

Project	Global Centre of Rail Excellence Stage 2
Client	Walters UK Ltd
Project Number	G23012
Drawing Number	G23012-JGS-025
Scale	1:1000
Printed	13/07/2023 14:16



Legend Key

- Locations By Type - DS+RC
- Locations By Type - IP
- Locations By Type - IP+DS+RC
- Locations By Type - IP+DS+RO+RC
- Locations By Type - IP+RO+RC
- Locations By Type - IP+SNC
- Locations By Type - IP+WLS
- Locations By Type - RO
- Locations By Type - RO+DS+RC
- Locations By Type - RO+RC
- Locations By Type - SNC
- Locations By Type - SNC+RC
- Locations By Type - TP



Appendix II

Exploratory Hole Logs and In-situ Testing

SPT Hammer Calibration Certificate

Certificate Number: AR3829,

DART540 and TECAV1

Geotechnical Borehole Logs

S1-BH117 to S1-BH120, S2-BH201,

S2-BH203 to S2-BH214 (inc. S2-

BH203A), S2-BH216, S2-BH217, S2-

BH219 to S2-BH233, S2-BH235 to

S2-BH237, S2-BH239 to S2-BH250,

S2-BH252, S2-BH260, S2-BH260A,

and S2-BH261

Probing Borehole Logs

S2-BH253.1 to S2-BH253.25,

S2-BH254.1 to S2-BH254.25,

S2-BH255.1 to S2-BH255.26,

S2-BH255.46 to S2-BH255.49,

S2-BH255.77 to S2-BH255.80,

S2-BH256.1 to S2-BH256.13,

S2-BH256.26 to S2-BH256.30,

S2-BH257.1 to S2-BH257.5,

S2-BH257.8, S2-BH257.11,

S2-BH257.17, S2-BH257.23,

S2-BH257.55 to S2-BH257.57,

S2-BH257.92 to S2-BH257.6, S2-

BH258/1.1 to S2-BH258/1.5,

BH258/2.1 to S2-BH258/2.5,

BH258/3.1 to S2-BH258/3.5,

BH258/4.1 to S2-BH258/4.5,

Trial Pit Logs

BH258/5.1 to S2-BH258/5.5, S2-BH259.1 to S2-BH259.28
S2-TP201 to S2-TP210, S2-TP2100 to S2-TP21009, S2-TP211, S2-TP2110 to S2-TP2117, S2-TP212, S2-TP2122 to S2-TP2126, S2-TP213 to S2-TP220, S2-TP223 to S2-TP230, S2-TP235, S2-TP237 to S2-TP245, S2-TP250 to S2-TP252, S2-TP255, S2-TP256, S2-TP258 to S2-268, S2-TP270 to S2-TP273, S2-TP275 to S2-TP280, S2-TP282, S2-TP282, S2-TP284, S2-TP288, S2-TP289 (inc. S2-TP289B), S2-TP292, S2-TP294 (inc. S2-TP294A and S2-TP294B), S2-TP298 to S2-TP300
S2-WS01 to S2-WS07 (inc. S2-WS01b)
S2-TP201 Test 1, S2-TP204 Test 1, S2-TP205 Test 1, S2-TP239 Test 1, S2-TP259 Test 1 and S2-TP2117 Test 1

Dynamic Windowless Sampler Logs**Soil Soakaway Infiltration Test**

SPT Calibration Report

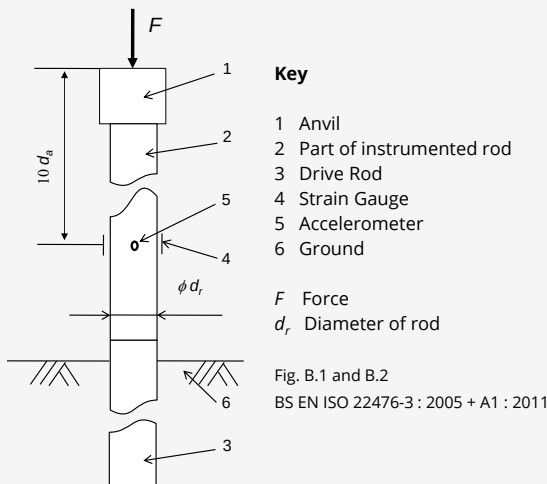
Hammer Energy Measurement Report

Type of Hammer SPT Hammer
Test No EQU2022_350
Client Jackson Drilling

Test Depth (m) 6.70
Mass of hammer $m = 63.5\text{kg}$
Falling height $h = 0.76\text{m}$
 $E_{\text{theor}} = m \times g \times h = 473\text{J}$

Characteristics of the instrumented rod

Diameter $d_r = 0.052\text{ m}$
Length of instrumented rod 0.558 m
Area $A = 11.61\text{ cm}^2$
Modulus $E_o = 206843\text{ MPa}$



DATE OF TEST VALID UNTIL HAMMER ID

22/12/2022	22/12/2023	AR3829
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$E_{\text{meas}} = 0.290\text{ kN-m}$

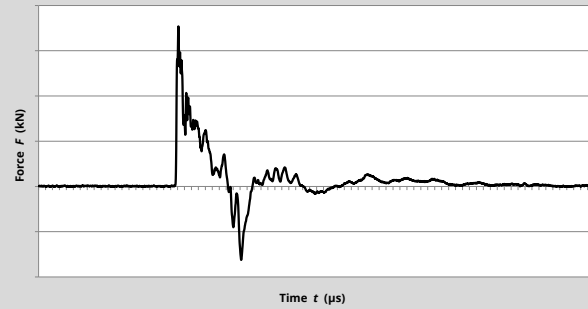
$E_{\text{theor}} = 0.473\text{ kN-m}$

Comments

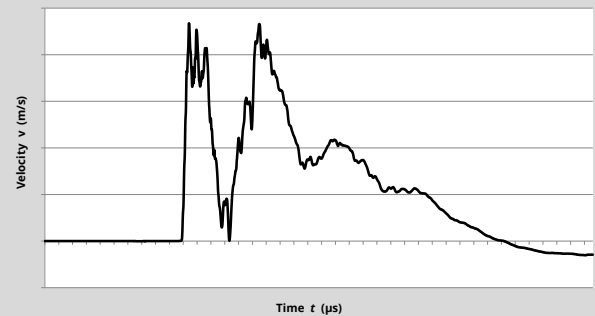
$$\text{Energy Ratio (Er)} = \frac{E_{\text{meas}}}{E_{\text{theor}}}$$

61.37%
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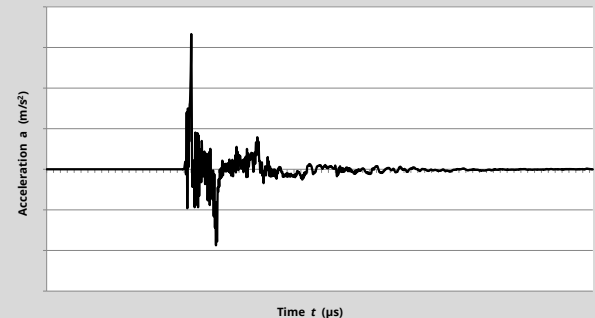
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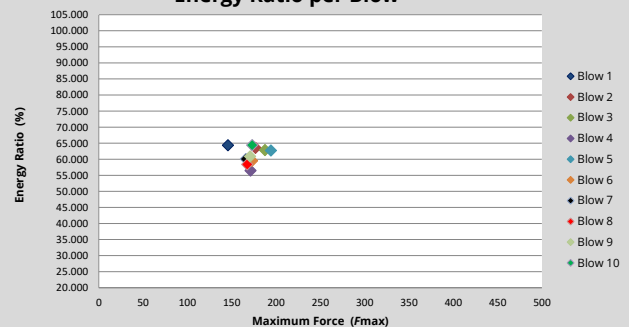
Particle Velocity



Acceleration



Energy Ratio per Blow



Equipe SPT Analyzer Operator

JL

Certificate prepared by

Signature

Certificate checked by

Signature

Certificate date

05/01/2023

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: DART540
Test Date: 24/01/2023
Report Date: 24/01/2023
File Name: DART540 .spt
Test Operator: JL

Instrumented Rod Data

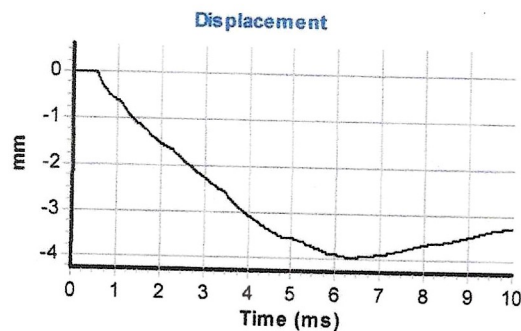
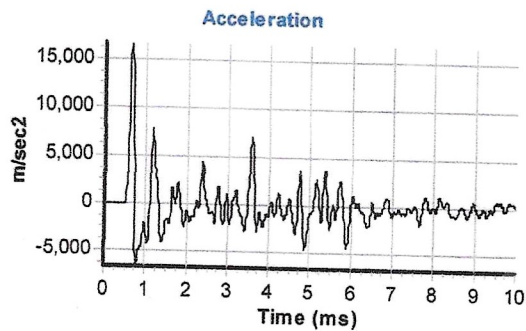
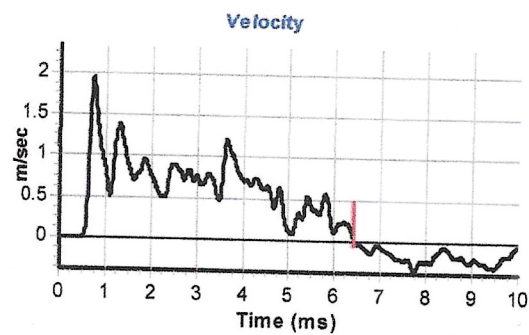
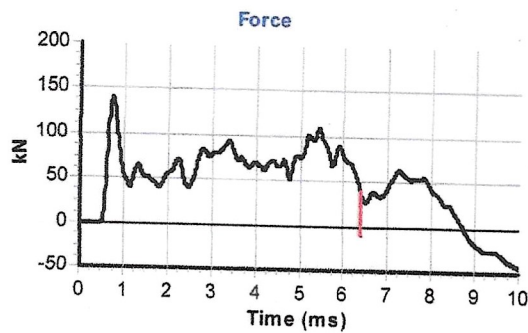
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_a (GPa): 200
Accelerometer No.1:
Accelerometer No.2:

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

SOUTH WALES GROUND TESTING LTD -
83118



Calculations

Area of Rod A (mm^2): 905
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 291

Energy Ratio E_r (%): **62**

Signed: C.McCLUSKEY

Title: FITTER

Dynamic Sampling Uk Ltd
Units 5-8 Victory Park
Victory Road
Derby
DE24 8ZF

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

SPT Hammer Ref: TECAV1
Test Date: 29/11/2022
Report Date: 29/11/2022
File Name: TECAV1.spt
Test Operator: B.HUNTER

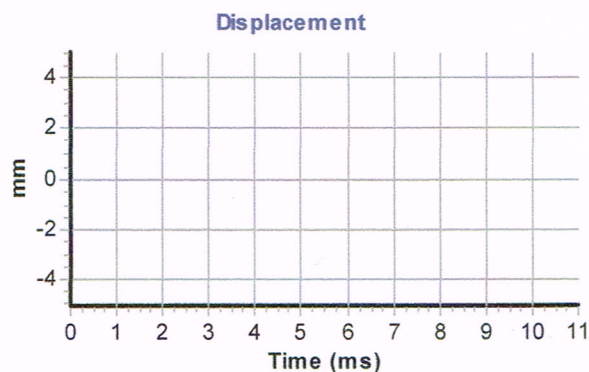
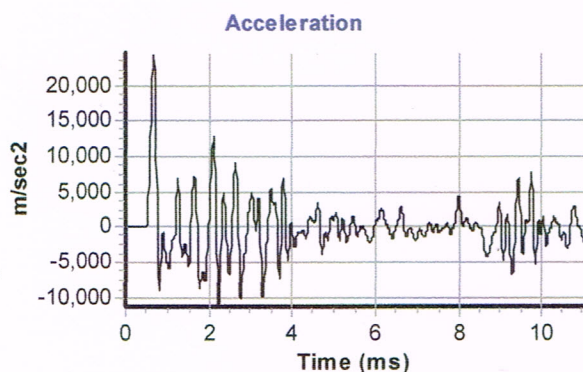
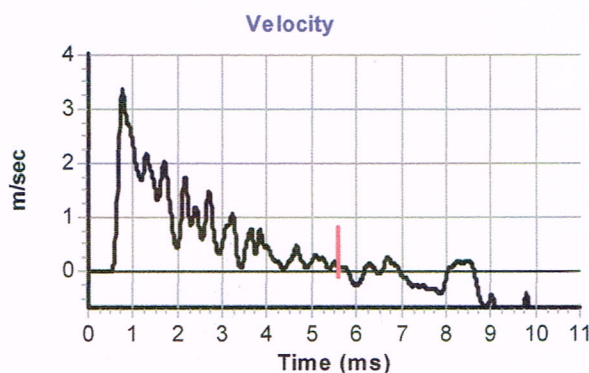
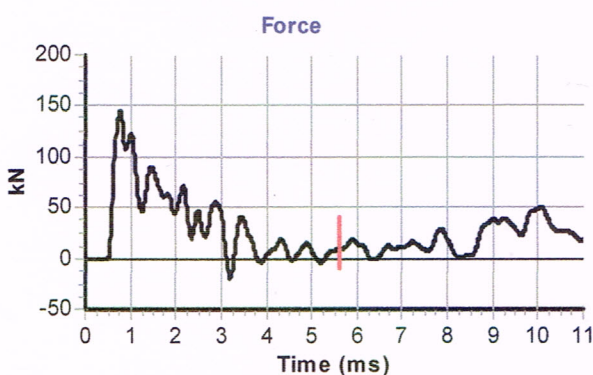
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.5
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 62901
Accelerometer No.2: 62902

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location



Calculations

Area of Rod A (mm^2): 970
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 303

Energy Ratio E_r (%): **64**

Signed: B.Hunter
Title: Operations Manager

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Exploratory Hole Progress by Time				Exploratory Hole	
Date and Time	Depth	Casing Depth	Water Depth	S1-BH117	
				Sheet 4 of 7	
				Scale	1:25
				Drilled	CJ
				Logged	CJ/AF
				Checked	AP

Drilling Flush					Hole Diameter		Casing Diameter		Water Added		Water Strikes						
Depth Top	Depth Base	Type	Colour	Returns	Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
4.50	16.50	Air/Mist	Dark grey	100%	31.50	96mm	19.50	140mm									
16.50	31.50	Air/Mist	N/A	0%													
Drill Bit Type		PCD			Drill Bit Condition		Good		Core Barrel Type		Conventional Triple Tube			Core Barrel Length		1.50	

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		DYNAMIC SAMPLING AND ROTARY DRILLING EXPLORATORY HOLE LOG										Exploratory Hole Progress by Time							Exploratory Hole	
												Date and Time			Depth	Casing Depth	Water Depth	S1-BH117		
Project		Global Centre of Rail Excellence (GCRE) Stage 2					Equipment		Teredo DC3					Sheet 7 of 7						
Client		Walters UK Ltd					Method		RO/DS/RC					Scale	1:25					
Project No		G23012		Level		254.30 mAOD		Inclination			90 degrees			Drilled	CJ					
Easting		283460.02		Northing		210670.97		SPT Hammer Serial Number			AR3829			Logged	CJ/AF					
Termination Reason		Scheduled depth					SPT Hammer Energy Ratio			61 %			Checked	AP						
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks				Drill Runs	TCR SCR RQD	Depth (Thickness)	Level (mAOD)	Legend	Description				If (min ave max)	Scale	Backfill			
						RC 30.00 - 31.50	98% 93% 83%				Very weak to weak medium bedded grey to dark grey MUDSTONE locally grading to weak grey siltstone. Occasional fine grained sandstone laminae. Rare plant fossils and rare ironstone nodules. No apparent weathering. Discontinuities: 0 to 10 degree medium locally closely and very closely spaced planar and undulating smooth tight and incipient bedding fractures. (SOUTH WALES MIDDLE COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: SZT 30.00m - 30.12m Very closely and closely spaced undulating rough tight fractures. 30.00m - 31.00m Grading to weak siltstone.				30.50					
											End of Exploratory Hole at 31.50m									
									222.80						31.00					
																31.50				
																32.00				
																32.50				
																33.00				
																33.50				
																34.00				
																34.50				
																35.00				
Drilling Flush					Hole Diameter		Casing Diameter		Water Added		Water Strikes									
Depth Top	Depth Base	Type	Colour	Returns	Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks			
4.50	16.50	Air/Mist	Dark grey	100%	31.50	96mm	19.50	140mm												
16.50	31.50	Air/Mist	N/A	0%																
Drill Bit Type		PCD			Drill Bit Condition		Good		Core Barrel Type		Conventional Triple Tube		Core Barrel Length		1.50					
Remarks																				
Rotary open holing from GL to 2.00m. Dynamic sampling from 2.00m to 3.00m. Rotary coring from 3.00m to 31.50m.																				
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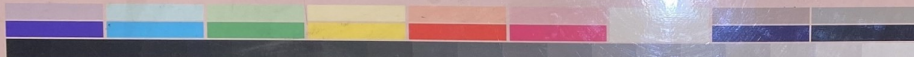
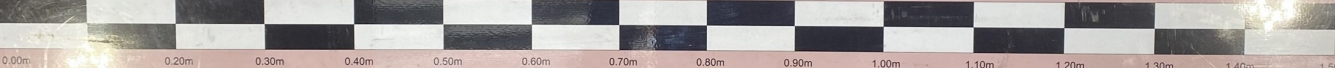
		EXPLORATORY HOLE PHOTOGRAPHS				Exploratory Hole
						S1-BH117
Project	Global Centre of Rail Excellence (GCRE) Stage 2	Easting	283460.02	Equipment	Teredo DC3	Sheet 2 of 10
Client	Walters UK Ltd	Northing	210670.97	Method	RO/DS/RC	
Project No	G23012	Level	254.30 mAOD	Termination Reason	Scheduled depth	

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Pontyclun, CF72 8QZ

Email: team@jacksongeo.co.uk
Telephone: 02920 099 769



Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	5 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	4.50 to 6.00	Engineer	RF



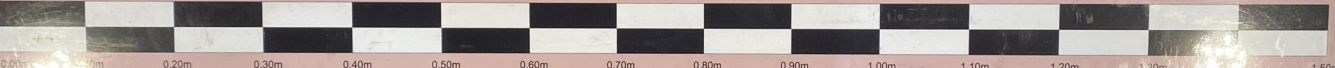
S1-BH117 4.50 m to 6.00 m

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	5 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	6.00 to 7.50	Engineer	RF



S1-BH117 6.00 m to 7.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Exploratory Hole	
				S1-BH117	
Project	Global Centre of Rail Excellence (GCRE) Stage 2	Easting	283460.02	Equipment	Teredo DC3
Client	Walters UK Ltd	Northing	210670.97	Method	RO/DS/RC
Project No	G23012	Level	254.30 mAOD	Termination Reason	Scheduled depth

Sheet 3 of 10

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	5 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	7.50 to 9.00	Engineer	RF





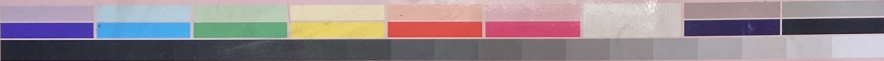
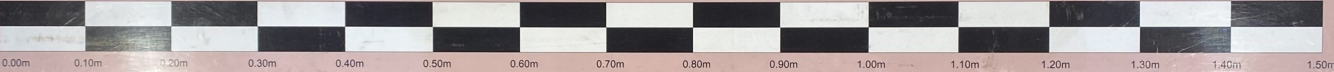
S1-BH117 7.50 m to 9.00 m

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	5 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	9.00 to 10.50	Engineer	RF


S1-BH117 9.00 m to 10.50 m

		EXPLORATORY HOLE PHOTOGRAPHS				Exploratory Hole
						S1-BH117
Project	Global Centre of Rail Excellence (GCRE) Stage 2	Easting	283460.02	Equipment	Teredo DC3	Sheet 4 of 10
Client	Walters UK Ltd	Northing	210670.97	Method	RO/DS/RC	
Project No	G23012	Level	254.30 mAOD	Termination Reason	Scheduled depth	

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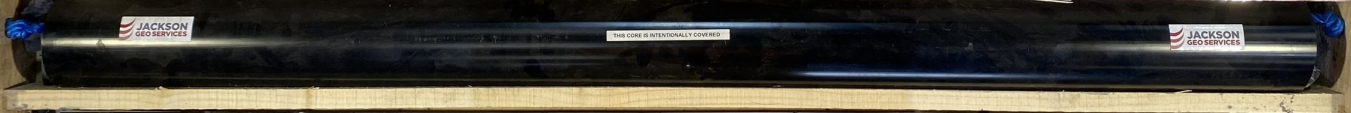


Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	5 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	10.50 to 12.00	Engineer	RF




9.00m

10.50m



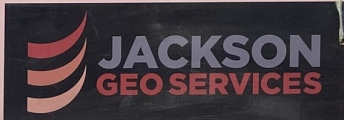
10.50m

12.00m

S1-BH117 10.50 m to 12.00 m

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	5 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	12.00 to 13.50	Engineer	RF




12.00m

13.50m



13.50m

15.00m

S1-BH117 12.00 m to 13.50 m

		EXPLORATORY HOLE PHOTOGRAPHS				Exploratory Hole
						S1-BH117
Project	Global Centre of Rail Excellence (GCRE) Stage 2	Easting	283460.02	Equipment	Teredo DC3	Sheet 5 of 10
Client	Walters UK Ltd	Northing	210670.97	Method	RO/DS/RC	
Project No	G23012	Level	254.30 mAOD	Termination Reason	Scheduled depth	

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	5 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	13.50 to 15.00	Engineer	RF

0.00m0.10m0.20m0.30m0.40m0.50m0.60m0.70m0.80m0.90m1.00m1.10m1.20m1.30m1.40m1.50m



S1-BH117 13.50 m to 15.00 m

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	10 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	15.00 to 16.50	Engineer	A

0.00m0.10m0.20m0.30m0.40m0.50m0.60m0.70m0.80m0.90m1.00m1.10m1.20m1.30m1.40m1.50m



S1-BH117 15.00 m to 16.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Exploratory Hole	
				S1-BH117	
Project	Global Centre of Rail Excellence (GCRE) Stage 2	Easting	283460.02	Equipment	Teredo DC3
Client	Walters UK Ltd	Northing	210670.97	Method	RO/DS/RC
Project No	G23012	Level	254.30 mAOD	Termination Reason	Scheduled depth

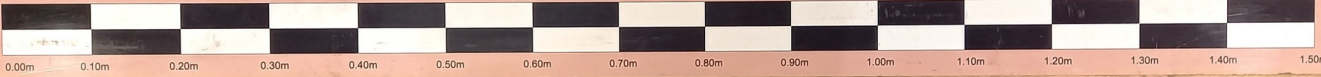
Sheet 6 of 10

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	10 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	1650 to 1800	Engineer	A

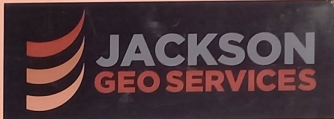




S1-BH117 16.50 m to 18.00 m

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	10 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	1800 to 1950	Engineer	A





S1-BH117 18.00 m to 19.50 m

		EXPLORATORY HOLE PHOTOGRAPHS				Exploratory Hole
						S1-BH117
Project	Global Centre of Rail Excellence (GCRE) Stage 2	Easting	283460.02	Equipment	Teredo DC3	Sheet 7 of 10
Client	Walters UK Ltd	Northing	210670.97	Method	RO/DS/RC	
Project No	G23012	Level	254.30 mAOD	Termination Reason	Scheduled depth	

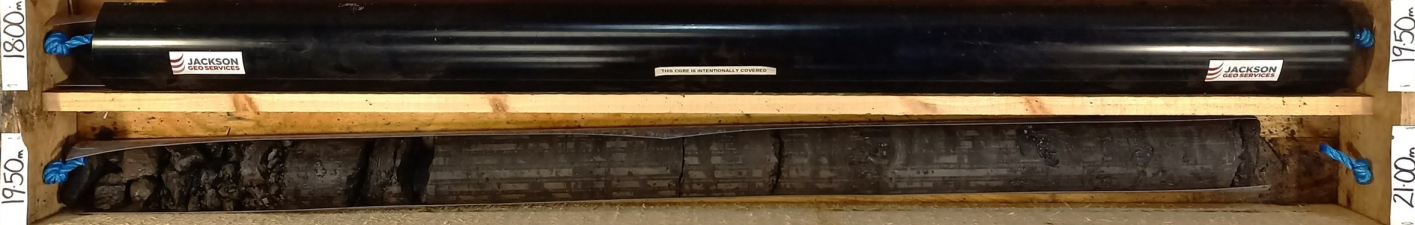
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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	10 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	1950 to 2100	Engineer	A





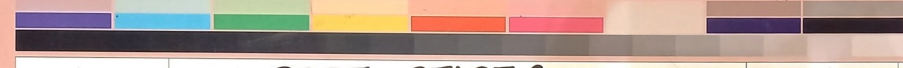
S1-BH117 19.50 m to 21.00 m

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	10 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	2100 to 2250	Engineer	A





S1-BH117 21.00 m to 22.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Exploratory Hole	
				S1-BH117	
Project	Global Centre of Rail Excellence (GCRE) Stage 2	Easting	283460.02	Equipment	Teredo DC3
Client	Walters UK Ltd	Northing	210670.97	Method	RO/DS/RC
Project No	G23012	Level	254.30 mAOD	Termination Reason	Scheduled depth

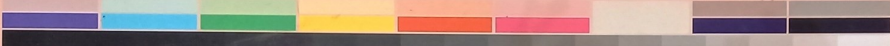
Sheet 8 of 10

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	10 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	22.50 to 24.00	Engineer	A






S1-BH117 22.50 m to 24.00 m

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	10 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	24.00 to 25.50	Engineer	A






S1-BH117 24.00 m to 25.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Exploratory Hole	
				S1-BH117	
Project	Global Centre of Rail Excellence (GCRE) Stage 2	Easting	283460.02	Equipment	Teredo DC3
Client	Walters UK Ltd	Northing	210670.97	Method	RO/DS/RC
Project No	G23012	Level	254.30 mAOD	Termination Reason	Scheduled depth

Sheet 9 of 10

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	10 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	25.50 to 27.00	Engineer	A



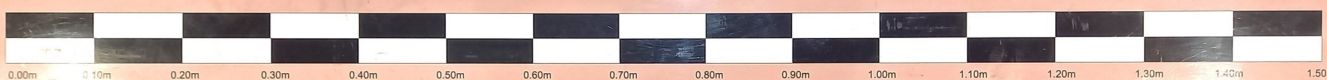

S1-BH117 25.50 m to 27.00 m

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Project Name	GCRE STAGE 2	Project Number	G23012
Client	WALTERS GROUP	Date	10 MAY 2023
Exploratory Hole Number	S1-BH117	Box / Face Number	
Depth (m) from	27.00 to 28.50	Engineer	A



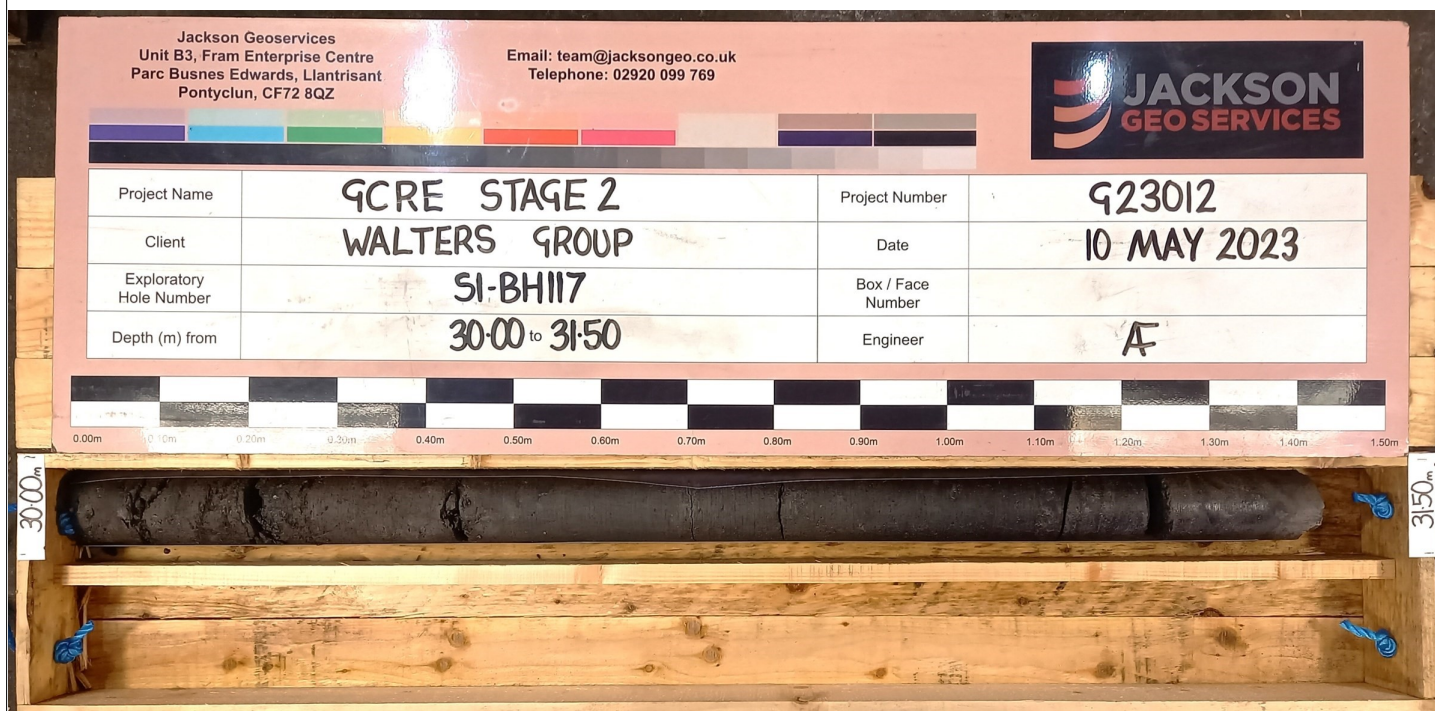

S1-BH117 27.00 m to 28.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Exploratory Hole	
				S1-BH117	
Project	Global Centre of Rail Excellence (GCRE) Stage 2	Easting	283460.02	Equipment	Teredo DC3
Client	Walters UK Ltd	Northing	210670.97	Method	RO/DS/RC
Project No	G23012	Level	254.30 mAOD	Termination Reason	Scheduled depth

Sheet 10 of 10



S1-BH117 28.50 m to 30.00 m



S1-BH117 30.00 m to 31.50 m

 DYNAMIC SAMPLING AND ROTARY DRILLING EXPLORATORY HOLE LOG				Exploratory Hole Progress by Time				Exploratory Hole									
				Date and Time		Depth	Casing Depth	Water Depth	S1-BH118								
Project		Global Centre of Rail Excellence (GCRE) Stage 2		Equipment	Teredo dc3/Teredo DC3			Sheet 1 of 7									
Client		Walters UK Ltd		Method	RC/RO/DS			Scale	1:25								
Project No	G23012	Level	253.60 mAOD	Inclination		90 degrees		Drilled	CJ								
Easting	283486.59	Northing	210735.68	SPT Hammer Serial Number		AR3829		Logged	AF								
Termination Reason		Scheduled depth		SPT Hammer Energy Ratio		61 %		Checked	AP								
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks		Drill Runs	TCR SCR RQD	Depth (Thickness)	Level (mAOD)	Legend	Description	If (min ave max)	Scale	Backfill					
1 UT	1.40 - 1.80 1.40	PID: 0.0ppmv		RO 0.00 - 2.00	0% 0% 0%	0.00	252.60		Rotary open holed. Made Ground Fill (Driller's description) (MADE GROUND) Geology Code: MGR								
						(1.00)											
						1.00			Rotary open holed. Orange clay. (Driller's description) (Possible DEVENSIAN GLACIAL TILL) Geology Code: GT								
						(0.40)											
						1.40			Stiff becoming very stiff light brown mottled orangish brown and grey slightly sandy slightly gravelly locally gravelly silty CLAY. Gravel is very angular to subangular fine to coarse of siltstone, mudstone, sandstone and rare coal. (Possible DEVENSIAN GLACIAL TILL) Geology Code: GT 2nd Geology Code: CL								
2 D	1.80 - 1.90	PID: 0.0ppmv		DS 2.00 - 3.00	95% 0% 0%	(2.60)		2.40m - 4.00m Stiff to very stiff brown locally mottled grey and orangish brown.									
3 D	1.90 - 2.00																
101 D	2.00 - 2.10																
102 ES	2.10 - 2.30 2.10																
103 B	2.30 - 3.00																
104 D	3.00 - 3.10	SPT(S) N=38 (5,6/7,9,9,13) Casing: 1.50 Water: Dry PID: 0.0ppmv		DS 3.00 - 4.00	100% 0% 0%	4.00		NO RECOVERY. SPT recovered as stiff brown mottled orangish brown and greyish brown and grey mottled orangish brown slightly sandy slightly gravelly locally gravelly silty CLAY. Gravel is very angular to subangular fine to coarse of siltstone, mudstone, sandstone and rare coal. (Possible DEVENSIAN GLACIAL TILL) Geology Code: GT 2nd Geology Code: CL									
4 D	3.00 - 3.45																
105 ES	3.00																
106 B	3.10 - 3.30																
	3.10																
5 D	4.00 - 4.45 4.00	SPT(S) N=50 (7,9/50 for 260mm) Casing: 1.50 Water: Dry		RO 4.00 - 4.50	0% 0% 0%	(0.50)	249.60		Very stiff dark grey slightly sandy gravelly silty CLAY. Gravel is angular and subangular fine to coarse of extremely weak and very weak mudstone lithorelicts. (WEATHERED SOUTH WALES COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: CL								
									Extremely weak locally very weak grey stained orangish brown MUDSTONE. Weathering: orangish brown staining penetrating 2-3mm, decreased fracture spacing, loss of strength throughout rock mass. Discontinuities are randomly oriented extremely closely spaced and very closely spaced planar, undulating, rough, tight, very tight and incipient. (WEATHERED SOUTH WALES COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: MST 4.75m - 4.88m NI. Recovered as clayey angular to subangular fine to coarse GRAVEL.								
Drilling Flush				Hole Diameter		Casing Diameter		Water Added		Water Strikes							
Depth Top	Depth Base	Type	Colour	Returns	Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
4.50	26.70	Air/Mist	Dark grey	100%	30.70	121mm	7.50	140mm			11/05/2023 10:00	4.50	10.00		8.60	20mins	
Drill Bit Type		PCD		Drill Bit Condition		Good		Core Barrel Type		Conventional Triple Tube		Core Barrel Length		1.50			
Remarks Rotary open holing from GL to 2.00m. Dynamic sampling from 2.00m to 4.00m. Rotary open holing from 4.00m to 4.50m. Rotary coring from 4.50m to 30.70m.																	

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		DYNAMIC SAMPLING AND ROTARY DRILLING EXPLORATORY HOLE LOG						Exploratory Hole Progress by Time				Exploratory Hole					
								Date and Time		Depth	Casing Depth	Water Depth	S1-BH118				
Project		Global Centre of Rail Excellence (GCRE) Stage 2			Equipment		Teredo dc3/Teredo DC3			Sheet 3 of 7							
Client		Walters UK Ltd			Method		RC/RO/DS			Scale		1:25					
Project No		G23012		Level		253.60 mAOD		Inclination		90 degrees		Drilled		CJ			
Easting		283486.59		Northing		210735.68		SPT Hammer Serial Number		AR3829		Logged		AF			
Termination Reason		Scheduled depth			SPT Hammer Energy Ratio		61 %			Checked		AP					
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks			Drill Runs	TCR SCR RQD	Depth (Thickness)	Level (mAOD)	Legend	Description			If (min ave max)	Scale	Backfill		
108 C	10.50 - 10.71						10.20	243.40	xxxxxx	Weak and moderately weak very thinly bedded and thinly bedded, grey SILTSTONE and sub-ordinate very thin and thin beds of extremely weak and very weak carbonaceous mudstone with ironstone nodules (up to 30mm in diameter). Weathering: loss of strength im fracture walls penetrating up to 2mm, decreased fracture spacing. Discontinuities: bedding fractures, 10-20° closely spaced and medium spaced undulating, rough, locally smooth, tight and very tight locally incipient. Joints, randomly oriented, medium spaced, undulating, smooth, incipient. (SOUTH WALES MIDDLE COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: SZT NO RECOVERY. Mudstone (Driller's description). (SOUTH WALES MIDDLE COAL MEASURES FORMATION) Geology Code: SWCM			Set 1 40 120 180	10.50			
							(0.30)	243.10	xxxxxx								
109 C	12.44 - 12.65				RC 10.50 - 12.00	100% 100% 40%	10.50	243.10	xxxxxx	Weak and moderately weak very thinly bedded and thinly grey SILTSTONE with occasional to frequent thin and thick laminae of light grey fine grained sandstone and dark grey carbonaceous mudstone and occasional carbonaceous inclusions (up to 10mm). Weathering: localized zones of decreased fracture spacing and reduction im fracture wall strength (up to 3mm penetration). Discontinuities: bedding fractures, 10-15° very closely spaced and closely spaced, planar smooth and locally rough, tight and incipient locally with <0.3mm silt infill. (SOUTH WALES MIDDLE COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: SZT 10.90m - 11.12m Occasional very thin beds of carbonaceous mudstone with randomly oriented very closely spaced undulating, rough, very tight and incipient fractures. 11.90m - 12.00m Medium stromg light grey fine grained sandstone.				11.00			
									xxxxxx								
									xxxxxx								
					RC 12.00 - 13.50	100% 100% 80%			xxxxxx					11.50			
					RC 13.50 - 15.00	100% 100% 31%			xxxxxx					12.00			
							(4.90)		xxxxxx					12.50			
									xxxxxx					13.00			
									xxxxxx					13.50			
									xxxxxx					14.00			
									xxxxxx					14.50			
									xxxxxx					15.00			
Continued on next Sheet																	
Drilling Flush					Hole Diameter		Casing Diameter		Water Added		Water Strikes						
Depth Top	Depth Base	Type	Colour	Returns	Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
4.50	26.70	Air/Mist	Dark grey	100%	30.70	121mm	7.50	140mm			11/05/2023 10:00	4.50	10.00		8.60	20mins	
Drill Bit Type		PCD		Drill Bit Condition		Good		Core Barrel Type		Conventional Triple Tube		Core Barrel Length		1.50			
Remarks																	
Rotary open holing from GL to 2.00m. Dynamic sampling from 2.00m to 4.00m. Rotary open holing from 4.00m to 4.50m. Rotary coring from 4.50m to 30.70m.																	

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