DUNELM DRILLING CO.

BOREHOLE RECORD

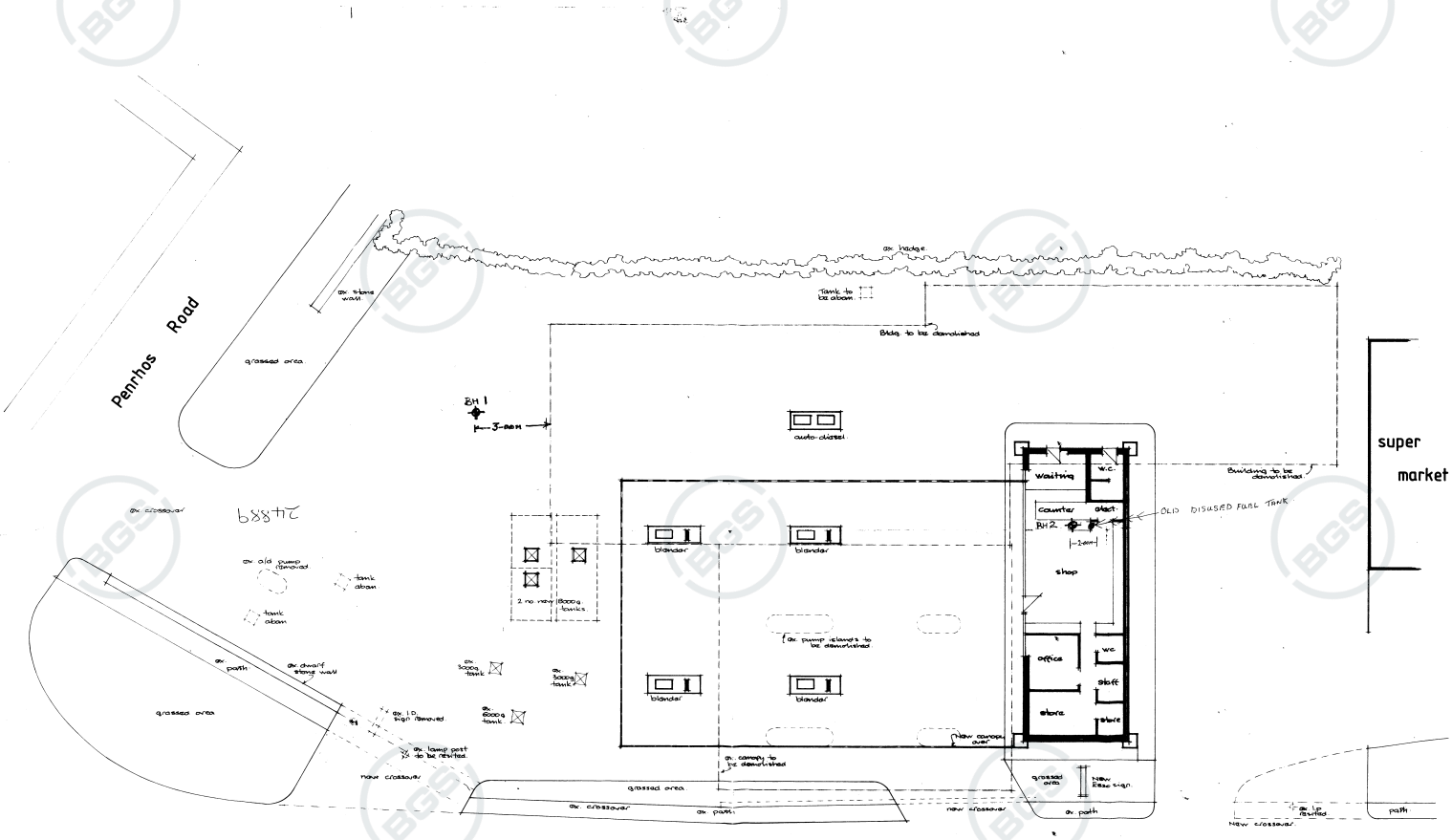
Contract No. C2365 Client ESSO PETROLEUM CO LTD

Ground Level ..... Location SWIFTS - HOLYHEAD

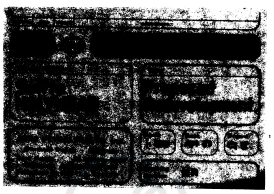
Date MAY 1983 BOREHOLE Nos 1 & 2

Depth	Thickness	Legend	Description of Strata	Type of Sample	C kN/m²	M %	Ø	Density Kg m⁻³	N
0.30	0.30		TARMAC & SUBBASE						
0.80	0.50		MIXED CLAY, SAND & STONE FILL	P 0.80	FOR 0.05" PENETRATION				70
1.25	0.45		VERY HARD GREEN SCHIST.						
			CHISELLING 1½ HRS.						
			DRY						
			BH2						
0.30	0.30		TARMAC & SUBBASE						
0.90	0.60		MIXED CLAY, SAND & STONE FILL	P 0.90	FOR 0.05" PENETRATION				66
2.00	1.10		VERY HARD DENSE GREEN SCHIST.	P 2.00	NO PENETRATION				40
			CHISELLING 3 HRS.						
			WATER AT 0.70 — COULD BE FROM ADJACENT TAP						
			STRONG DIESEL SMELL FROM GROUND. BH CLOSE TO DISUSED FUEL TANK.						

Water Struck at ..... Standing Water Level .....



Rallt Newydd A5



INFORMATION FROM THE EX GARAGE OWNER, IS THAT THE GROUND HAD TO BE BLASTED, TO EXCAVATE FOR THE FUEL TANKS.

Paul Havard Drilling Limited

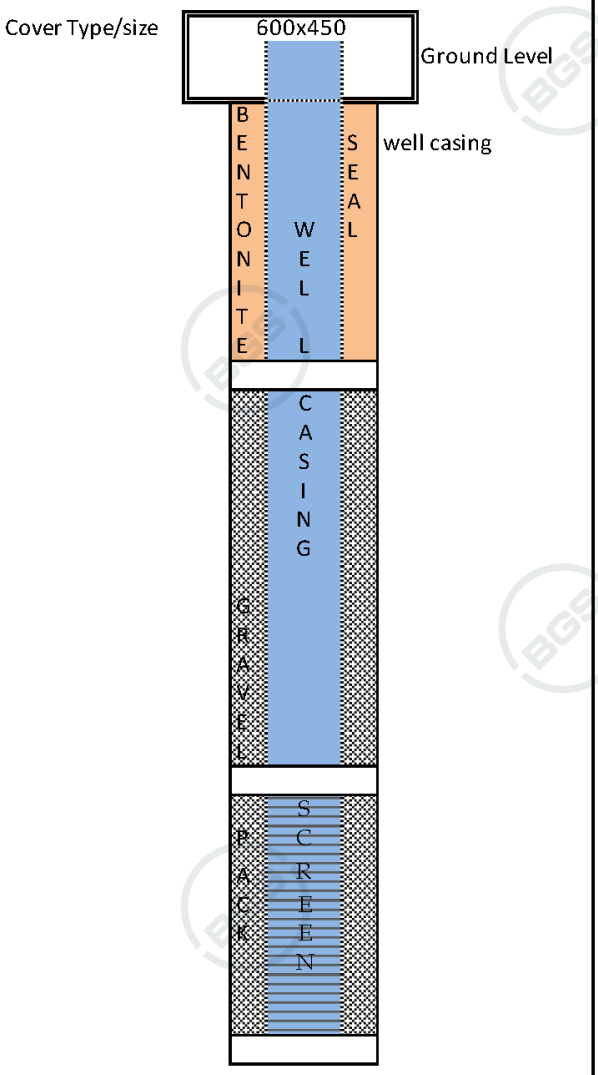
Refail Crecrist
Rhoscolyn
Anglesey LL65 2EJ

www.phdrilling.co.uk
phdrilling@icloud.com
Tel 01407 860186

Site Name	Tyn Llan
Town/village	Caergeiliog
Bh No	1
NGR	SH29604 77854

Date	24/06/2024	Start of day	Depth to Base Mtrs
		Hole depth	0.00
Description of strata		Water level	
Grey rock fill			0.50
Weak brown weathered clayey shale			0.90
Weak light brown shale			3.80
Light grey moderately strong psammite and green mica Schist			
		End of days drilling	78.00
Water Observations		End of days water Level	60.00
Water struck	4.50	Flow Rate	Very small
Sealed Off			
Water struck	67.00		Med
Sealed Off		Casing Depth	
Flush Medium	Method	Bit Type	Diameter
Air	Dth	Button	191
Casing dia		Casing depth	
220		4.50	

Installations Details



Remarks
Small seepages of water through out the borehole

Bore Hole Pump Details	
Make	
Model	
Date Installed	
Serial No	

Driller: Thomas Havard

Paul Havard Drilling Limited

Refail Crecrist
Rhoscolyn
Anglesey LL65 2EJ

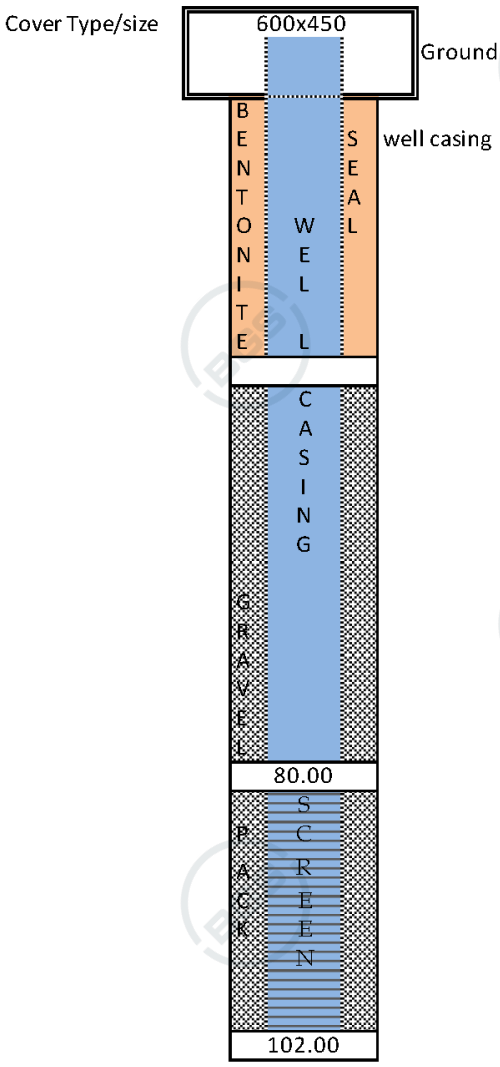
www.phdrilling.co.uk
phdrilling@icloud.com
Tel 01407 860186

Site Name	Tyn Llan
Town/village	Caergeiliog
Bh No	1
NGR	SH29604 77854

Date	25/06/2024	Start of day	Depth to Base Mtrs
		Hole depth	78.00
Description of strata		Water level	30.00
Light grey moderately strong psammite and green mica Schist			
lower drill rods into borehole to perform test 45mins			
Permeability test 1.15 hours			
Remove drill rods after test 45 min			
Total time 2.75 hours			
		End of days drilling	102.00
Water Observations		End of days water Level	60.00

Water struck	96.00	Flow Rate	med
Sealed Off			
Water struck			
Sealed Off		Casing Depth	
Flush Medium	Method	Bit Type	Diameter
Air	Dth	Button	191
Casing Dia		Casing depth	
220		4.50	

Installations Details



Remarks

Small seepages of water through out the borehole

Well liner lowered in to the base, gravel pack needs installing

Driller	Thomas Havard

Bore Hole Pump Details

Make	
Model	
Date Installed	
Serial No	

Paul Havard Drilling Limited

Refail Crecrist
Rhoscolyn
Anglesey LL65 2EJ

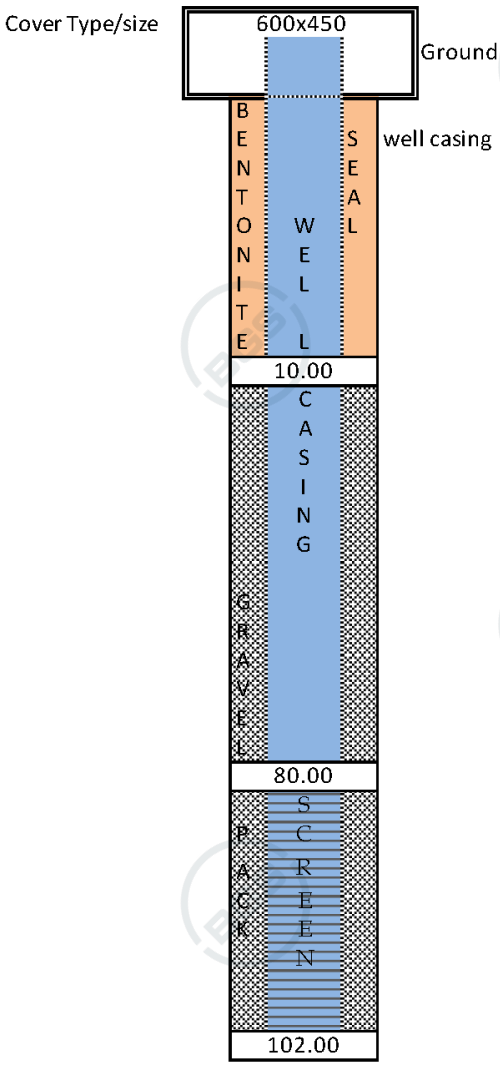
www.phdrilling.co.uk
phdrilling@icloud.com
Tel 01407 860186

Site Name	Tyn Llan
Town/village	Caergeiliog
Bh No	1
NGR	SH29604 77854

Date	26/06/2024	Start of day	Depth to Base Mtrs
		Hole depth	102.00
Description of strata		Water level	30.00
Light grey moderately strong psammite and green mica Schist			
Gravel pack installed and air lifted for 2.5 hours			
bentonite and cement grout seal GL to 10.00			
32mm Mdpe pipe inside liner to the base			
		End of days drilling	102.00
Water Observations		End of days water Level	

Water struck		Flow Rate	
Sealed Off			
Water struck			
Sealed Off		Casing Depth	
Flush Medium	Method	Bit Type	Diameter
Casing Dia		Casing depth	
220		4.50	

Installations Details



Remarks	Bore Hole Pump Details	
	Make	
	Model	
	Date Installed	
	Serial No	
Driller: Thomas Havard		

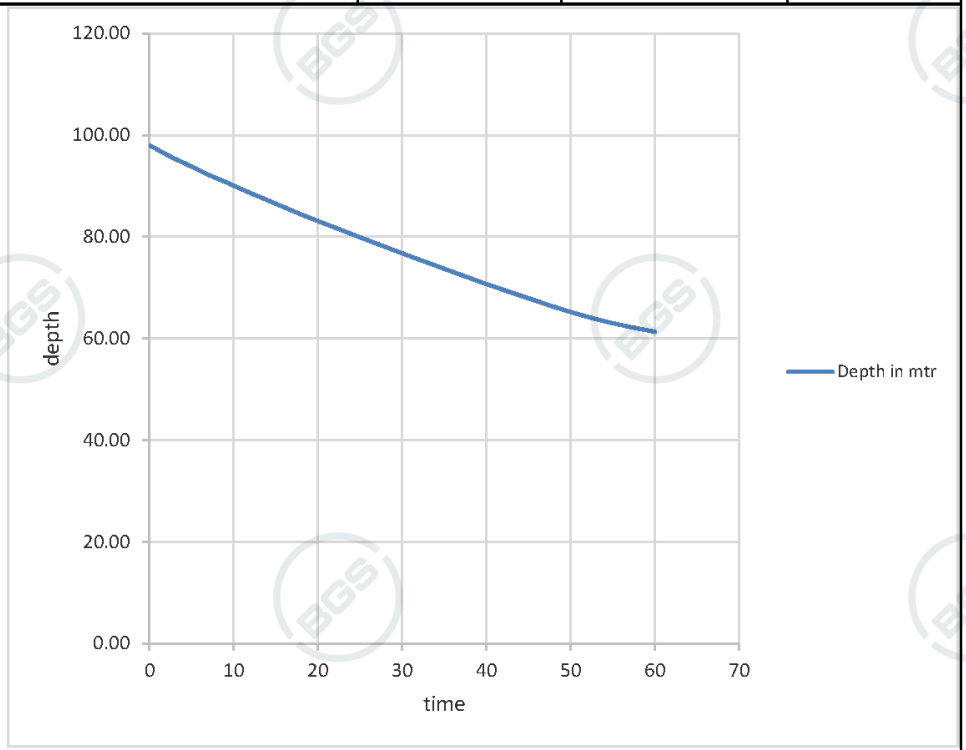
Paul Havard Drilling Limited
Refail Crecrist
Rhoscolyn
Anglesey LL65 2EJ

www.phdrilling.uk
phdrilling@icloud.co
Tel 01407 860186

Site Name	Ty Llan
Town/village	Valley
Bh No	1

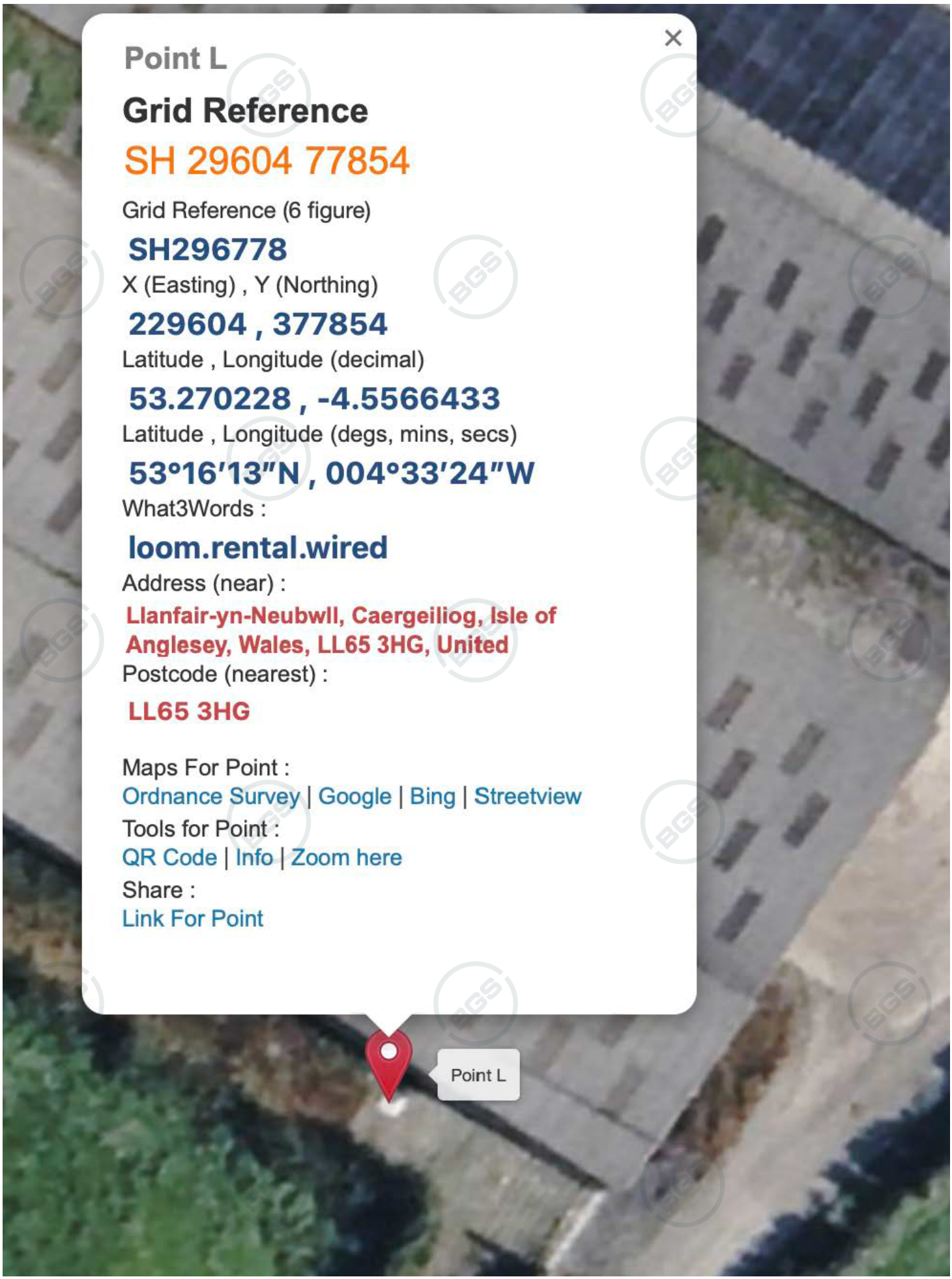
permeability test		BH Diameter cm	19	ltr per mtr	28.4
Date	25/06/2024	BH Depth	102	BH volume	2892.0

Time in mins	Depth in mtr	Ingress Liters
0	98.00	25.5
1	97.10	25.5
2	96.20	25.5
3	95.35	24.1
4	94.60	21.3
5	93.80	22.7
6	93.00	22.7
7	92.20	22.7
8	91.50	19.8
9	90.80	19.8
10	90.05	21.3
11	89.30	21.3
12	88.60	19.8
13	87.90	19.8
14	87.20	19.8
15	86.50	19.8
16	85.80	19.8
17	85.10	19.8
18	84.40	19.8
19	83.75	18.4
20	83.10	18.4
25	79.90	90.7
30	76.75	89.3
35	73.70	86.5
40	70.70	85.1
45	67.90	79.4
50	65.20	76.6
55	63.00	62.4
60	61.30	48.2



Notes

All measurement taken 1 Metre above ground level


Point L
Grid Reference
SH 29604 77854
Grid Reference (6 figure)
SH296778
X (Easting) , Y (Northing)
229604 , 377854
Latitude , Longitude (decimal)
53.270228 , -4.5566433
Latitude , Longitude (degs, mins, secs)
53°16′13″N , 004°33′24″W
What3Words :
loom.rental.wired
Address (near) :
Llanfair-yn-Neubwll, Caergeiliog, Isle of Anglesey, Wales, LL65 3HG, United
Postcode (nearest) :
LL65 3HG
Maps For Point :
Ordnance Survey | Google | Bing | Streetview
Tools for Point :
QR Code | Info | Zoom here
Share :
Link For Point
Point L

L.1.TIF

LONDON MIDLAND AND SCOTTISH RAILWAY COMPANY.

E.R.O. 41586

Telephone : 304
Extension 31.

Telegrams :
Marine LMS Holyhead

Marine Supt. & Harbourmaster,
Captain K. N. MACKENZIE

MARINE DEPARTMENT,

HOLYHEAD,

In your reply please quote this reference

C.D. El. 3/L.

YOUR REFERENCE

18th September, 1942

SH28/1

E.F. Dunt, Esq.,
Richard Jones Hall,
University College,
Bangor.

Dear Sir, GLAN Y GORS. BORE HOLE.

With reference to your letter of the 26th ultimo. The bore hole in question is the property of the L.M.S. Railway company, but the water from same has not been used during the past four years for drinking purposes, on instructions from the Company's Chemist.

I have marked on the tracing the site of the bore hole in question and the additional information you require is as follows

(2) Yield is 1200 gallons per hour.
(3) Level of water below well top when not pumping 4' 0".
(4) Level of water below well top when pumping 25' 0".

Yours faithfully,
for [illegible]

SH 28/1

(III) (*a*) Have measurements been made from which the data for levels can be converted to records of discharge of :—

(1) rivers and streams ... ...

(2) reservoirs ... ...

(3) lakes ... ...

(4) canals or navigable waterways ... ...

(*b*) If so, how have these measurements been made (*e.g.*, by current meters, velocities of floats, surveys of sections, calibration of weirs, records of water used for locking, etc.)?

(IV) (*a*) Are records kept in the case of springs breaking overground of the amount of water yielded?

(*b*) If so, what form of recording is used?

(*c*) How often are readings taken?

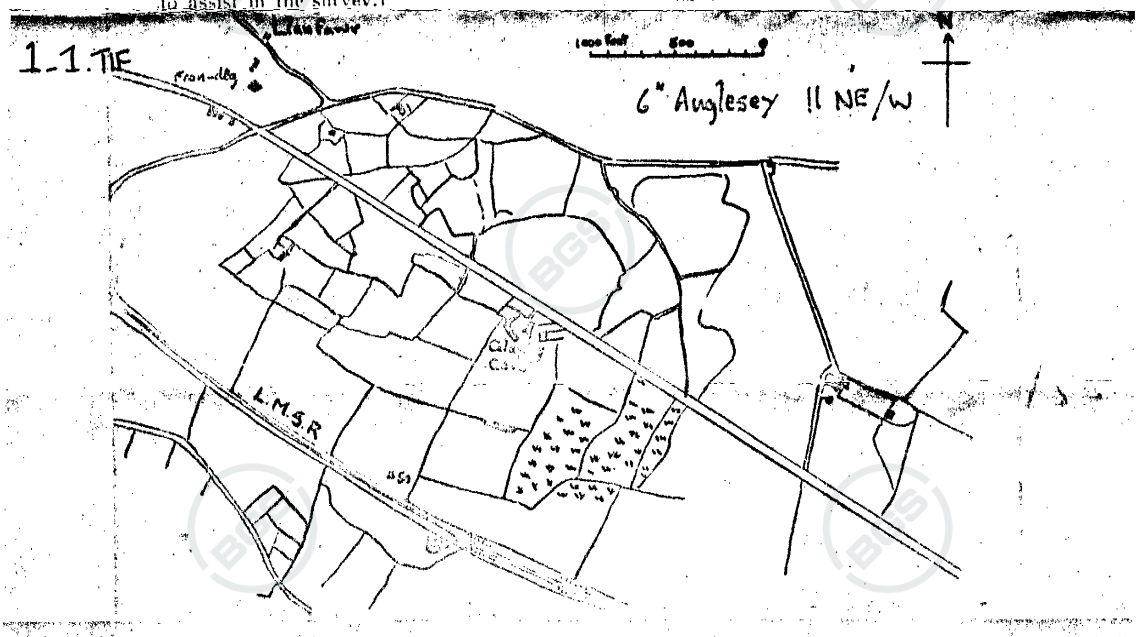
(*d*) Exact location of the spring. (A map or sketch would be helpful.)

(V) Since when have the records under I, II, III and IV been kept?

(VI) Are past records available?

(VII) REMARKS.

(Please indicate here any further information or particulars which may be thought likely to assist in the survey.)



1-2.TIF

SH 2609 8121

SH 28/1.

II. If systematic measurements of water levels are made, state whether these include :—

(a) Pumping levels 25' Below water (b) Rest levels ... ... 4' Below water

(c) Time of recovery to rest level on cessation of pumping ... ...

(d) Changes in pumping level, if rate of pumping is altered. ... ...

Also state : (e) at what intervals records are taken (i.e., daily, weekly, etc.) ... ... Occasionally

Please furnish a specimen graph of records taken over as long a period as available (up to 1 year).

III. If measurements are made only occasionally, please indicate what is, or has been, done in this respect and furnish examples of any graphs or figures available.

IV. YIELDS.

(1) Number of gallons pumped per hour 1300

(2) Is pumping continuous? ... ... No

(3) If not, how many hours pumping per day? 12

(4) Maximum daily yields available ... ...

Estimated ... ... 31,200 galls

Based on actual tests .....

V. If a section or record of strata can be given please attach to this form.

VI. (1) If a chemical analysis can be given, please attach.

(2) If not state hardness ... ...

(3) For what purpose is the water used? ... ... Domestic

1_3.TIF

(B) UNDERGROUND WATER—(WELLS AND BORINGS).

(In each case please state whether a well and/or boring is in question.)

SH28/13

I. General.

Glan y Cors (see 6" Anglesey IINE/w). Water Dept.

1. Exact site of well or boring ... ...
(A map or sketch showing position would be useful.)

2. Surface level of ground above Ordnance Datum ... ... ft.

3. Date of construction ... ... 1903.

Wells.

4. Depth of well from surface level of ground (*i.e.*, 2 above). If top of well is below the surface level of the ground (*i.e.*, 2 above) state how much ... ... ft.

5. Depth of floor of galleries at site of well: also dimension and direction of galleries ... ... ft.

Borings.

6. Depth of boring from surface level of ground (*i.e.*, 2 above). If boring is in bottom of well, state depth of well ... ... 30 ft.

7. (*a*) Diameter of top of boring ... ... 10 in.

(*b*) Diameter of bottom of boring... ... ... 10 in.

8. Tubed from top of boring to ... ... 30 ft.

9. Lining tubes perforated at depths of ... ... 26' 6" & 30' 0" ft.

10. Water struck during boring at depths of ... ... ft.

11. What was rest level on completion of boring? ... ... 2' 10"

Wells and Borings.

12. Is the water raised by pump or air lift? ... ... Pump

13. Depth from top of well or boring to bottom of suction pipe ... 30 ft.

SH 2609 8121

SH28/1

Inland Water Survey for Great Britain.

Name or Description of Authority or Undertaking..... L & N.E.R. Rly.

Postal Address..... Holyhead Station

.....

.....

(A) OVER-GROUND WATER.

(I) (a) Do you take systematic records of levels of water in :—

(1) rivers ... ...

(2) streams ... ...

(3) reservoirs ... ...

(4) lakes ... ...

(5) canals or navigable rivers ... ...

(b) If so, please give a short description of the method used.

(c) How often are the readings taken?

(d) Exact points at which the records are taken. (A map or sketch would be helpful.)

(e) Have the levels been related to Ordnance Datum Level or to some other standard (in the latter case please specify standard)?

(f) Are all the levels (*e.g.*, highest and lowest) covered satisfactorily by the records taken?

(g) Are arrangements made for extra readings during rise and fall of floods, etc.?

(II) What types of systematic records of discharge other than records of levels are kept as regards :—

(1) rivers ... ...

(2) streams ... ...

(3) reservoirs ... ...

(4) lakes ... ...

(5) canals or navigable waterways ... ...

CC Ground Investigations Ltd

ROTARY BOREHOLE LOG

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Borehole No. **BH01**

Sheet 1 of 2

Project Name: Penrhos 132 kV Substation	Project No: **C7957**	Co-ords: E 226860 N 380708	Hole Type DS+RC
Location: Anglesey		Level: 8.03mAOD	Scale 1 : 50.00
Client: WSP UK LTD		Dates: Start: 24/04/2023 End: 25/04/2023	Logged By SPM

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
		B D	0.20 - 0.40 0.20					MADE GROUND: Grey sub-angular fine to coarse GRAVEL of igneous material.	0.20	7.83	
		B D	0.50 - 0.70 0.50					MADE GROUND: Grey very sandy silty angular to sub-angular fine to coarse GRAVEL of igneous material and concrete.	(0.40) 0.60	7.43	
1		B D	1.00 - 1.20 1.00					Firm brown mottled grey sandy CLAY.	(0.90)		1
	1	SPT	1.50 - 1.95	S 24				Bluish grey gravelly SILT with low cobble content. Gravel is angular to sub-angular fine to medium lithorelicts of schist. Cobbles are sub-angular of schist.	1.50	6.53	
2		D	2.00								2
	1	SPT	2.50 - 2.95	S 17					(2.00)		
3		D	3.00								3
		B C SPT	3.50 - 4.75 3.50 - 4.40 3.50 - 3.91	S*58	C	83% 0% 0%		Very dense slightly sandy silty angular to sub-angular fine to coarse GRAVEL lithorelicts of schist.	3.50 (0.50)	4.53	
4								4.00-4.40m: Non-intact. Recovered as angular to sub-angular fine to coarse gravel.	4.00	4.03	4
		C SPT C	4.40 - 5.40 4.40 - 4.55	C*500	C	100% 68%		Moderately weak foliated greenish grey micaceous crystalline SCHIST. Discontinuities are sub-horiontal to sub-vertical (10-70°) very closely to closely spaced stepped rough with orangish brown staining and occasionally infilled with orangish brown slightly gravelly silt.			
		CS	4.74 - 4.98		C	19%					
5											5
		CS C SPT C	5.31 - 5.40 5.40 - 6.90 5.40 - 5.55	C*375	C	100% 48% 9%		4.68m: Discontinuities are sub-horizontal (30°) clean. 4.80m: Discontinuities are sub-horizontal (10°) infilled. 4.98m: Discontinuities are sub-horizontal (30°) clean. 5.06m: Discontinuities are sub-horizontal (10°) clean. 5.12m: Discontinuities are sub-horizontal (10°) clean. 5.14m: Insipient discontinuity. 5.15m: Discontinuities are sub-horizonal (10°) planar smooth with orangish brown staining.			
6		CS	6.35 - 6.50		C			5.23m: Discontinuities are sub-horizonal (10°) stepped rough with heavy orangish brown staining. 5.26m: Discontinuities are sub-horizonal (20°) planar smooth with orangish brown staining. 5.40-6.90m: Very closely spaced discontinuties. 5.60m: Tabular incluion of quartz (50mm). 5.80m: Discontinuities are sub-horizonal (11°) planar smooth with light orangish brown staining. 6.54m: Discontinuities are sub-horizonal (15°) undulating rough with heavy orangish brown staining. 6.72m: Discontinuities are sub-horizonal (35°) planar smooth with orangish brown staining.	(4.40)		6
7		C SPT C	6.90 - 8.40 6.90 - 6.99	C*375	C	99% 87% 22%					7
8											8

EQUIPMENT: Hand digging tools. Fraste Multi-drill PL(G) track mounted rig.
METHOD: Hand dug inspection pit: 0.00-1.50m. Dynamic sampling using a 113mm sample barrel: 1.50-3.50m. Waterflush rotary coring using T6-116 coring barrel: 3.50-8.40m.
CASING: PW to 3.50m.
GROUNDWATER: Groundwater encountered in run at 2.50m-3.50m, settled at 1.86m following 20 minutes monitoring.
INSTALLATION: Bentonite pellet seal: 4.50-8.40m. 50mm ID HDPE slotted pipe with washed gravel response zone: 1.50-4.50m. 50mm ID HDPE plain pipe with wash gravel response zone: 1.40-1.50m. 50mm ID HDPE plain pipe with bentonite pellet seal: 0.50-1.40m. 50mm ID HDPE plain pipe with wash gravel response zone: 0.30-0.50m. Flush 150mm steel cover set in concrete: 0.00-0.30m. Gas valve fitted.
REMARKS: 4.40m-8.40m 70% flush returns

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
24/04/23	2.50		1.86

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
24/04/2023 17:00	4.40	3.50	1.79
25/04/2023 08:00	4.40	3.50	1.76

CC Ground Investigations Ltd

ROTARY BOREHOLE LOG

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Borehole No. **BH01**

Sheet 2 of 2

Project Name: Penrhos 132 kV Substation	Project No: **C7957**	Co-ords: E 226860 N 380708	Hole Type DS+RC
Location: Anglesey		Level: 8.03mAOD	Scale 1 : 50.00
Client: WSP UK LTD		Dates: Start: 24/04/2023 End: 25/04/2023	Logged By SPM

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
								6.82m: Quartz vein. 7.12m: Discontinuities are sub-horizonal (5°) planar smooth with orangish brown staining. 7.20m: Quartz vein (35mm). 7.24m: Discontinuities are sub-horizonal (30°) undulating smooth with orangish brown silty infill. 7.30m: Quartz vein. 7.36m: Discontinuities are sub-horizonal (5°) with silty orangish brown staining. 7.39m: Discontinuities are sub-horizonal (5°) undulating smooth with orangish brown staining. 7.53m: Discontinuities are sub-horizonal (20°) planar smooth. 7.58m: Discontinuities are horizonal with purplish brown silty infill. 7.69m: Discontinuities are horizonal planar smooth and clean. 7.70-7.76m: Insipient discontinuties are sub-horizonal (45°). Incipient fracture. 7.77-7.89m: Multicolour silty angular to sub-angular fine to coarse gravel of schist, quartz and mica. 8.00m: Discontinuities are sub-horizonal (45°) undulating smooth with orangish brown and clean. 8.28m: Discontinuities are sub-horizonal (45°) stepped rough and clean. Borehole completed at 8.40m	8.40	-0.37	

9 10 11 12 13 14 15 16 17

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
25/04/2023 11:00	8.40	3.50	

CC Ground Investigations Ltd

ROTARY BOREHOLE LOG

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Borehole No. **BH02**

Sheet 1 of 2

Project Name: Penrhos 132 kV Substation	Project No: **C7957**	Co-ords: E 226863 N 380662	Hole Type RC
Location: Anglesey		Level: 8.01mAOD	Scale 1 : 50.00
Client: WSP UK LTD		Dates: Start: 26/04/2023 End: 27/04/2023	Logged By SPM

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
		B	0.20 - 0.40					MADE GROUND: Grey silty angular to coarse GRAVEL of igneous material.	0.20	7.81	
		B	0.30 - 0.50					Greenish grey slightly clayey silty sandy angular to sub-angular fine to coarse GRAVEL lithorelicts of schist.			
1		B	1.00 - 1.20						(1.60)		1
		B	1.40 - 1.80	C*83				1.40m: Very dense.			
		SPT C	1.40 - 1.73								
		C	1.80 - 3.30		C	100% 65% 18%		Moderately weak to strong foliated fine grained greenish grey crystalline micaceous SCHIST. Discontinuities are sub-horizontal (5-10°) very close to closely spaced planar and undulating smooth with orangish brown staining.	1.80	6.21	
2								1.80-2.00m: Recovered as angular fine to coarse gravel.			2
								2.00-2.10m: Non-intact.			
								2.27m: Discontinuities are sub-horizontal (45°) planar smooth with orangish brown staining. Clean.			
3								2.52m: Discontinuities are sub-horizontal (5°) undulating smooth with orangish brown staining.			3
		C	3.30 - 4.80		C	100% 78% 30%		2.60-2.71m: Discontinuities are sub-horizontal (45°) undulating smooth with orangish brown staining.			
		CS	3.70 - 3.82					2.80-3.00m: 6No 0°-5° Discontinuities with orangish brown staining. Silty.			
4								3.10-3.30m: Non-intact.			4
								3.50-3.66m: Non-intact.			
		CS	4.21 - 4.44		C			4.17m: Discontinuities are sub-horizontal (20°) planar smooth with orangish brown staining. Clean.			
								4.45m: Discontinuities are sub-horizontal (30°) orangish brown staining. Infilled with silty angular fine to medium gravel.	(6.00)		
		C	4.80 - 6.30		C	100% 45% 21%		4.80-5.46m: Non-intact, intersecting sub-horizontal to sub-vertical Discontinuities.			
5											5
		CS	5.50 - 5.70								
								5.71-5.80m: Discontinuities are sub-horizontal (45°) undulating smooth with orangish brown staining. Silty.			
6											6
		C	6.30 - 7.80		C	100% 69% 54%		6.33-6.46m: Discontinuities are sub-horizontal (45°) undulating smooth with orangish brown staining. Silty.			
		CS	6.72 - 7.13					6.71m: Discontinuities are sub-horizontal (25°) undulating smooth with orangish brown staining.			
7								6.81-7.06m: Discontinuities are sub-horizontal (45°). Insipient infilled with quartz.			7
								7.13m: Discontinuities are sub-horizontal (25°) planar smooth with orangish brown staining.			
		CS	7.57 - 7.80		C			7.15-7.21m: Discontinuities are sub-horizontal (60°) with orangish brown staining.	7.80	0.21	
8								7.35-7.44m: Discontinuities are sub-rounded 90° with			8

EQUIPMENT: Hand digging tools. Fraste Multi-drill PL(G) track mounted rig.
METHOD: Hand dug inspection pit: 0.00-1.20m. Waterflush rotary coring using T6-116 coring barrel: 1.20-7.80m.
CASING: PW to 1.80m.
GROUNDWATER: None encountered prior to using water flush.
INSTALLATION: Bentonite pellet seal: 5.00-7.80m. 50mm ID HDPE slotted pipe with washed gravel response zone: 2.00-5.00m. 50mm ID HDPE plain pipe with wash gravel response zone: 1.90-2.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 0.40-1.90m. 50mm ID HDPE plain pipe with wash gravel response zone: 0.25-0.40m. Flush 150mm steel cover set in concrete: 0.00-0.25m. Gas valve fitted.
REMARKS:1.80m-7.80m. Borehole installed 27/04/2023. 80-100% flush returns.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
26/04/2023 17:45	7.80	1.80	
27/04/2023 08:00	7.80	1.80	1.24
27/04/2023 10:00	7.80	1.80	

CC Ground Investigations Ltd

ROTARY BOREHOLE LOG

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Borehole No. **BH02**

Sheet 2 of 2

Project Name: Penrhos 132 kV Substation	Project No: **C7957**	Co-ords: E 226863 N 380662	Hole Type RC
Location: Anglesey		Level: 8.01mAOD	Scale 1 : 50.00
Client: WSP UK LTD		Dates: Start: 26/04/2023 End: 27/04/2023	Logged By SPM

(m)	Water Levels	Core Run, Samples & Testing			Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
		No/Type	Depth (m)	Result				orangish brown staining.			
								Borehole completed at 7.80m			

9 10 11 12 13 14 15 16 17

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)

CC ROTARY LOG C7957.GPJ CCGI GINT STD AGS 4_0.GDT 14/7/23 EW

CC Ground Investigations Ltd

ROTARY BOREHOLE LOG

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Borehole No. **BH03**

Sheet 1 of 1

Project Name: Penrhos 132 kV Substation	Project No: **C7957**	Co-ords: E 226881 N 380678	Hole Type DS+RC
Location: Anglesey		Level: 8.00mAOD	Scale 1 : 50.00
Client: WSP UK LTD		Dates: Start: 25/04/2023 End: 26/04/2023	Logged By SPM

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
		B D	0.00 - 0.30 0.20					MADE GROUND: Grey silty angular to sub-angular medium to coarse GRAVEL of igneous material.	0.10	7.90	
		B D	0.50 - 0.70 0.50					MADE GROUND: Greyish brown gravelly silty SAND. Gravel is angular to sub-angular of igneous material.	0.40	7.60	
1		B D	1.00 - 1.20 1.00					Brown slightly clayey silty sandy sub-angular to sub-rounded fine to medium GRAVEL lithorelicts of schist.	(1.15)		1
		SPT	1.50 - 1.95	S 22				Greenish grey gravelly SILT. Gravel is angular to sub-angular fine to medium of schist lithorelicts.	1.55	6.45	
2		D	2.00						(0.85)		2
		C SPT C	2.40 - 3.40 2.40 - 2.48	C*375		100% 35% 0%		Moderately weak foliated greenish grey micaceous SCHIST. Discontinuities are sub-horizontal very close to closely spaced planar and undulating smooth with occasional orangish brown staining.	2.40	5.60	
3		CS	3.10 - 3.25		C			2.40-2.50m:recovered as angular to sub-angular fine to coarse gravel.			3
		C	3.40 - 4.50		C	82% 27% 0%		2.60m: Discontinuities are sub-horizontal (5°) stepped rough and clean.			
4					C			2.85m: Discontinuities are sub-horizontal (25°) with orangish brown staining.			4
								3.13m: Discontinuities are sub-horizontal (45°) undulating smooth and clean.			
								3.25-3.34m: 4No sub-horizontal (45°) discontinuity and 2no 75° discontinuity planar rough with quartz infill.			
		C	4.50 - 6.00			100% 37% 16%		3.40-4.50m: Recovered as silty sub-angular to sub-rounded cobbles and gravels.			
		CS	4.80 - 4.95		C			4.60m: Discontinuities are sub-horizontal (5°) planar smooth and clean with orangish brown staining.			
5								4.70m: Discontinuities are sub-horizontal (5°) planar smooth and clean with orangish brown staining.	(5.10)		5
								4.80m: Discontinuities are sub-horizontal (25°) undulating smooth and clean with orangish brown staining.			
								5.10-5.36m: Non-intact quartzite.			
								5.36-5.48m: 2No 70° insipient discontinuity infilled with quartz.			
6		C	6.00 - 7.50			73% 61% 40%		5.55-5.70m: Discontinuities are sub-horizontal (45°) undulating smooth and silty with orangish brown staining.			6
								5.71-5.82m: Discontinuities are sub-horizontal (45°) planar smooth with orangish brown staining.			
		CS	6.55 - 6.94		C			5.85-5.94m: Discontinuities are sub-horizontal (45°) undulating smooth with orangish brown staining.			
7								6.10m: Discontinuities are sub-horizontal (20°) planar smooth with orangish brown staining.			7
								6.21m: Discontinuities are sub-horizontal (5°) planar smooth with orangish brown staining.			
								6.50-6.56m: Quartz vein.			
								Borehole completed at 7.50m	7.50	0.50	
8											8

EQUIPMENT: Hand digging tools. Fraste Multi-drill PL(G) track mounted rig.
METHOD: Hand dug inspection pit: 0.00-1.50m. Dynamic sampling using a 113mm sample barrel: 1.50-2.40m. Waterflush rotary coring using T6-116 coring barrel: 2.40-7.50m.
CASING: PW to 2.40m.
GROUNDWATER: None encountered prior to using water flush.
INSTALLATION: Bentonite pellet seal: 3.50-7.50m. 50mm ID HDPE slotted pipe with washed gravel response zone: 1.00-3.50m. 50mm ID HDPE plain pipe with wash gravel response zone: 0.90-1.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 0.35-0.90m. 50mm ID HDPE plain pipe with wash gravel response zone: 0.25-0.35m. Flush 150mm steel cover set in concrete: 0.00-0.25m. Gas valve fitted.
REMARKS: Dropped core in run 6.00-7.50m, 0.40m lost.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
25/04/2023 17:00	6.00	2.40	1.80
26/04/2023 08:00	6.00	2.40	1.74
26/04/2023 11:00	7.50	2.40	

CC Ground Investigations Ltd

ROTARY BOREHOLE LOG

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Borehole No. **BH04**

Sheet 1 of 2

Project Name: Penrhos 132 kV Substation	Project No: **C7957**	Co-ords: E 226842 N 380647	Hole Type RC
Location: Anglesey		Level: 7.98mAOD	Scale 1 : 50.00
Client: WSP UK LTD		Dates: Start: 27/04/2023 End: 27/04/2023	Logged By SPM

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
								MADE GROUND: Grey silty angular to sub-angular coarse GRAVEL of igneous material.	0.20	7.78	
		B	0.50 - 0.70					Greenish grey silty sandy angular to sub-angular fine to coarse GRAVEL lithorelicts of schist.			
		B	0.70 - 1.30								
1									(2.00)		1
		C	1.30 - 2.20	C 48		100% 0% 0%		1.30m: Dense			
		SPT C	1.30 - 1.75		C			1.70-1.90m: Greyish green gravelly silt. Gravel is angular to sub-angular fine of lithorelicts of schist.			
2									2.20	5.78	2
		C	2.20 - 3.20	C*500		100% 10% 0%		Moderately weak foliated greenish grey foliated micaceous SCHIST. Discontinuities are sub-horizontal to sub-vertical (5-90°) very close to closely spaced planar and undulating smooth with silty micaceous infill and orangish brown staining.			
		SPT C	2.20 - 2.33		C			2.20-2.90m: Non-intact intersecting fractures.			
3											3
		C	3.20 - 4.40			100% 46% 13%		3.50-3.60m: 1No 45° discontinuity with orangish brown staining and infill with angular to sub-angular fine to medium gravel of schist and quartz.			
4		CS	3.93 - 4.09		C			3.74m: Discontinuities are sub-horizontal (5°) undulating smooth with orangish brown staining.			4
		C	4.40 - 5.90			100% 45% 21%		3.83m: Discontinuities are sub-horizontal (5°) undulating smooth with orangish brown staining.			
								3.97m: Discontinuities are sub-horizontal (5°) undulating smooth with orangish brown staining.			
5		CS	4.98 - 5.26					4.11m: Discontinuities are sub-horizontal (20°) planar smooth with orangish brown staining. Silty.	(5.30)		5
		CS	5.26 - 5.36		C			4.48-4.80m: 2No discontinuity undulating and planar rough with orangish brown staining.			
								4.91m: Discontinuities are sub-horizontal (45°) with orangish brown staining.			
								5.20m: Drilling induced discontinuity sub-horizontal (20°) planar rough.			
6		C	5.90 - 7.50			62% 16% 5%		5.30m: Drilling induced discontinuity sub-horizontal (20°) planar rough.			6
								5.41-5.905.20m: Discontinuities are sub-horizontal (70°) undulating smooth with orangish brown staining.			
		CS	6.37 - 6.51		C			5.90-6.23m: Non-intact randomly intersecting.			
								6.24m: Discontinuities are sub-horizontal (5°) planar smooth with orangish brown staining.			
7								6.34m: Discontinuities are sub-horizontal (25°) planar rough (drilling induced).			7
								6.50m: Discontinuities are sub-horizontal (10°) undulating rough with orangish brown staining.			
								6.57-6.76m: Discontinuities are vertical 90° undulating rough with orangish brown staining. Silty.	7.50	0.48	
								6.82-7.10m: Intersecting discontinuities 5°-70° non-intact.			
8								7.10-7.50m: Undulating smooth with orangish brown			8

EQUIPMENT: Hand digging tools. Fraste Multi-drill PL(G) track mounted rig.
METHOD: Hand dug inspection pit: 0.00-1.30m. Waterflush rotary coring using T6-116 coring barrel: 1.30-7.50m.
CASING: PW to 1.75m.
GROUNDWATER: None encountered prior to using water flush.
INSTALLATION: Bentonite pellet seal: 3.00-7.50m. 50mm ID HDPE slotted pipe with washed gravel response zone: 1.00-3.00m. 50mm ID HDPE plain pipe with wash gravel response zone: 0.90-1.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 0.35-0.90m. 50mm ID HDPE plain pipe with wash gravel response zone: 0.25-0.35m. Flush 150mm steel cover set in concrete: 0.00-0.25m. Gas valve fitted.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
27/04/2023 17:45	7.50	1.75	

CC Ground Investigations Ltd

ROTARY BOREHOLE LOG

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Borehole No. **BH04**

Sheet 2 of 2

Project Name: Penrhos 132 kV Substation	Project No: **C7957**	Co-ords: E 226842 N 380647	Hole Type RC
Location: Anglesey		Level: 7.98mAOD	Scale 1 : 50.00
Client: WSP UK LTD		Dates: Start: 27/04/2023 End: 27/04/2023	Logged By SPM

(m)	Water Levels	Core Run, Samples & Testing			Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
		No/Type	Depth (m)	Result				staining.			
								Borehole completed at 7.50m			

9 10 11 12 13 14 15 16 17

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)