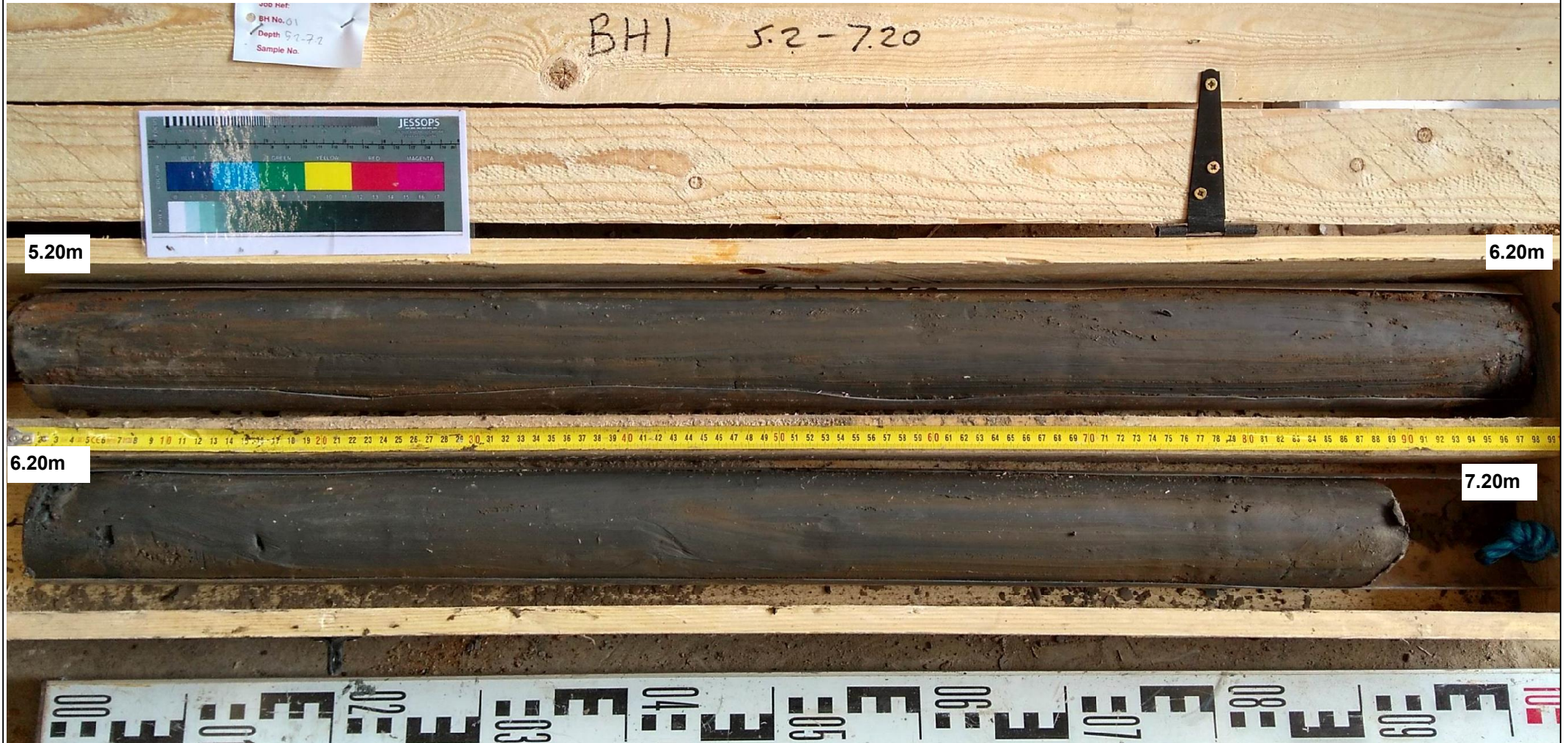


Sample Photographs BH1, 5.20m to 7.20m Depth



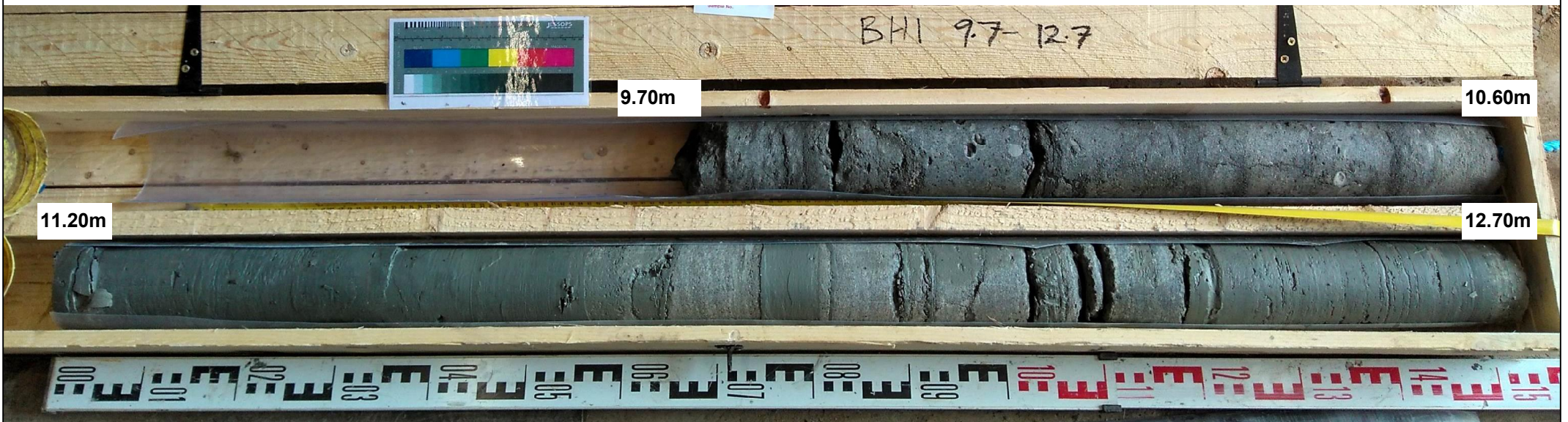
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Client: Oxford University Development

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Sample Photographs BH1, 7.20m to 12.70m Depth



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Sample Photographs BH1, 12.70m to 18.70m Depth



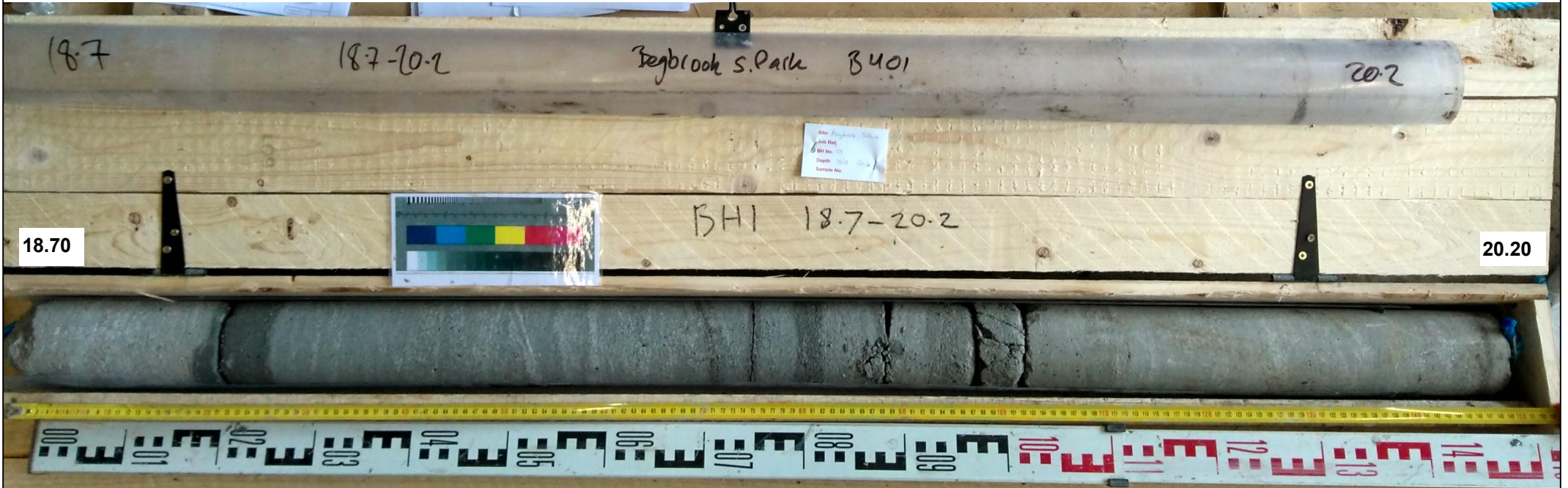
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Sample Photographs BH1, 18.70m to 20.20m Depth



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Additional Close Up Core Photographs BH1



BH1, 9.75-10.00m, example of calcite-filled bivalves in Cornbrash Formation



BH1, 11.60-11.85m, example of laminae and ripples of light grey and white silt in very stiff, laminated, green grey clay of the Forest Marble Formation.

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GROUND ENGINEERING LIMITED Tel: 01733-566566 www.groundengineering.co.uk					Site: BEGBROKE SCIENCE PARK, KIDLINGTON			BOREHOLE BH2		
Date: 18/06/21					Hole Size: 150mm dia to 7.20m 120mm dia to 10.20m			447955 mE 213615 mN Ground Level: 68.75m. O.D.		
Samples/Tests		Core Details			(Date)	Description of Strata	Legend	Depth m	O. D. Level m	
Depth m	TCR	SCR	RQD	FI	Water					
0.10	D1					MADE GROUND - Grey, slightly sandy GRAVEL. Gravel of angular granite, brick, concrete, limestone and ash.		0.15	68.60	
0.40	D2					MADE GROUND - Brown, silty, very gravelly SAND. Gravel of angular granite, limestone, brick, flint and ash.		0.80	67.95	
0.70	D3					MADE GROUND - Medium dense, brown, red brown and grey, clayey, sandy GRAVEL with occasional cobbles of brick and limestone. Gravel of angular to sub-angular brick, concrete, limestone, flint, quartzite, clinker and ash.		1.90	66.85	
1.20	D4					MADE GROUND - Soft, orange brown, slightly gravelly, silty CLAY. Gravel of angular to rounded limestone, flint, quartz, quartzite, ironstone and ash. Loose, orange brown, silty SAND AND GRAVEL. Gravel of angular to rounded limestone, flint, quartz, quartzite and ironstone. (SUMMERTOWN - RADLEY SAND AND GRAVEL MEMBER) Very dense, orange brown and yellow brown, slightly silty, sandy GRAVEL with occasional cobbles of limestone. Gravel of angular to rounded flint, quartz, quartzite, limestone and ironstone. Occasional fossil belemnite fragments.		2.30	66.45	
1.20-3.20	U1			N21						
1.35-1.65	S									
2.20	D5					... Medium dense below 4.20m depth. (SUMMERTOWN - RADLEY SAND AND GRAVEL MEMBER)		2.80	65.95	
2.20-3.20	U2			N6						
2.35-2.65	S									
3.20	D6					Stiff, grey, orange brown and dark grey mottled, slightly gravelly CLAY. Gravel of angular to sub-angular limestone, flint and ironstone. (REWORKED KELLAWAYS CLAY MEMBER) Stiff, closely fissured, dark blue grey CLAY with occasional gravel size pyrite nodules. Rare grey silt partings and fossil traces. ...Coarse gravel size concretionary limestone nodule at 5.00m depth.		4.40	64.35	
3.35-3.58	S			50*						
4.20	D7									
4.20-5.20	U3				N21 (9%)	(KELLAWAYS CLAY MEMBER)		4.60	64.15	
4.35-4.65	S									
4.40	V1			(128)						
4.80	V2					Weak to strong, thinly to medium bedded, grey, argillaceous, shelly LIMESTONE with abundant fossil bivalves. Fossils include cardiid bivalves, oysters and razor clams. Horizontal beds of very stiff, dark grey clay; 20mm thick at 8.52m, 100mm thick at 9.33m, 20mm thick clay 9.68m and 50mm thick at 9.80m depth.		7.90	60.85	
5.15	V3			(126)						
5.20-6.20	U4				N19					
5.35-5.65	S				(140+)	(CORNBASH FORMATION)		10.00	58.75	
5.65	V4									
6.15	V5				(140+)					
6.20-7.20	U5				N37					
6.35-6.65	S									
7.20	S				N49					
7.35-7.65		93	47	40	>20					
8.70		100	96	92	2					

REMARKS 1. Starter pit excavated to 1.20m depth 2. No live roots observed 3. Window sampled 117mm dia to 3.20m, open hole to 4.20m, 107mm dia to 5.20m, 97mm dia to 7.20m, reamed out with roller bit and cored 92mm dia to 10.20m depth 4. Casing installed to 7.20m depth	Project No 15387	
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KEY TCR - Total Core Recovery % (of core run) SCR - Solid Core Recovery % (of core run) RQD - Rock Quality Designation % (of core run) FI - Fracture Index ▽ Water Strike ▽c Level on completion ▼ Water Rise c▼w Level Casing Withdrawn ▼s Standpipe Level	Groundwater Strikes						Groundwater Observations		
	Depth m						Depth m		
	No	Struck	Rose to	Rate	Cased	Sealed	Date	Hole	Casing
						18/06/21	10.20	7.20	NA

Sample Photographs BH2, 1.20m to 3.20m Depth



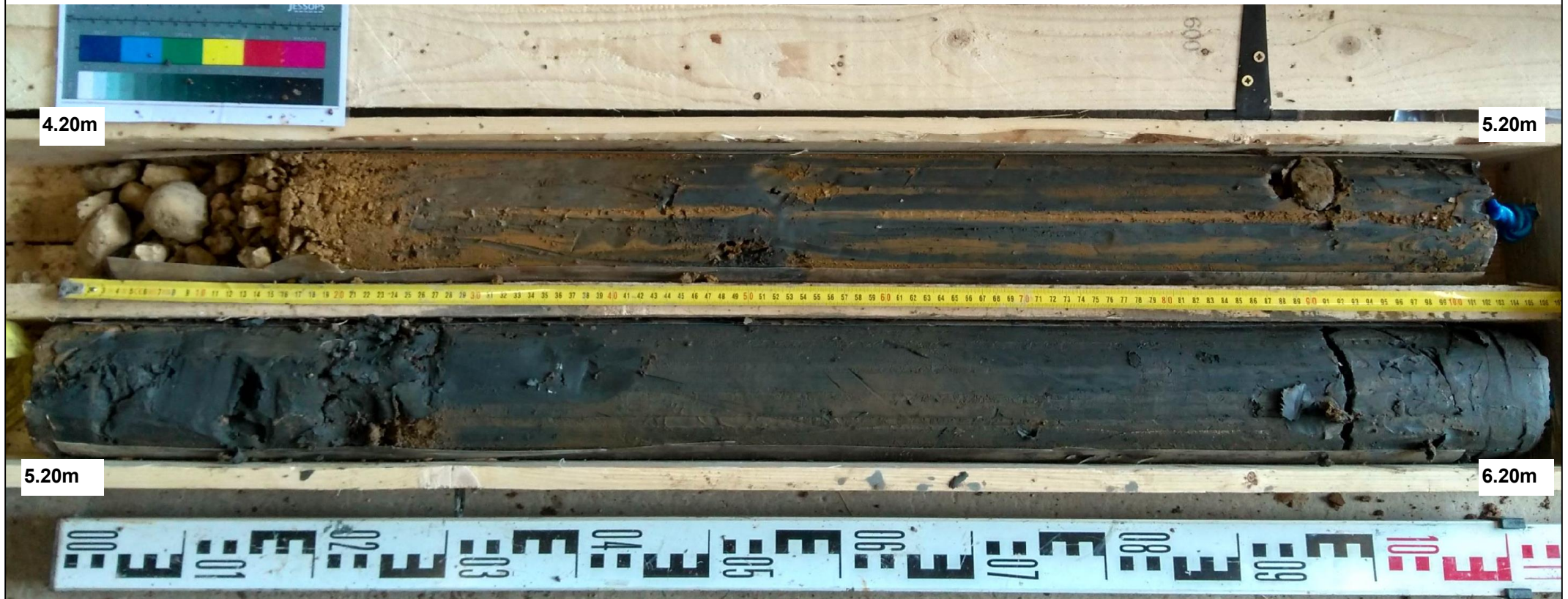
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Sample Photographs BH2, 4.20m to 6.20m Depth



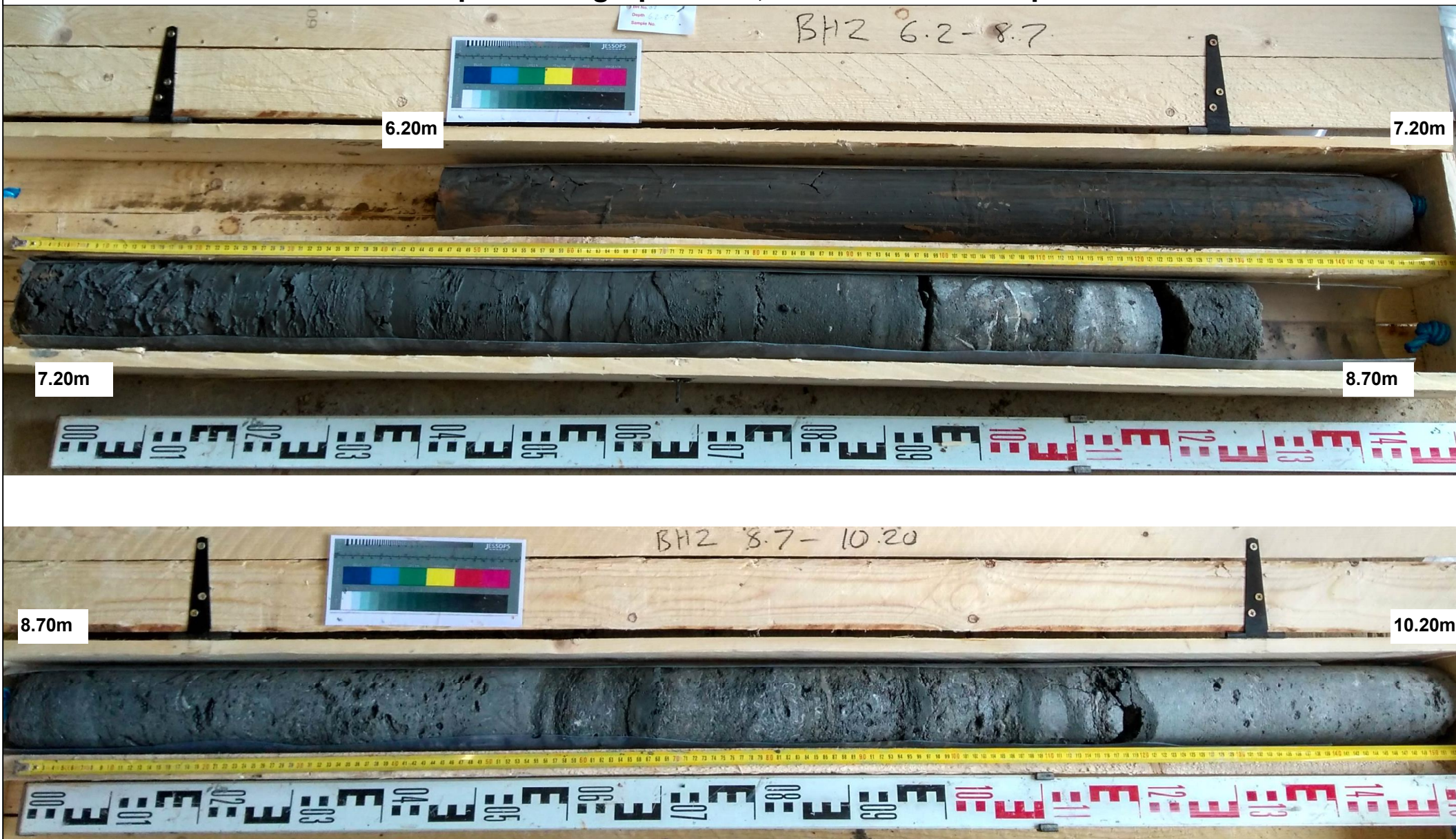
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Sample Photographs BH2, 6.20m to 10.2m Depth



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Additional Close Up Core Photographs BH2 (Sheet 1 of 2)



BH2, 5.00m, coarse gravel size concretionary limestone nodule in Kellaways Clay Member



BH2, 7.80, example of bivalve fossil fragments near base of Kellaways Clay Member.

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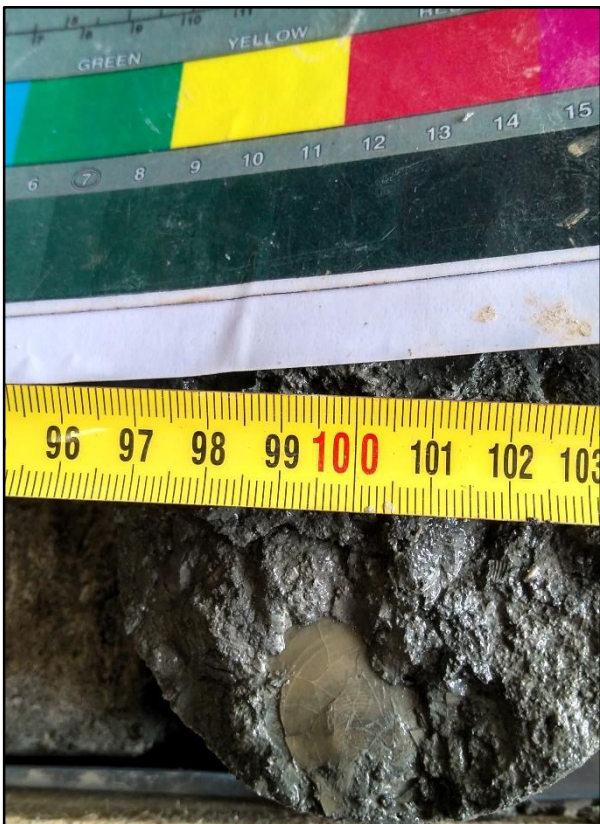
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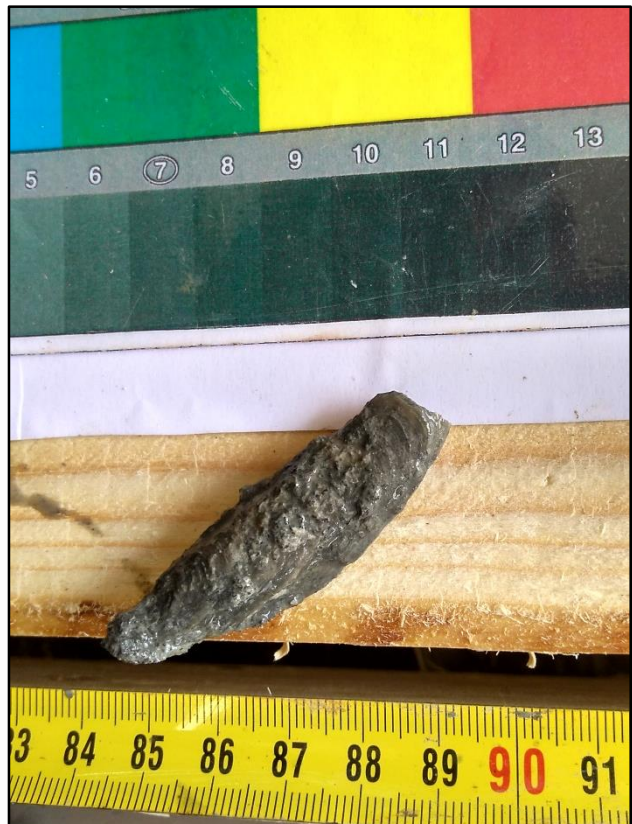
Additional Close Up Core Photographs BH2 (Sheet 2 of 2)



BH2, 9.90m, coarse gravel size cordiid bivalve (with both halves) in Cornbrash Formation.



BH2, 10.00, example of oyster fossil in Cornbrash Formation.



BH2, 9.90, example of razor clam in Cornbrash Formation.

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Site: **BEGBROKE SCIENCE PARK, KIDLINGTON**

BOREHOLE BH3

Date: 16/06/21
to 17/06/21

Hole Size: 150mm dia to 7.20m
120mm dia to 20.20m

447794 mE 213550 mN
Ground Level: 68.20m. O.D.

Samples/Tests	Core Details				(Date)	Inst.	Description of Strata	Legend	Depth m	O.D. Level m
	Depth m	TCR	SCR	RQD						
0.20	D1					MADE GROUND - Light brown, slightly gravelly, silty SAND. Gravel of angular brick, ash, flint, granite and ironstone.		0.30	67.90	
0.70	D2					Soft, becoming firm, friable, brown and orange brown mottled, slightly gravelly, sandy, silty CLAY. Gravel of angular to rounded limestone, ironstone, flint, quartz and quartzite.		1.65	66.55	
1.20-2.20 1.35-1.65 1.40 1.60	U1 S V1 V2		N4 (58) (58)		(SUMMERTOWN - RADLEY SAND AND GRAVEL MEMBER)					
2.20 2.35-2.58	D3 S		50*		Dense, becoming very dense, orange brown, silty, gravelly SAND. Gravel of angular to sub-rounded flint, limestone, ironstone, quartz and quartzite.		2.80			65.40
3.20 3.35-3.57	D4 S		50*		Very dense, yellow brown and orange brown, slightly silty, very sandy GRAVEL with occasional cobbles of limestone. Gravel of angular to rounded limestone, flint, quartz, quartzite and ironstone.					
4.20 4.20-5.20 4.35-4.65 4.50	D5 U2 S V3		N31 (114)		Stiff, orange brown, grey and dark grey mottled, slightly gravelly CLAY. Gravel of angular limestone and flint. (REWORKED KELLAWAYS CLAY MEMBER)		4.35 4.60	63.85 63.60		
4.90 5.20-6.20 5.35-5.65	V4 U3 S		(140+) N34		Stiff, closely fissured, dark blue grey CLAY with occasional gravel size pyrite nodules. Rare grey silt partings and fossil traces.					
6.20-7.20 6.35-6.65	U4 S		N43		(KELLAWAYS CLAY MEMBER)					
7.20 7.35-7.65	S		N47		Weak to strong, thinly to medium bedded, grey, argillaceous, shelly LIMESTONE with abundant fossil burrows and bivalves. Horizontal beds of very stiff, dark grey clay; 10mm thick at 8.16m, 40mm thick at 8.91m, 30mm thick at 8.91m, 30mm thick at 9.53m, 10mm thick at 9.93m depth.		7.50	60.70		
8.70		86	68	60	4	(CORNBRAsh FORMATION)		10.00	58.20	

REMARKS
1. Starter pit excavated to 1.20m depth
2. Live roots observed to 1.80m depth
3. Window sampled 117mm dia to 2.20m, open hole to 4.20m, 107mm dia to 5.20m, 97mm dia to 6.20m, 87mm dia to 7.20m then reamed out with roller bit and cored 92mm dia to 20.20m depth
4. Casing installed to 7.20m depth
5. Gas monitoring standpipe installed to 5.00m depth

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KEY	Groundwater Strikes						Groundwater Observations			
	Depth m						Depth m			
	No	Struck	Rose to	Rate	Cased	Sealed	Date	Hole	Casing	Water
							16/06/21	17.70	7.20	NA
							17/06/21	17.70	7.20	NA
							17/06/21	20.20	7.20	NA
							18/06/21	20.20	7.20	3.98
							30/06/21	5.00	1.00	3.27

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Site: BEGBROKE SCIENCE PARK, KIDLINGTON

BOREHOLE
BH3

Date: 16/06/21
to 17/06/21

Hole Size: 150mm dia to 7.20m
120mm dia to 20.20m

447794 mE 213550 mN
Ground Level: 68.20m. O.D.

Samples/Tests	Core Details				(Date) Water	Inst.	Description of Strata	Legend	Depth m	O. D. Level m
	Depth m	TCR	SCR	RQD						
	10.20	100	95	53	6		"See previous page"		10.00	58.20
							Stiff, laminated, light green grey, silty CLAY with occasional thin laminae of light grey silt. Rare black carbonaceous specks. (FOREST MARBLE FORMATION)		10.20	58.00
		97	86	86	6				11.10	57.10
	11.70						Moderately weak to strong, very thinly bedded, green grey, oolitic LIMESTONE with occasional very thin beds and thick laminae of very stiff, green grey, silty clay. (FOREST MARBLE FORMATION)		12.10	56.10
		27	22	10	>20		Very stiff, laminated, green grey, silty CLAY with occasional thin laminae and ripples of light grey and white silt. Rare black carbonaceous specks. ...Locally calcareous and cemented to an extremely weak mudstone below 13.20m depth.			
	13.20						...Occasional very thin beds of weak, oolitic limestone below 14.10m depth. (FOREST MARBLE FORMATION)		14.60	53.60
		100	93	86	2					
	14.70						Weak to medium strong, very thinly to thinly bedded, green grey, oolitic LIMESTONE with occasional very thin beds and thick laminae of very stiff, green grey, silty clay. (FOREST MARBLE FORMATION) ...Sub-vertical fracture at 15.00m to 15.70m depth, closed and unstained.		15.80	52.40
		77	56	47	17					
	16.20						Very stiff, laminated, green grey, silty CLAY with occasional thin laminae of light grey and white silt. Rare black carbonaceous specks. (FOREST MARBLE FORMATION)		16.95	51.25
		98	93	93	3					
	17.70						Moderately weak to strong, thinly to medium bedded, light grey and white, oolitic LIMESTONE with cross bedding of ooids up to 25 degrees from horizontal. (FOREST MARBLE FORMATION)			
		88	80	73	4		15mm thick layer of white sand at 18.70m depth. Limestone is grey and argillaceous below 18.70m depth.		19.05	49.15
	19.20						Very stiff, fissured, dark green grey CLAY. Locally 'gritty' with sand and fine gravel size fossil shell fragments to 19.60m depth. (FOREST MARBLE FORMATION)		19.90	48.30
		100	94	87	6				20.00	48.20






REMARKS

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KEY

TCR - Total Core Recovery % (of core run)
SCR - Solid Core Recovery % (of core run)
RQD - Rock Quality Designation % (of core run)
FI - Fracture Index
 Water Strike  c Level on completion
 Water Rise  c Level Casing Withdrawn
 Standpipe Level

Groundwater Strikes						Groundwater Observations			
Depth m						Depth m			
No	Struck	Rose to	Rate	Cased	Sealed	Date	Hole	Casing	Water
						07/07/21	5.00	1.00	3.30
						14/07/21	5.00	1.00	3.32

Sample Photographs BH3, 1.20m to 5.20m Depth



1.20m

2.20m

4.20m

5.20m

Open hole drilled with SPTs & D samples at 1m intervals in gravel 2.20m-4.20m depth as unable to retrieve liner samples.

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Sample Photographs BH3, 5.20m to 7.20m Depth



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Sample Photographs BH3, 7.20m to 13.20m Depth



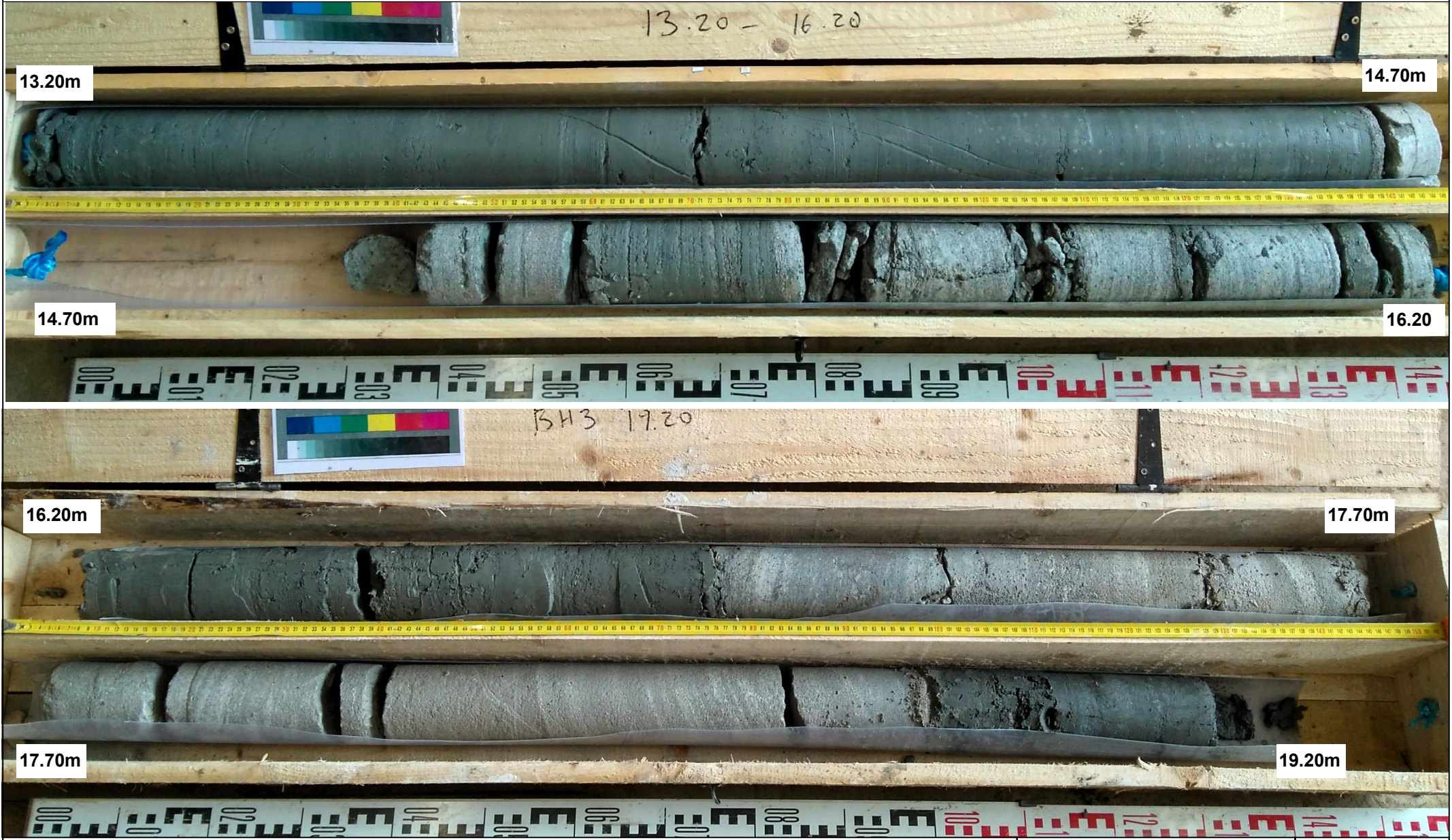
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Sample Photographs BH3, 13.20m to 19.20m Depth



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