FIGURES:

1. Site Location Plan
2. Exploratory Hole Location Plan

APPENDICES:

1. Site Photographs
2. Window Sample Holes Logs
3. Geotechnical Laboratory Test Results

Figure 1

Site Location Plan

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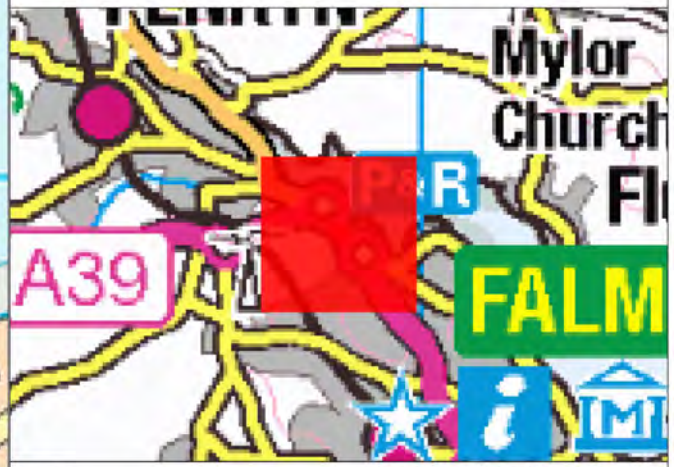


Project	Ponsharden Cemeteries
Project Number	A2292
Location	Falmouth, Cornwall
Client	PDP Green Consulting Ltd
Drawing Title	Site Location Plan

Drawing Number	Revision	Date	Approximate Scale
A2292-1	1	02/03/2021	1:5000 @ A4

Key

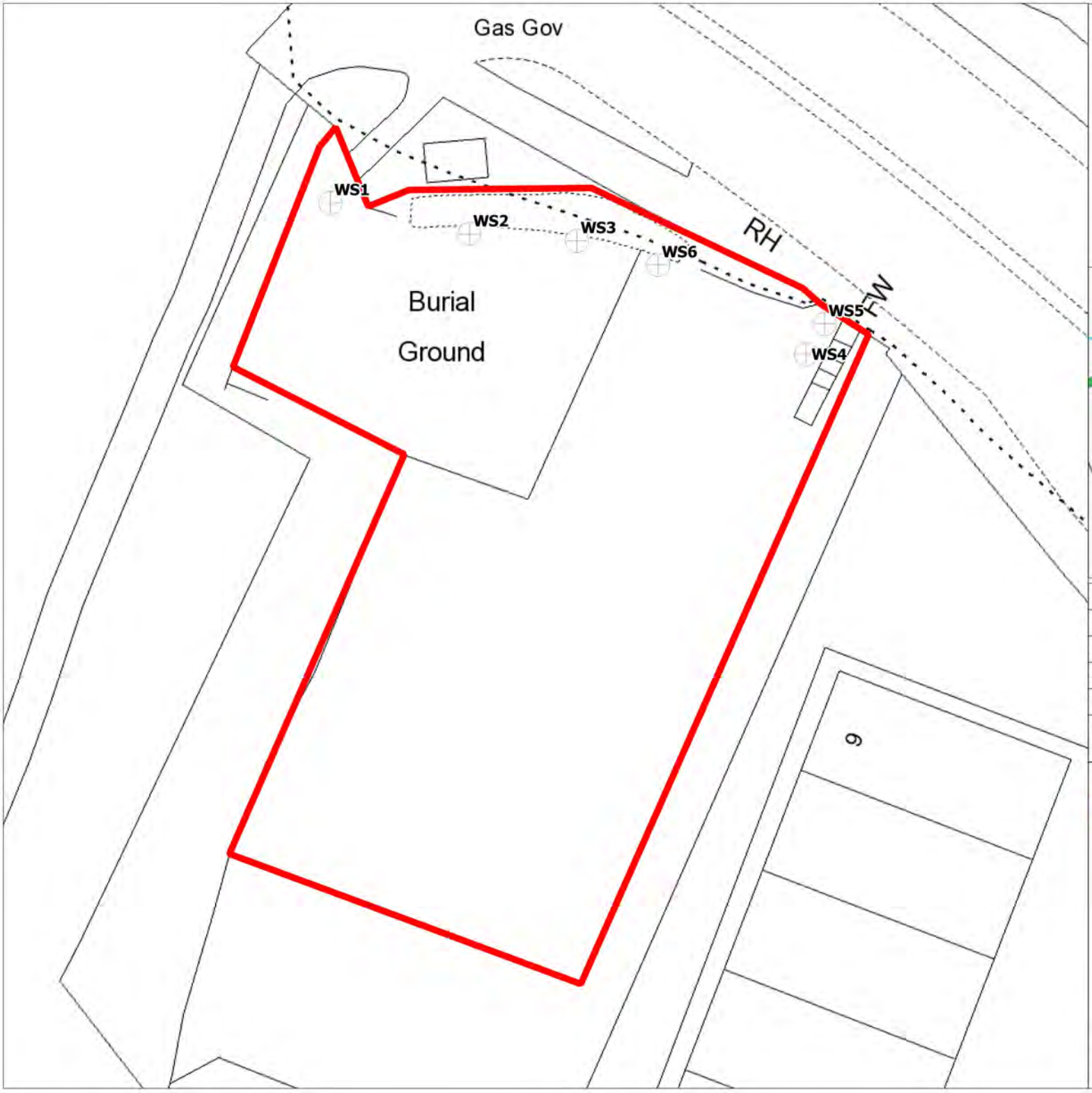
Site Boundary

0 50 100 150 m

N

Figure 2

Exploratory Hole Location Plan



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Project	Ponsharden Cemeteries
Project Number	A2292
Location	Falmouth, Cornwall
Client	PDP Green Consulting Ltd
Drawing Title	Exploratory Hole Location Plan

Drawing Number	Revision	Date	Approximate Scale
A2292-02	1	02/03/2021	1:350 @ A4

Key

Site Boundary

Window Sample Hole Locations

0 10 m

N

Appendix 1

Site Photographs

Photograph 1 – Window Sample Hole WS6

Photograph 2 – Window Sample Hole WS5

Photograph 3 – Window Sample Hole WS4

Photograph 4 – Window Sample Hole WS3

Photograph 5 – Window Sample Hole WS2

Photograph 6 – Window Sample Hole WS1

Photograph 7 – General view of southern entrance of access to site, facing north.

Photograph 8 – General view of the southern boundary of site, facing north.

Photograph 9 – General view of the north-western boundary of site, facing north.

Photograph 10 – General view of access to the north-western boundary of site, facing north.

Photograph 11 – General view of the eastern boundary of site, facing south.

Photograph 12 – General view of the western boundary of site, facing west. The geomorphology slopes moderately down to the west.

Photograph 13 – General view of the access of the north-western boundary of site, facing south.

Photograph 14 – General view of the northern boundary of site, facing south. Note the retaining wall showing weathered rock and tree stumps.

Appendix 2

Window Sample Hole Logs

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Window Sampler Log No. WS1

Sheet: 1 of 1

Equipment & Methods. Modular window sampleSupport Used:None Backfill: Bentonite and arisings	Project Name: Ponsharden Cemetery Project Location: Falmouth Client: PDP Green Consulting Ltd	Job No: A2292
Co-ordinates: E: N:	Ground Level (m):	Date Started:02/03/2021 Date Completed:02/03/2021

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
					MADE GROUND: Brown gravelly topsoil with tree roots **(Made Ground)**			(0.30)
						-0.30		0.30
					Stiff brown/grey gravelly CLAY. Gravel is in abundance sub-rounded to sub-angular slate **(Mylor Slate Formation)**			
0.50- 0.70	WS1	D						
0.80- 1.00	WS1	D						(1.20)
			C 12	3,3/3,3,3,3				
1.20- 1.40	WS1	D			...from 1.20 Quartz cobble			
						-1.50		1.50
1.50- 1.70	WS1	D			Moderately weak to moderately strong brown/grey METAMUDSTONE. Very weak thin laminae 1 to 4 mm. Arising as a silty gravel **(Mylor Slate Formation)**			
1.80- 2.00	WS1	D						
			C 22	6,7/5,6,5,6				
2.20- 2.40	WS1	D						
2.50- 2.70	WS1	D						
2.80- 3.00	WS1	D			...from 2.70 Quartz gravel			(2.94)
			C 37	7,8/7,9,9,12				
3.10- 3.30	WS1	D						
3.40- 3.60	WS1	D						
3.80- 4.00	WS1	D						
			C 53	9,9/10,15,15,10/60 mm				
						-4.44		4.44

End of W/S 4.44 m
(Thickness of basal layer not proven)

Remarks:
Core recovery:

0 - 1m 65%
1 - 2m 90%
2 - 3m 100%
3 - 4m 100%

Notes: For explanation of symbols and abbreviations, see Key Sheet.

Logged By:	Checked By:
CS	
Scale: 1:25	Approved By:
FIG No.	

AGS-GS STANDARD WINDOW SAMPLER LOG V2 A2292 PONSHARDEN.GPJ GSG-AGS3-STD TEMPLATE.GDT 25/3/21

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Window Sampler Log No. WS2

Sheet: 1 of 1

Equipment & Methods. Modular window sampleSupport Used:None Backfill: Bentonite and arisings	Project Name: Ponsharden Cemetery Project Location: Falmouth Client: PDP Green Consulting Ltd	Job No: A2292
Co-ordinates: E: N:	Ground Level (m):	Date Started:02/03/2021 Date Completed:02/03/2021

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
					MADE GROUND: Turf over dark brown topsoil **(Made Ground)**			(0.30)
0.20- 0.40	WS2	D				-0.30		0.30
0.50- 0.70	WS2	D			Stiff brown/grey gravelly CLAY. Gravel is fine - medium sub-rounded to sub-angular slate **(Mylor Slate Formation)**			(0.80)
0.80- 1.00	WS2	D						
1.00- 1.20	WS2	D	C 22	4,5/5,5,5,7		-1.10		1.10
1.40- 1.60	WS2	D			Moderately weak to moderately strong brown/grey METAMUDSTONE. Arising as weathered rock **(Mylor Slate Formation)**			(1.13)
1.80- 2.00	WS2	D						
			C 84	15,10/50 mm/16,20,14/30 mm		-2.23		2.23

End of W/S 2.23 m
(Thickness of basal layer not proven)

Remarks:
Core recovery:

0 - 1m 75%
1 - 2m 100%

Notes: For explanation of symbols and abbreviations, see Key Sheet.

Logged By: CS	Checked By:
Scale: 1:25	Approved By:
FIG No.	

AGS-GS STANDARD WINDOW SAMPLER LOG V2 A2292 PONSHARDEN.GPJ GSG-AGS3-STD TEMPLATE.GDT 25/3/21

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Window Sampler Log No. WS3

Sheet: 1 of 1

Equipment & Methods. Modular window sampleSupport Used:None Backfill: Bentonite and arisings	Project Name: Ponsharden Cemetery Project Location: Falmouth Client: PDP Green Consulting Ltd	Job No: A2292
Co-ordinates: E: N:	Ground Level (m):	Date Started:02/03/2021 Date Completed:02/03/2021

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
					MADE GROUND: Turf over dark brown gravely clayey topsoil with rootlets **(Made Ground)**			(0.30)
						-0.30		0.30
0.30- 0.50	WS3	D			Stiff brown/grey slightly gravelly CLAY. Gravel is fine - coarse subangular - subrounded slate **(Mylor Slate Formation)**			
0.70- 1.00	WS3	D						(1.30)
			C 17	3,4/3,4,6,4				
1.10- 1.30	WS3	D						
1.50- 1.70	WS3	D				-1.60		1.60
					Moderately weak to moderately strong grey MUDSTONE. Very rare thin laminae observed **(Mylor Slate Formation)**			
1.80- 2.00	WS3	D						
			C 21	4,4/3,5,6,7				
2.10- 2.30	WS3	D						
2.40- 2.60	WS3	D						(1.78)
					...from 2.50 Behaving as intact rock in moderately strong slate			
2.80- 3.00	WS3	D						
			C 100	10,10/18,30,20/0 mm				
						-3.38		3.38

End of W/S 3.38 m
(Thickness of basal layer not proven)

Remarks:
Core recovery:

0 - 1m 70%
1 - 2m 90%
2 - 3m 80%

Notes: For explanation of symbols and abbreviations, see Key Sheet.

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Scale: 1:25	Approved By:
FIG No.	

AGS-GS STANDARD WINDOW SAMPLER LOG V2 A2292 PONSHARDEN.GPJ GSG-AGS3-STD TEMPLATE.GDT 25/3/21

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Window Sampler Log No. WS4

Sheet: 1 of 1

Equipment & Methods. Modular window sampleSupport Used:None Backfill: Bentonite and arisings	Project Name: Ponsharden Cemetery Project Location: Falmouth Client: PDP Green Consulting Ltd	Job No: A2292
Co-ordinates: E: N:	Ground Level (m):	Date Started:02/03/2021 Date Completed:02/03/2021

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
					MADE GROUND: Brown gravelly topsoil with tree roots. Gravel is fine - medium subrounded imported granitic **(Made Ground)**			(0.75)
0.50- 0.70	WS4	D				-0.75		0.75
0.80- 1.00	WS4	D			Stiff brown/grey gravelly CLAY. Gravel is fine - coarse subangular - subrounded slate and flint **(Mylor Slate Formation)**			
			C 5	1,2/1,1,2,1				
1.30- 1.50	WS4	D						(1.55)
1.50- 1.70	WS4	D						
1.80- 2.00	WS4	D			...from 1.70 Increased in weathered gravel			
			C 21	1,3/6,4,6,5				
2.10- 2.30	WS4	D				-2.30		2.30
2.40- 2.60	WS4	D			Moderately weak - moderately strong grey/brown METAMUDSTONE. Very thin laminae 1 - 4 mm. Rare quartz gravel. Arising as a clayey gravel **(Mylor Slate Formation)**			
2.70- 3.00	WS4	D						(1.09)
			C 64	8,14/18,18,12,21/10 mm				
						-3.39		3.39

End of W/S 3.39 m
(Thickness of basal layer not proven)

Remarks:
Core recovery:

0 - 1m 80%
1 - 2m 80%
2 - 3m 90%

Notes: For explanation of symbols and abbreviations, see Key Sheet.

Logged By: CS	Checked By:
Scale: 1:25	Approved By:
FIG No.	

AGS-GS STANDARD WINDOW SAMPLER LOG V2 A2292 PONSHARDEN.GPJ GSG-AGS3-STD TEMPLATE.GDT 25/3/21

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Window Sampler Log No. WS5

Sheet: 1 of 1

Equipment & Methods. Modular window sampleSupport Used:None Backfill: Bentonite and arisings	Project Name: Ponsharden Cemetery Project Location: Falmouth Client: PDP Green Consulting Ltd	Job No: A2292
Co-ordinates: E: N:	Ground Level (m):	Date Started:02/03/2021 Date Completed:02/03/2021

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
					MADE GROUND: Brown gravelly topsoil with tree roots **(Made Ground)**			(0.30)
						-0.30		0.30
0.30- 0.50	1	D			Stiff brown/grey gravelly CLAY. Gravel is in abundance subrounded to subangular slate **(Mylor Slate Formation)**			
0.70- 1.00	1	D						
			C 12					(1.50)
1.10- 1.30	1	D		2,2/3,2,3,4				
1.50- 1.70	2	D						
1.80- 2.00	2	D				-1.80		1.80
			C 28		Moderately weak to moderately strong brown/grey METAMUDSTONE. Very weak thin laminae 1 to 4 mm. Arising as a silty gravel **(Mylor Slate Formation)**			
2.10- 2.30	2	D		3,4/6,6,7,8				
2.40- 2.60	3	D						(1.62)
2.80- 3.00	3	D						
			C 50					
				17,8/50 mm/27,23/70 mm		-3.42		3.42

End of W/S 3.42 m
(Thickness of basal layer not proven)

Remarks:

Logged By: CS	Checked By:
Scale: 1:25	Approved By:
FIG No.	

Notes: For explanation of symbols and abbreviations, see Key Sheet.

AGS-GS STANDARD WINDOW SAMPLER LOG V2 A2292 PONSHARDEN.GPJ GSG-AGS3-STD TEMPLATE.GDT 25/3/21

AGS Ground Solutions Ltd
4 Bond Street, Redruth, Cornwall TR15 2QB
01209 202 409
agsgroundsolutions.com

Window Sampler Log No. WS6

Sheet: 1 of 1

Equipment & Methods. Modular window sample rigSupport Used:None Backfill: Bentonite and arisings	Project Name: Ponsharden Cemetery Project Location: Falmouth Client: PDP Green Consulting Ltd	Job No: A2292
Co-ordinates: E: N:	Ground Level (m):	Date Started:02/03/2021 Date Completed:02/03/2021

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.10- 0.30	WS6	D			MADE GROUND: Brown gravelly topsoil with tree roots **(Made Ground)**			(0.30)
						-0.30		0.30
0.40- 0.60	WS6	D			Stiff brown/grey gravelly CLAY. Gravel is in abundance subrounded to subangular slate **(Mylor Slate Formation)**			
0.80- 1.00	WS6	D						(1.00)
			C 2					
1.10- 1.30	WS6	D		1,0/1,1,0,0				
						-1.30		1.30
1.40- 1.60	WS6	D			Moderately weak to moderately strong brown/grey METAMUDSTONE. Very weak thin laminae 1 to 4 mm. Arising as a silty gravel **(Mylor Slate Formation)**			
1.80- 2.00	WS6	D						
			C 27					
2.10- 2.30	WS6	D		4,5/5,6,6,10				(1.93)
2.40- 2.60	WS6	D						
2.70- 3.00	WS6	D						
			C 50					
				8,13/19,31/0 mm		-3.23		3.23

End of W/S 3.23 m
(Thickness of basal layer not proven)

Remarks:
Core recovery:

0 - 1m 100% (0m - 1m)
1 - 2m 80% (1.2 - 2m)
2 - 3m 100% (2 - 3m)

Notes: For explanation of symbols and abbreviations, see Key Sheet.

Logged By: CS	Checked By:
Scale: 1:25	Approved By:
FIG No.	

AGS-GS STANDARD WINDOW SAMPLER LOG V2 A2292 PONSHARDEN.GPJ GSG-AGS3-STD TEMPLATE.GDT 25/3/21

Appendix 3

Geotechnical Laboratory Test Results

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

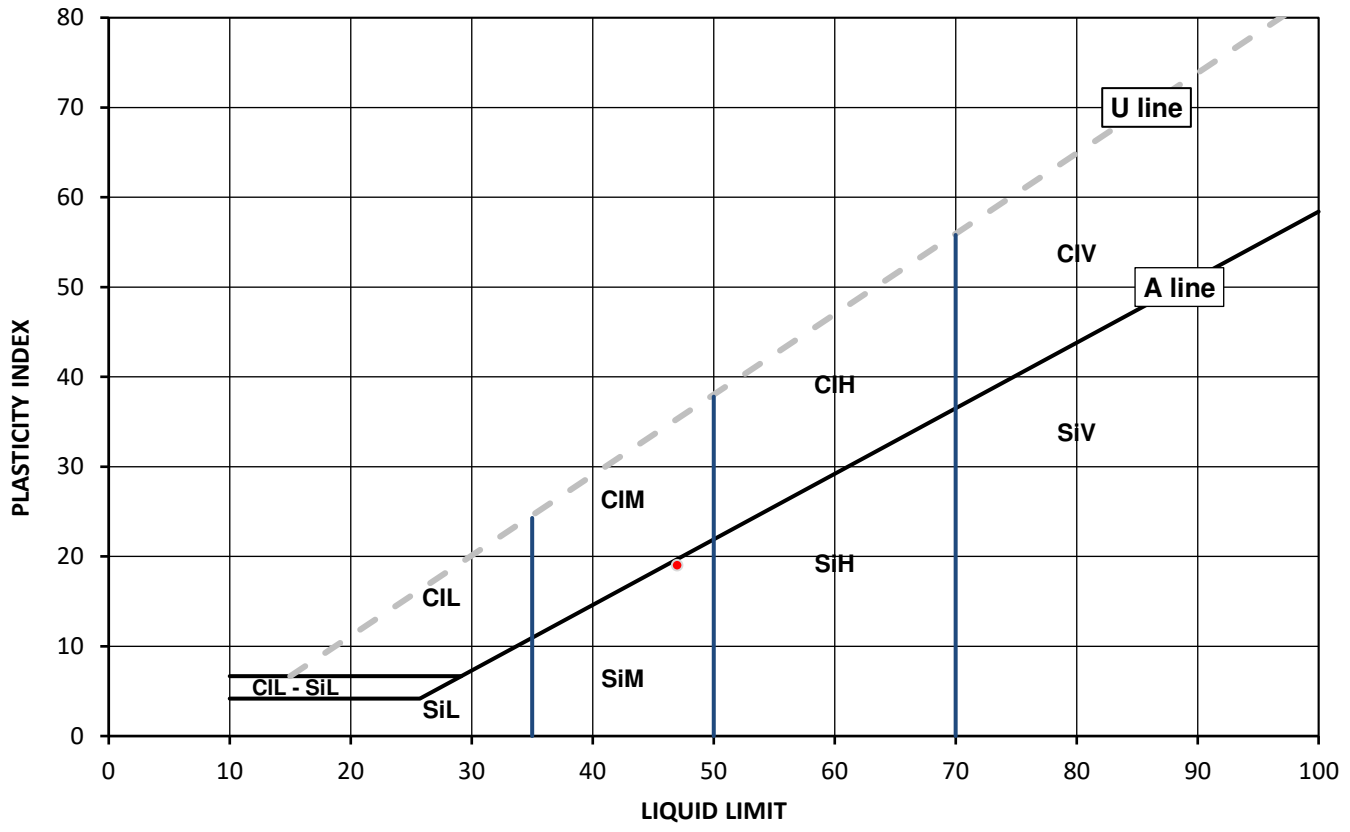
Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799098	Depth Top [m]:	1.50
Hole No.:	WS1	Depth Base [m]:	1.70
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown clayey very sandy very silty GRAVEL		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
12	47	28	19	27



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
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UKAS TESTING 4041

Environmental Science

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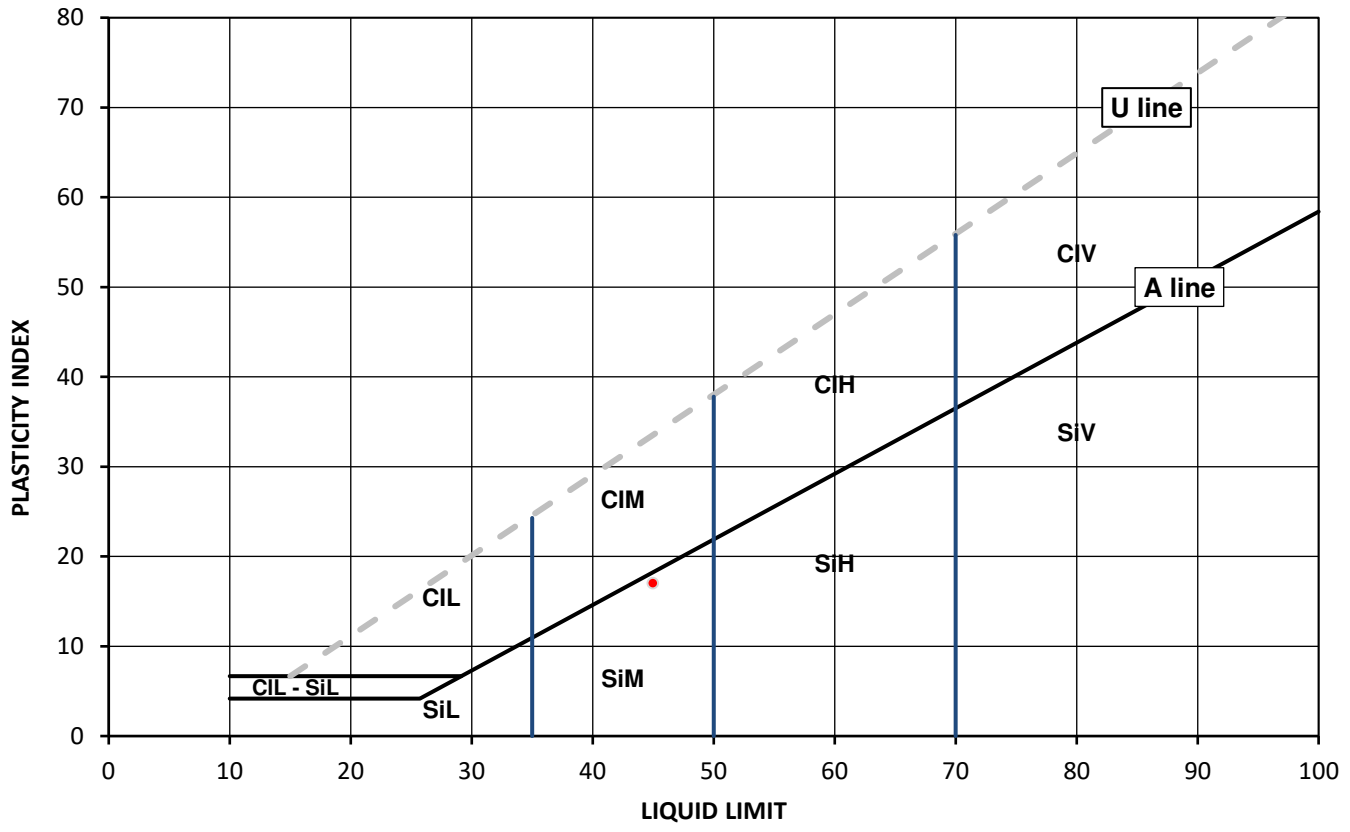
Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799099	Depth Top [m]:	2.50
Hole No.:	WS1	Depth Base [m]:	2.70
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown very clayey very sandy silty GRAVEL		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
10	45	28	17	37



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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Liquid and Plastic Limits

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Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

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Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

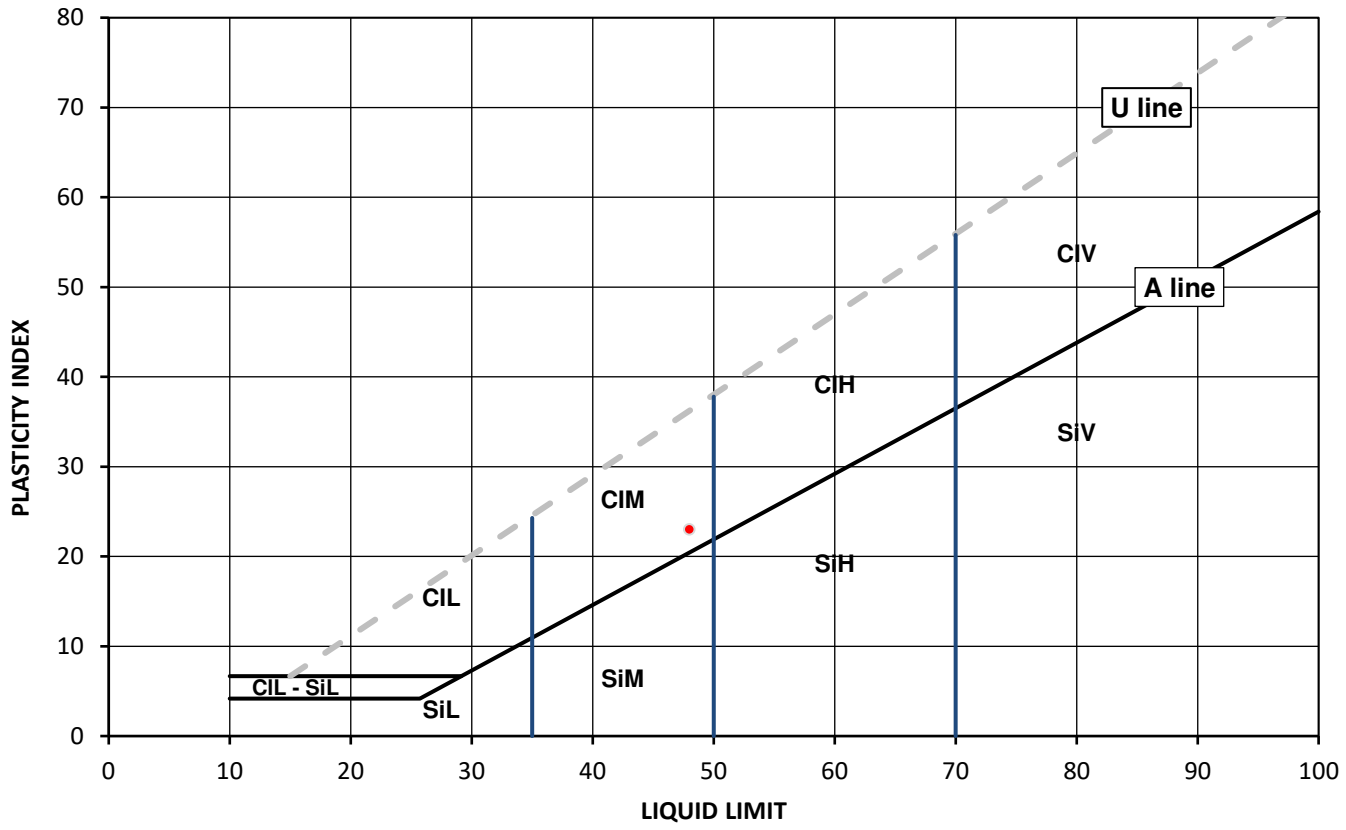
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799100	Depth Top [m]:	2.80
Hole No.:	WS1	Depth Base [m]:	3.00
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown clayey very sandy silty GRAVEL		

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
6.8	48	25	23	21



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

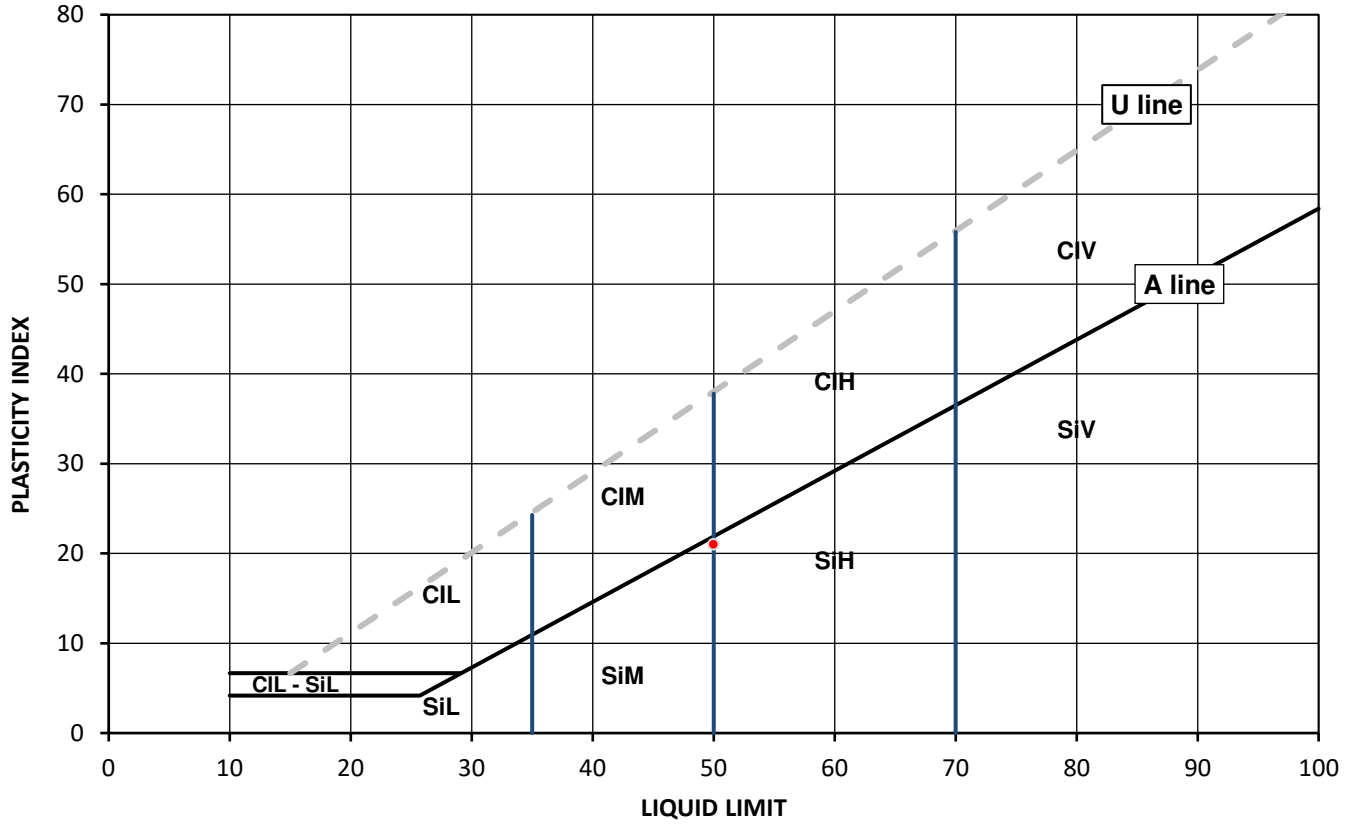
Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799101	Depth Top [m]:	3.80
Hole No.:	WS1	Depth Base [m]:	4.00
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown sandy silty very gravelly SHALES		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
7.1	50	29	21	22



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

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Liquid and Plastic Limits

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Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

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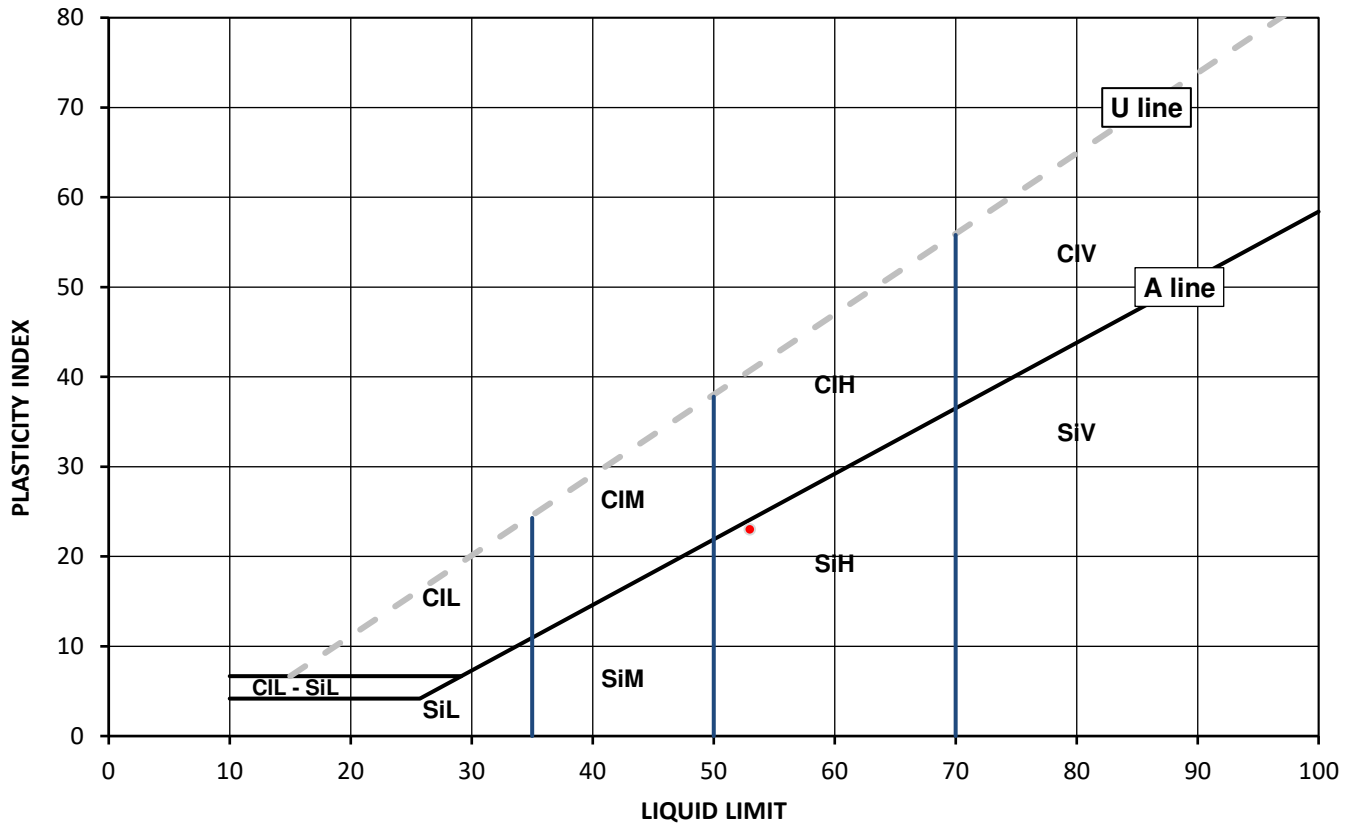
Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799102	Depth Top [m]:	1.40
Hole No.:	WS2	Depth Base [m]:	1.60
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown clayey silty sandy GRAVEL		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
16	53	30	23	43



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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Date Reported: 24/03/2021

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Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

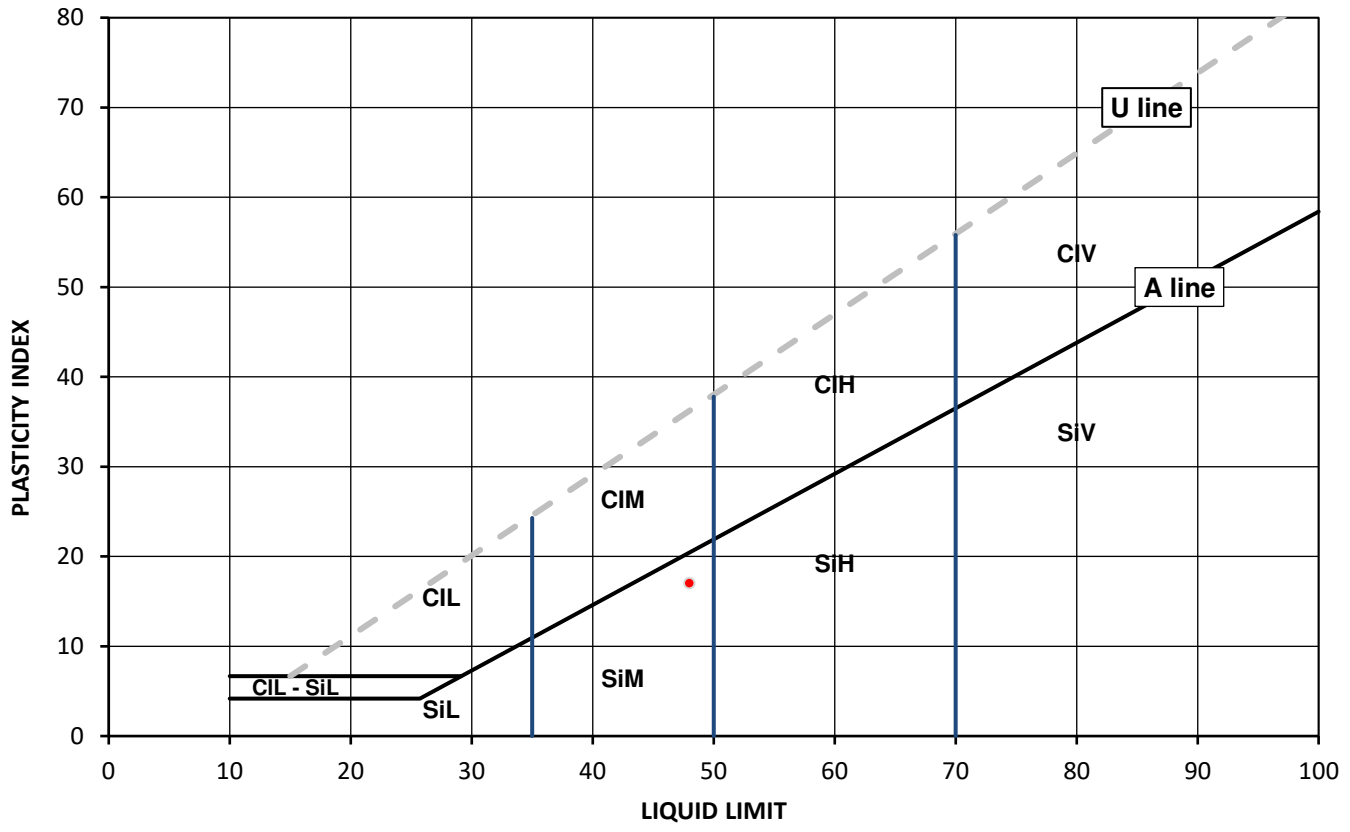
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799103	Depth Top [m]:	1.50
Hole No.:	WS3	Depth Base [m]:	1.70
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown very sandy very clayey very silty GRAVEL		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
13	48	31	17	39



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

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PL Deputy Head of Geotechnical Section
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Date Reported: 24/03/2021

GF 232.10

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Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

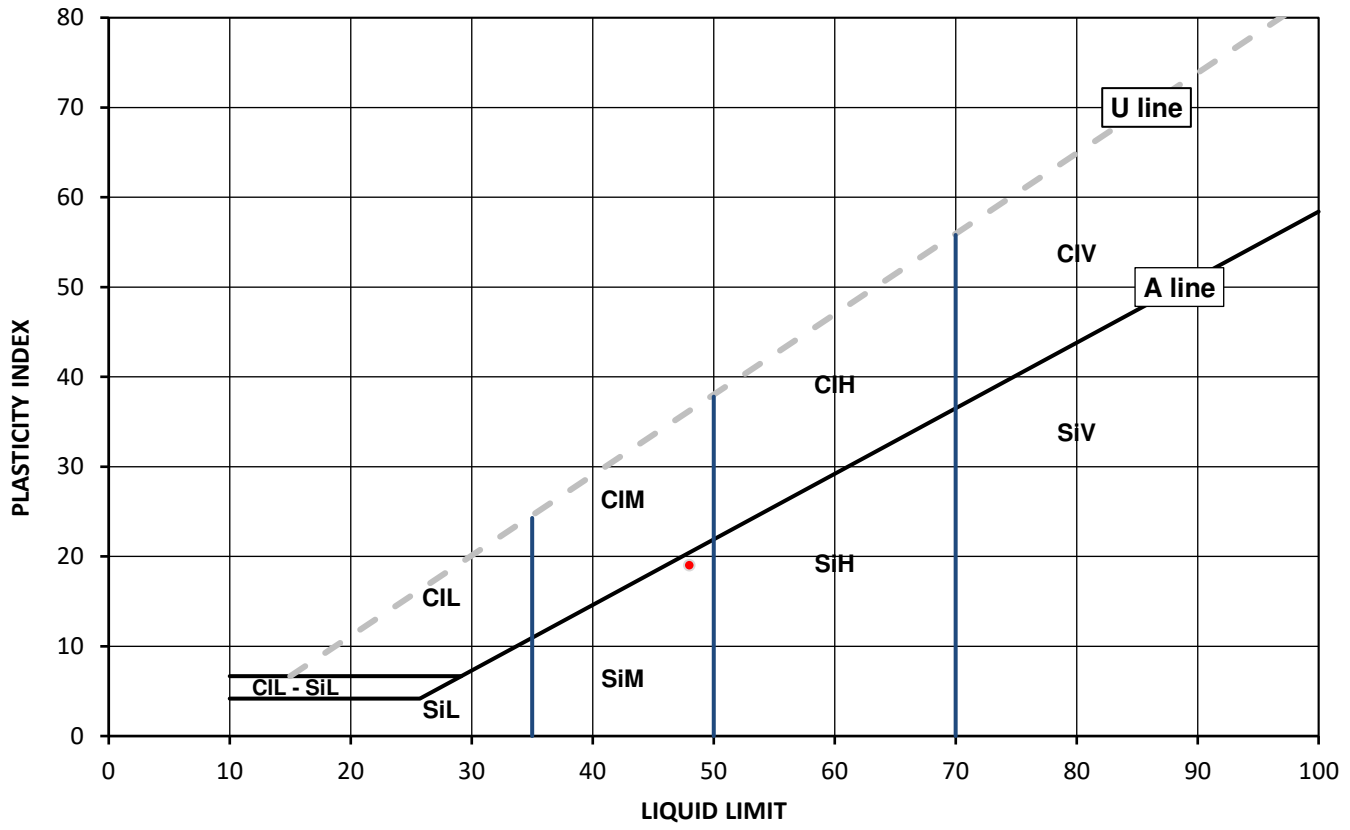
Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799104	Depth Top [m]:	2.80
Hole No.:	WS3	Depth Base [m]:	3.00
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown clayey sandy silty GRAVEL		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
6.4	48	29	19	22



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

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Date Reported: 24/03/2021

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Liquid and Plastic Limits

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Environmental Science

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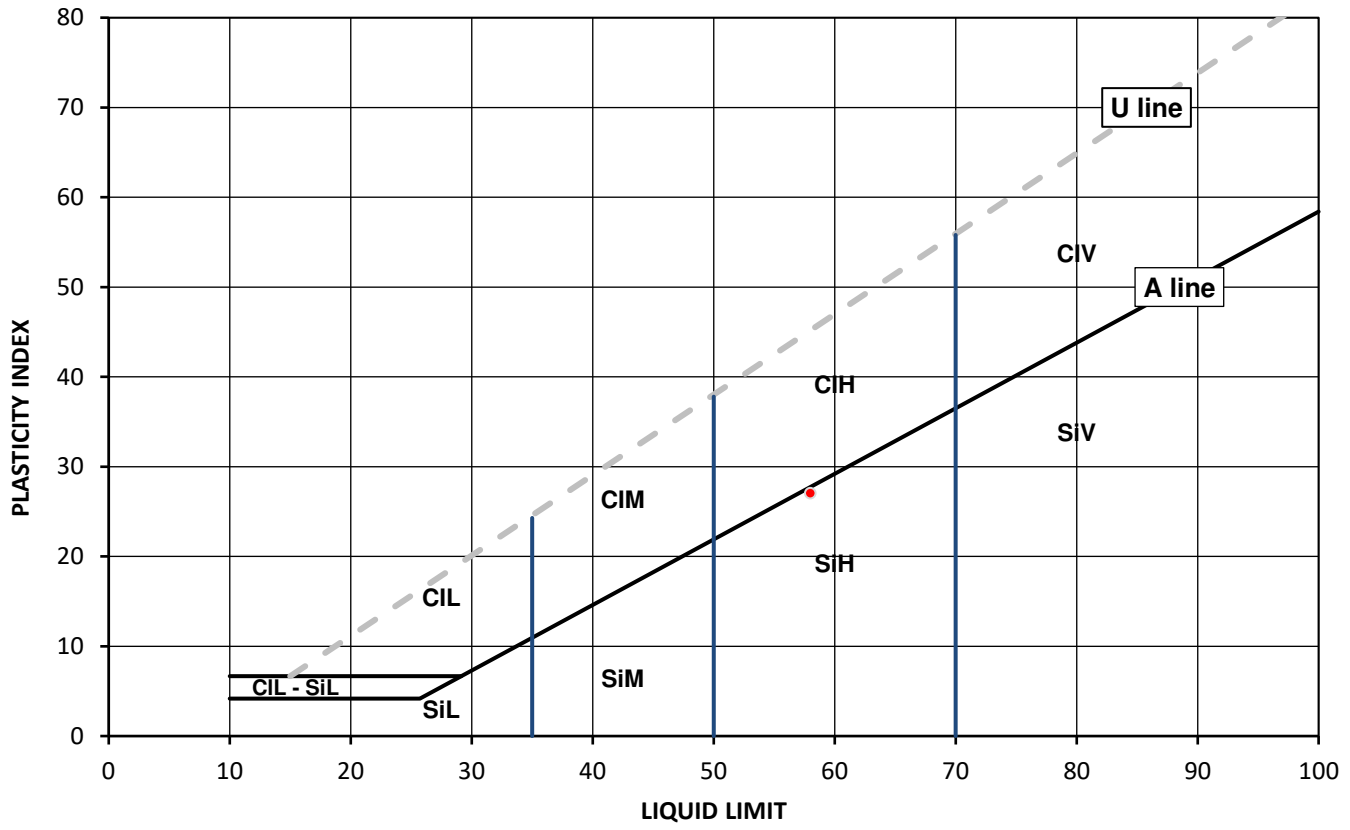
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799105	Depth Top [m]:	1.50
Hole No.:	WS4	Depth Base [m]:	1.70
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown sandy clayey silty GRAVEL		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
14	58	31	27	29



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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Date Reported: 24/03/2021

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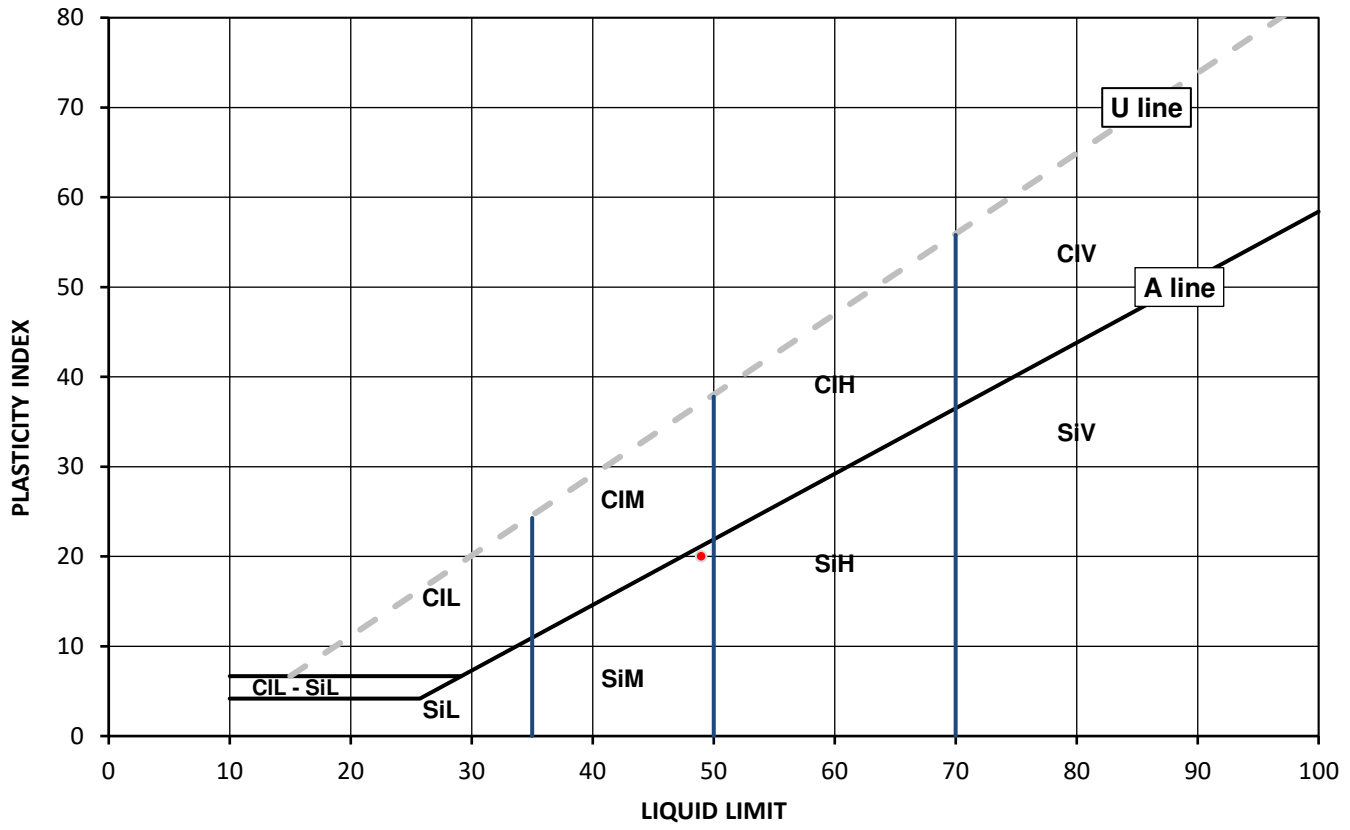
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799106	Depth Top [m]:	2.40
Hole No.:	WS4	Depth Base [m]:	2.60
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown sandy clayey silty GRAVEL		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
7.4	49	29	20	23



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

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PL Deputy Head of Geotechnical Section
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Date Reported: 24/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

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UKAS TESTING 4041

Environmental Science

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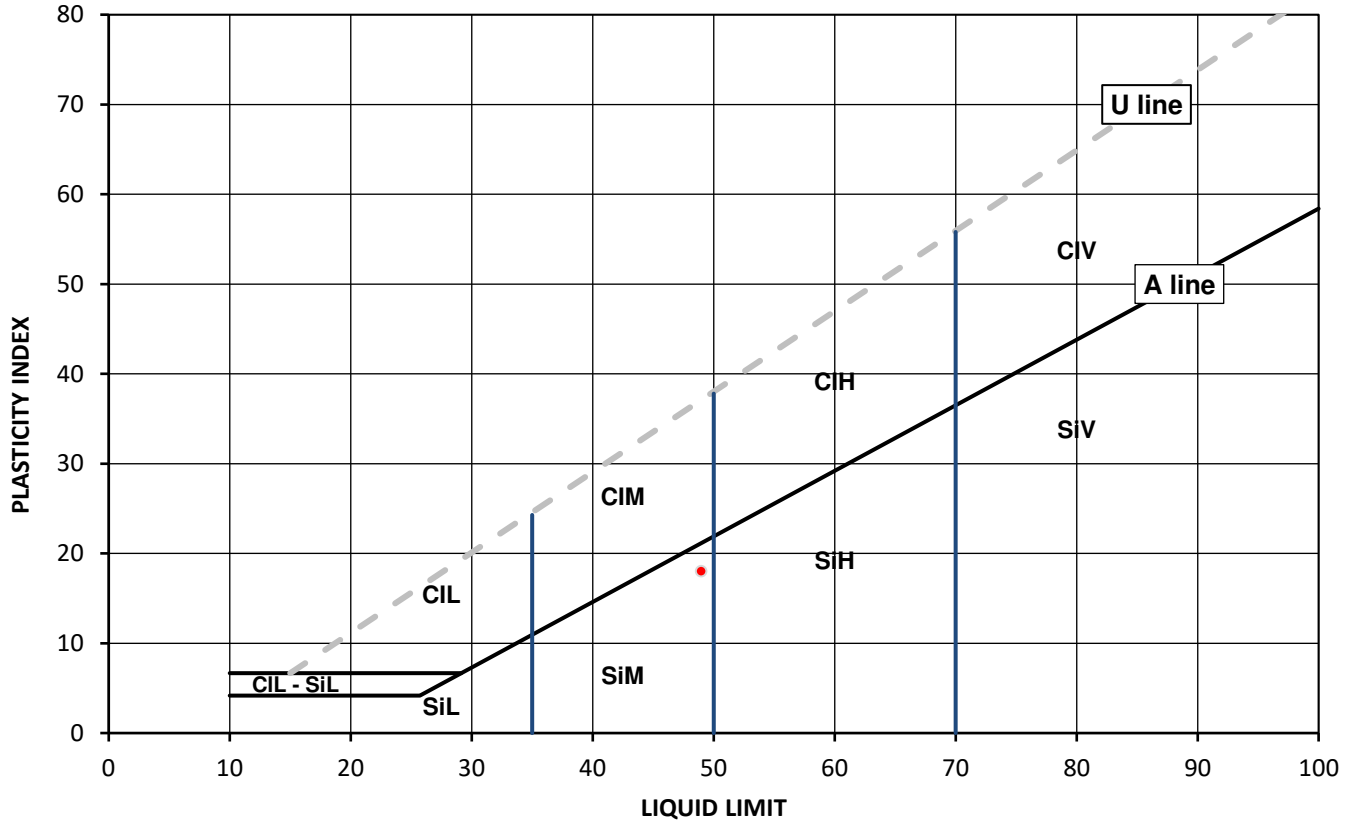
Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799107	Depth Top [m]:	1.50
Hole No.:	WS5	Depth Base [m]:	1.70
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown clayey sandy silty GRAVEL with fragments of shale		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
12	49	31	18	26



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

			Plasticity	Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

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PL Deputy Head of Geotechnical Section
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Date Reported: 24/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

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Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: AGS Ground Solutions Ltd
Client Address: 4 Bond Street, Redruth, Cornwall, TR15 2QB
Contact: Chloe Sheppard-Muir
Site Address: Ponsharden Cementry

Client Reference: A2292
Job Number: 21-61887
Date Sampled: 03/03/2021
Date Received: 10/03/2021
Date Tested: 19/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

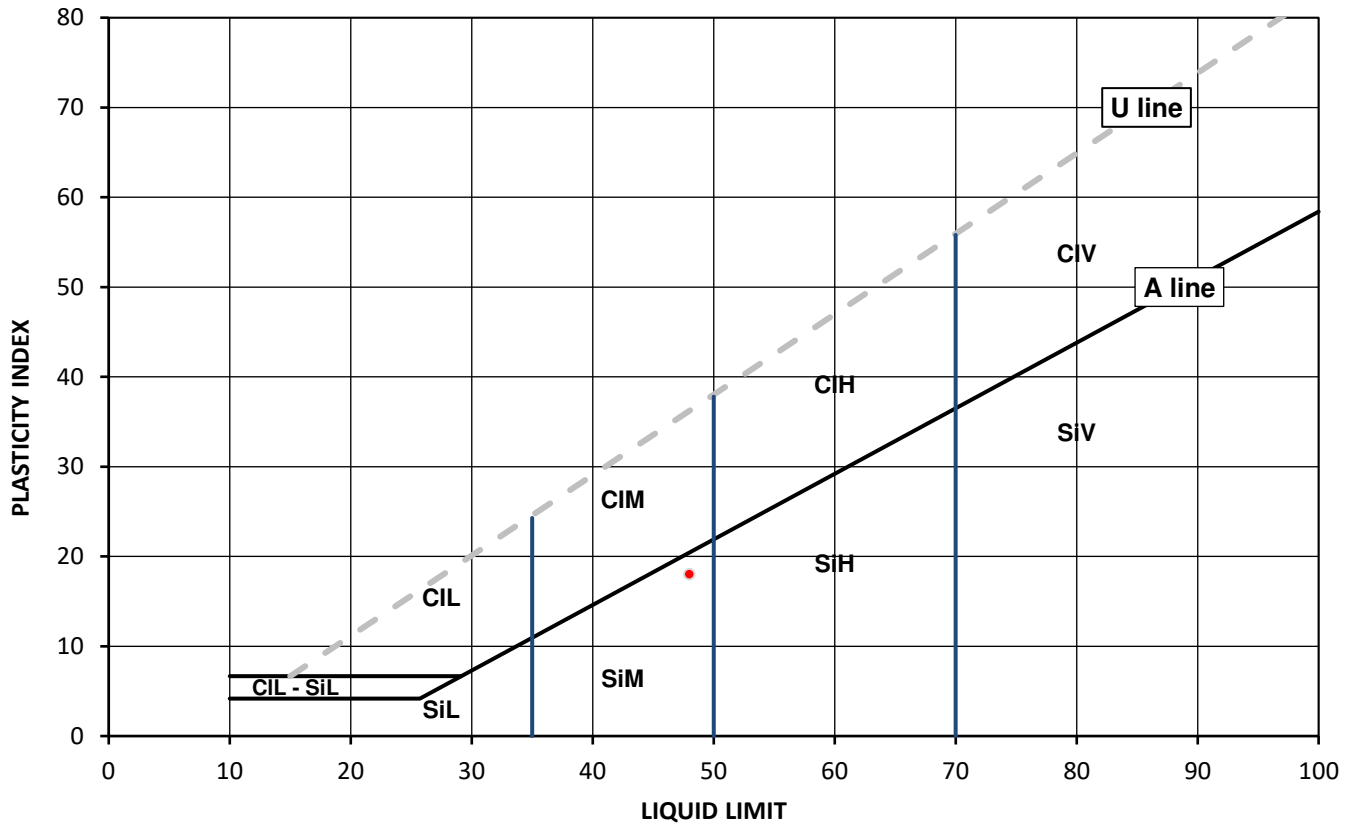
Test Results:

Laboratory Reference: 1799108
Hole No.: WS5
Sample Reference: Not Given
Soil Description: Dark brown clayey sandy silty GRAVEL

Depth Top [m]: 2.80
Depth Base [m]: 3.00
Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
15	48	30	18	24



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

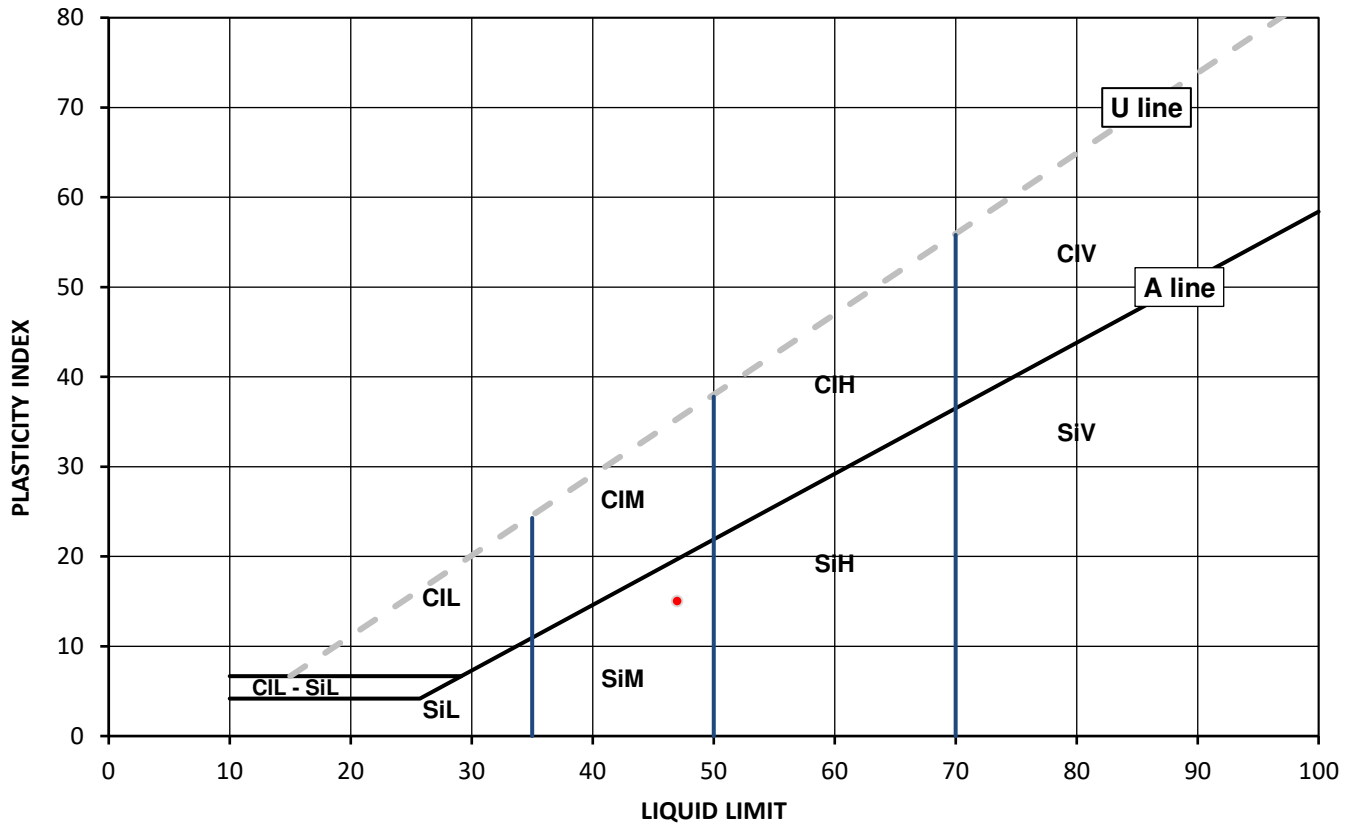
Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799109	Depth Top [m]:	1.40
Hole No.:	WS6	Depth Base [m]:	1.60
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Dark brown sandy very clayey very silty GRAVEL		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
15	47	32	15	39



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

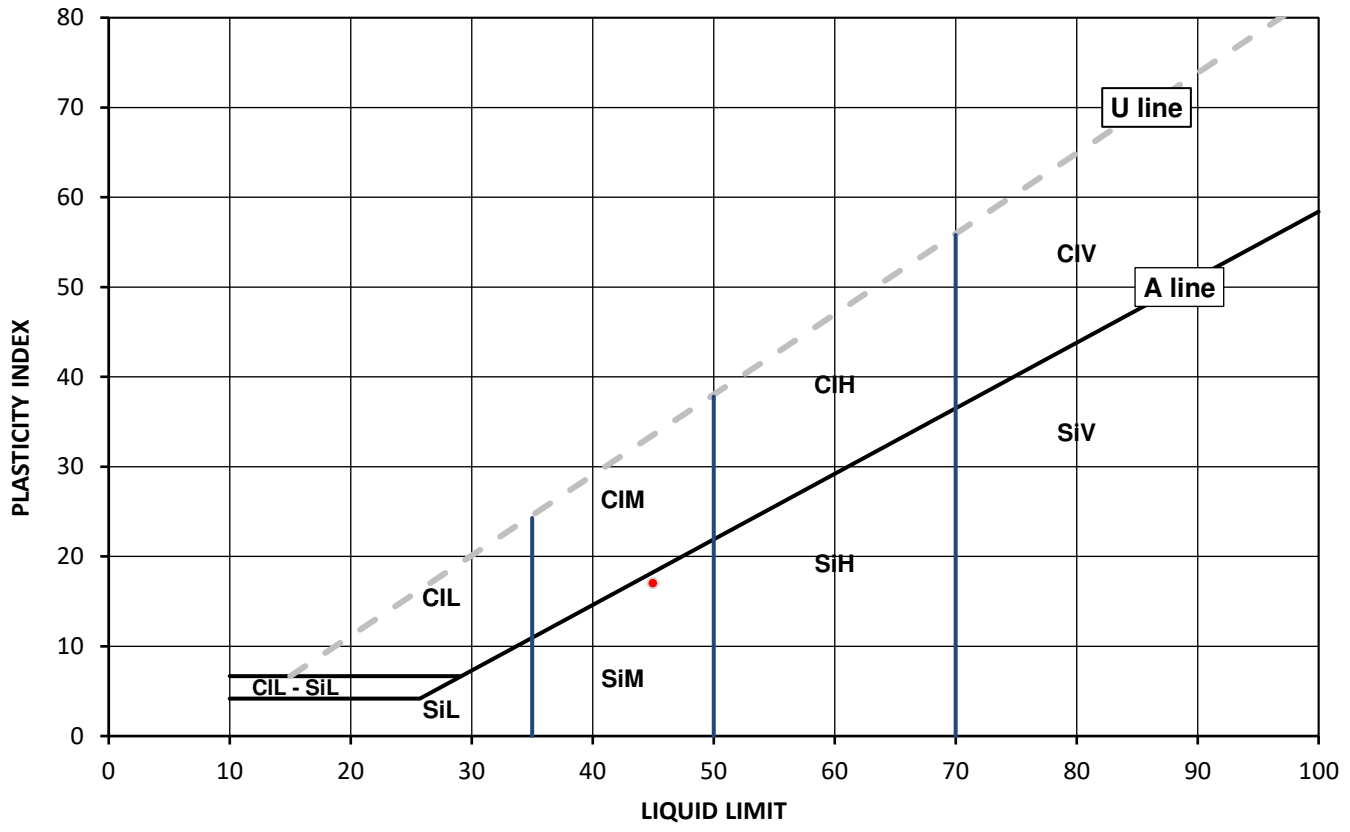
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799110	Depth Top [m]:	2.70
Hole No.:	WS6	Depth Base [m]:	3.00
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown clayey silty sandy GRAVEL		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
13	45	28	17	44



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 232.10

SUMMARY REPORT

Summary of Classification Test Results

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Tested in Accordance with:

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: AGS Ground Solutions Ltd

Client Address: 4 Bond Street, Redruth, Cornwall, TR15 2QB

Contact: Chloe Sheppard-Muir

Site Address: Ponsharden Cementry

Client Reference: A2292
Job Number: 21-61887
Date Sampled: 03/03/2021
Date Received: 10/03/2021
Date Tested: 19/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
1799098	WS1	Not Given	1.50	1.70	D	Dark brown clayey very sandy very silty GRAVEL	Atterberg 1 Point	12		27	47	28	19						
1799099	WS1	Not Given	2.50	2.70	D	Dark brown very clayey very sandy silty GRAVEL	Atterberg 1 Point	10		28	45	28	17						
1799100	WS1	Not Given	2.80	3.00	D	Dark brown clayey very sandy silty GRAVEL	Atterberg 1 Point	6.8		21	48	25	23						
1799101	WS1	Not Given	3.80	4.00	D	Dark brown sandy silty very gravelly SHALES	Atterberg 1 Point	7.1		22	50	29	21						
1799102	WS2	Not Given	1.40	1.60	D	Dark brown clayey silty sandy GRAVEL	Atterberg 1 Point	16		43	53	30	23						
1799103	WS3	Not Given	1.50	1.70	D	Brown very sandy very clayey very silty GRAVEL	Atterberg 1 Point	13		39	48	31	17						
1799104	WS3	Not Given	2.80	3.00	D	Dark brown clayey sandy silty GRAVEL	Atterberg 1 Point	6.4		22	48	29	19						
1799105	WS4	Not Given	1.50	1.70	D	Dark brown sandy clayey silty GRAVEL	Atterberg 1 Point	14		29	58	31	27						
1799106	WS4	Not Given	2.40	2.60	D	Dark brown sandy clayey silty GRAVEL	Atterberg 1 Point	7.4		23	49	29	20						
1799107	WS5	Not Given	1.50	1.70	D	Dark brown clayey sandy silty GRAVEL with fragments of shale	Atterberg 1 Point	12		26	49	31	18						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 234.12

SUMMARY REPORT

Summary of Classification Test Results

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Tested in Accordance with:

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: AGS Ground Solutions Ltd

Client Address: 4 Bond Street, Redruth, Cornwall, TR15 2QB

Contact: Chloe Sheppard-Muir

Site Address: Ponsharden Cementry

Client Reference: A2292
Job Number: 21-61887
Date Sampled: 03/03/2021
Date Received: 10/03/2021
Date Tested: 19/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
1799108	WS5	Not Given	2.80	3.00	D	Dark brown clayey sandy silty GRAVEL	Atterberg 1 Point	15		24	48	30	18						
1799109	WS6	Not Given	1.40	1.60	D	Dark brown sandy very clayey very silty GRAVEL	Atterberg 1 Point	15		39	47	32	15						
1799110	WS6	Not Given	2.70	3.00	D	Brown clayey silty sandy GRAVEL	Atterberg 1 Point	13		44	45	28	17						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: AGS Ground Solutions Ltd
Client Address: 4 Bond Street, Redruth, Cornwall, TR15 2QB
Contact: Chloe Sheppard-Muir
Site Address: Ponsharden Cementry

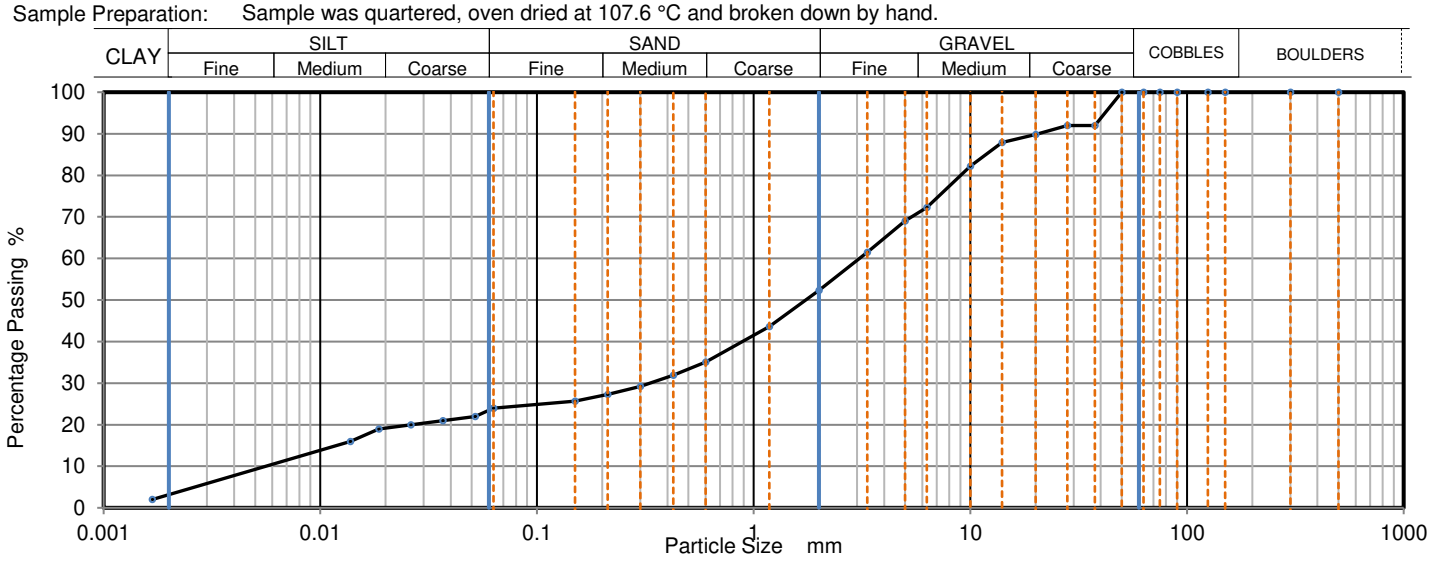
Client Reference: A2292
Job Number: 21-61887
Date Sampled: 03/03/2021
Date Received: 10/03/2021
Date Tested: 19/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1799098
Hole No.: WS1
Sample Reference: Not Given
Sample Description: Dark brown clayey very sandy very silty GRAVEL
Sample Preparation: Sample was quartered, oven dried at 107.6 °C and broken down by hand.

Depth Top [m]: 1.50
Depth Base [m]: 1.70
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	24
300	100	0.0517	22
150	100	0.0368	21
125	100	0.0262	20
90	100	0.0186	19
75	100	0.0138	16
63	100	0.0017	2
50	100		
37.5	92		
28	92		
20	90		
14	88		
10	82		
6.3	72		
5	69		
3.35	62	Particle density	(assumed)
2	52	2.65	Mg/m3
1.18	44		
0.6	35		
0.425	32		
0.3	29		
0.212	27		
0.15	26		
0.063	24		

Sample Proportions	% dry mass
Very coarse	0
Gravel	48
Sand	29
Silt	19
Clay	4

Grading Analysis		
D100	mm	50
D60	mm	3.08
D30	mm	0.332
D10	mm	0.00537
Uniformity Coefficient		570
Curvature Coefficient		6.7

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: AGS Ground Solutions Ltd
Client Address: 4 Bond Street, Redruth, Cornwall, TR15 2QB
Contact: Chloe Sheppard-Muir
Site Address: Ponsharden Cementry

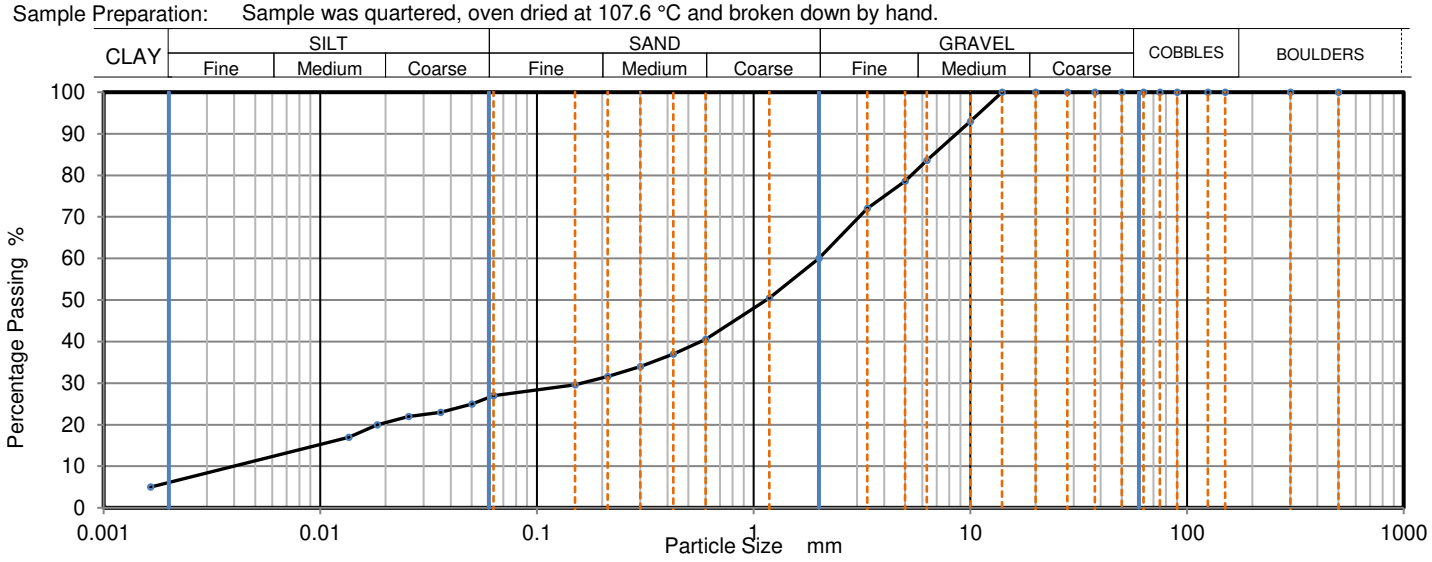
Client Reference: A2292
Job Number: 21-61887
Date Sampled: 03/03/2021
Date Received: 10/03/2021
Date Tested: 19/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1799099
Hole No.: WS1
Sample Reference: Not Given
Sample Description: Dark brown very clayey very sandy silty GRAVEL
Sample Preparation: Sample was quartered, oven dried at 107.6 °C and broken down by hand.

Depth Top [m]: 2.50
Depth Base [m]: 2.70
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	27
300	100	0.0502	25
150	100	0.0359	23
125	100	0.0256	22
90	100	0.0183	20
75	100	0.0135	17
63	100	0.0016	5
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	93		
6.3	84		
5	79		
3.35	72	Particle density	(assumed)
2	60	2.65	Mg/m3
1.18	51		
0.6	41		
0.425	37		
0.3	34		
0.212	32		
0.15	30		
0.063	27		

Sample Proportions	% dry mass
Very coarse	0
Gravel	40
Sand	33
Silt	21
Clay	6

Grading Analysis		
D100	mm	14
D60	mm	2
D30	mm	0.161
D10	mm	0.00401
Uniformity Coefficient		500
Curvature Coefficient		3.2

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

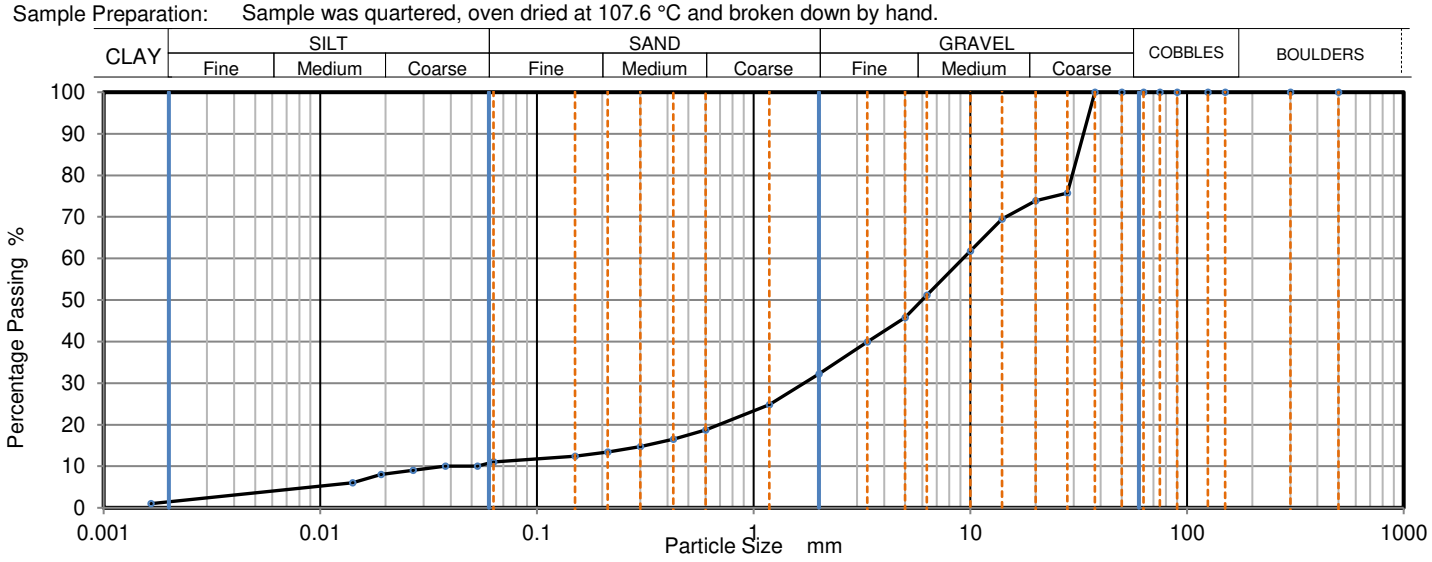
i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799100	Depth Top [m]:	2.80
Hole No.:	WS1	Depth Base [m]:	3.00
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Dark brown clayey very sandy silty GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 107.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	11
300	100	0.0530	10
150	100	0.0377	10
125	100	0.0268	9
90	100	0.0191	8
75	100	0.0141	6
63	100	0.0017	1
50	100		
37.5	100		
28	76		
20	74		
14	70		
10	62		
6.3	51		
5	46		
3.35	40	Particle density	(assumed)
2	32	2.65	Mg/m3
1.18	25		
0.6	19		
0.425	17		
0.3	15		
0.212	13		
0.15	12		
0.063	11		

Sample Proportions	% dry mass
Very coarse	0
Gravel	68
Sand	21
Silt	10
Clay	1

Grading Analysis		
D100	mm	37.5
D60	mm	9.25
D30	mm	1.71
D10	mm	0.0447
Uniformity Coefficient		210
Curvature Coefficient		7.1

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

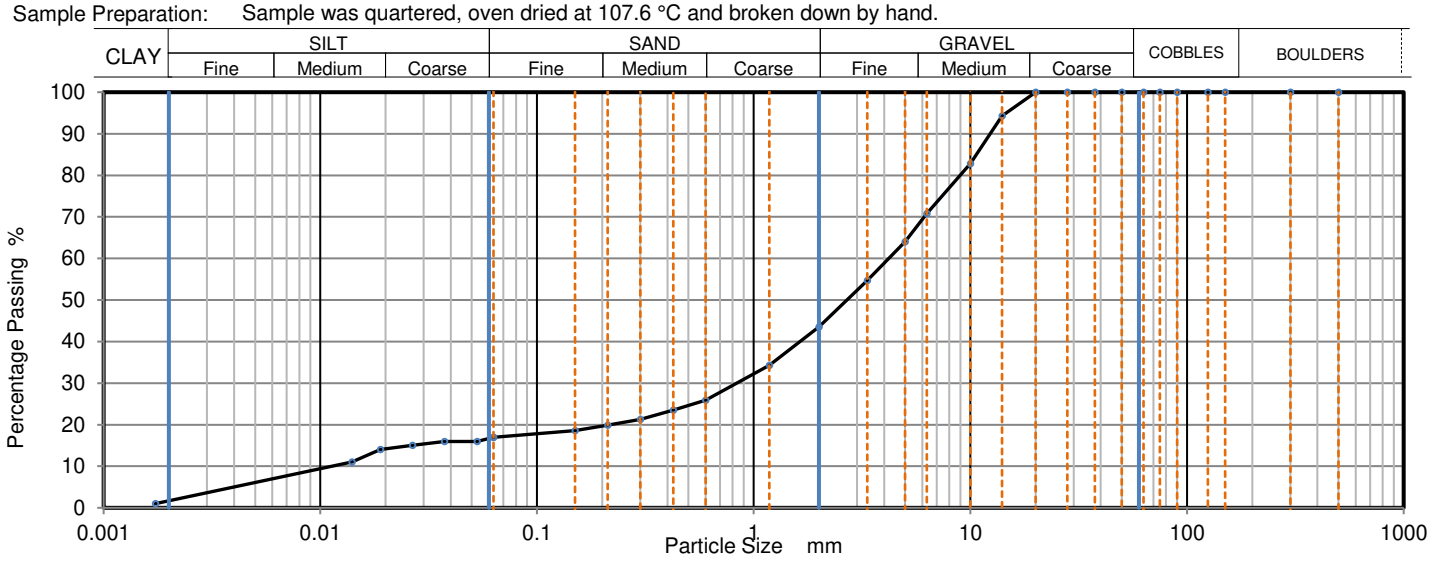
i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799101	Depth Top [m]:	3.80
Hole No.:	WS1	Depth Base [m]:	4.00
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Dark brown sandy silty very gravelly SHALES		
Sample Preparation:	Sample was quartered, oven dried at 107.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	17
300	100	0.0530	16
150	100	0.0375	16
125	100	0.0266	15
90	100	0.0189	14
75	100	0.0140	11
63	100	0.0017	1
50	100		
37.5	100		
28	100		
20	100		
14	94		
10	83		
6.3	71		
5	64		
3.35	55	Particle density	(assumed)
2	44	2.65	Mg/m3
1.18	34		
0.6	26		
0.425	24		
0.3	21		
0.212	20		
0.15	19		
0.063	17		

Sample Proportions	% dry mass
Very coarse	0
Gravel	56
Sand	26
Silt	16
Clay	2

Grading Analysis		
D100	mm	20
D60	mm	4.21
D30	mm	0.835
D10	mm	0.0104
Uniformity Coefficient		400
Curvature Coefficient		16

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

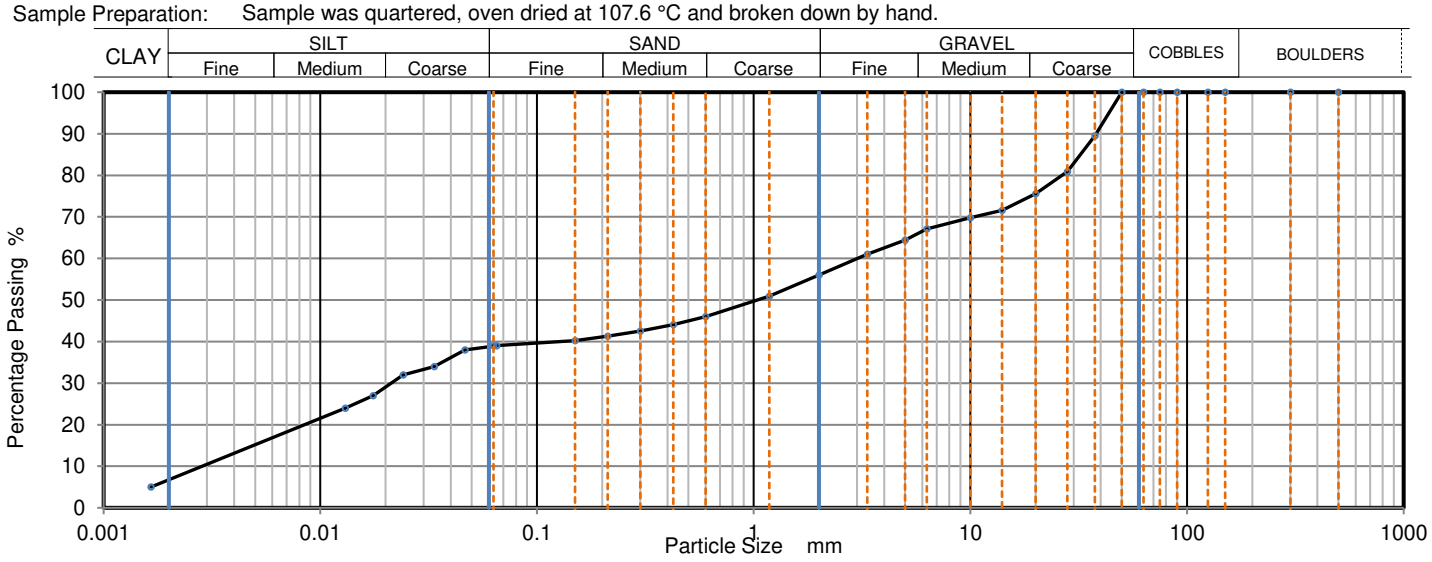
i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799102	Depth Top [m]:	1.40
Hole No.:	WS2	Depth Base [m]:	1.60
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Dark brown clayey silty sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 107.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0652	39
300	100	0.0465	38
150	100	0.0336	34
125	100	0.0241	32
90	100	0.0175	27
75	100	0.0130	24
63	100	0.0017	5
50	100		
37.5	90		
28	81		
20	76		
14	72		
10	70		
6.3	67		
5	64		
3.35	61	Particle density	(assumed)
2	56	2.65	Mg/m3
1.18	51		
0.6	46		
0.425	44		
0.3	43		
0.212	41		
0.15	40		
0.063	39		

Sample Proportions	% dry mass
Very coarse	0
Gravel	44
Sand	17
Silt	33
Clay	6

Grading Analysis		
D100	mm	50
D60	mm	3.01
D30	mm	0.021
D10	mm	0.00295
Uniformity Coefficient		1000
Curvature Coefficient		0.05

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: AGS Ground Solutions Ltd
Client Address: 4 Bond Street, Redruth, Cornwall, TR15 2QB
Contact: Chloe Sheppard-Muir
Site Address: Ponsharden Cementry

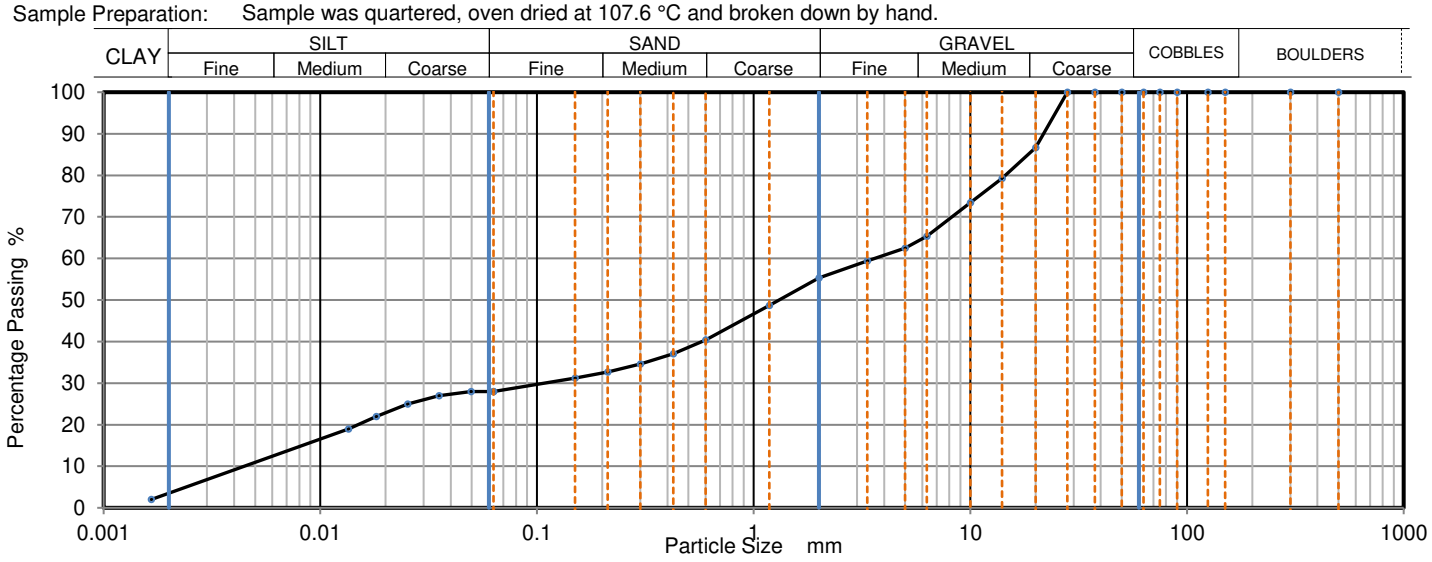
Client Reference: A2292
Job Number: 21-61887
Date Sampled: 03/03/2021
Date Received: 10/03/2021
Date Tested: 19/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1799103
Hole No.: WS3
Sample Reference: Not Given
Sample Description: Brown very sandy very clayey very silty GRAVEL
Sample Preparation: Sample was quartered, oven dried at 107.6 °C and broken down by hand.

Depth Top [m]: 1.50
Depth Base [m]: 1.70
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	28
300	100	0.0495	28
150	100	0.0353	27
125	100	0.0253	25
90	100	0.0181	22
75	100	0.0135	19
63	100	0.0017	2
50	100		
37.5	100		
28	100		
20	87		
14	79		
10	73		
6.3	65		
5	63		
3.35	59	Particle density	(assumed)
2	55	2.65	Mg/m3
1.18	49		
0.6	40		
0.425	37		
0.3	35		
0.212	33		
0.15	31		
0.063	28		

Sample Proportions	% dry mass
Very coarse	0
Gravel	45
Sand	27
Silt	24
Clay	4

Grading Analysis		
D100	mm	28
D60	mm	3.62
D30	mm	0.103
D10	mm	0.00435
Uniformity Coefficient		830
Curvature Coefficient		0.68

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: AGS Ground Solutions Ltd
Client Address: 4 Bond Street, Redruth, Cornwall, TR15 2QB
Contact: Chloe Sheppard-Muir
Site Address: Ponsharden Cementry

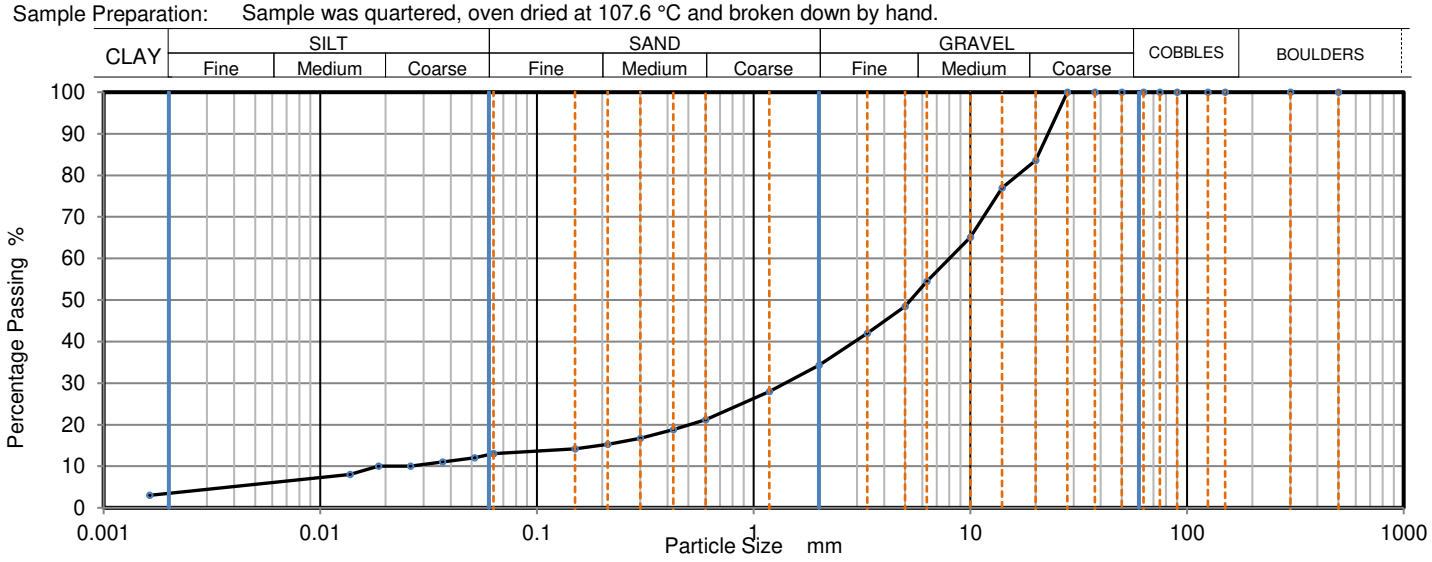
Client Reference: A2292
Job Number: 21-61887
Date Sampled: 03/03/2021
Date Received: 10/03/2021
Date Tested: 19/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1799104
Hole No.: WS3
Sample Reference: Not Given
Sample Description: Dark brown clayey sandy silty GRAVEL
Sample Preparation: Sample was quartered, oven dried at 107.6 °C and broken down by hand.

Depth Top [m]: 2.80
Depth Base [m]: 3.00
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	13
300	100	0.0515	12
150	100	0.0366	11
125	100	0.0260	10
90	100	0.0185	10
75	100	0.0137	8
63	100	0.0016	3
50	100		
37.5	100		
28	100		
20	84		
14	77		
10	65		
6.3	55		
5	49		
3.35	42	Particle density	(assumed)
2	34	2.65	Mg/m3
1.18	28		
0.6	21		
0.425	19		
0.3	17		
0.212	15		
0.15	14		
0.063	13		

Sample Proportions	% dry mass
Very coarse	0
Gravel	66
Sand	21
Silt	10
Clay	3

Grading Analysis		
D100	mm	28
D60	mm	8
D30	mm	1.4
D10	mm	0.0211
Uniformity Coefficient		380
Curvature Coefficient		12

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: AGS Ground Solutions Ltd
Client Address: 4 Bond Street, Redruth, Cornwall, TR15 2QB
Contact: Chloe Sheppard-Muir
Site Address: Ponsharden Cementry

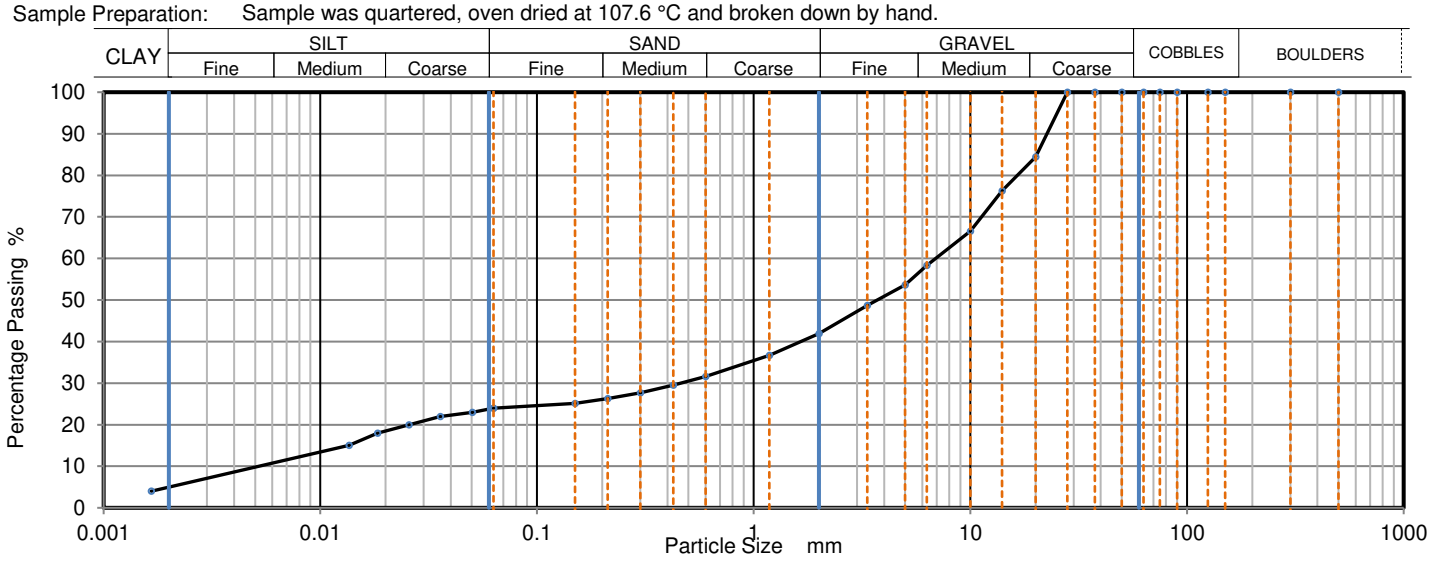
Client Reference: A2292
Job Number: 21-61887
Date Sampled: 03/03/2021
Date Received: 10/03/2021
Date Tested: 19/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1799105
Hole No.: WS4
Sample Reference: Not Given
Sample Description: Dark brown sandy clayey silty GRAVEL
Sample Preparation: Sample was quartered, oven dried at 107.6 °C and broken down by hand.

Depth Top [m]: 1.50
Depth Base [m]: 1.70
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	24
300	100	0.0504	23
150	100	0.0358	22
125	100	0.0256	20
90	100	0.0184	18
75	100	0.0136	15
63	100	0.0017	4
50	100		
37.5	100		
28	100		
20	84		
14	76		
10	67		
6.3	58		
5	54		
3.35	49	Particle density	(assumed)
2	42	2.65	Mg/m3
1.18	37		
0.6	32		
0.425	30		
0.3	28		
0.212	26		
0.15	25		
0.063	24		

Sample Proportions	% dry mass
Very coarse	0
Gravel	58
Sand	18
Silt	19
Clay	5

Grading Analysis		
D100	mm	28
D60	mm	6.92
D30	mm	0.46
D10	mm	0.00493
Uniformity Coefficient		1400
Curvature Coefficient		6.2

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

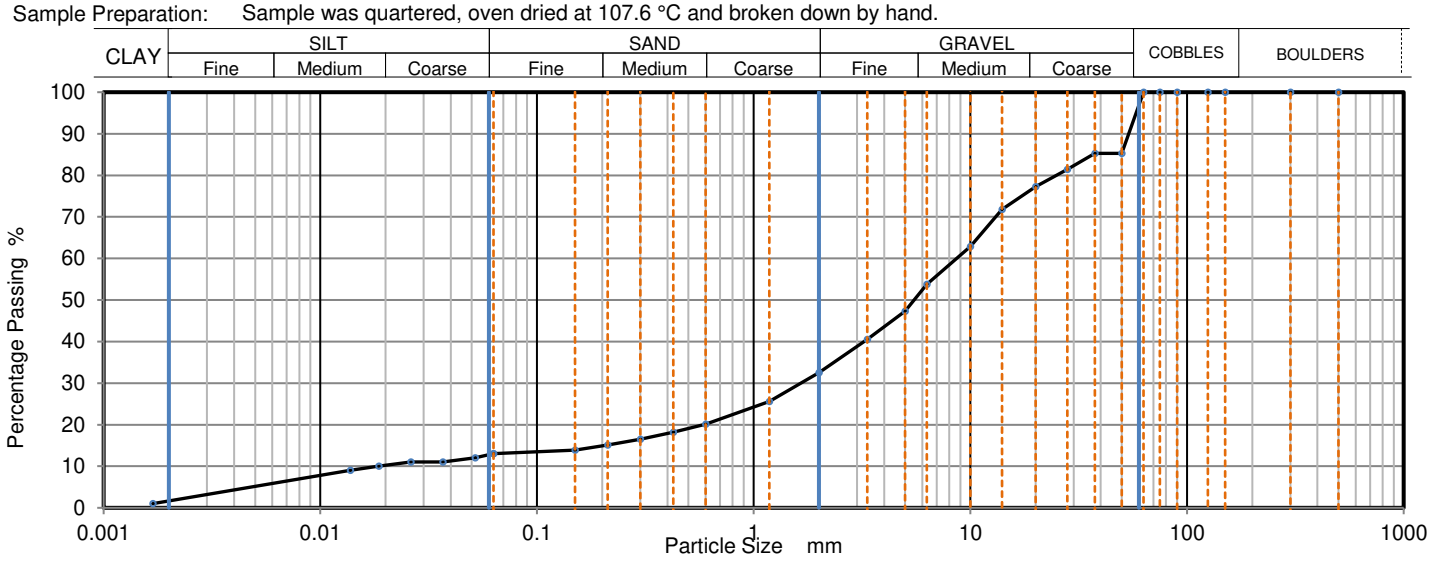
Environmental Science

Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799106	Depth Top [m]:	2.40
Hole No.:	WS4	Depth Base [m]:	2.60
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Dark brown sandy clayey silty GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 107.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	13
300	100	0.0517	12
150	100	0.0368	11
125	100	0.0262	11
90	100	0.0186	10
75	100	0.0138	9
63	100	0.0017	1
50	85		
37.5	85		
28	81		
20	77		
14	72		
10	63		
6.3	54		
5	47		
3.35	41	Particle density	(assumed)
2	33	2.65	Mg/m3
1.18	26		
0.6	20		
0.425	18		
0.3	17		
0.212	15		
0.15	14		
0.063	13		

Sample Proportions	% dry mass
Very coarse	0
Gravel	68
Sand	20
Silt	10
Clay	2

Grading Analysis		
D100	mm	63
D60	mm	8.62
D30	mm	1.65
D10	mm	0.0191
Uniformity Coefficient		450
Curvature Coefficient		17

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: AGS Ground Solutions Ltd
Client Address: 4 Bond Street, Redruth, Cornwall, TR15 2QB
Contact: Chloe Sheppard-Muir
Site Address: Ponsharden Cementry

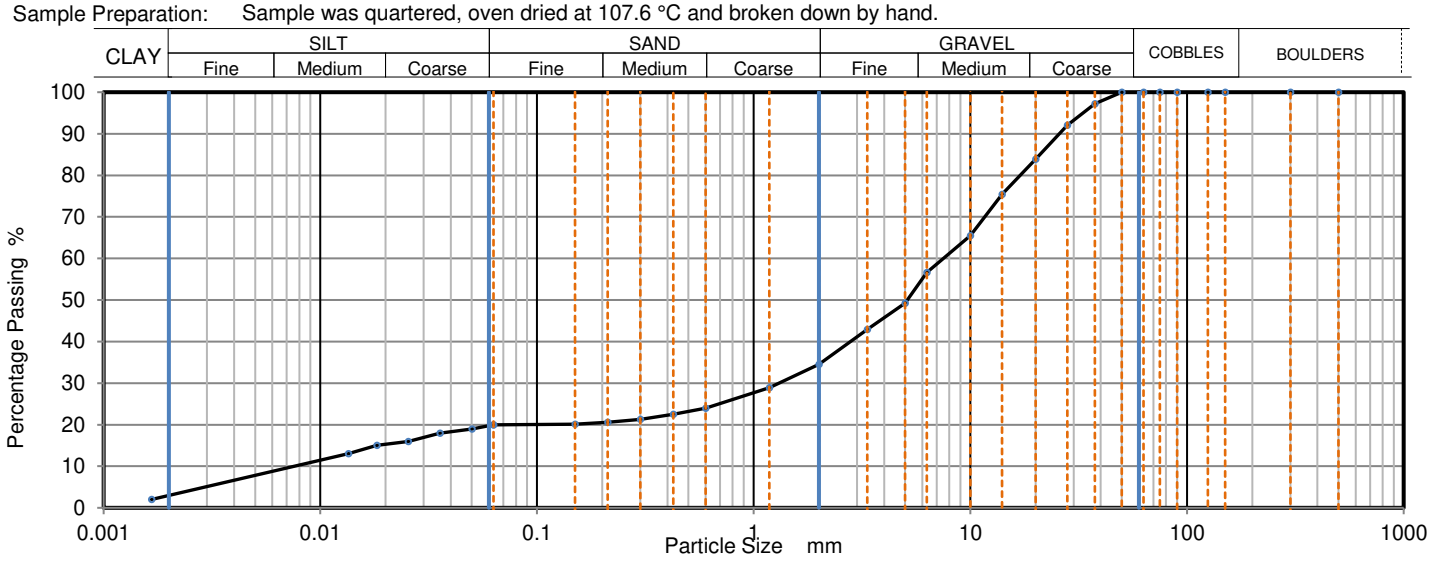
Client Reference: A2292
Job Number: 21-61887
Date Sampled: 03/03/2021
Date Received: 10/03/2021
Date Tested: 19/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1799107
Hole No.: WS5
Sample Reference: Not Given
Sample Description: Dark brown clayey sandy silty GRAVEL with fragments of shale
Sample Preparation: Sample was quartered, oven dried at 107.6 °C and broken down by hand.

Depth Top [m]: 1.50
Depth Base [m]: 1.70
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	20
300	100	0.0501	19
150	100	0.0356	18
125	100	0.0255	16
90	100	0.0183	15
75	100	0.0135	13
63	100	0.0017	2
50	100		
37.5	97		
28	92		
20	84		
14	75		
10	66		
6.3	57		
5	49		
3.35	43	Particle density	(assumed)
2	35	2.65	Mg/m3
1.18	29		
0.6	24		
0.425	23		
0.3	21		
0.212	21		
0.15	20		
0.063	20		

Sample Proportions	% dry mass
Very coarse	0
Gravel	66
Sand	15
Silt	16
Clay	3

Grading Analysis		
D100	mm	50
D60	mm	7.52
D30	mm	1.31
D10	mm	0.00737
Uniformity Coefficient		1000
Curvature Coefficient		31

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

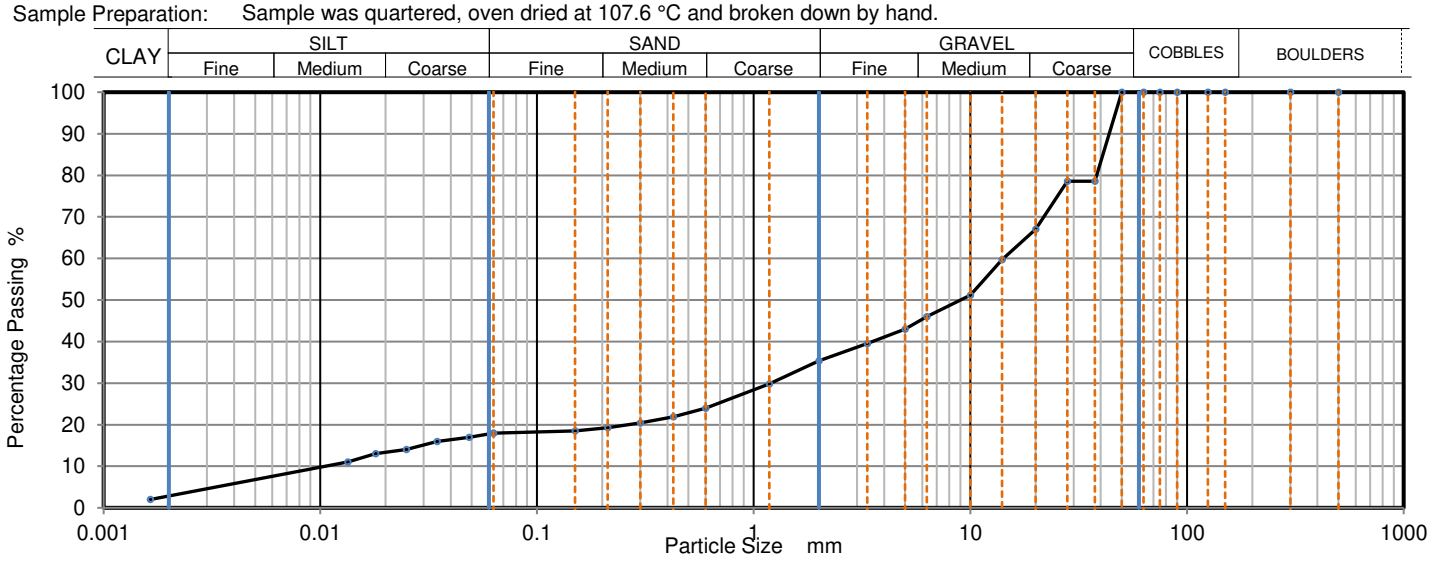
i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799108	Depth Top [m]:	2.80
Hole No.:	WS5	Depth Base [m]:	3.00
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Dark brown clayey sandy silty GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 107.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	18
300	100	0.0485	17
150	100	0.0345	16
125	100	0.0249	14
90	100	0.0180	13
75	100	0.0134	11
63	100	0.0016	2
50	100		
37.5	79		
28	79		
20	67		
14	60		
10	51		
6.3	46		
5	43		
3.35	40	Particle density	(assumed)
2	35	2.65	Mg/m3
1.18	30		
0.6	24		
0.425	22		
0.3	20		
0.212	19		
0.15	19		
0.063	18		

Sample Proportions	% dry mass
Very coarse	0
Gravel	65
Sand	18
Silt	14
Clay	3

Grading Analysis		
D100	mm	50
D60	mm	14.2
D30	mm	1.2
D10	mm	0.0114
Uniformity Coefficient		1300
Curvature Coefficient		8.9

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

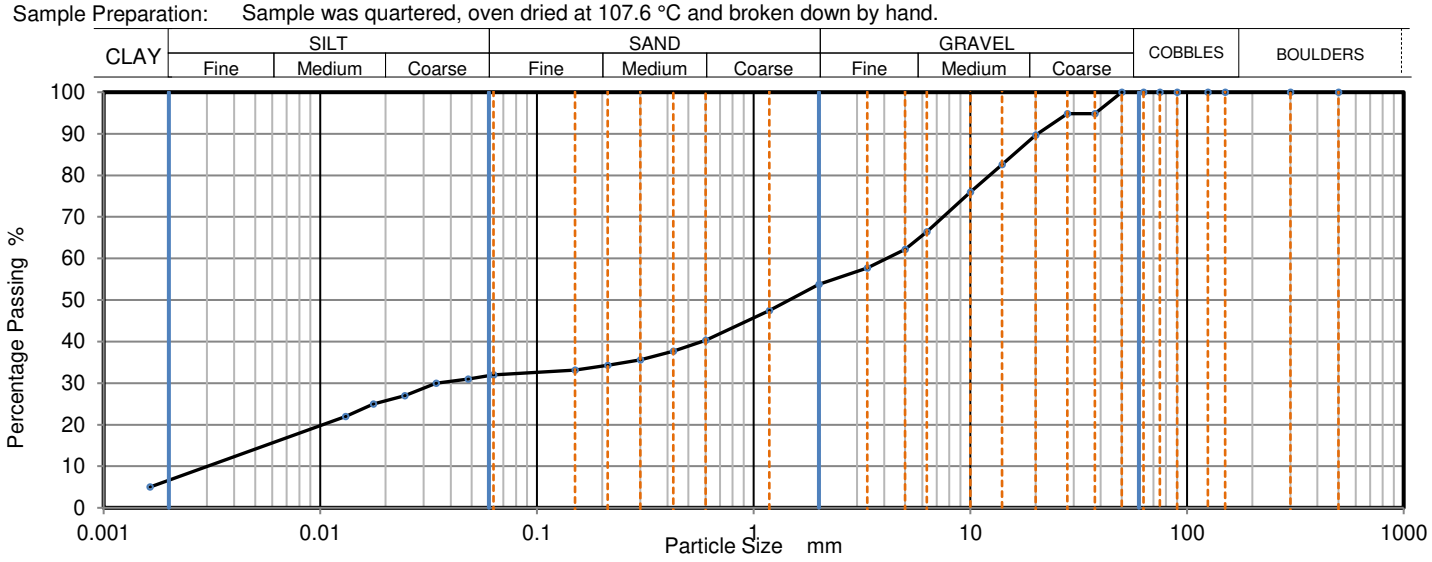
i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799109	Depth Top [m]:	1.40
Hole No.:	WS6	Depth Base [m]:	1.60
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Dark brown sandy very clayey very silty GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 107.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	32
300	100	0.0480	31
150	100	0.0342	30
125	100	0.0245	27
90	100	0.0176	25
75	100	0.0131	22
63	100	0.0016	5
50	100		
37.5	95		
28	95		
20	90		
14	83		
10	76		
6.3	66		
5	62		
3.35	58	Particle density	(assumed)
2	54	2.65	Mg/m3
1.18	48		
0.6	40		
0.425	38		
0.3	36		
0.212	34		
0.15	33		
0.063	32		

Sample Proportions	% dry mass
Very coarse	0
Gravel	46
Sand	22
Silt	25
Clay	7

Grading Analysis		
D100	mm	50
D60	mm	4.11
D30	mm	0.0391
D10	mm	0.00292
Uniformity Coefficient		1400
Curvature Coefficient		0.13

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

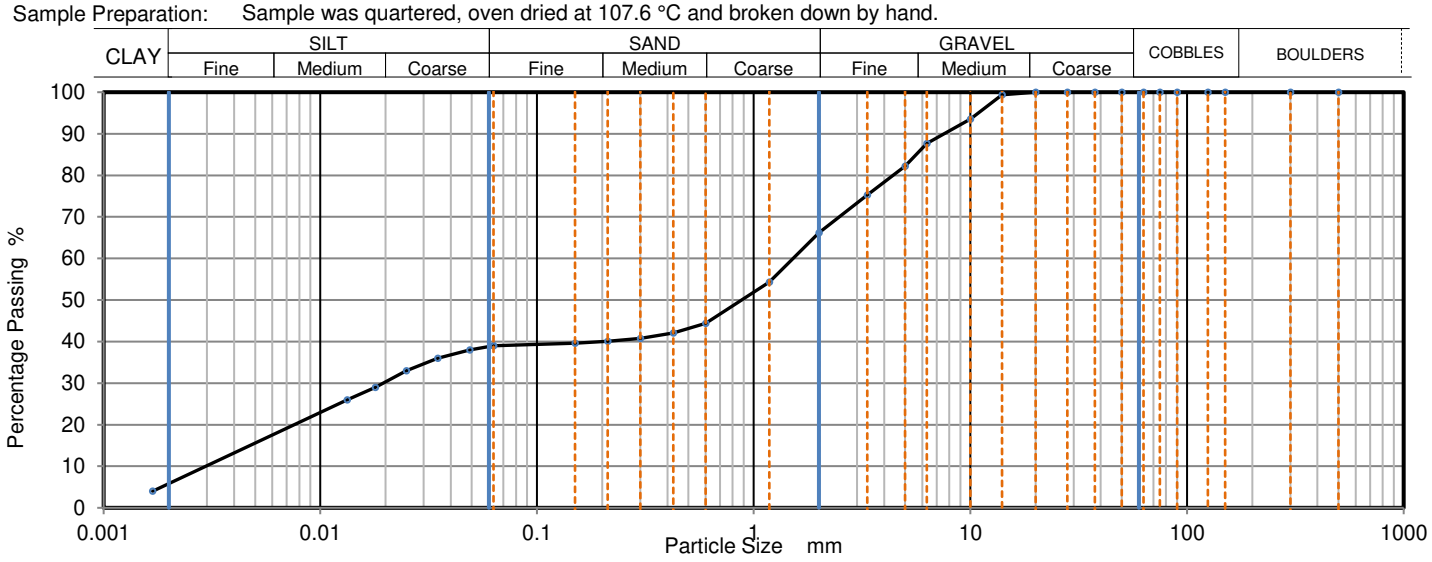
i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client:	AGS Ground Solutions Ltd	Client Reference:	A2292
Client Address:	4 Bond Street, Redruth, Cornwall, TR15 2QB	Job Number:	21-61887
		Date Sampled:	03/03/2021
		Date Received:	10/03/2021
Contact:	Chloe Sheppard-Muir	Date Tested:	19/03/2021
Site Address:	Ponsharden Cementry	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799110	Depth Top [m]:	2.70
Hole No.:	WS6	Depth Base [m]:	3.00
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Brown clayey silty sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 107.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	39
300	100	0.0489	38
150	100	0.0348	36
125	100	0.0249	33
90	100	0.0180	29
75	100	0.0133	26
63	100	0.0017	4
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	94		
6.3	88		
5	82		
3.35	75	Particle density	(assumed)
2	66	2.65	Mg/m3
1.18	54		
0.6	44		
0.425	42		
0.3	41		
0.212	40		
0.15	40		
0.063	39		

Sample Proportions	% dry mass
Very coarse	0
Gravel	34
Sand	27
Silt	33
Clay	6

Grading Analysis		
D100	mm	20
D60	mm	1.52
D30	mm	0.0191
D10	mm	0.00289
Uniformity Coefficient		530
Curvature Coefficient		0.083

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 24/03/2021

GF 100.20