

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com				Project Name : NRFT Shed				Project No.: 10887		Borehole No.: BH11 Sheet 1 of 1	
Location : Newport				Client: Associated British Ports				Coordinates : - -		Hole Type : WS	
Equipment :				Diameter of Casing : 100 mm				Level : -		Scale : 1:50	
Diameter of Boring : 100mm				Depth of Casing : 4.00 mBGL				Dates 19/08/2011		Logged By : TD	
Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.70-1.20	D				MADE GROUND: Blacktop over concrete MADE GROUND: Medium dense pink/grey slightly sandy gravel (possibly sub-base) MADE GROUND: Medium dense to dense blakc slightly sandy gravel Layer of geotextile MADE GROUND: Medium dense to dense grey/black slightly sandy gravel of slag (possibly sub-base) Soft to firm becoming soft slightly sandy CLAY with occasional pockets of sandy gravel	0 0.30 0.40 0.70 1.20 4.00 5 6 7 8 9 10			
End of Borehole at 4.00 m											
Remarks :		Groundwater not encountered		Key :		D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation			



APPENDIX C

SHELL AND AUGER BOREHOLE LOGS

 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com				Project Name : NRFT Shed				Project No.: 10887		Borehole No.: BH3 Sheet 2 of 2	
Location : Newport				Client: Associated British Ports				Coordinates : - -		Hole Type : Cable	
Equipment : Dando 2000				Diameter of Casing : 150 mm				Level : -		Scale : 1:50	
Diameter of Boring : 150mm				Depth of Casing : 19.60 mBGL				Dates 01/09/2011 - 05/09/2011		Logged By : TD	
Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		11.00	CPT	N=26 (15,5,7,8,6,5)	11.60		Medium dense angular GRAVEL/COBBLES of Sandstone 10.5-11.0m: Chiselling for 2hrs	10			
		12.50	CPT	N=3 (1,0,1,0,1,1)			Vert soft to soft grey silty CLAY	11			
		14.00	SPT	N=2 (0,0,1,0,1,0)				12			
		15.50	SPT	N=2 (0,0,1,0,1,0)				13			
		16.20						14			
		17.00	CPT	N=23 (2,6,4,5,7,7)			Medium dense to dense sandy GRAVEL with occasional cobbles/boulders	15			
		18.50	CPT	N=52 (10,12,8,13,15,16)				16			
								17			
								18			
								19			
								20			
Remarks :							Key : D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon)SCR - Solid Core Recovery CPT - Standard Penetration Test (solid cone) RQD - Rock Quality Designation W - Water sample U - Undisturbed sample TCR - Total Core Recovery				



 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com				Project Name : NRFT Shed				Project No.: 10887		Borehole No.: BH5 Sheet 1 of 3	
Location : Newport				Client: Associated British Ports				Coordinates : - -		Hole Type : Cable	
Equipment : Dando 2000				Diameter of Casing : 150 mm				Level : -		Scale : 1:50	
Diameter of Boring : 150mm				Depth of Casing : 20.00 mBGL				Dates 30/08/2011 - 01/09/2011		Logged By : TD	
Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
								MADE GROUND: Tarmac and concrete over grey sandy/ashy gravels	0		
		1.00	CPT	N=5 (2,1,2,1,1,1)	1.20				1		
		2.00	SPT	N=4 (1,0,1,1,1,1)				Soft grey silty CLAY	2		
		3.00	SPT	N=5 (1,1,2,1,1,1)					3		
		4.00	SPT	N=7 (1,1,1,2,2,2)	3.70			Firm grey silty sandy CLAY	4		
		5.00	SPT	N=8 (1,1,2,2,2,2)	5.50				5		
		6.50	SPT	N=3 (1,0,1,0,1,1)				Soft grey silty sandy CLAY	6		
		8.00	SPT	N=3 (1,0,1,0,1,1)					7		
		9.50	SPT	N=5 (1,0,1,1,1,2)					8		
									9		
									10		
		Depth (m)	Type	Results			(Continued next sheet)				
Remarks :							Key : D - Small disturbed sample W - Water sample B - Bulk disturbed sample U - Undisturbed sample ES - Environmental soil sample TCR - Total Core Recovery SPT - Standard Penetration Test (split spoon) SCR - Solid Core Recovery SPT - Standard Penetration Test (solid cone) RQD - Rock Quality Designation				



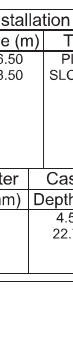
 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com				Project Name : NRFT Shed				Project No.: 10887		Borehole No.: BH5 Sheet 2 of 3	
Location : Newport				Client: Associated British Ports				Coordinates : - -		Hole Type : Cable	
Equipment : Dando 2000				Diameter of Casing : 150 mm				Level : -		Scale : 1:50	
Diameter of Boring : 150mm				Depth of Casing : 20.00 mBGL				Dates 30/08/2011 - 01/09/2011		Logged By : TD	
Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
								Soft grey silty sandy CLAY	10		
		11.00	SPT	N=4 (1,0,1,1,1,1)					11		
									12		
	 Rising to 12.20 m	12.50	SPT	N=5 (1,1,1,1,1,2)					13		
									14		
		14.00	SPT	N=5 (1,2,1,1,2,1)					14		
	 14.80 m				14.80			Soft grey silty sandy gravelly CLAY	15		
		15.50	CPT	N=6 (1,2,2,1,2,1)					16		
					16.20			Medium dense to dense sandy cobbly GRAVEL with occasional boulders	17		
		17.00	CPT	N=26 (3,4,6,7,6,7)					18		
									19		
		18.50	CPT	N=42 (4,5,8,9,9,16)				18.4 to 19.2m: Chiselling for 0.5Hrs	19		
									20		
							(Continued next sheet)				
Remarks :							Key : D - Small disturbed sample W - Water sample B - Bulk disturbed sample U - Undisturbed sample ES - Environmental soil sample TCR - Total Core Recovery SPT - Standard Penetration Test (split spoon) SCR - Solid Core Recovery CPT - Standard Penetration Test (solid cone) RQD - Rock Quality Designation				



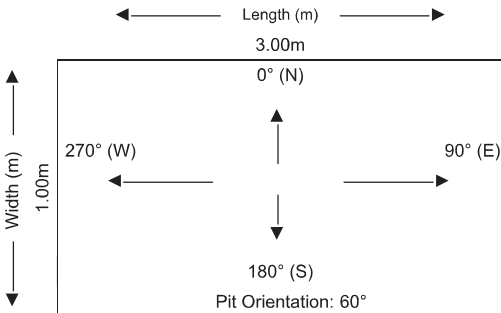
 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com					Project Name : NRFT Shed					Project No.: 10887		Borehole No.: BH5 Sheet 3 of 3	
Location : Newport					Client: Associated British Ports					Coordinates : - -		Hole Type : Cable	
Equipment : Dando 2000					Diameter of Casing : 150 mm					Level : -		Scale : 1:50	
Diameter of Boring : 150mm					Depth of Casing : 20.00 mBGL					Dates 30/08/2011 - 01/09/2011		Logged By : TD	
Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description					
		Depth (m)	Type	Results									
					20.30		 Medium dense to dense sandy cobbly GRAVEL with occasional boulders 20.0 to 20.3m: Chiselling for 1.5Hrs End of Borehole at 20.30 m	20					
								21					
								22					
								23					
								24					
								25					
								26					
								27					
								28					
								29					
								30					
Remarks :							Key : D - Small disturbed sample W - Water sample B - Bulk disturbed sample U - Undisturbed sample ES - Environmental soil sample TCR - Total Core Recovery SPT - Standard Penetration Test (split spoon) SCR - Solid Core Recovery CPT - Standard Penetration Test (solid cone) RQD - Rock Quality Designation						



	Contract Name: M4CaN: Docks Enabling Works			Client: Welsh Government		Borehole ID: BH-M4ABP-Z04-01			
	Contract Number: JFR8707	Start Date: 12/03/2018	End Date: 14/03/2018	Checked By: GR	Status: DRAFT	Sheet 1 of 3			
Cable Percussion Borehole Log	Easting: 332042.6	Northing: 184501.6	Ground Level: 8.54mOD	Plant Used: Dando 150	Logged By: AS	Scale: 1:50			
Weather: Overcast			Termination: Target depth reached.		SPT Hammer: SPT01 Energy Ratio: 62%				
Samples & In Situ Testing				Strata Details				Groundwater	
Depths	Type/Ref	SPT	Testing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
0.50 - 0.95	B1			8.04	(0.50)		Grey CONCRETE. MADE GROUND		
1.10	B2								
1.20 - 1.65	B4								
1.20 - 1.65	D3	SPT(S) 1.20m, N=4 (2,2/1,1,1,1)					Soft to firm grey to dark grey mottled brown and black sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of ash and wood fragments. MADE GROUND	1	
1.80	D5								
2.00	ES							2	
2.00 - 2.45	UT6		Ublow=21, 100% Recovery PID 2.00m, 0.0ppm		(3.50)				
2.50 - 2.95	D7	SPT(S) 2.50m, N=6 (2,2/2,2,1,1)							
3.00	ES							3	
3.00 - 3.45	UT8		Ublow=26, 100% Recovery PID 3.00m, 0.0ppm						
3.45 - 3.50	D9								
3.50 - 3.95	B10	SPT(S) 3.50m, N=4 (1,1/1,1,1,1)							
4.00	ES			4.54	4.00		Soft greyish brown to brownish grey silty CLAY. TIDAL FLAT DEPOSITS	4	
4.00 - 4.45	UT11		Ublow=9, 100% Recovery PID 4.00m, 0.0ppm						
4.50 - 4.95	D12	SPT(S) 4.50m, N=4 (1,1/1,1,1,1)							
5.00	ES							5	
5.00 - 5.45	UT13		Ublow=12, 100% Recovery PID 5.00m, 0.0ppm						
5.45 - 5.50	D14								
5.50 - 5.95	B16	SPT(S) 5.50m, N=5 (1,1/1,1,1,2)			(3.00)			6	
5.50 - 5.95	D15								
6.20	D17								
6.50 - 6.95	UT18		Ublow=10, 100% Recovery						
6.95 - 7.00	D19								
7.00	ES			1.54	7.00		Very soft to soft indistinctly fissured grey to dark grey silty CLAY. TIDAL FLAT DEPOSITS	7	
7.00 - 7.45	D20	SPT(S) 7.00m, N=2 (1,0/1,0,1,0)							
8.00	ES							8	
8.00 - 8.45	UT21		Ublow=8, 100% Recovery						
8.45 - 8.50	D22								
8.50 - 8.95	B24	SPT(S) 8.50m, N=1 (1,0/0,1,0,0)			(5.50)				
8.50 - 8.95	D23								
9.00	ES							9	
9.50 - 9.95	UT25		Ublow=7, 100% Recovery						
9.95 - 10.00	D26								
10.00 - 10.45	D27							10	
Start & End of Shift Observations				Installation				Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Ref	Top (m)	Base (m)	Type	Dia (mm)
12-03-2018	08:30	0.00			1	0.00	16.50	PLAIN	50
12-03-2018	17:00	1.20	1.20		1	16.50	18.50	SLOTTED	50
13-03-2018	08:30	1.20	1.20						
13-03-2018	17:00	17.00	17.00	4.50					
14-03-2018	08:30	17.00	17.00	7.80					
14-03-2018	16:00	23.50	22.70	10.40					
Chiselling				Borehole Diameter				Casing Diameter	
From (m)	To (m)	Duration	Remarks	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)		
18.80	19.10	01:00		4.50	200	4.50	200		
19.40	19.60	00:30		23.50	150	22.70	150		
20.40	20.70	01:30							
23.20	23.50	01:30							
								RPS CP Template Issue Number: 1 Issue Date: 13/09/2017	

	Contract Name: M4CaN: Docks Enabling Works			Client: Welsh Government		Borehole ID: BH-M4ABP-Z04-01							
	Contract Number: JFR8707	Start Date: 12/03/2018	End Date: 14/03/2018	Checked By: GR	Status: DRAFT	Sheet 2 of 3							
Cable Percussion Borehole Log	Easting: 332042.6	Northing: 184501.6	Ground Level: 8.54mOD	Plant Used: Dando 150	Logged By: AS	Scale: 1:50							
Weather: Overcast			Termination: Target depth reached.		SPT Hammer: SPT01 Energy Ratio: 62%								
Samples & In Situ Testing				Strata Details			Groundwater						
Depths	Type/Ref	SPT	Testing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation				
11.00 11.00 - 11.45	ES UT28	SPT(S) 10.00m, N=2 (1,0/1,0,0,1)	Ublow=10, 100% Recovery					11					
11.45 - 11.50 11.50 - 11.95 11.50 - 11.95	D29 B31 D30	SPT(S) 11.50m, N=4 (1,1/1,1,1,1)											
12.00	ES		Ublow=9, 100% Recovery	-3.96	12.50		Soft to firm grey slightly sandy clayey SILT. Sand is fine to medium. TIDAL FLAT DEPOSITS	12					
12.50 - 12.95	UT32												
12.95 - 13.00 13.00 - 13.45	D33 D34	SPT(S) 13.00m, N=9 (1,2/2,3,2,2)	Ublow=32, 100% Recovery		(3.10)		From 14.00m: Becoming very sandy.	13					
14.00	ES UT35												
14.45 - 14.50 14.50 - 14.95 14.50 - 14.95	D36 B38 D37	SPT(S) 14.50m, N=7 (1,2/2,1,2,2)	Ublow=56, 100% Recovery		15.60			14					
15.50 - 15.95	UT39												
16.00	ES B40	SPT(C) 16.00m, N=29 (4,5/6,6,8,9)						15					
16.00 - 16.45													
17.00 - 17.45	B41	SPT(C) 17.00m, N=22 (3,5/5,6,6,5)						16					
17.00 - 17.45													
18.50 - 18.95	B42	SPT(C) 18.50m, 50 (5,9/50 for 225mm)					From 18.50m: Very dense.	17					
19.00	ES												
19.00								18					
19.00													
20.00 - 20.45	B43			-10.46	19.00		Greyish brown medium to coarse SAND and subangular to subrounded fine to coarse quartzite GRAVEL with low subrounded quartzite cobble content. GLACIOFLUVIAL DEPOSITS	19					
				-11.46	20.00			20					
Start & End of Shift Observations				Installation				Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Ref	Top (m)	Base (m)	Type	Dia (mm)	Inspection pit hand excavated from 0.0 mbgl to 1.20 mbgl. Cable percussive drilling from 1.20 mbgl to 23.50 mbgl.			
					1 1	0.00 16.50	16.50 18.50	PLAIN SLOTTED	50 50				
Chiselling				Borehole Diameter		Casing Diameter		Water Strikes		Remarks			
From (m)	To (m)	Duration	Remarks	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Strike (m)	Casing (m)		Sealed (m)	Time (mins)	Rose to (m)
18.80	19.10	01:00		4.50	200	4.50	200	12.70	11.90		20	7.80	Medium flow rate
19.40	19.60	00:30		23.50	150	22.70	150						
20.40	20.70	01:30											
23.20	23.50	01:30											
RPS CP Template Issue Number: 1 Issue Date: 13/09/2017													

RPS						Contract Name: M4CaN: Docks Enabling Works			Client: Welsh Government			Borehole ID: BH-M4ABP-Z04-01					
Cable Percussion Borehole Log						Contract Number: JFR8707		Start Date: 12/03/2018		End Date: 14/03/2018		Checked By: GR		Status: DRAFT		Sheet 3 of 3	
						Easting: 332042.6		Northing: 184501.6		Ground Level: 8.54mOD		Plant Used: Dando 150		Logged By: AS		Scale: 1:50	
Weather: Overcast						Termination: Target depth reached.						SPT Hammer: SPT01 Energy Ratio: 62%					
Samples & In Situ Testing						Strata Details									Groundwater		
Depths		Type/ Ref	SPT	Testing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/ Installation		
21.50 - 21.95		B44	SPT(C) 20.00m, N=36 (4,6/7,10,10,9)			(2.70)		Dense to very dense brown mottled cream gravelly medium to coarse SAND with low cobble content. Gravel is subangular to rounded fine to coarse of quartzite. Cobbles are subrounded of quartzite. GLACIOFLUVIAL DEPOSITS						21			
22.00		ES	SPT(C) 21.50m, 50 (8,10/50 for 255mm)											22			
22.70		D45			-14.16	22.70		Very stiff reddish brown silty CLAY with frequent light greenish grey reduction spots (up to 30 mm). (Weathering Grade IVb) MERCIA MUDSTONE GROUP	23								
23.00 - 23.45		B47	SPT(C) 23.00m, 50 (25 for 125mm/50 for 0mm)			(0.80)											
23.00 - 23.45		D46	SPT(C) 23.50m, 50 (25 for 40mm/50 for 40mm)		-14.96	23.50		End of Borehole at 23.50m									
														24			
														25			
														26			
														27			
														28			
														29			
														30			
Start & End of Shift Observations						Installation				Remarks:							
Date	Time	Depth (m)	Casing (m)	Water (m)	Ref	Top (m)	Base (m)	Type	Dia (mm)	Inspection pit hand excavated from 0.0 mbgl to 1.20 mbgl. Cable percussive drilling from 1.20 mbgl to 23.50 mbgl.							
					1 1	0.00 16.50	16.50 18.50	PLAIN SLOTTED	50 50								
Chiselling						Borehole Diameter				Casing Diameter		Water Strikes					
From (m)	To (m)	Duration	Remarks			Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)		Remarks	
18.80	19.10	01:00				4.50	200	4.50	200	12.70	11.90		20	7.80		Medium flow rate	
19.40	19.60	00:30				23.50	150	22.70	150								
20.40	20.70	01:30															
23.20	23.50	01:30															
RPS CP Template Issue Number: 1 Issue Date: 13/09/2017																	

	Contract Name: M4CaN: Docks Enabling Works			Client: Welsh Government		Trial Pit ID: TP-M4ABP-Z04-01	
	Contract Number: JFR8707	Start Date: 09/03/2018	End Date: 09/03/2018	Checked By: GR	Status: DRAFT	Sheet 1 of 1	
Trial Pit Log		Easting: 332063.7	Northing: 184506.2	Ground Level: 8.70mOD	Plant Used: JCB 3CX	Logged By: AS	Scale: 1:50
Weather: Sunny			Hole Termination: Target depth reached.			Stability: Stable	
Samples & In Situ Testing				Strata Details			
Depths	Type/Ref	Testing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water
0.50	ES	PID 0.50m, 0.0ppm	8.50	0.20		Black (ashy) fine to coarse SAND.	
			8.30	0.40		MADE GROUND	
			8.10	0.60		MADE GROUND	
1.00	B1	PID 1.50m, 0.0ppm	7.50	1.20		MADE GROUND	1
1.50	D1		6.90	(0.60)		MADE GROUND	
1.50	ES				MADE GROUND		
2.00	B2			2			
2.50	D2	PID 2.50m, 0.0ppm	(1.60)		Between 1.40-1.70m: Dark grey to dark brown fine to medium.	3	
2.50	ES				Soft grey to bluish grey mottled light orangish brown slightly sandy CLAY. Sand is fine to medium. Occasional pockets of firm grey sandy clay.		
3.00	B3				TIDAL FLAT DEPOSITS		
			5.30	3.40	End of Trial Pit at 3.40m		
							4
							5
							6
							7
Dimensions:				General Remarks:			
Final Depth: 3.40m				Moderate seepage from 0.50m.			
							
				Water Strikes			
				Strike (m)			
				0.50			
				Remarks			
				Moderate seepage			
RPS TP Template Issue Number: 1 Issue Date: 13/09/2017							

Zone	Plot Reference	Occupier	Summary of Proposals
5	Alt	ABP Common User Storage Area	New concrete hardstanding to be provided including infrastructure provisions to allow operations to be maintained as existing.



Legend

- Land Parcel Zone
- Historic Investigation Locations 1994-2016 (Integral Geotechnique)
 - Borehole
 - Window Sample
- RPS Investigation Locations (2017/18)
 - Cable Percussive Borehole
 - Window Sample Borehole
 - Cone Penetration Test (CPT)
 - Surface Water Sample
 - Monitoring Well Installation



Llywodraeth Cymru
Welsh Government

M4 Corridor around Newport -
ABP & Tenant Relocation

**Investigation Locations
(Zone 5)**

Figure: JFR8707-SI-005	Revision: B
Date: June 2018	Status: FINAL
Drawn: RJU	Checked: GR
Scale: A3 @ 1:750	
0 12.5 25m	



	Contract Name: M4CaN: Docks Enabling Works			Client: Welsh Government		Borehole ID: BH-M4ABP-Z05-01			
	Contract Number: JFR8707	Start Date: 15/03/2018	End Date: 26/03/2018	Checked By: GR	Status: DRAFT	Sheet 1 of 3			
Cable Percussion Borehole Log	Easting: 331940.2	Northing: 184433.9	Ground Level: 8.52mOD	Plant Used: Dando 150	Logged By: AS	Scale: 1:50			
Weather: Cloudy			Termination: Target depth reached.		SPT Hammer: SPT01 Energy Ratio: 62%				
Samples & In Situ Testing				Strata Details			Groundwater		
Depths	Type/Ref	SPT	Testing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		
0.50 - 0.95	B1		PID 0.50m, 0.5ppm	8.37	0.15 (0.35)	  	1 		
1.00	ES		PID 1.00m, 0.4ppm	8.02	0.50				
1.20 - 1.65	B2	SPT(C) 1.20m, N=17 (3,4/4,5,5,3)			(1.20)				
1.70	D3			6.82	1.70		2 		
2.00	ES		Ublow=10, 100% Recovery						
2.00 - 2.45	UT4		PID 2.00m, 0.0ppm		(1.30)				
2.50	D5	SPT(S) 2.50m, N=2 (1,1/0,1,0,1)		5.52	3.00		3 		
2.50 - 2.95	B7								
2.50 - 2.95	D6								
3.00	ES		Ublow=9, 100% Recovery				3 		
3.00 - 3.45	UT8		PID 3.00m, 0.0ppm						
3.50	D9	SPT(S) 3.50m, N=2 (1,0/1,0,1,0)							
3.50 - 3.95	D10						3 		
4.00	ES		Ublow=13, 100% Recovery						
4.00 - 4.45	UT11		PID 4.00m, 0.0ppm						
4.50	D12	SPT(S) 4.50m, N=4 (1,1/1,1,1,1)					3 		
4.50 - 4.95	B14								
4.50 - 4.95	D13								
5.00	ES		Ublow=12, 100% Recovery				3 		
5.00 - 5.45	UT15		PID 5.00m, 0.0ppm						
5.50	D16	SPT(S) 5.50m, N=2 (1,0/0,1,0,1)							
5.50 - 5.95	D17						3 		
6.50 - 6.95	UT18		Ublow=10, 100% Recovery						
7.00	D19	SPT(S) 7.00m, N=4 (1,1/1,1,1,1)							
7.00	ES		Ublow=15, 100% Recovery				7 		
7.00 - 7.45	B21		PID 7.00m, 0.0ppm						
7.00 - 7.45	D20								
8.00 - 8.45	UT22						7 		
8.50	D23	SPT(S) 8.50m, N=2 (1,0/0,1,0,1)							
8.50 - 8.95	D24								
9.00	ES		PID 9.00m, 0.0ppm				9 		
9.50 - 9.95	UT25		Ublow=9, 100% Recovery						
10.00	D26								
Start & End of Shift Observations				Installation				Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Ref	Top (m)	Base (m)	Type	Dia (mm)
15-03-2018	08:30	0.00			1	0.00	16.00	PLAIN	50
15-03-2018	17:00	12.50	11.00		1	16.00	18.00	SLOTTED	50
26-03-2018	08:30	12.50	11.00	5.50					
26-03-2018	17:00	22.20	21.60	5.00					
Chiselling				Borehole Diameter				Casing Diameter	
From (m)	To (m)	Duration	Remarks	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)		
18.20	18.60	01:00		22.20	200	4.50	200		
21.10	21.30	00:30				21.60	150		
22.00	22.20	00:30							
Water Strikes				Remarks					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)					
0.90	1.80	20	0.60	8.80	Medium flow rate				
15.30	14.90		20		Medium flow rate				
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	Contract Name: M4CaN: Docks Enabling Works			Client: Welsh Government		Borehole ID: BH-M4ABP-Z05-01				
	Contract Number: JFR8707	Start Date: 15/03/2018	End Date: 26/03/2018	Checked By: GR	Status: DRAFT	Sheet 2 of 3				
Cable Percussion Borehole Log	Easting: 331940.2	Northing: 184433.9	Ground Level: 8.52mOD	Plant Used: Dando 150	Logged By: AS	Scale: 1:50				
Weather: Cloudy			Termination: Target depth reached.		SPT Hammer: SPT01 Energy Ratio: 62%					
Samples & In Situ Testing				Strata Details				Groundwater		
Depths	Type/Ref	SPT	Testing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation	
10.00 - 10.45 10.00 - 10.45	B28 D27	SPT(S) 10.00m, N=5 (1,1/1,1,2,1)					to medium. TIDAL FLAT DEPOSITS			
11.00 11.00 - 11.45	ES UT29		Ublow=7, 100% Recovery PID 11.00m, 0.0ppm		(3.00)			11		
11.50 - 11.95	D30	SPT(S) 11.50m, N=4 (1,1/1,1,1,1)						12		
12.50 - 12.95 12.50 - 12.95 12.50 - 12.95	B32 ES U-NR31		Ublow=35, 0% Recovery PID 12.50m, 0.0ppm	-3.98	12.50		Very soft dark grey silty CLAY. TIDAL FLAT DEPOSITS	13		
14.00 - 14.45 14.00 - 14.45	B33 ES	SPT(C) 14.00m, N=11 (6,7/5,2,2,2)	PID 14.00m, 0.0ppm	-5.48	14.00		Very soft locally firm dark grey sandy gravelly CLAY. Sand is fine to medium. Gravel is subrounded to rounded fine to medium of sandstone and quartzite. GLACIOFLUVIAL DEPOSITS	14		
15.00 - 15.45	UT34		Ublow=47, 100% Recovery					15		
15.50 - 15.95 15.50 - 15.95 15.50 - 15.95	B36 D35 ES	SPT(S) 15.50m, N=36 (2,7/9,11,9,7)	PID 15.50m, 0.0ppm	-6.98	15.50		Dense dark grey clayey sandy subrounded to rounded fine to coarse sandstone and quartzite GRAVEL. Sand is fine to coarse. GLACIOFLUVIAL DEPOSITS	16		
16.50 - 16.95 16.50 - 16.95	B37 ES	SPT(C) 16.50m, N=29 (3,4/6,6,7,10)	PID 16.50m, 0.0ppm	-7.98	16.50		Medium dense grey sandy subrounded to rounded fine to coarse GRAVEL of sandstone, mudstone and quartzite. Sand is fine to coarse. GLACIOFLUVIAL DEPOSITS	17		
18.00 - 18.45	B38	SPT(C) 18.00m, 50 (11,13/50 for 200mm)		-9.48	18.00		Very dense grey sandy subrounded to rounded medium to coarse GRAVEL of sandstone, mudstone and quartzite with low subrounded quartzite cobble content. Sand is fine to coarse. GLACIOFLUVIAL DEPOSITS	18		
19.50 - 19.95	B39	SPT(C) 19.50m, N=40 (8,7/9,9,10,12)		-9.93	18.45		Dense brown medium to coarse SAND and subrounded to rounded fine to coarse GRAVEL with low subrounded to rounded quartzite cobble content. Gravel is of sandstone, mudstone, quartzite and quartz. GLACIOFLUVIAL DEPOSITS	19		
Start & End of Shift Observations				Installation				Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Ref	Top (m)	Base (m)	Type	Dia (mm)	Concrete coring from ground level to 0.50 mbgl. Inspection pit hand excavated from 0.50 mbgl to 1.20 mbgl. Cable percussive drilling to 22.20 mbgl.
					1	0.00	16.00	PLAIN	50	
Chiselling				Borehole Diameter				Casing Diameter		
From (m)	To (m)	Duration	Remarks	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)
18.20	18.60	01:00		22.20	200	4.50	200	0.90	14.90	1.80
21.10	21.30	00:30				21.60	150	15.30		
22.00	22.20	00:30								
								Time (mins)		
								Rose to (m)		
								Remarks		
								Medium flow rate		
								Medium flow rate		
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	Contract Name: M4CaN: Docks Enabling Works			Client: Welsh Government			Borehole ID: BH-M4ABP-Z05-01						
	Contract Number: JFR8707	Start Date: 15/03/2018	End Date: 26/03/2018	Checked By: GR	Status: DRAFT		Sheet 3 of 3						
Cable Percussion Borehole Log	Easting: 331940.2	Northing: 184433.9	Ground Level: 8.52mOD	Plant Used: Dando 150	Logged By: AS	Scale: 1:50							
Weather: Cloudy			Termination: Target depth reached.			SPT Hammer: SPT01 Energy Ratio: 62%							
Samples & In Situ Testing				Strata Details				Groundwater					
Depths	Type/Ref	SPT	Testing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation				
21.00 - 21.45	B40	SPT(C) 21.00m, N=49 (5,5/6,13,13,17)	PID 21.60m, 0.0ppm	-13.08	(3.15)		Very stiff reddish brown CLAY with frequent greyish green reduction spots. (Weathering Grade IVb) MERCIA MUDSTONE GROUP	21					
21.60 - 22.00 21.60 - 22.00	B41 ES				21.60 (0.60)			22					
22.00 - 22.20	D42	SPT(S) 22.00m, 50 (25 for 125mm/50 for 75mm) SPT(C) 22.20m, 50 (25 for 40mm/50 for 40mm)			-13.68	22.20	End of Borehole at 22.20m						
								23					
								24					
								25					
								26					
								27					
								28					
								29					
								30					
Start & End of Shift Observations				Installation				Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Ref	Top (m)	Base (m)	Type	Dia (mm)	Concrete coring from ground level to 0.50 mbgl. Inspection pit hand excavated from 0.50 mbgl to 1.20 mbgl. Cable percussive drilling to 22.20 mbgl.			
					1 1	0.00 16.00	16.00 18.00	PLAIN SLOTTED	50 50				
Chiselling				Borehole Diameter		Casing Diameter		Water Strikes		Remarks			
From (m)	To (m)	Duration	Remarks	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
18.20	18.60	01:00		22.20	200	4.50	200	0.90		1.80	20	0.60	Medium flow rate
21.10	21.30	00:30				21.60	150	15.30	14.90		20	8.80	Medium flow rate
22.00	22.20	00:30											
RPS CP Template Issue Number: 1 Issue Date: 13/09/2017													

	Contract Name: M4CaN: Docks Enabling Works			Client: Welsh Government			Borehole ID: BH-M4ABP-Z05-02			
	Contract Number: JFR8707	Start Date: 08/03/2018	End Date: 12/03/2018	Checked By: GR	Status: DRAFT	Sheet 1 of 3				
Cable Percussion Borehole Log	Easting: 332000.7	Northing: 184475.6	Ground Level: 8.49mOD	Plant Used: Dando 150	Logged By: MS/AS	Scale: 1:50				
Weather: Overcast			Termination: Target depth reached.			SPT Hammer: SPT01 Energy Ratio: 62%				
Samples & In Situ Testing				Strata Details				Groundwater		
Depths	Type/Ref	SPT	Testing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation	
0.50 - 0.95	B1		PID 0.50m, 0.0ppm	8.19	(0.30) 0.30		Black TARMACADAM. MADE GROUND			
1.00	ES		PID 1.00m, 0.0ppm		(1.10)		Black slightly clayey gravelly (ashy) fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of coal, red brick, ash, concrete and limestone. MADE GROUND			
1.20 - 1.65	B3	SPT(S) 1.20m, N=5 (1,1/1,1,2,1)		7.09	1.40		Soft greyish brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of slag and concrete. Occasional rootlets and organic matter (possibly decomposed roots and rootlets). MADE GROUND			
1.20 - 1.65	D2									
2.00	ES		Ublow=21, 100% Recovery PID 2.00m, 0.0ppm		(1.60)		Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
2.00 - 2.45	UT4									
2.45 - 2.50	D5	SPT(S) 2.50m, N=4 (1,1/1,1,1,1)		5.49	3.00		Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
2.50 - 2.95	D6									
3.00	ES		Ublow=15, 100% Recovery PID 3.00m, 0.0ppm				Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
3.00 - 3.45	UT7									
3.45 - 3.50	D8	SPT(S) 3.50m, N=3 (1,0/1,0,1,1)					Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
3.50 - 3.95	B10									
3.50 - 3.95	D9						Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
4.00	ES		Ublow=9, 100% Recovery PID 4.00m, 0.0ppm							
4.00 - 4.45	UT11						Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
4.45 - 4.50	D12	SPT(S) 4.50m, N=6 (1,1/1,2,1,2)								
4.50 - 4.95	D13				(3.00)		Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
5.00	ES		Ublow=13, 100% Recovery PID 5.00m, 0.0ppm							
5.00 - 5.45	UT14						Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
5.45 - 5.50	D15	SPT(S) 5.50m, N=4 (1,1/1,1,1,1)								
5.50 - 5.95	B17						Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
5.50 - 5.95	D16									
6.00	ES		PID 6.00m, 0.0ppm	2.49	6.00		Very soft to soft greyish brown silty CLAY. Sand is fine to coarse. TIDAL FLAT DEPOSITS			
6.50 - 6.95	UT18		Ublow=16, 100% Recovery							
6.95 - 7.00	D19	SPT(S) 7.00m, N=4 (1,1/1,1,1,1)					Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
7.00	ES		PID 7.00m, 0.0ppm							
7.00 - 7.45	D20						Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
7.80	D21		Ublow=10, 100% Recovery PID 8.00m, 0.0ppm							
8.00	ES						Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
8.00 - 8.45	UT22									
8.45 - 8.50	D23	SPT(S) 8.50m, N=3 (1,0/1,0,1,1)					Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
8.50 - 8.95	B25									
8.50 - 8.95	D24						Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
9.00	ES		PID 9.00m, 0.0ppm							
9.50 - 9.95	UT26		Ublow=10, 100% Recovery				Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
9.95 - 10.00	D27									
10.00	ES						Very soft to soft greyish brown silty CLAY. TIDAL FLAT DEPOSITS			
Start & End of Shift Observations				Installation				Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Ref	Top (m)	Base (m)	Type	Dia (mm)	
08-03-2018	08:30	0.00			1	0.00	18.00	PLAIN	19	
08-03-2018	17:00	10.00	9.30				20.00	SLOTTED	19	
08-03-2018	08:30	10.00	9.30							
09-03-2018	17:00	18.50	18.50	14.30						
12-03-2018	08:30	18.50	18.50	3.70						
12-03-2018	17:00	22.40	21.30	10.40						
Chiselling				Borehole Diameter				Casing Diameter		
From (m)	To (m)	Duration	Remarks	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Strike (m)	Casing (m)	
17.30	17.60	01:00		22.40	200	3.00	200	15.00	14.80	
17.90	18.10	00:30				21.30	150			
18.70	18.90	00:30								
20.10	20.50	01:00								
								Sealed (m)	Time (mins)	Rose to (m)
									20	12.50
								Remarks		
								Medium flow rate		
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RPS		Contract Name: M4CaN: Docks Enabling Works			Client: Welsh Government		Borehole ID: BH-M4ABP-Z05-02						
		Contract Number: JFR8707	Start Date: 08/03/2018	End Date: 12/03/2018	Checked By: GR	Status: DRAFT	Sheet 2 of 3						
Cable Percussion Borehole Log		Easting: 332000.7	Northing: 184475.6	Ground Level: 8.49mOD	Plant Used: Dando 150	Logged By: MS/AS	Scale: 1:50						
Weather: Overcast			Termination: Target depth reached.			SPT Hammer: SPT01 Energy Ratio: 62%							
Samples & In Situ Testing				Strata Details				Groundwater					
Depths	Type/ Ref	SPT	Testing	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation				
10.00 - 10.45	D28	SPT(S) 10.00m, N=3 (1,0/1,0,1,1)	PID 10.00m, 0.0ppm										
11.00 - 11.45	ES UT29		Ublow=8, 100% Recovery PID 11.00m, 0.0ppm					11					
11.45 - 11.50	D30	SPT(S) 11.50m, N=1 (1,0/0,1,0,0)											
11.50 - 11.95	B32												
11.50 - 11.95	D31												
12.00 - 12.45	ES		PID 12.00m, 0.0ppm					12					
12.50 - 12.95	UT33		Ublow=5, 100% Recovery		(9.00)								
12.95 - 13.00	D34	SPT(S) 13.00m, N=2 (1,0/1,0,1,0)						13					
13.00 - 13.45	ES D35		PID 13.00m, 0.0ppm										
14.00 - 14.45	ES UT36		Ublow=29, 100% Recovery PID 14.00m, 0.0ppm					14					
14.45 - 14.50	D37	SPT(S) 14.50m, N=16 (1,1/2,3,5,6)											
14.50 - 14.95	B39												
14.50 - 14.95	D38												
15.00 - 15.45	ES B40		PID 15.00m, 0.0ppm	-6.51	15.00		Dense grey slightly clayey subangular to subrounded fine to medium GRAVEL of sandstone, quartzite and conglomerate. GLACIOFLUVIAL DEPOSITS	15					
15.50 - 15.95	B41	SPT(C) 15.50m, N=37 (5,8/8,10,10,9)			(1.00)								
16.00 - 16.45	ES		PID 16.00m, 0.0ppm	-7.51	16.00		Very dense brownish grey rounded fine to coarse GRAVEL of sandstone, mudstone and quartzitic conglomerate. GLACIOFLUVIAL DEPOSITS	16					
17.00 - 17.45	ES B42	SPT(C) 17.00m, 50 (11,13/50 for 265mm)	PID 17.00m, 0.0ppm					17					
18.00 - 18.45	ES		PID 18.00m, 0.0ppm	-9.01	17.50		Dense brownish grey medium to coarse SAND and subangular to rounded fine to coarse GRAVEL with low cobble content. Gravel is of sandstone, quartzite and quartzitic conglomerate. Cobbles are rounded of sandstone, quartzite and quartzitic conglomerate. GLACIOFLUVIAL DEPOSITS	18					
18.50 - 18.95	B43	SPT(C) 18.50m, N=44 (7,11/10,11,10,13)			(2.50)			19					
20.00 - 20.45	B44			-11.51	20.00			20					
Start & End of Shift Observations				Installation				Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Ref	Top (m)	Base (m)	Type	Dia (mm)				
					1	0.00	18.00	PLAIN	19				
					1	18.00	20.00	SLOTTED	19				
								Concrete coring from ground level to 0.50 mbgl. Inspection pit hand excavated from 0.50 mbgl to 1.2 mbgl. Cable percussive drilling to 22.40 mbgl.					
								Water Strikes					
								Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
								15.00	14.80		20	12.50	Medium flow rate
Chiselling				Borehole Diameter		Casing Diameter							
From (m)	To (m)	Duration	Remarks		Depth (m)	Dia (mm)	Depth (m)	Dia (mm)					
17.30	17.60	01:00			22.40	200	3.00	200					
17.90	18.10	00:30					21.30	150					
18.70	18.90	00:30											
20.10	20.50	01:00											
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