

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic sampling from 1.20m to 11.30m. Rotary coring from 11.30m to 30.80m.	Exploratory Hole S1-BH103
Project	Global Centre of Rail Excellence	Easting	284603.15	Equipment	Insulated Digging Tools/Comacchio 305
Client	Walters UK Limited	Northing	210646.48	Method	IP/DS/RC
Project No	G22069	Level	234.33 mAOD	Termination Reason	Scheduled depth

Sheet 6 of 11

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	30 NOV' 2022
Exploratory Hole Number	S1-BH103	Box / Face Number	
Depth (m) from	12.80 to 14.30	Engineer	A





S1-BH103 12.80 m to 14.30 m

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	30 NOV' 2022
Exploratory Hole Number	S1-BH103	Box / Face Number	
Depth (m) from	14.30 to 15.80	Engineer	A





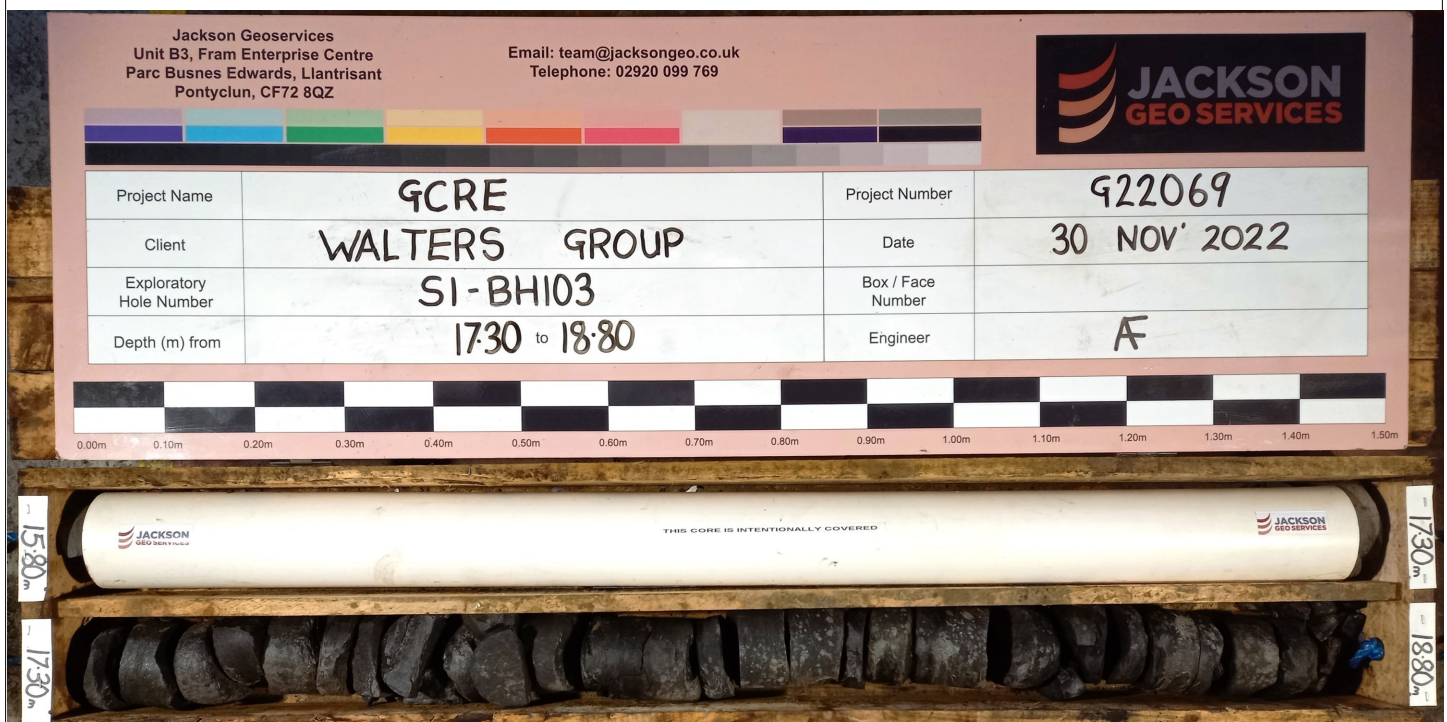
S1-BH103 14.30 m to 15.80 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic sampling from 1.20m to 11.30m. Rotary coring from 11.30m to 30.80m.	Exploratory Hole S1-BH103
Project	Global Centre of Rail Excellence	Easting	284603.15	Equipment	Insulated Digging Tools/Comacchio 305
Client	Walters UK Limited	Northing	210646.48	Method	IP/DS/RC
Project No	G22069	Level	234.33 mAOD	Termination Reason	Scheduled depth

Sheet 7 of 11



S1-BH103 15.80 m to 17.30 m



S1-BH103 17.30 m to 18.80 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic sampling from 1.20m to 11.30m. Rotary coring from 11.30m to 30.80m.	Exploratory Hole S1-BH103
Project	Global Centre of Rail Excellence	Easting	284603.15	Equipment	Insulated Digging Tools/Comacchio 305
Client	Walters UK Limited	Northing	210646.48	Method	IP/DS/RC
Project No	G22069	Level	234.33 mAOD	Termination Reason	Scheduled depth

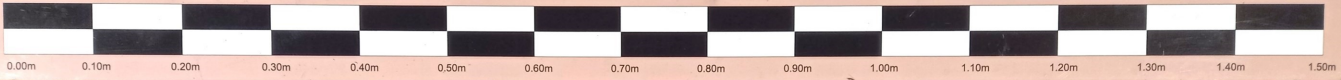
Sheet 8 of 11

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	30 NOV' 2022
Exploratory Hole Number	SI-BH103	Box / Face Number	
Depth (m) from	18.80 to 20.30	Engineer	A





S1-BH103 18.80 m to 20.30 m

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	30 NOV' 2022
Exploratory Hole Number	SI-BH103	Box / Face Number	
Depth (m) from	20.30 to 21.80	Engineer	A





S1-BH103 20.30 m to 21.80 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic sampling from 1.20m to 11.30m. Rotary coring from 11.30m to 30.80m.	Exploratory Hole S1-BH103
Project	Global Centre of Rail Excellence	Easting	284603.15	Equipment	Insulated Digging Tools/Comacchio 305
Client	Walters UK Limited	Northing	210646.48	Method	IP/DS/RC
Project No	G22069	Level	234.33 mAOD	Termination Reason	Scheduled depth

Sheet 9 of 11

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	30 NOV' 2022
Exploratory Hole Number	S1-BH103	Box / Face Number	
Depth (m) from	21.80 to 23.30	Engineer	A





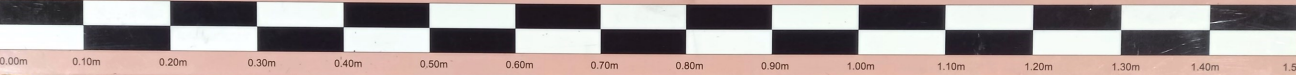
S1-BH103 21.80 m to 23.30 m

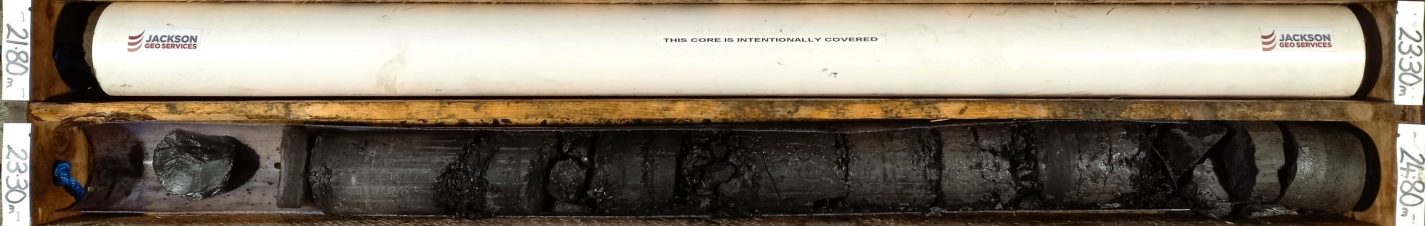
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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	30 NOV' 2022
Exploratory Hole Number	S1-BH103	Box / Face Number	
Depth (m) from	23.30 to 24.80	Engineer	A





S1-BH103 23.30 m to 24.80 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic sampling from 1.20m to 11.30m. Rotary coring from 11.30m to 30.80m.	Exploratory Hole S1-BH103
Project	Global Centre of Rail Excellence	Easting	284603.15	Equipment	Insulated Digging Tools/Comacchio 305
Client	Walters UK Limited	Northing	210646.48	Method	IP/DS/RC
Project No	G22069	Level	234.33 mAOD	Termination Reason	Scheduled depth

Sheet 10 of 11

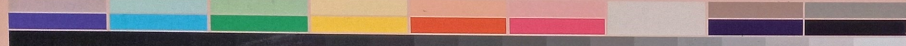
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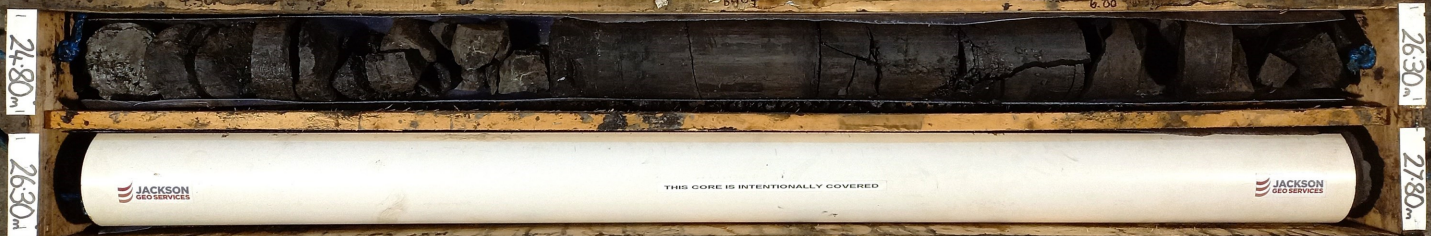
Email: team@jacksongeo.co.uk
Telephone: 02920 099 769



Project Name	GCRE
Client	WALTERS GROUP
Exploratory Hole Number	S1-BH103
Depth (m) from	24.80 to 26.30

Project Number	G22069
Date	30 NOV' 2022
Box / Face Number	
Engineer	A



S1-BH103 24.80 m to 26.30 m

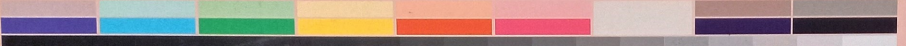
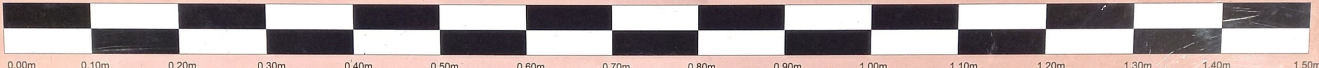
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Project Name	GCRE
Client	WALTERS GROUP
Exploratory Hole Number	S1-BH103
Depth (m) from	26.30 to 27.80

Project Number	G22069
Date	30 NOV' 2022
Box / Face Number	
Engineer	A



S1-BH103 26.30 m to 27.80 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic sampling from 1.20m to 11.30m. Rotary coring from 11.30m to 30.80m.	Exploratory Hole S1-BH103
Project	Global Centre of Rail Excellence	Easting	284603.15	Equipment	Insulated Digging Tools/Comacchio 305
Client	Walters UK Limited	Northing	210646.48	Method	IP/DS/RC
Project No	G22069	Level	234.33 mAOD	Termination Reason	Scheduled depth

Sheet 11 of 11

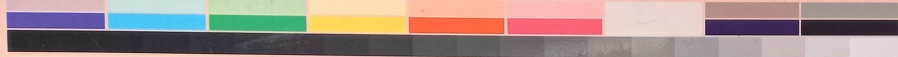
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Project Name	GCRE
Client	WALTERS GROUP
Exploratory Hole Number	S1-BH103
Depth (m) from	27.80 to 29.30

Project Number	G22069
Date	30 NOV' 2022
Box / Face Number	
Engineer	A






27.80m

29.30m



29.30m

30.80m

S1-BH103 27.80 m to 29.30 m

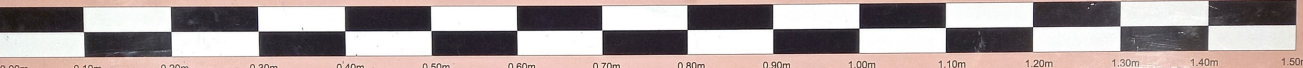
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Project Name	GCRE
Client	WALTERS GROUP
Exploratory Hole Number	S1-BH103
Depth (m) from	29.30 to 30.80

Project Number	G22069
Date	30 NOV' 2022
Box / Face Number	
Engineer	A



29.30m

30.80m



29.30m

30.80m

S1-BH103 29.30 m to 30.80 m



Exploratory Hole Progress by Time				Exploratory Hole	
Date and Time	Depth	Casing Depth	Water Depth	S1-BH105	
30/11/2022 12:00	0.00	0.00	Dry		
30/11/2022 16:30	5.20	4.20			
01/12/2022 08:30	5.20	4.20			
01/12/2022 15:15	9.80	9.00	Wet	Sheet 1 of 7	
02/12/2022 09:15	9.80	9.00	7.14	Scale	1:25
02/12/2022 15:00	15.80	9.00	15.27	Drilled	TP
05/12/2022 08:30	15.80	9.00	6.56	Logged	AF/SC/JJ
05/12/2022 15:15	30.80	9.00	Wet	Checked	

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
9.80	14.50	Air/Mist	Grey	100%	30.80	146mm	9.00	200mm			01/12/2022 10:00	6.00	7.00		5.01	30mins	
14.50	17.00	Air/Mist	Dark Grey	100%													
17.00	30.80	Air/Mist	Grey	100%													
Drill Bit Type			PCD		Drill Bit Condition		Good		Core Barrel Type		Wireline Triple Tube		Core Barrel Length			1.50	

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Date and Time	Depth	Casing Depth	Water Depth	S1-BH105	
				Sheet 2 of 7	
				Scale	1:25
				Drilled	TP
				Logged	AF/SC/JJ
				Checked	

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
9.80	14.50	Air/Mist	Grey	100%	30.80	146mm	9.00	200mm			01/12/2022 10:00	6.00	7.00		5.01	30mins	
14.50	17.00	Air/Mist	Dark Grey	100%													
17.00	30.80	Air/Mist	Grey	100%													
Drill Bit Type			PCD		Drill Bit Condition		Good		Core Barrel Type		Wireline Triple Tube			Core Barrel Length			1.50

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Exploratory Hole Progress by Time				Exploratory Hole	
Date and Time	Depth	Casing Depth	Water Depth	S1-BH105	
				Sheet 3 of 7	
				Scale	1:25
				Drilled	TP
				Logged	AF/SC/JJ
				Checked	

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	
9.80	14.50	Air/Mist	Grey	100%	30.80	146mm	9.00	200mm			01/12/2022 10:00	6.00	7.00		5.01	30mins		
14.50	17.00	Air/Mist	Dark Grey	100%														
17.00	30.80	Air/Mist	Grey	100%														
Drill Bit Type			PCD		Drill Bit Condition		Good		Core Barrel Type		Wireline Triple Tube			Core Barrel Length			1.50	

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DYNAMIC SAMPLING AND ROTARY DRILLING EXPLORATORY HOLE LOG

Project	Global Centre of Rail Excellence		Equipment	Commachio 305/Insulated Digging Tools	
Client	Walters UK Limited		Method	RC/IP/DS	
Project No	G22069	Level	236.49 mAOD	Inclination	90 degrees
Easting	284718.99	Northing	210649.88	SPT Hammer Serial Number	AR2724
Termination Reason	Scheduled depth			SPT Hammer Energy Ratio	69 %

Exploratory Hole Progress by Time				Exploratory Hole	
Date and Time	Depth	Casing Depth	Water Depth	S1-BH105 Sheet 4 of 7 Scale1:25 DrilledTP LoggedAF/SC/JJ Checked	

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
121 C	15.10 - 15.20		RC 14.30 - 15.80	80% 48% 0%	(1.20)			Very weak locally weak thickly laminated to very thinly bedded dark grey carbonaceous MUDSTONE. Weathering: occasional zones of increased fracture spacing and loss of strength. Discontinuities: sub-horizontal to 10 degree very closely locally closely spaced planar smooth tight and incipient bedding fractures. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: MST <i>15.60m - 15.80m Extremely weak thickly laminated MUDSTONE. NI, recovered as very angular fine to medium tabular gravel.</i>		15.50	
					15.80	220.69		Very weak black COAL. No apparent weathering. Discontinuities: sub-horizontal and randomly orientated stepped smooth incipient fractures. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: COAL	Set 1 NI <10 <10	16.00	
			RC 15.80 - 17.30	100% 37% 25%	16.50 16.70 (0.05) 16.75	219.99 219.79 219.74		Very weak locally weak thickly laminated to very thinly bedded dark grey to black highly carbonaceous MUDSTONE. Weathering: increased fracture spacing and loss of strength throughout rock mass. Discontinuities: sub-horizontal to 10 degree extremely closely locally very closely spaced planar smooth tight and incipient bedding fractures. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: MST Very weak black COAL. No apparent weathering. NI, recovered as angular fine gravel. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: COAL Weak thinly bedded grey SILTSTONE. Occasional thin fine sandstone laminae. Weathering: occasional zones of loss of strength (30-40mm thickness). Discontinuities: sub-horizontal to 20 degree closely locally very closely and medium spaced undulating rough tight and incipient bedding fractures, locally infilled with <1-3mm. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: SZT <i>17.15m - 17.25m 35-40 degree undulating rough tight joint.</i>	Set 1 NI <10 <10 Set 1 50 120 220	16.50 17.00	
122 C	17.00 - 17.15				(0.50)						
					17.25	219.24				17.50	
			RC 17.30 - 18.80	100% 97% 92%					Set 1 NI 180 420	18.00	
123 C	18.20 - 18.32				(2.35)			Medium strong to strong thinly and medium bedded light grey and grey fine grained SANDSTONE with occasional thin light grey fine to medium sandstone laminae and grey siltstone laminae. No apparent weathering. Discontinuities: sub-horizontal to 10 degree closely and medium spaced locally very closely spaced planar rough tight bedding fractures, locally infilled with <1mm silty fine sand. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: SST <i>18.80m - 18.90m Weak grey SILTSTONE. NI, recovered as very angular fine to coarse gravel. Possible extremely closely spaced fractures.</i>		18.50	
			RC 18.80 - 20.30	97% 68% 46%				Weak to moderately weak locally medium strong thinly locally medium bedded grey SILTSTONE. Occasional thin fine sandstone laminae. Weathering: occasional zones of increased fracture spacing and loss of strength (10-50mm thickness). Discontinuities: sub-horizontal to 15 degree closely and medium spaced locally very closely spaced undulating rough tight and incipient bedding fractures, locally infilled with <1-2mm silt. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: SZT	Set 1 NI 130 290	19.00 19.50	
					19.60	216.89				20.00	

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
9.80	14.50	Air/Mist	Grey	100%	30.80	146mm	9.00	200mm			01/12/2022 10:00	6.00	7.00		5.01	30mins	
14.50	17.00	Air/Mist	Dark Grey	100%													
17.00	30.80	Air/Mist	Grey	100%													
Drill Bit Type			PCD		Drill Bit Condition		Good		Core Barrel Type		Wireline Triple Tube		Core Barrel Length			1.50	

Remarks
Hand excavated inspection pit from GL to 1.20m depth. Dynamic sampling from 1.20m to 9.80m depth. Rotary coring from 9.80m to 30.80m depth.

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Exploratory Hole Progress by Time				Exploratory Hole	
Date and Time	Depth	Casing Depth	Water Depth	S1-BH105	
				Sheet 6 of 7	
				Scale	1:25
				Drilled	TP
				Logged	AF/SC/JJ
				Checked	

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	
9.80	14.50	Air/Mist	Grey	100%	30.80	146mm	9.00	200mm			01/12/2022 10:00	6.00	7.00		5.01	30mins		
14.50	17.00	Air/Mist	Dark Grey	100%														
17.00	30.80	Air/Mist	Grey	100%														
Drill Bit Type			PCD		Drill Bit Condition		Good		Core Barrel Type		Wireline Triple Tube			Core Barrel Length			1.50	

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