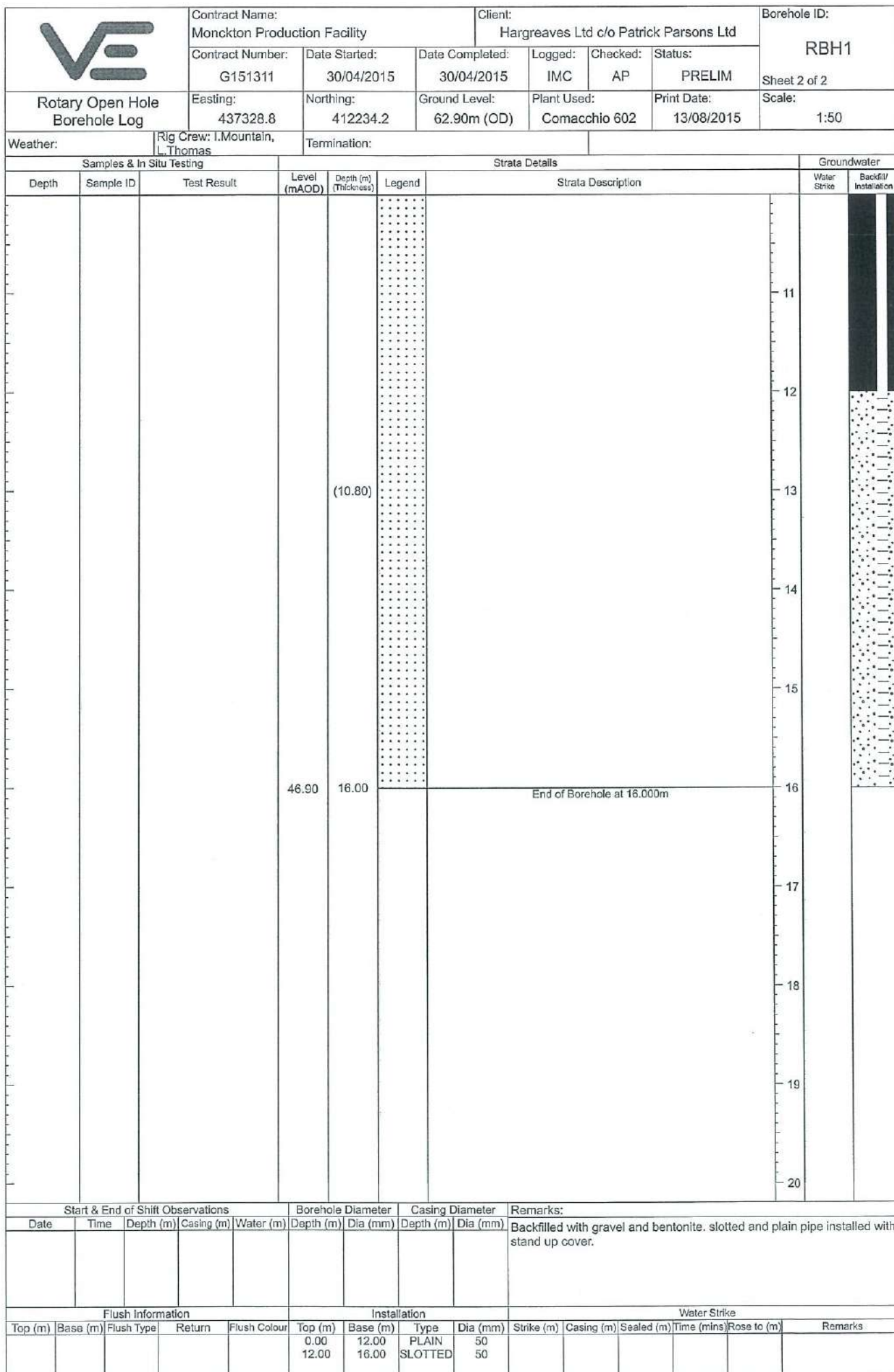
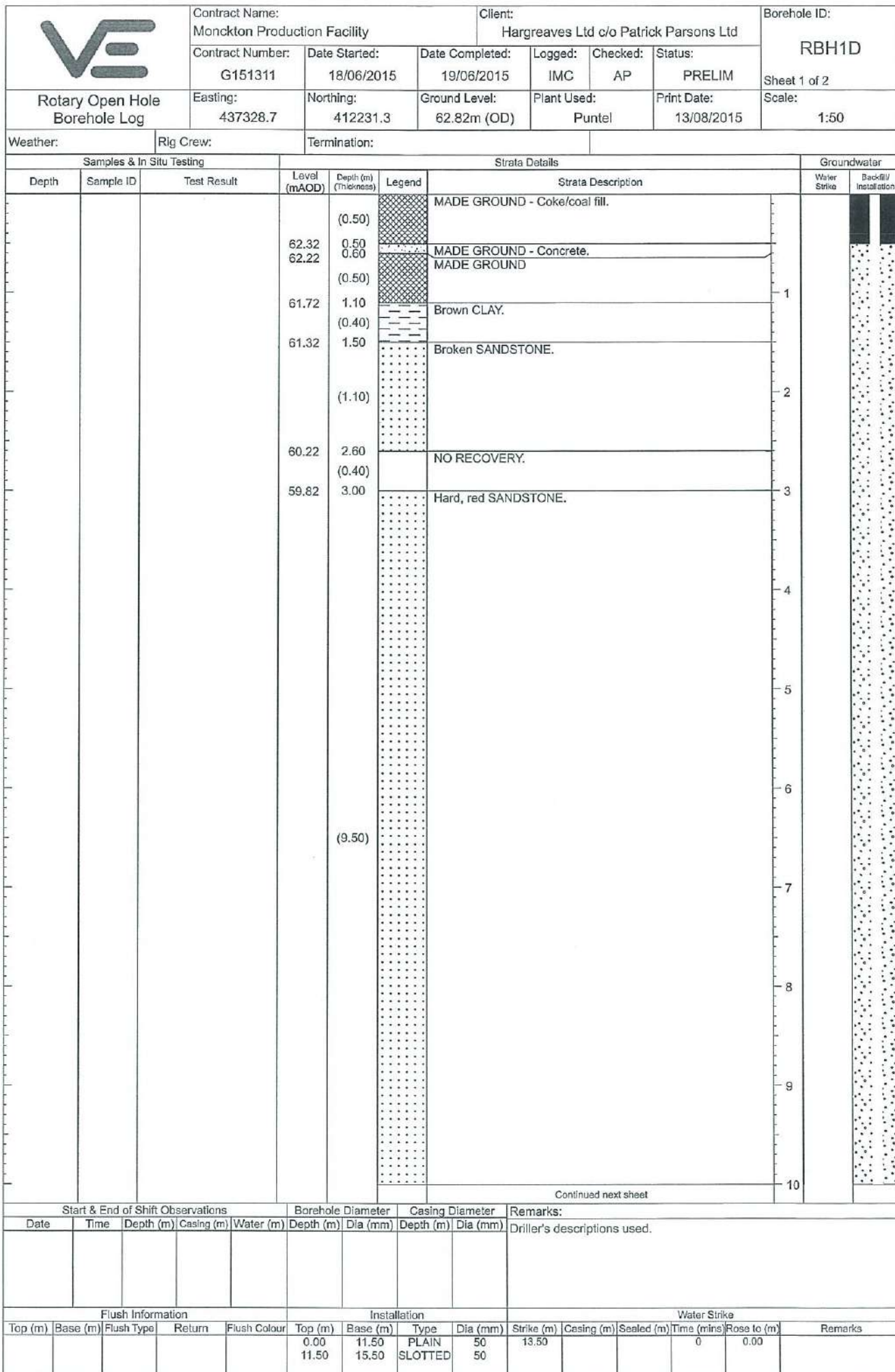


	Contract Name: Monckton Production Facility			Client: Hargreaves Ltd c/o Patrick Parsons Ltd			Borehole ID: RBH1	
	Contract Number: G151311	Date Started: 30/04/2015	Date Completed: 30/04/2015	Logged: IMC	Checked: AP	Status: PRELIM	Sheet 1 of 2	
Rotary Open Hole Borehole Log		Easting: 437328.8	Northing: 412234.2	Ground Level: 62.90m (OD)	Plant Used: Comacchio 602	Print Date: 13/08/2015	Scale: 1:50	
Weather:		Rig Crew: I.Mountain, L.Thomas		Termination:				
Samples & In Situ Testing			Strata Details					Groundwater
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike
			61.70	(1.20) 1.20		MADE GROUND (Drillers Description)		1
				(4.00) 5.20		Brown weathered SANDSTONE (Drillers Description)		2 3 4 5
			57.70	5.20		SANDSTONE (Drillers Description)		6 7 8 9 10
Continued next sheet								
Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
Remarks:					Backfilled with gravel and bentonite. slotted and plain pipe installed with stand up cover.			
Flush Information					Installation		Water Strike	
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)
					0.00	12.00	PLAIN	50
					12.00	16.00	SLOTTED	50
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks			





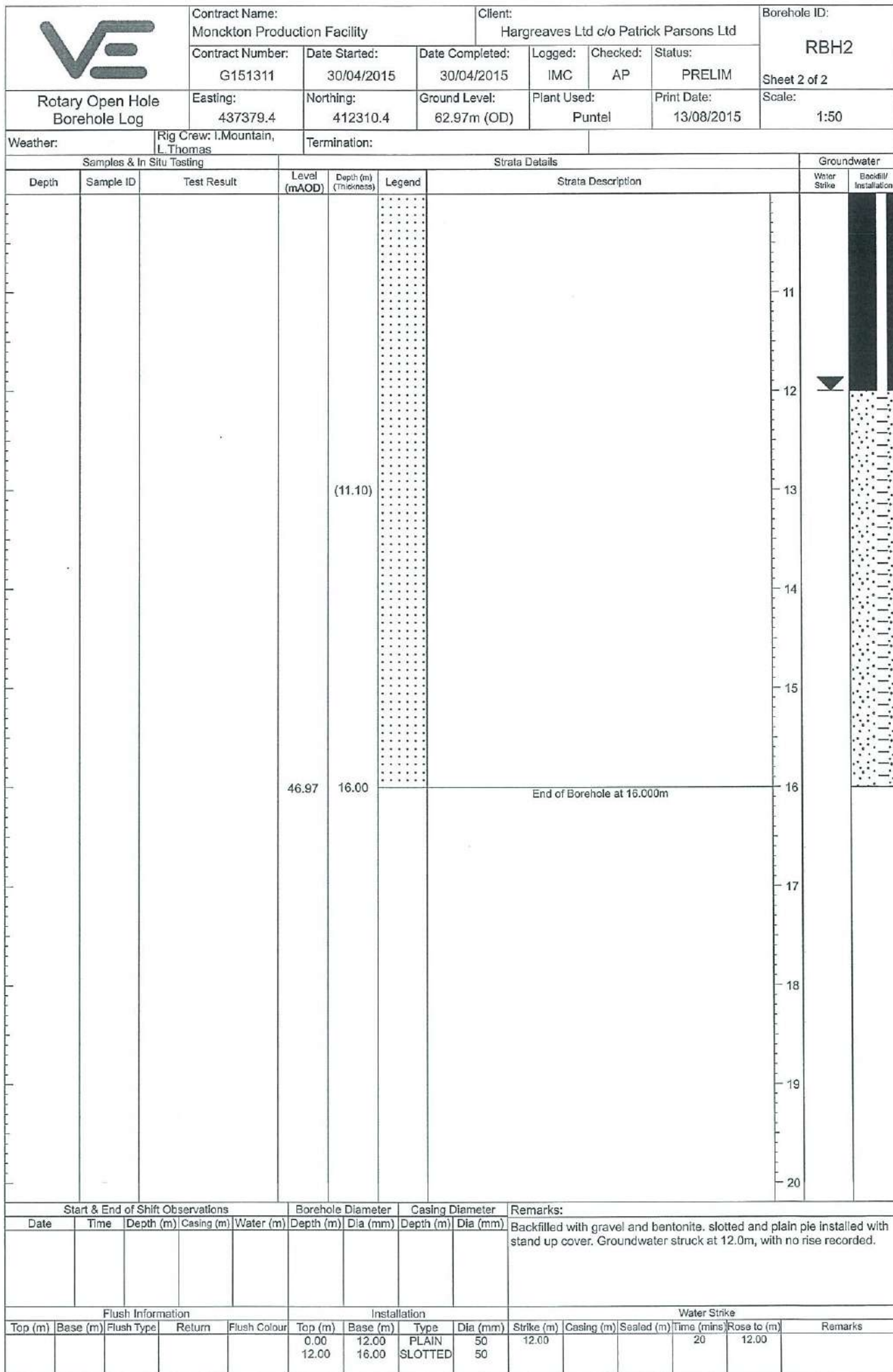
	Contract Name: Monckton Production Facility			Client: Hargreaves Ltd c/o Patrick Parsons Ltd			Borehole ID: RBH1D	
	Contract Number: G151311	Date Started: 18/06/2015	Date Completed: 19/06/2015	Logged: IMC	Checked: AP	Status: PRELIM	Sheet 2 of 2	
Rotary Open Hole Borehole Log	Easting: 437328.7	Northing: 412231.3	Ground Level: 62.82m (OD)	Plant Used: Puntel	Print Date: 13/08/2015	Scale: 1:50		
	Weather:		Rig Crew:	Termination:				

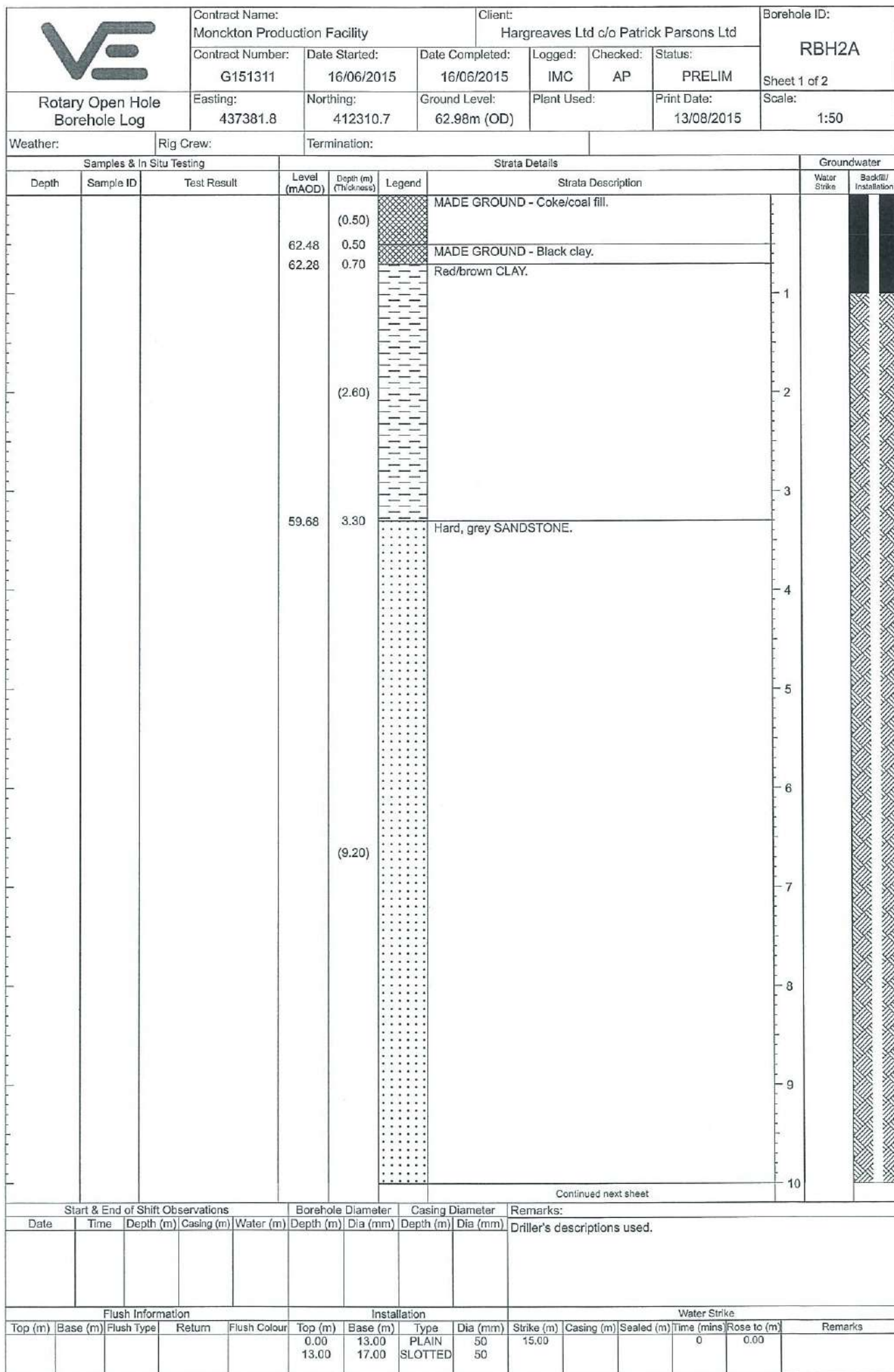
Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (m AOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
			50.32	12.50			11	
						MUDSTONE	12	
				(3.00)			13	
							14	
			47.32	15.50		End of Borehole at 15.500m	15	
							16	
							17	
							18	
							19	
							20	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Driller's descriptions used.	

Flush Information					Installation				Water Strike				Remarks	
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)		Rose to (m)
					0.00	11.50	PLAIN	50	13.50				0	0.00
					11.50	15.50	SLOTTED	50						

	Contract Name: Monckton Production Facility			Client: Hargreaves Ltd c/o Patrick Parsons Ltd			Borehole ID: RBH2		
	Contract Number: G151311	Date Started: 30/04/2015	Date Completed: 30/04/2015	Logged: IMC	Checked: AP	Status: PRELIM	Sheet 1 of 2		
Rotary Open Hole Borehole Log	Easting: 437379.4	Northing: 412310.4	Ground Level: 62.97m (OD)	Plant Used: Puntel	Print Date: 13/08/2015	Scale: 1:50			
	Weather:		Rig Crew: I.Mountain, L.Thomas	Termination:					
Samples & In Situ Testing			Strata Details					Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	
						MADE GROUND (Drillers Description)			
			61.87	(1.10) 1.10				1	
						Brown weathered SANDSTONE			
				(2.00)				2	
			59.87	3.10		MUDSTONE (Drillers Description)		3	
				(1.80)				4	
			58.07	4.90		SANDSTONE (Drillers Description)		5	
								6	
								7	
								8	
								9	
								10	
Continued next sheet									
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Backfilled with gravel and bentonite. slotted and plain pie installed with stand up cover. Groundwater struck at 12.0m, with no rise recorded.
Flush Information					Installation				Water Strike
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)
					0.00	12.00	PLAIN	50	12.00
					12.00	16.00	SLOTTED	50	
									Time (mins)
									Rose to (m)
									Remarks





	Contract Name: Monckton Production Facility				Client: Hargreaves Ltd c/o Patrick Parsons Ltd			Borehole ID: RBH2A						
	Contract Number: G151311	Date Started: 16/06/2015	Date Completed: 16/06/2015	Logged: IMC	Checked: AP	Status: PRELIM	Sheet 2 of 2							
	Easting: 437381.8		Northing: 412310.7		Ground Level: 62.98m (OD)		Plant Used:		Print Date: 13/08/2015					
Rotary Open Hole Borehole Log								Scale: 1:50						
Weather:		Rig Crew:		Termination:										
Samples & In Situ Testing				Strata Details				Groundwater						
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation					
			50.48	12.50				11						
						MUDSTONE		12						
				(4.50)				13						
								14						
								15						
								16						
			45.98	17.00		End of Borehole at 17.000m		17						
								18						
								19						
								20						
Start & End of Shift Observations				Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Driller's descriptions used.					
Flush Information				Installation				Water Strike						
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					0.00	13.00	PLAIN	50	15.00			0	0.00	
					13.00	17.00	SLOTTED	50						



Contract Name: Monckton Production Facility		Client: Hargreaves Ltd c/o Patrick Parsons Ltd			Borehole ID: RBH3	
Contract Number: G151311	Date Started: 30/04/2015	Date Completed: 30/04/2015	Logged: IM	Checked: AP	Status: PRELIM	
Easting: 437480.2		Northing: 412184.6	Ground Level: 65.27m (OD)	Plant Used: GEO 602	Print Date: 13/08/2015	
Weather:		Rig Crew: I.Mountain, L.Thomas	Termination:		Sheet 1 of 3 Scale: 1:50	

Samples & In Situ Testing		Strata Details				Groundwater		
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill Installation

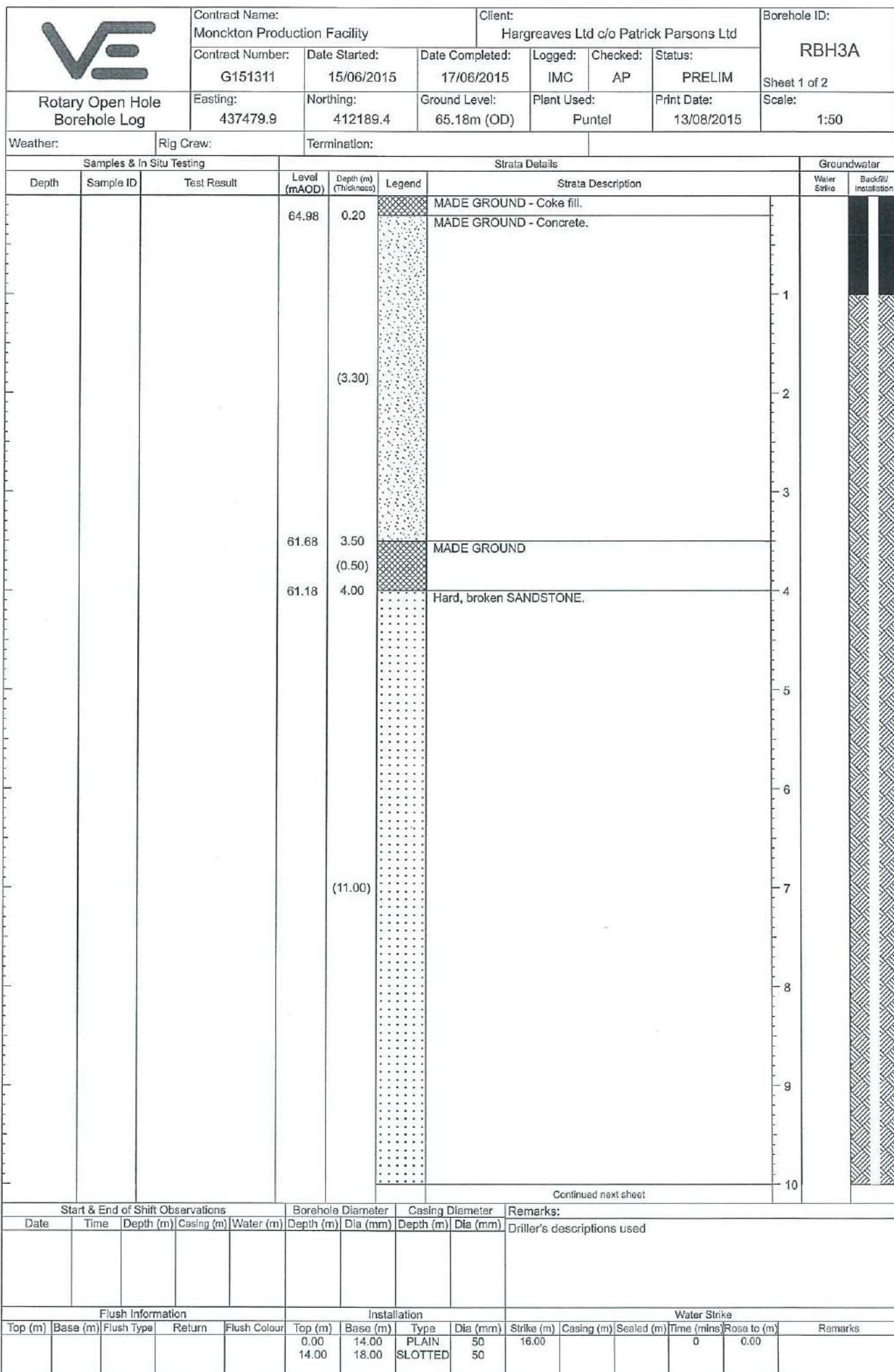
			64.37	0.90		MADE GROUND (Drillers Description)		
						SANDSTONE with gravel bands (Drillers Description)	1	
							2	
							3	
							4	
							5	
			59.27	6.00		SANDSTONE (Drillers Description)	6	
							7	
							8	
							9	
							10	

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Backfilled with gravel and bentonite. slotted and plain pipe installed with stand up cover.					
Flush Information					Installation				Water Strike					
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					0.00	17.00	PLAIN	50						
					17.00	21.00	SLOTTED	50						

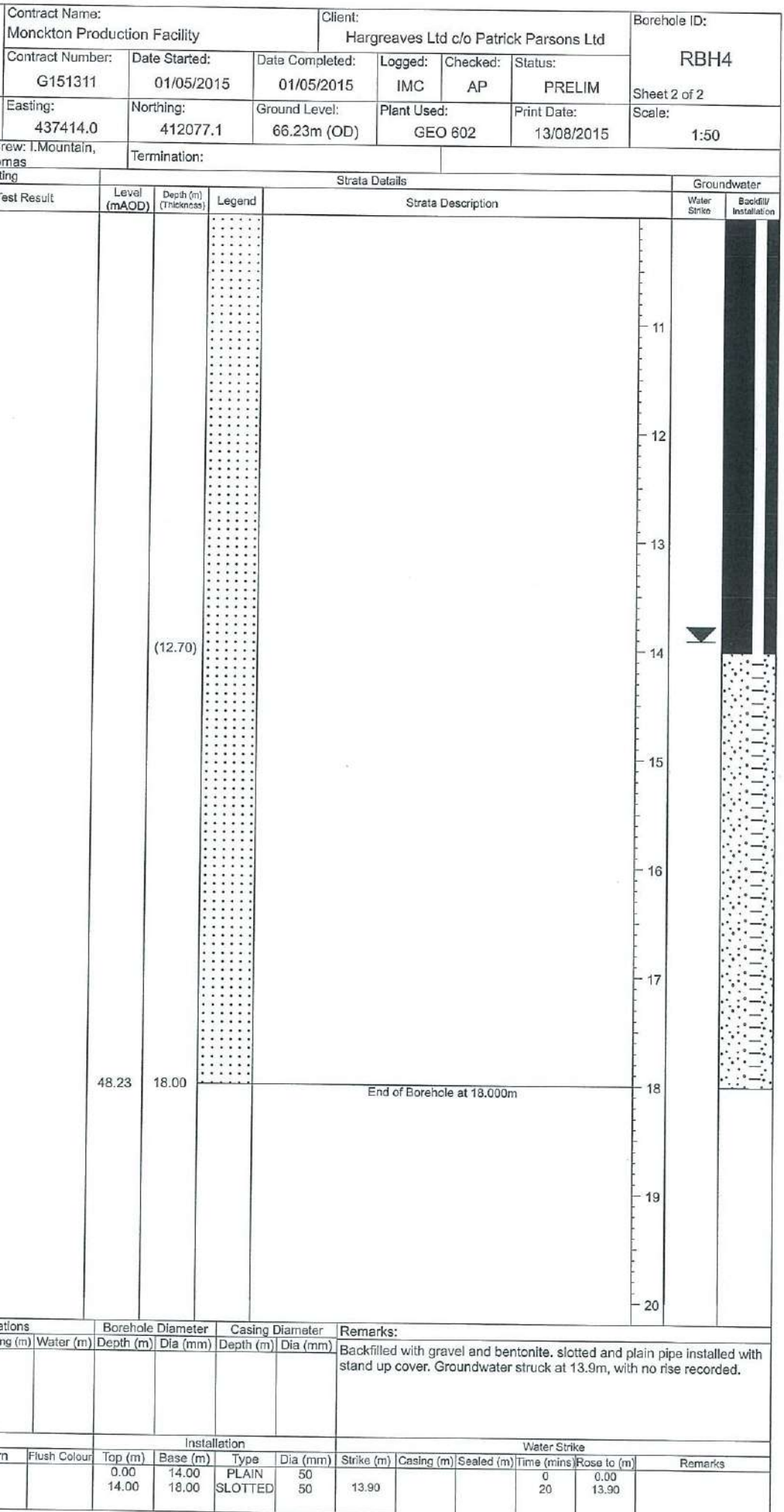
	Contract Name: Monckton Production Facility			Client: Hargreaves Ltd c/o Patrick Parsons Ltd			Borehole ID: RBH3	
	Contract Number: G151311	Date Started: 30/04/2015	Date Completed: 30/04/2015	Logged: IM	Checked: AP	Status: PRELIM	Sheet 2 of 3	
Rotary Open Hole Borehole Log	Easting: 437480.2	Northing: 412184.6	Ground Level: 65.27m (OD)	Plant Used: GEO 602	Print Date: 13/08/2015	Scale: 1:50		
	Weather:		Rig Crew: I. Mountain, L. Thomas	Termination:				
Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(11.00)			11	
							12	
							13	
							14	
							15	
							16	
			48.27	17.00		MUDSTONE (Drillers Description)	17	
							18	
				(4.00)			19	
							20	
Continued next sheet								
Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
Remarks:								
Backfilled with gravel and bentonite, slotted and plain pipe installed with stand up cover.								
Flush Information					Installation		Water Strike	
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)
					0.00	17.00	PLAIN	50
					17.00	21.00	SLOTTED	50
					Strike (m)	Casing (m)	Sealed (m)	Time (mins)
								Rose to (m)
					Remarks			

	Contract Name: Monckton Production Facility			Client: Hargreaves Ltd c/o Patrick Parsons Ltd			Borehole ID: RBH3							
	Contract Number: G151311	Date Started: 30/04/2015	Date Completed: 30/04/2015	Logged: IM	Checked: AP	Status: PRELIM	Sheet 3 of 3							
Rotary Open Hole Borehole Log	Easting: 437480.2	Northing: 412184.6	Ground Level: 65.27m (OD)	Plant Used: GEO 602	Print Date: 13/08/2015	Scale: 1:50								
	Weather:		Rig Crew: I.Mountain, L.Thomas		Termination:									
Samples & In Situ Testing			Strata Details				Groundwater							
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation						
			44.27	21.00		End of Borehole at 21.000m	21							
							22							
							23							
							24							
							25							
							26							
							27							
							28							
							29							
							30							
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)						
									Backfilled with gravel and bentonite. slotted and plain pipe installed with stand up cover.					
Flush Information					Installation				Water Strike					
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					0.00	17.00	PLAIN	50						
					17.00	21.00	SLOTTED	50						



	Contract Name: Monckton Production Facility			Client: Hargreaves Ltd c/o Patrick Parsons Ltd			Borehole ID: RBH3A							
	Contract Number: G151311	Date Started: 15/06/2015	Date Completed: 17/06/2015	Logged: IMC	Checked: AP	Status: PRELIM	Sheet 2 of 2							
Rotary Open Hole Borehole Log	Easting: 437479.9		Northing: 412189.4		Ground Level: 65.18m (OD)		Plant Used: Puntel	Print Date: 13/08/2015						
								Scale: 1:50						
Weather:		Rig Crew:		Termination:										
Samples & In Situ Testing			Strata Details					Groundwater						
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	Backfill/ Installation					
			50.18	15.00		Hard, red SANDSTONE.		11						
				(3.00)				12						
								13						
								14						
								15						
								16						
								17						
								18						
								19						
								20						
Start & End of Shift Observations			Borehole Diameter		Casing Diameter		Remarks:							
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Driller's descriptions used					
Flush Information			Installation				Water Strike							
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					0.00	14.00	PLAIN	50	16.00			0	0.00	
					14.00	18.00	SLOTTED	50						

	Contract Name: Monckton Production Facility			Client: Hargreaves Ltd c/o Patrick Parsons Ltd			Borehole ID: RBH4		
	Contract Number: G151311	Date Started: 01/05/2015	Date Completed: 01/05/2015	Logged: IMC	Checked: AP	Status: PRELIM	Sheet 1 of 2		
Rotary Open Hole Borehole Log		Easting: 437414.0	Northing: 412077.1	Ground Level: 66.23m (OD)	Plant Used: GEO 602	Print Date: 13/08/2015	Scale: 1:50		
Weather:		Rig Crew: I.Mountain, L.Thomas		Termination:					
Samples & In Situ Testing				Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description		Water Strike	
						MADE GROUND (Drillers Description)			
				(3.40)				1	
								2	
								3	
			62.83	3.40		Brown weathered SANDSTONE (Drillers Description)		4	
				(1.90)				5	
			60.93	5.30		SANDSTONE (Drillers Description)		6	
								7	
								8	
								9	
								10	
Continued next sheet									
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Backfilled with gravel and bentonite. slotted and plain pipe installed with stand up cover. Groundwater struck at 13.9m, with no rise recorded.
Flush Information					Installation				Water Strike
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)
					0.00	14.00	PLAIN	50	13.90
					14.00	18.00	SLOTTED	50	
									Time (mins)
									Rose to (m)
									Remarks





Contract Name:
Monckton Production Facility

Client:
Hargreaves Ltd c/o Patrick Parsons Ltd

Borehole ID:

RBH4A

Contract Number:
G151311

Date Started:
18/06/2015

Date Completed:
18/06/2015

Logged:
IMC

Checked:
AP

Status:
PRELIM

Sheet 1 of 2

Rotary Open Hole
Borehole Log

Easting:
437412.9

Northing:
412076.5

Ground Level:
66.16m (OD)

Plant Used:
Puntel

Print Date:
13/08/2015

Scale:
1:50

Weather:

Rig Crew:

Termination:

Samples & In Situ Testing					Strata Details					Groundwater				
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description			Water Strike	Backfill/ Installation				
				(0.50)		MADE GROUND								
			65.66	0.50		Brown CLAY.								
				(0.80)					1					
			64.86	1.30		Red SANDSTONE.								
				(1.30)					2					
			63.56	2.60		Grey SANDSTONE.								
									3					
									4					
									5					
									6					
				(7.20)					7					
									8					
									9					
			56.36	9.80		Very hard, grey SANDSTONE.			10					
							Continued next sheet							
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Driller's descriptions used.					
Flush Information					Installation				Water Strike					
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					0.00	14.50	PLAIN	50	16.50			0	0.00	
					14.50	19.50	SLOTTED	50						

Analytical Report Number: 15-79638

Project / Site name: Monckton

Lab Sample Number				490377				
Sample Reference				TP12				
Sample Number				3				
Depth (m)				1.00				
Date Sampled				16/06/2015				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	3.7				
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	8.5				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	5.1				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.5				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.9				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	22				
Monocaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-xylene	µg/kg	1	MCERTS	< 1.0				
o-xylene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	3.7				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	8.1				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	9.0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	21				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	4.0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	33				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	38				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	75				



4041



Environmental Science

Analytical Report Number: 15-79638

Project / Site name: Monckton

Lab Sample Number				490377				
Sample Reference				TP12				
Sample Number				3				
Depth (m)				1.00				
Date Sampled				16/06/2015				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0				
Chloroethane	µg/kg	1	ISO 17025	< 1.0				
Bromomethane	µg/kg	1	ISO 17025	< 1.0				
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0				
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0				
1,1-Dichloroethene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0				
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0				
Trichloromethane	µg/kg	1	MCERTS	< 1.0				
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0				
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0				
Benzene	µg/kg	1	MCERTS	< 1.0				
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloroethene	µg/kg	1	MCERTS	< 1.0				
Dibromomethane	µg/kg	1	MCERTS	< 1.0				
Bromodichloromethane	µg/kg	1	NONE	< 1.0				
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0				
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0				
Tetrachloroethene	µg/kg	1	MCERTS	< 1.0				
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0				
Chlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-Xylene	µg/kg	1	MCERTS	< 1.0				
Styrene	µg/kg	1	MCERTS	< 1.0				
Tribromomethane	µg/kg	1	MCERTS	< 1.0				
o-Xylene	µg/kg	1	MCERTS	< 1.0				
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Isopropylbenzene	µg/kg	1	NONE	< 1.0				
Bromobenzene	µg/kg	1	MCERTS	< 1.0				
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0				
2-Chlorotoluene	µg/kg	1	NONE	< 1.0				
4-Chlorotoluene	µg/kg	1	NONE	< 1.0				
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
tert-Butylbenzene	µg/kg	1	NONE	< 1.0				
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
sec-Butylbenzene	µg/kg	1	NONE	< 1.0				
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0				
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0				
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Butylbenzene	µg/kg	1	NONE	< 1.0				
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0				
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0				
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0				



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MCERTS



Environmental Science

Analytical Report Number : 15-79638**Project / Site name: Monckton**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
490377	TP12	3	1.00	Brown sand.



Analytical Report Number : 15-79638

Project / Site name: Monckton

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Phenols, speciated, in soil, by GCMS	Determination of speciated phenols in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.



Environmental Science

Analytical Report Number : 15-77254

Project / Site name: Moncton

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073W-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



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Analytical Report Number : 15-79244

Project / Site name: Moncton

Samples received on: 22/09/2015

Your job number: G151311

Samples instructed on: 22/09/2015

Your order number:

Analysis completed by: 30/09/2015

Report Issue Number: 1

Report issued on: 30/09/2015

Samples Analysed: 10 soil samples

Signed:

Dr Irma Doyle
Assistant Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Environmental Science

Analytical Report Number: 15-79244

Project / Site name: Moncton

Lab Sample Number				488249	488250	488251	488252	488253
Sample Reference				TP6	TP11	TP14	TP17	TP19
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.80	0.60	1.00	1.00
Date Sampled				14/05/2015	18/05/2015	15/05/2015	14/05/2015	15/05/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	9.6	8.3	12	8.6
Total mass of sample received	kg	0.001	NONE	0.40	0.54	0.47	0.54	0.52

General Inorganics

Total Cyanide	mg/kg	1	MCERTS	120	23	31	100	11
Free Cyanide	mg/kg	1	NONE	1	< 1	< 1	2	< 1

Phenols by GC-MS

Phenol	mg/kg	0.2	NONE	5.1	< 0.2	< 0.2	< 0.2	< 0.2
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Methylphenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Total Phenols

Total Phenols (GC-MS)	mg/kg	1	NONE	5.1	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	3.9	< 0.05	11	19	0.65
Acenaphthylene	mg/kg	0.1	MCERTS	29	< 0.10	1.6	41	0.44
Acenaphthene	mg/kg	0.1	MCERTS	15	1.1	4.5	55	13
Fluorene	mg/kg	0.1	MCERTS	8.5	0.75	3.8	51	11
Phenanthrene	mg/kg	0.1	MCERTS	19	0.68	15	120	7.0
Anthracene	mg/kg	0.1	MCERTS	15	0.22	3.9	60	1.6
Fluoranthene	mg/kg	0.1	MCERTS	140	0.51	19	220	2.6
Pyrene	mg/kg	0.1	MCERTS	120	0.44	16	180	2.1
Benzo(a)anthracene	mg/kg	0.1	MCERTS	79	0.24	13	94	3.1
Chrysene	mg/kg	0.05	MCERTS	79	0.20	9.9	93	2.0
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	110	0.40	20	110	4.2
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	72	< 0.10	5.3	65	2.1
Benzo(a)pyrene	mg/kg	0.1	MCERTS	97	0.23	14	110	3.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	48	< 0.10	6.6	43	2.0
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	7.3	< 0.10	0.69	10	0.27
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	48	< 0.05	6.2	56	1.7

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	888	4.77	150	1330	56.8
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Environmental Science

Analytical Report Number: 15-79244

Project / Site name: Moncton

Lab Sample Number				488249	488250	488251	488252	488253
Sample Reference				TP6	TP11	TP14	TP17	TP19
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.80	0.60	1.00	1.00
Date Sampled				14/05/2015	18/05/2015	15/05/2015	14/05/2015	15/05/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	2.1	16	6.7	5.1
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	< 0.2	1.6	1.8	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	11	22	500	10
Copper (aqua regia extractable)	mg/kg	1	MCERTS	49	5.9	53	67	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	42	9.4	36	40	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	17	19	26	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	4.2	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	60	21	74	120	160
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	1.5	2.9	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	110	< 2.0	4.8	37	5.7
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	220	< 8.0	23	87	18
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	100	< 8.0	81	220	11
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	430	< 10	110	350	35
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	5.1	< 1.0	1.9	24	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	110	2.1	59	320	11
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	410	< 10	150	1500	26
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	890	13	150	2700	52
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	1400	15	360	4500	89



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Environmental Science

Analytical Report Number: 15-79244

Project / Site name: Moncton

Lab Sample Number				488249	488250	488251	488252	488253
Sample Reference				TP6	TP11	TP14	TP17	TP19
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.80	0.60	1.00	1.00
Date Sampled				14/05/2015	18/05/2015	15/05/2015	14/05/2015	15/05/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



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Environmental Science

Analytical Report Number: 15-79244

Project / Site name: Moncton

Lab Sample Number				488254	488255	488256	488257	488258
Sample Reference				TP22	TP24	TP25	TP27	TP28
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.50	1.00	1.00	0.60
Date Sampled				18/05/2015	20/05/2015	19/05/2015	19/05/2015	18/05/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	9.4	6.5	11	4.0
Total mass of sample received	kg	0.001	NONE	0.50	0.37	0.49	0.51	0.50

General Inorganics

Total Cyanide	mg/kg	1	MCERTS	610	3	64	170	2
Free Cyanide	mg/kg	1	NONE	5	< 1	1	2	< 1

Phenols by GC-MS

Phenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	0.4	< 0.2
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Methylphenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Total Phenols

Total Phenols (GC-MS)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	110	4.7	0.64	5.4	0.25
Acenaphthylene	mg/kg	0.1	MCERTS	180	0.37	1.1	1.4	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	9000	14	2.8	4.4	0.13
Fluorene	mg/kg	0.1	MCERTS	6600	6.9	2.2	3.0	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	4500	7.9	16	5.3	0.40
Anthracene	mg/kg	0.1	MCERTS	1600	1.6	5.2	1.5	0.11
Fluoranthene	mg/kg	0.1	MCERTS	720	8.2	24	6.0	0.60
Pyrene	mg/kg	0.1	MCERTS	510	6.7	21	5.1	0.51
Benzo(a)anthracene	mg/kg	0.1	MCERTS	160	4.6	13	2.7	0.42
Chrysene	mg/kg	0.05	MCERTS	150	4.4	13	2.4	0.31
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	130	7.2	13	4.3	0.62
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	83	2.2	6.3	1.4	0.14
Benzo(a)pyrene	mg/kg	0.1	MCERTS	130	4.0	12	2.4	0.39
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	59	2.4	4.8	1.5	0.30
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	12	0.34	1.1	0.40	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	67	2.0	5.1	1.3	0.26

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	24000	77.3	140	48.6	4.44
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Environmental Science

Analytical Report Number: 15-79244

Project / Site name: Moncton

Lab Sample Number				488254	488255	488256	488257	488258
Sample Reference				TP22	TP24	TP25	TP27	TP28
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.50	1.00	1.00	0.60
Date Sampled				18/05/2015	20/05/2015	19/05/2015	19/05/2015	18/05/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	31	53	6.6	11	2.3
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	2.3	0.4	< 0.2	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	23	9.3	6.1	7.5
Copper (aqua regia extractable)	mg/kg	1	MCERTS	360	100	20	18	8.3
Lead (aqua regia extractable)	mg/kg	1	MCERTS	99	85	49	190	11
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.4	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	32	46	11	6.9	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	2.4	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	61	110	45	23	29

Monoaromatics

Benzene	µg/kg	1	MCERTS	19	< 1.0	20	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	7.7	< 1.0	11	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	4.6	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	83	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	44	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	5.9	< 1.0	< 1.0	15	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	300	4.1	2.5	70	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	590	46	17	180	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	250	440	41	670	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	1200	490	60	940	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	60	6.5	4.0	14	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	21000	21	33	620	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	7000	83	240	890	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	3400	210	410	1200	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	32000	320	690	2800	< 10



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Environmental Science

Analytical Report Number: 15-79244

Project / Site name: Moncton

Lab Sample Number				488254	488255	488256	488257	488258
Sample Reference				TP22	TP24	TP25	TP27	TP28
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.50	1.00	1.00	0.60
Date Sampled				18/05/2015	20/05/2015	19/05/2015	19/05/2015	18/05/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	19	< 1.0	20	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	7.7	< 1.0	11	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	4.6	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	83	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	MCERTS	44	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	190	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	160	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	3.7	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number : 15-79244

Project / Site name: Moncton

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
488249	TP6	None Supplied	0.50	Black loam and sand with gravel.
488250	TP11	None Supplied	0.80	Light brown sandy clay.
488251	TP14	None Supplied	0.60	Black loam and sand with gravel and brick.
488252	TP17	None Supplied	1.00	Brown loam and sand with gravel and rubble.
488253	TP19	None Supplied	1.00	Light brown sandy loam with gravel.
488254	TP22	None Supplied	0.60	Brown loam and sand with gravel and brick.
488255	TP24	None Supplied	0.50	Black loam and sand with gravel.
488256	TP25	None Supplied	1.00	Light brown sandy loam with gravel and brick.
488257	TP27	None Supplied	1.00	Brown sandy loam with gravel.
488258	TP28	None Supplied	0.60	Beige sandy loam with gravel and rubble.



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Environmental Science

Analytical Report Number : 15-79244

Project / Site name: Moncton

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Phenols, speciated, in soil, by GCMS	Determination of speciated phenols in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.