Appendix 8-A

Fracflow Groundwater Technical Memo

PROJECT NUJIO'QONIK
Environmental Impact Statement

Fracflow Consultants Inc.
Environmental, Hydrogeological and
Geotechnical Engineering Consultants

world energy GH_2

TECHNICAL MEMORANDUM

TO: David Pinsent, Environment and Sustainability Manager — FFC-NL-3168-2-003
World Energy GH_2

FROM: Fracflow Consultants Inc.

DATE: June 27, 2023

SUBJECT: Groundwater Conditions and Impacts – Industrial Water Supply and Hydrogen Plant Site

The Groundwater Aquifer and Flow System

As noted, the industrial water supply will be taken from the three pond system (Gull (Mine) Pond, Muddy Pond and Noels Pond) with the last two ponds being fed by the discharge from the Warm Creek drainage basin. Provision of the required water flows to the Hydrogen Plant will require careful management of the water levels (the active storage) in all three ponds. This water management will result in variations in the pond levels throughout the year by 1.0 to 1.5 m relative to the current pond levels.

Two of the three source ponds are located on or adjacent to and contribute recharge to the thick overburden aquifer that provides groundwater to two existing well fields (Figure 1). These two well fields are located at the bottom of the Warm Creek drainage basin. The granular aquifer in which these six production wells have been constructed is known to be up to about 80 m thick in the well fields where two deep monitoring wells were drilled into the underlying bedrock. The granular aquifer is underlain by fractured carbonate bedrock and is bounded on the east by an elevated area of fractured metamorphic/igneous bedrock. The hydraulic head contours in Figure 1 shows that there is a fairly uniform northeast to southwest hydraulic gradient of 0.004 to 0.006. Most of the aquifer is covered by a 3 to 5 m thick layer of bog or peat producing a perched water table, with the depth to the water table ranging from 16 to 24 m. Most of the ponds in this area are perched. One of the existing well fields is located between 150 and 400 m east to southeast of the Muddy Pond shoreline.

Based on the aquifer test data that is on file with DECC, the well fields are estimated to have total well yield capacity of approximately 8 to 10 m3/min. The model simulation (Figure 1) shows that the groundwater withdrawals from two existing well fields are not dewatering the aquifer and that the drawdowns over time will extend out underneath Muddy Pond and Noels Pond.

The granular aquifer is assumed to extend up into the Warm Creek drainage basin and to Long Gull Pond. The 3D groundwater flow and transport model hydraulic head contour map in

Figure 1 demonstrates that the groundwater withdrawals from the two existing well fields are obtained from recharge on the east side of Warm Creek with an ultimate source area in the Long Gull Pond area. The hydraulic head contour lines in Figure 1 show that surface and groundwater withdrawals by World Energy GH_2 on the eastern side of the aquifer will have very little impact on groundwater levels in the western side of the aquifer adjacent to Muddy Pond-Noels Pond.

Groundwater Interaction with the Source Ponds

Figure 1 shows the model simulation that was completed to evaluate what impact changing the water levels in the three source ponds would have on the groundwater system that supplies the existing well fields. The model confirms that Muddy Pond and Noels Pond both have very low permeability pond sediments that produce a perched pond condition. Muddy Pond and Noels Pond have little to no impact on the underlying water table elevations. This is confirmed by the actual water level measurements where the water level in Muddy Pond and Noels Pond are approximately 21 m while the average non-pumping water levels/hydraulic heads in the underlying aquifer ranges from 11 to 13 m. In addition, The Warm Creek stream bed between the community of Noels Pond and the point where Warm Creek discharges into Noels Pond is a losing stream. Changes in the water levels in Muddy Pond and in Noels Pond will have no significant impact on the groundwater resources that can be removed from the granular aquifer.

Figure 1 shows the strong hydraulic gradient between Gull (Mine) Pond and the adjacent granular aquifer. In this area, the average water level elevation in Gull (Mine) Pond is approximately 32 to 33 m. By contrast the hydraulic head in FMW11, immediately east of the discharge from Gull (Mine) Pond, is approximately 12.5 to 14.5 m. The hydraulic head in BH1, that is located immediately west of FMW11, is approximately 13.5 m. As one proceeds down along the flow line to FMW10, the hydraulic head decreases to 6 to 7 m. Clearly, all of the surface water systems in the Gull (Mine) Pond area are perched and changes in the water level in Gull (Mine) Pond of 1 to 3 m will have no significant impacts on the groundwater system.

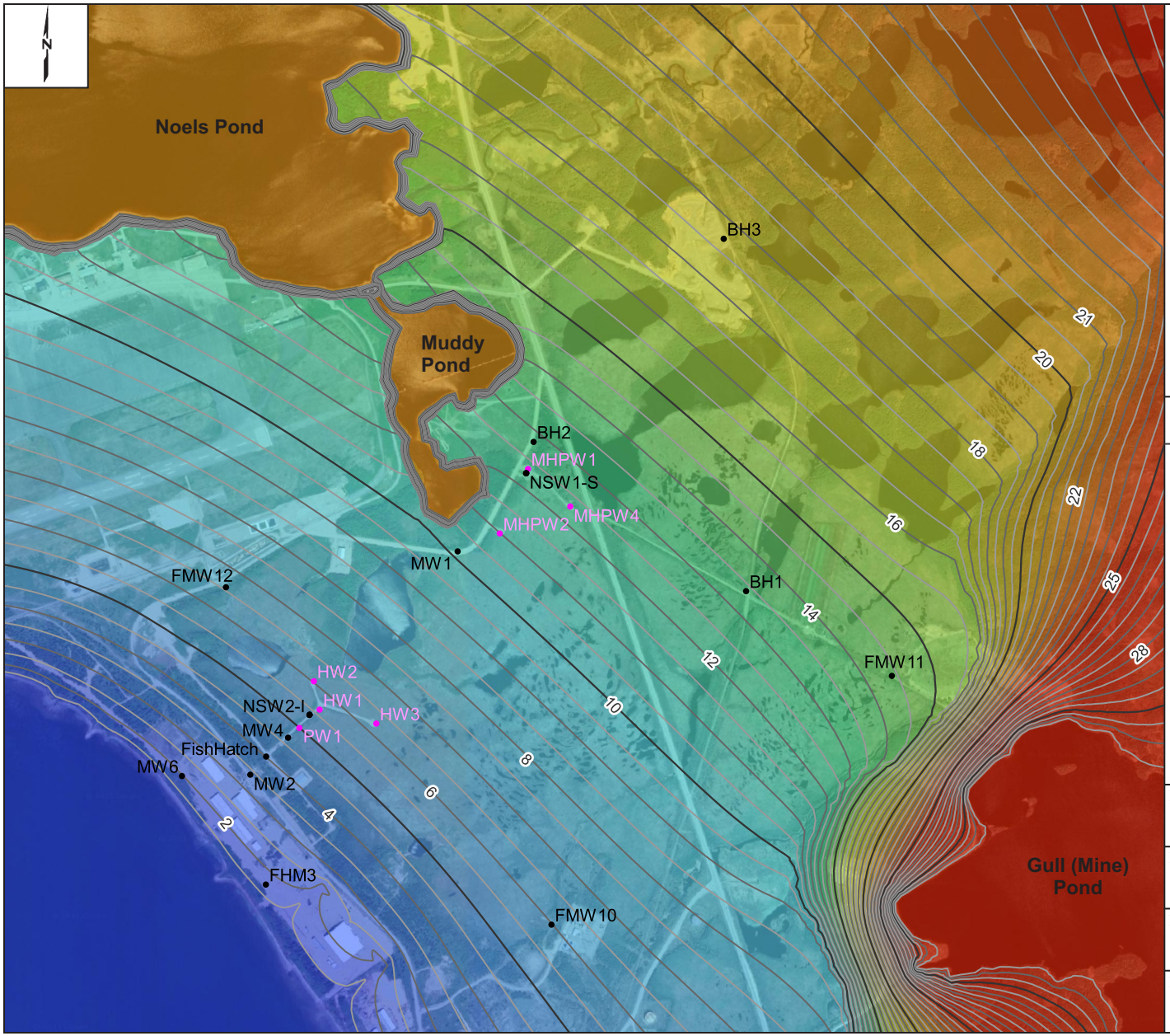
Groundwater Conditions at the Former Abitibi Mill Site

Figure 2 shows the average or historical water table contours across the former Abitibi Mill site based on 2007 water level measurements. Figure 2 also shows the location of three cross-sections (Figures 3, 4 and 5) in which the ground surface and depth to the water table are plotted. These cross-sections show that the local groundwater table can be up to 8 to 10 m below ground surface and that the water table near the harbour shoreline is shallow.

Groundwater Quality

Data from three existing monitoring wells are included to show the overburden characteristics and the groundwater chemistry. Figures 6, 7 and 8 show the logs for the three monitoring wells including the water level that were measured at the time the monitoring wells were constructed. Tables 1, 2 and 3 provide the water chemistry data from these three monitoring wells. It is important to note that FMW11 and FMW10 are both located down-gradient from old industrial landfills and as such exhibit elevated TDS. BH1 is located towards the central part of the

granular aquifer but trans-gradient to down-gradient of a commercial sod farm. The water chemistry from BH1 has lower TDS that the other two monitoring wells but does show impacts from the use of fertilizers for the sod growing operation.



Legend

- Production well location
- Monitoring well location

Legend

Contours, m

1 5 10 15 20 >25

0 200 400 600

Scale, m

Note: Base orthorectified image from Google Earth (2023).

Figure 1

Contour map of the calculated water elevation (hydraulic head) at the surface-water table level under non-pumping steady-state condition.

Document Reference	FFC-NL-3168-EIS
Location	Stephenville, NL
Project No.	3168-2
Date	June 2023

FFC

Legend

- MW10 (0/5) — Monitoring well location with (ground elevation and water elevation) where available
- Test pit location
- 14 — Water elevation contours, in 1 m intervals.

0 40 80

Scale, m

Figure 2

Water elevation contours measured in 2007 at the former Abitibi Mill site, Stephenville, NL.

Document Reference
FFC-NL-3168-EIS

Location
Stephenville, NL

Project No.
3168-2

Date
March 2023

FFC

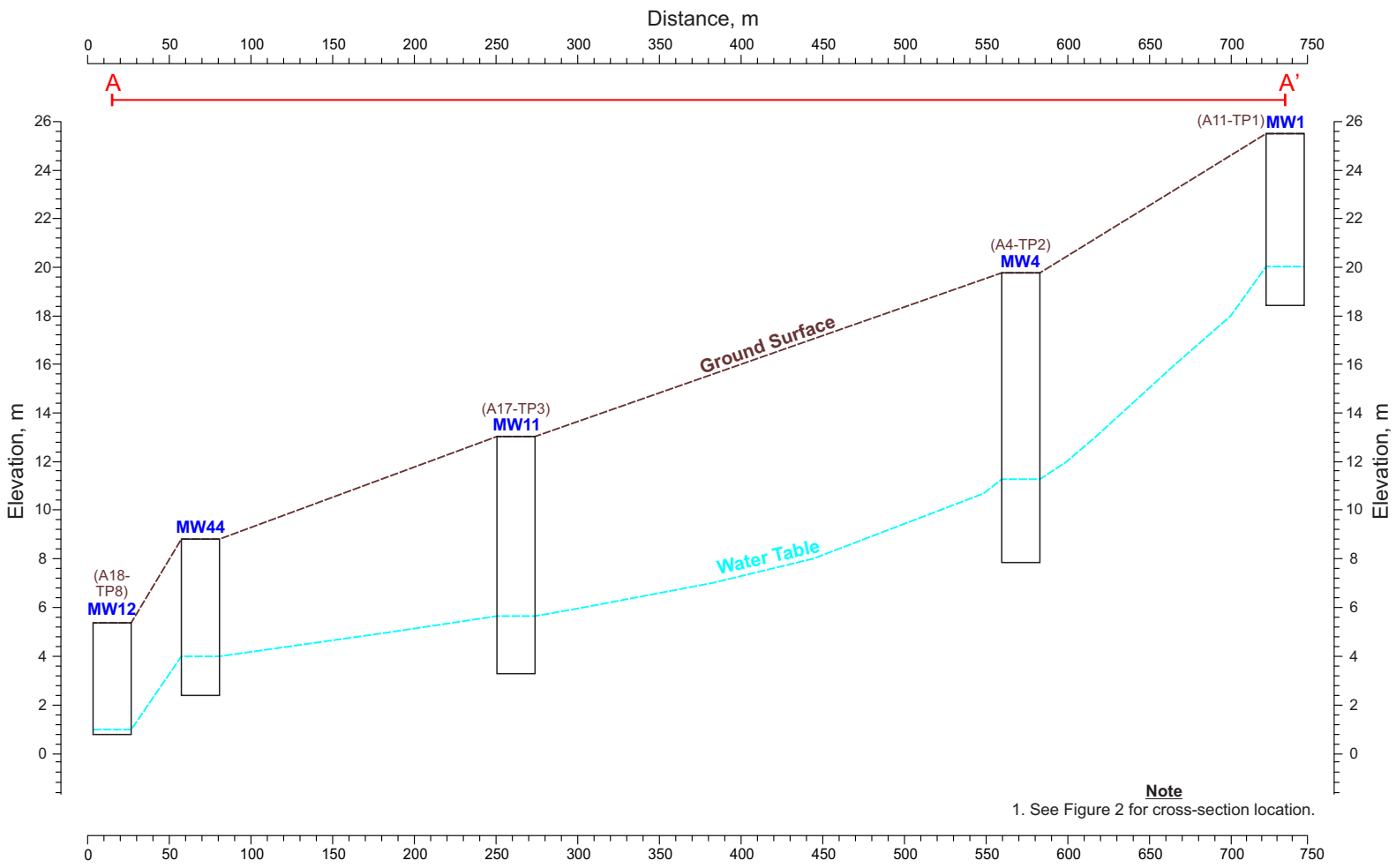


Figure 3 Monitoring well locations along cross-section A-A' at the former Abitibi Mill site, Stephenville, NL. Groundwater level data from 2007. Vertical exaggeration - 1:14.9.

Project No.	Document Reference
3168-2	FFC-NL-3168-EIS
Location	**Date**
Stephenville, NL	June 2023

FFC

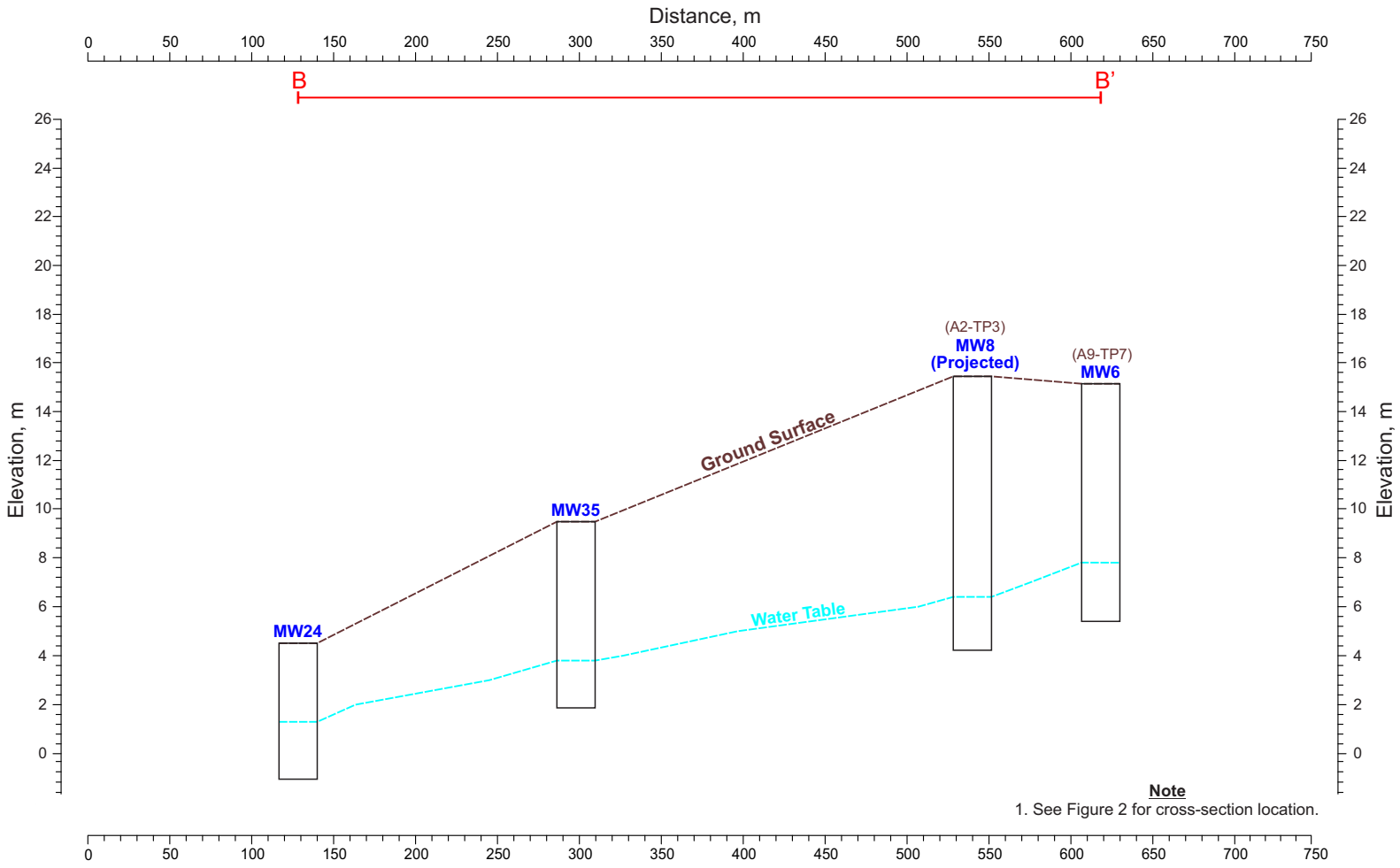


Figure 2 Monitoring well locations along cross-section B-B' at the former Abitibi Mill site, Stephenville, NL. Groundwater level data from 2007. Vertical exaggeration - 1:14.9.

Project No.	Document Reference
3168-2	FFC-NL-3168-EIS
Location	**Date**
Stephenville, NL	June 2023

FFC

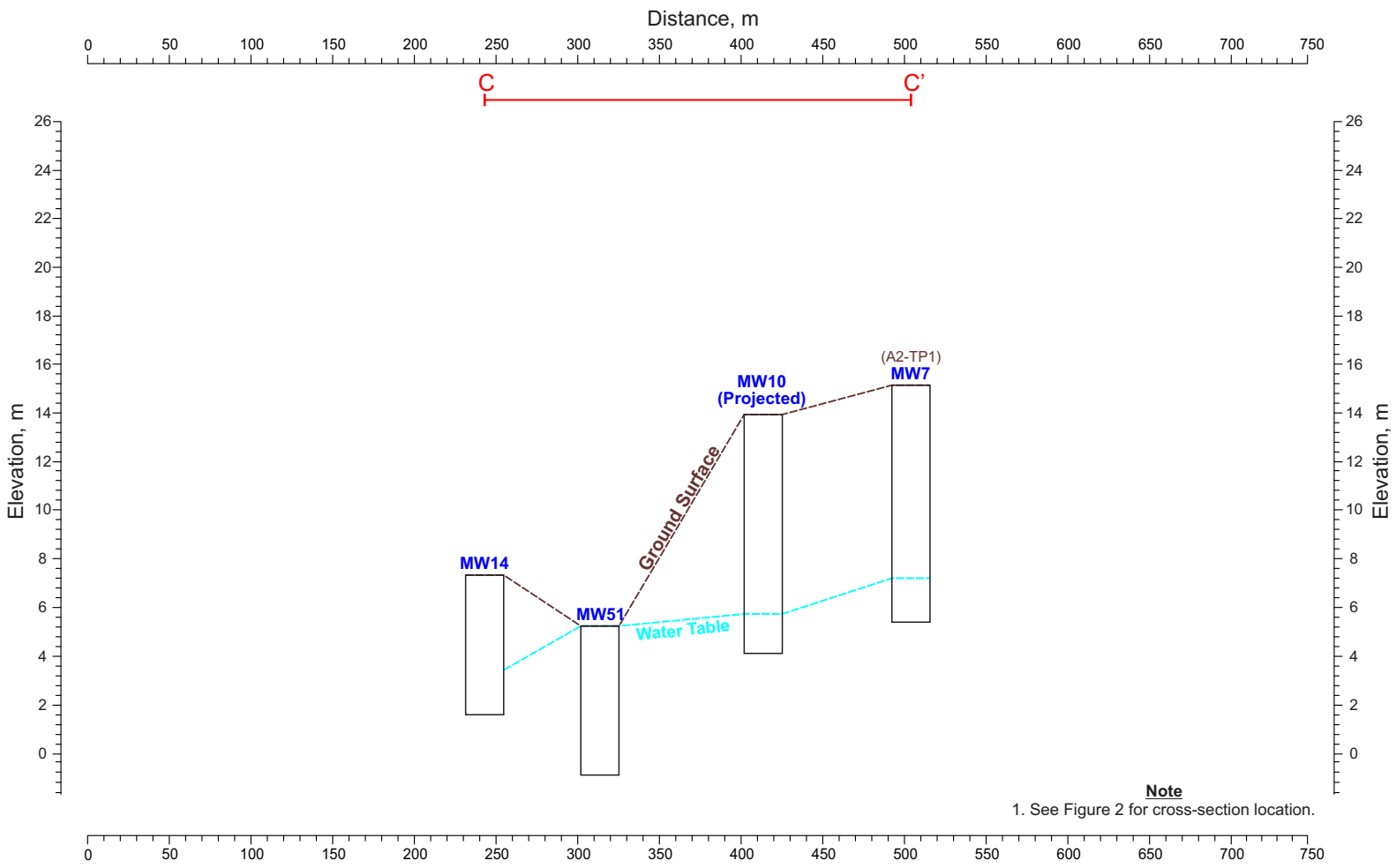


Figure 5 Monitoring well locations along cross-section C-C' at the former Abitibi Mill site, Stephenville, NL. Groundwater level data from 2007. Vertical exaggeration - 1:14.9.

Project No.	Document Reference
3168-2	FFC-NL-3168-EIS
Location	Date
Stephenville, NL	June 2023

FFC

Figure 6 (page 1 of 5)

Project: Geotechnical Investigation

Log of Borehole: BH1

Client:

Project No: 3113

Location: Stephenville, NL

Date: November 16 - 19, 2017

Depth (ft / m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample Sequence	"N" Value	Recovery (%)	% Fines	Standard Penetration Test "N" Value per 300 mm (20 – 60)	Well Data	Well Description
0 / 0		Ground Surface (GS)	31.4								Well head protection installed
		Auger	30								Cement packing from 0.05 m to 0.46 m Native sand packing from 0.46 m to 0.91 m Bentonite packing from 0.91 m to 1.12 m
5 / 1		SPT: 4 / 18 / 36 / 36 Wet, brown, medium sand	29.4	SS	1	54	31				
		Auger	28.3								0.05 m dia. riser from 0 m to 16.68 m
10 / 3		SPT: 7 / 12 / 21 / 22 Damp, brown, medium sand with red and black particles	27.7	SS	2	33	52				
		Auger	26.9								
15 / 4		SPT: 13 / 16 / 19 /14 Damp,brown, medium sand	26.3	SS	3	35	25				Native sand packing from 1.12 m to 26.48 m
		Auger	25.4								
20 / 6		SPT: 10 / 39 / 27 / 16 No recovery	24.8	SS	4	66	0				
		Auger									

Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

Drilling Method: Hollow Stem Augering
Dynamic Cone Penetration Test

Driller: Formation Drilling Ltd.

Datum: Geodetic

Sheet: 1 of 5

Figure 6 (page 2 of 5)
Project: Geotechnical Investigation

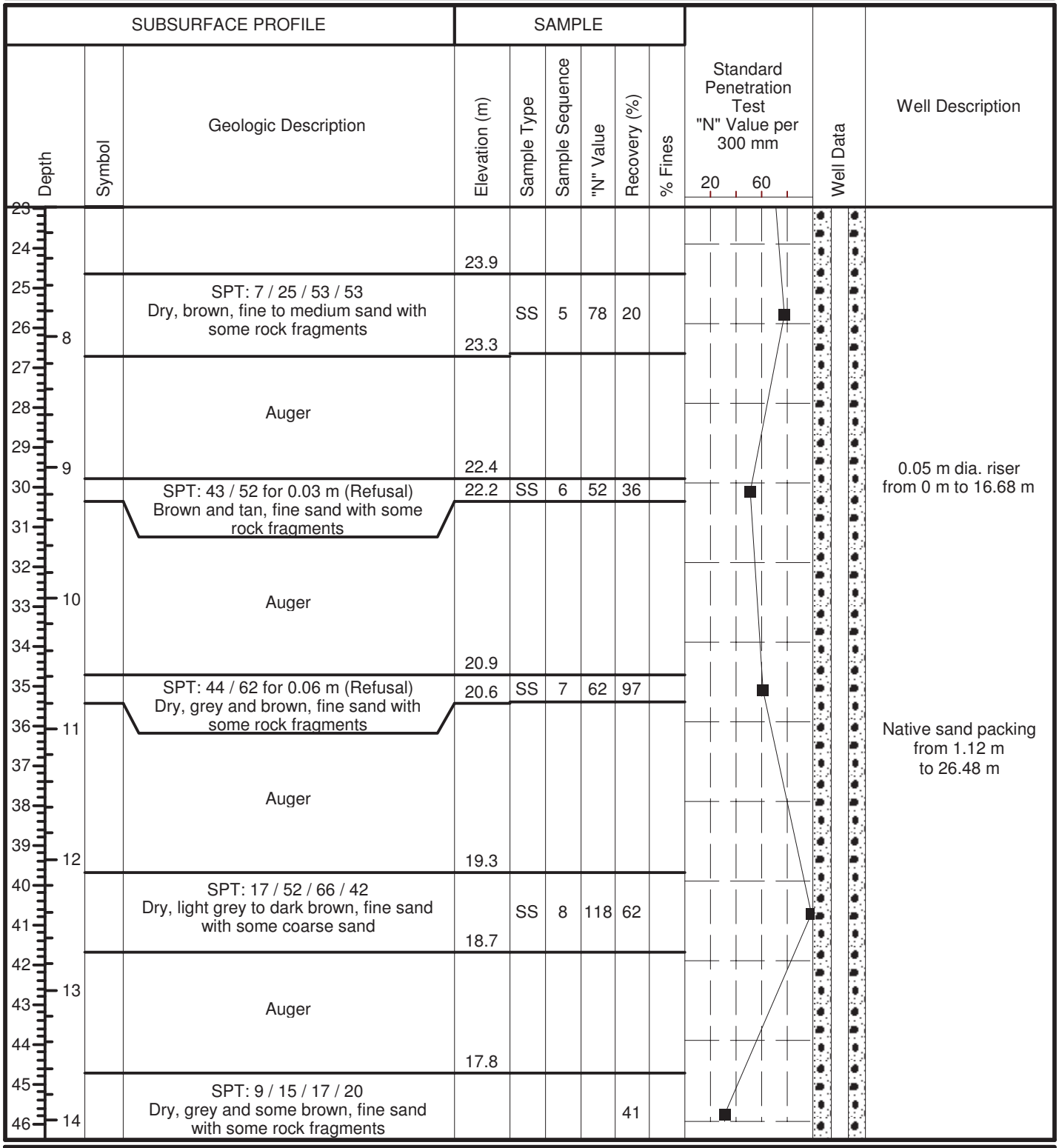
Log of Borehole: BH1

Client:

Project No: 3113

Location: Stephenville, NL

Date: November 16 - 19, 2017



Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

Drilling Method: Hollow Stem Augering
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Figure 6 (page 3 of 5)
Project: Geotechnical Investigation

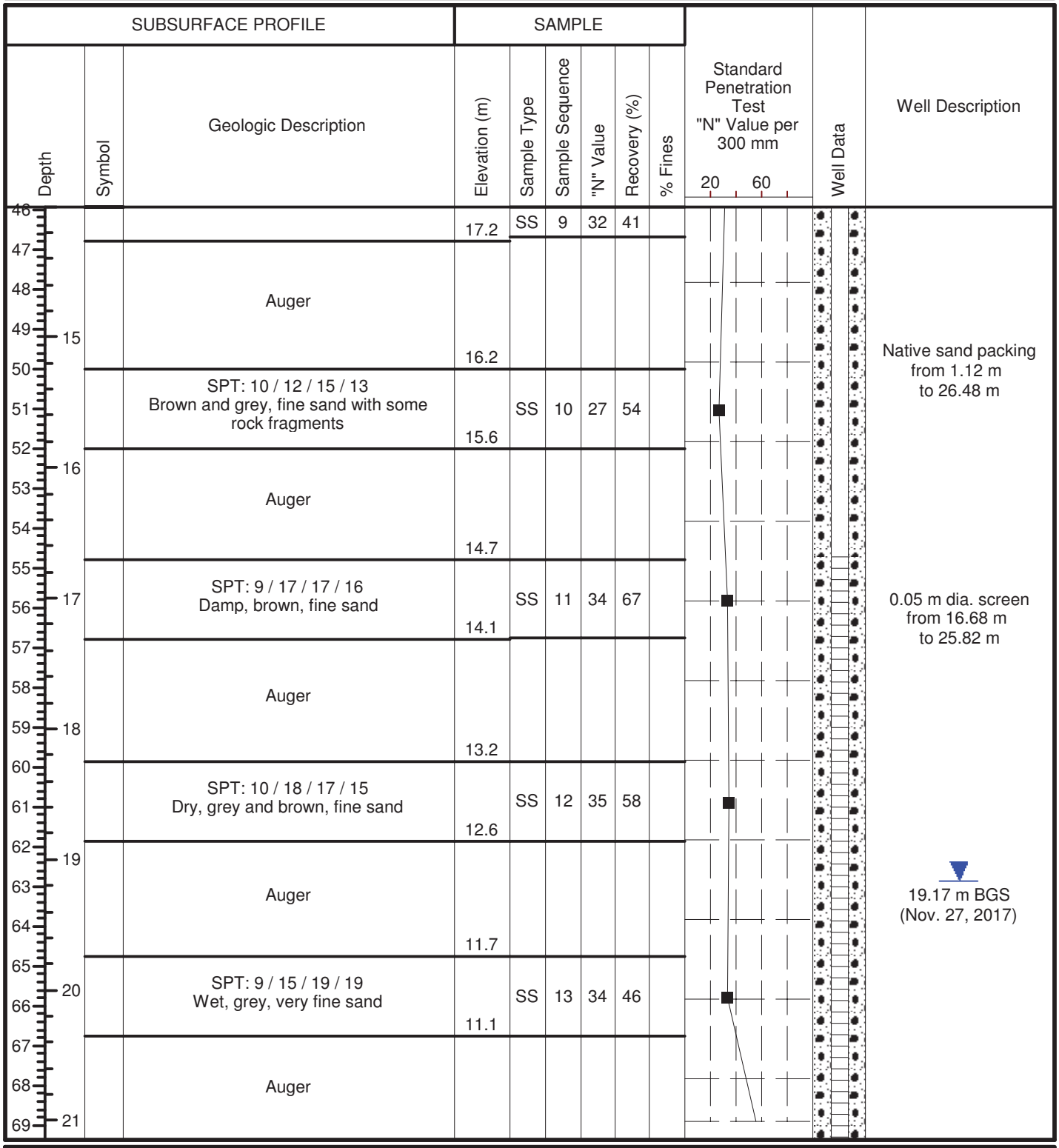
Log of Borehole: BH1

Client:

Project No: 3113

Location: Stephenville, NL

Date: November 16 - 19, 2017



Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

Drilling Method: Hollow Stem Augering
Dynamic Cone Penetration Test

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Datum: Geodetic

Sheet: 3 of 5

Figure 6 (page 4 of 5)

Project: Geotechnical Investigation

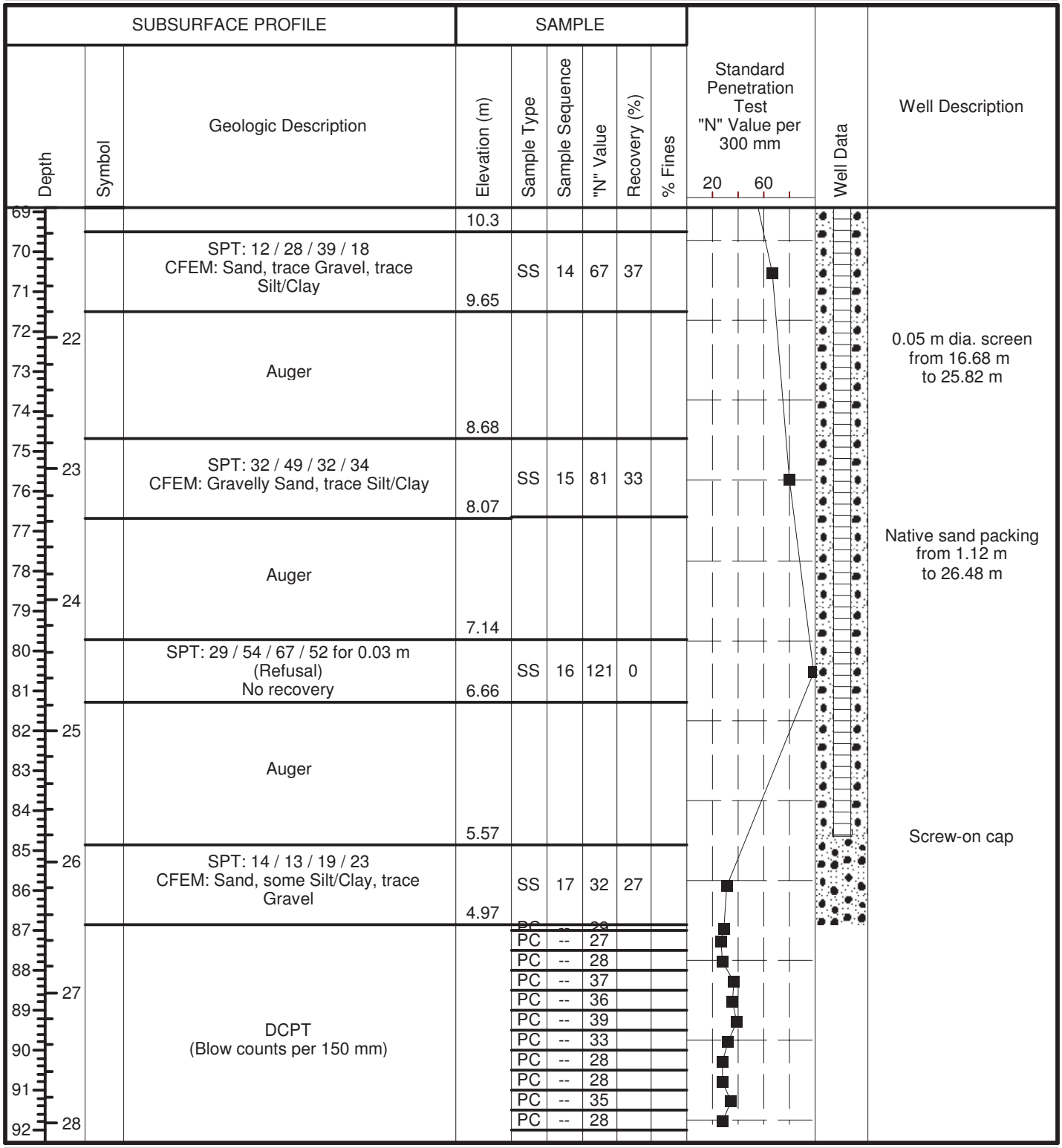
Client:

Location: Stephenville, NL

Log of Borehole: BH1

Project No: 3113

Date: November 16 - 19, 2017



Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

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Figure 6 (page 5 of 5)

Project: Geotechnical Investigation

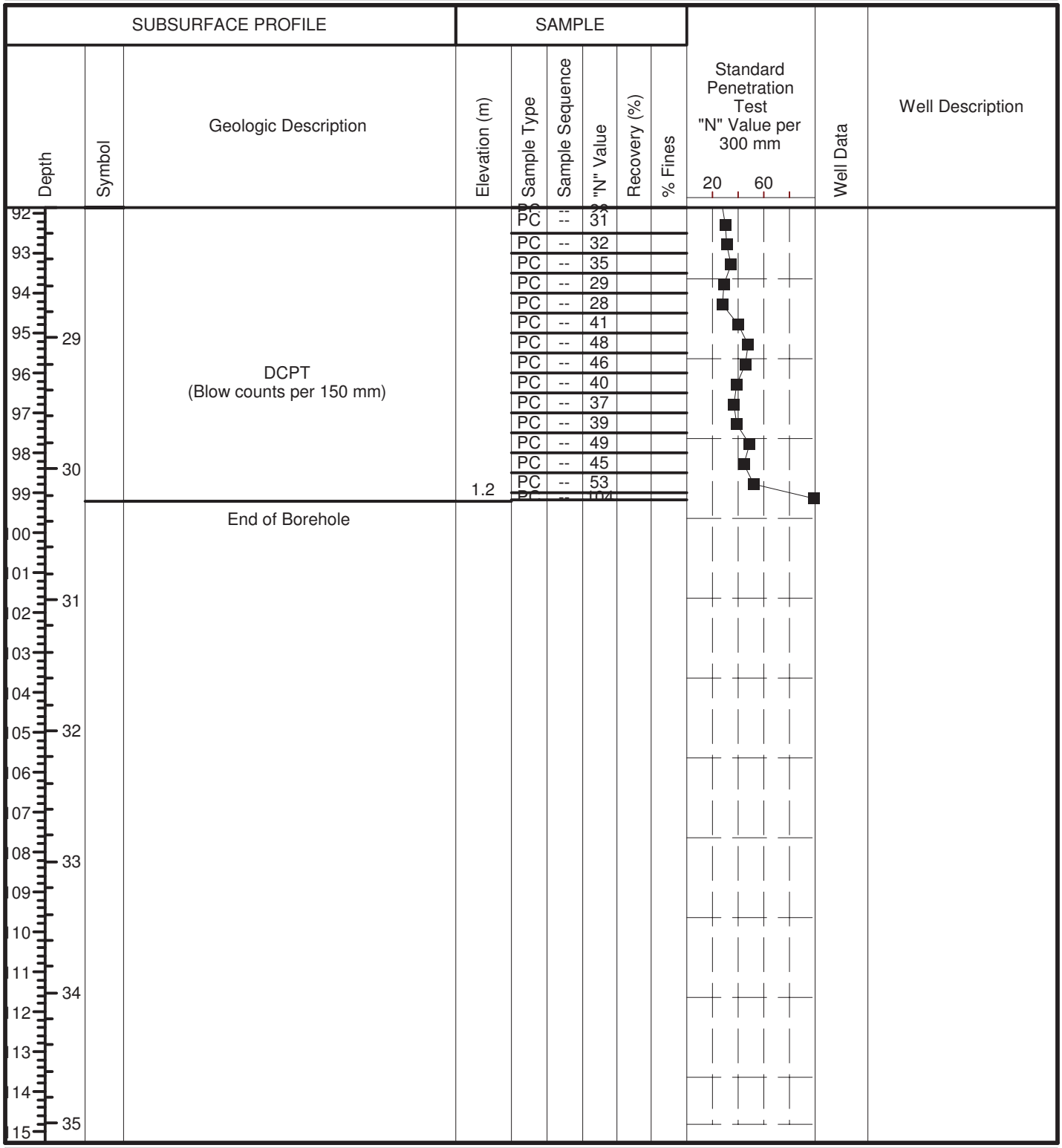
Log of Borehole: BH1

Client:

Project No: 3113

Location: Stephenville, NL

Date: November 16 - 19, 2017



Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

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Sheet: 5 of 5

Figure 7 (page 1 of 3)
Project: Well Field Monitoring

Log of Monitoring Well: FMW10

Client:

Project No: 3113

Location: Stephenville, NL

Date: October 17, 2018

SUBSURFACE PROFILE				SAMPLE							
Depth (ft / m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample Sequence	"N" Value	Recovery (%)	% Fines	Standard Penetration Test "N" Value per 300 mm (20 – 60)	Well Data	Well Description
0 / 0		Ground Surface (GS)	26.7								
0 – 3 / 0 – 1		Augering	25.3	OB	-						Protective well casing Riser SU 0.22 m
3 – 9 / 1 – 2		Augering Dark brown sand, some cobbles	23.8	OB	-						
9 – 13 / 3 – 4		Augering Brown gravelly sand	22.2	OB	-						Native material packing from 0.00 m to 5.49 m
13 – 18 / 4 – 5		Augering Brown gravel and sand	20.7	OB	-						
18 – 23 / 5 – 7		Augering Sand, some gravel	19.2	OB	-						Bentonite packing from 5.49 m to 7.01 m
23 – 29 / 7 – 9		Augering Gravelly sand	17.7	OB	-						0.05 m dia. PVC riser from 0.00 m to 19.67 m
29 – 33 / 9 – 10		Augering Medium sand									

Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

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Driller: Formation Drilling Ltd.

Datum: Geodetic

Figure 7 (page 2 of 3)
Project: Well Field Monitoring

Client:

Location: Stephenville, NL

Log of Monitoring Well: FMW10

Project No: 3113

Date: October 17, 2018

Depth	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample Sequence	"N" Value	Recovery (%)	% Fines	Standard Penetration Test "N" Value per 300 mm (20 – 60)	Well Data	Well Description
33											
34			16.2	OB	-						
35											
36	11	Augering Medium sand		OB	-						
37											
38											
39			14.7								
40	12										Native material packing from 7.01 m to 18.44 m
41		Augering Fine to medium sand		OB	-						
42											
43	13										
44			13.1								
45											
46	14	Augering		OB	-						
47											
48											
49	15		11.6								0.05 m dia. PVC riser from 0.00 m to 19.67 m
50											
51											
52	16	Augering		OB	-						
53											
54			10								
55											
56	17	Augering		OB	-						
57											
58											
59	18		8.5								No.2 silica sand packing from 18.44 m to 22.78 m
60											
61											
62	19	Augering		OB	-						
63											
64											WL 19.66 m bgs (Oct. 19, 2018)
65			6.93								
	20										

Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

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Driller: Formation Drilling Ltd.

Datum: Geodetic

Figure 7 (page 3 of 3)
Project: Well Field Monitoring

Client:

Location: Stephenville, NL

Log of Monitoring Well: FMW10

Project No: 3113

Date: October 17, 2018

SUBSURFACE PROFILE				SAMPLE							
Depth	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample Sequence	"N" Value	Recovery (%)	% Fines	Standard Penetration Test "N" Value per 300 mm (20 60)	Well Data	Well Description
21		Augering Brown fine to medium sand Up-coning sand (0.91 m) afterwards	5.46	OB	-						0.05 m dia. PVC screen from 19.67 m to 22.71 m
22		Augering Fine to medium sand	3.91	OB	-						No.2 silica sand packing from 18.44 m to 22.78 m
23		End of Borehole									Pointed screw-on end cap at 22.71 m

Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

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Driller: Formation Drilling Ltd.

Datum: Geodetic

Sheet: 3 of 3

Figure 8 (page 1 of 3)
Project: Well Field Monitoring

Log of Monitoring Well: FMW11

Client:

Project No: 3113

Location: Stephenville, NL

Date: October 14, 2018

Depth (ft / m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample Sequence	"N" Value	Recovery (%)	% Fines	Standard Penetration Test "N" Value per 300 mm (20 – 60)	Well Data	Well Description
0 / 0		Ground Surface (GS)	31.4								
0 – 3 / 0 – 1		Augering Bog/Overburden	29.9	OB	-						Protective well casing Riser SU 0.15 m
3 – 10 / 1 – 3		Augering Dark brown sand, some fine to medium gravel	28.4	OB	-						Native material packing from 0.00 m to 4.57 m
10 – 15 / 3 – 4.6		Augering Top 0.9 m: Light brown sand, some fine gravel Bottom 0.6 m fine to medium gravel	26.9	OB	-						0.05 m dia. PVC riser from 0.00 m to 19.34 m
15 – 17 / 4.6 – 5.2		SPT: 6 / 10 / 12 / 22 Brown medium to coarse sand	26.3	SS	1	22	38				Bentonite packing from 4.57 m to 6.10 m
17 – 20 / 5.2 – 6		Augering Brown sand, some fine to medium gravel	25.3	OB	-						
20 – 25 / 6 – 7.6		Augering Medium gravel and sand	23.8	OB	-						Native material packing from 6.10 m to 17.98 m
25 – 26 / 7.6 – 8		SPT: 6 / 10 / 10 / 9 Fine to medium sand	23.2	SS	2	20	50				
26 – 30 / 8 – 9.1		Augering Fine to medium gravel	22.2	OB	-						
30 – 33 / 9.1 – 10		Augering									

Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

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Driller: Formation Drilling Ltd.

Datum: Geodetic

Figure 8 (page 2 of 3)
Project: Well Field Monitoring

Log of Monitoring Well: FMW11

Client:

Project No: 3113

Location: Stephenville, NL

Date: October 14, 2018

Depth	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample Sequence	"N" Value	Recovery (%)	% Fines	Standard Penetration Test "N" Value per 300 mm (20 – 60)	Well Data	Well Description
33											
34											
35			20.8	OB	-						
36	11	SPT: 7 / 10 / 10 / 9 Fine to medium sand	20.1	SS	3	25	58				
37											
38		Augering Medium gravel (Top) changing to fine sand (Bottom)		OB	-						
39	12		19.2								
40											
41											
42		Augering Medium to large gravel, some sand		OB	-						
43	13		17.7								
44											
45											
46	14	SPT: 20 / 32 / 16 / 36 Fine to coarse sand (Top) changing to medium gravel and rock fragments (Bottom)	17.1	SS	4	48	54				0.05 m dia. PVC riser from 0.00 m to 19.34 m
47											
48		Augering Brown gravel and sand		OB	-						
49	15		16.2								
50											
51											
52		Augering		OB	-						
53	16		14.6								
54											
55											
56	17	SPT: 7 / 13 / 15 / 28 Brown, fine to medium sand	14	SS	5	28	56				
57											
58		Augering		OB	-						No.2 Silica sand packing from 17.98 m to 22.86 m
59	18		13.1								
60											
61											
62		Augering Water table encountered		OB	-						WL 18.88 m bgs (Oct. 19, 2018)
63	19		11.6								
64											
65											
	20										

Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

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Figure 8 (page 3 of 3)
Project: Well Field Monitoring

Log of Monitoring Well: FMW11

Client:

Project No: 3113

Location: Stephenville, NL

Date: October 14, 2018

SUBSURFACE PROFILE				SAMPLE							
Depth	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample Sequence	"N" Value	Recovery (%)	% Fines	Standard Penetration Test "N" Value per 300 mm (20 60)	Well Data	Well Description
66		SPT: 7 / 15 / 14 / 14 Brown medium to fine sand	11	SS	6	29	46		■		
67											
68		Augering Up-coning sand (0.10 m) at the beginning		OB	-						0.05 m dia. PVC screen from 19.34 m to 22.39 m
69	21										
70			10								
71											
72	22	Augering		OB	-						Pointed screw-on end cap at 22.39 m
73											
74											
75			8.5								
76	23	End of Borehole									
77											
78											
79	24										
80											
81											
82	25										
83											
84											
85											
86	26										
87											
88											
89	27										
90											
91											
92	28										
93											
94											
95	29										
96											
97											
98	30										

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154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
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Sheet: 3 of 3

Table 1 Groundwater chemistry for BH1 (page 1 of 4).

Workorder No.			17K289906	19K479456	20K614700	20K658687	21K767120	22K912449
Date Sampled			28-Nov-17	11-Jun-19	15-Jun-20	28-Sep-20	06/22/2021	06/22/2022
Sample Description			3113-BH1-WS1	3113-BH1-WS2	3113-BH1-WS-200615	3113-BH1-WS-200928	3113-BH1-WS-210622	3113-BH1-WS-220622
Package Name	**Parameter Name**	**Unit**	**8944411**	**272195**	**1207836**	**1514447**	**2668129**	**4017814**
Field Paramaters	pH			7.53	6.98	7.43	7.83	8.00
	Temperature	°C		8.20	8.20	11.20	8.50	8.20
	Turbidity	NTU		2578.00	22.00	4.00	0.85	0.25
	Electrical Conductivity	umho/cm		340.00	330.60	454.40	353.90	341.70
	Dissolved Oxygen	mg/L		7.37	8.93	8.70	9.69	7.83
	Temperature (DO Meter)	°C						
Standard Water Analysis	pH		8.18	8.19	7.99		8.05	8.05
	Reactive Silica as SiO2	mg/L	7.90	7.90	10.20		11.70	7.40
	Chloride	mg/L	27.00	24.00	24.00		28.00	25.00
	Fluoride	mg/L	0.16	<0.12	<0.12		<0.12	<0.12
	Sulphate	mg/L	6.00	5.00	5.00		6.00	5.00
	Alkalinity	mg/L	128.00	125.00	115.00		124.00	119.00
	True Color	TCU	<5	<5	<5		<5.00	<5.00
	Turbidity	NTU	1.70	1.10	12.50		1.40	1.70
	Electrical Conductivity	umho/cm	333.00	352.00	335.00		345.00	348.00
	Nitrate + Nitrite as N	mg/L	0.14	0.08	0.08		0.11	0.11
	Nitrate as N	mg/L	0.14	0.08	0.08		0.11	0.11
	Nitrite as N	mg/L	<0.05	<0.05	<0.05		<0.05	<0.05
	Ammonia as N	mg/L	0.03	0.05	0.07		<0.03	<0.03
	Total Organic Carbon	mg/L	0.90	3.60	4.00		<0.5	0.80
	Ortho-Phosphate as P	mg/L	<0.01	<0.01	<0.01		0.01	<0.01
	Total Sodium	mg/L	15.60	15.20	18.40			
	Total Potassium	mg/L	2.10	1.10	1.40			
	Total Calcium	mg/L	44.40	44.20	40.00			
	Total Magnesium	mg/L	7.80	7.30	8.80			
	Dissolved Sodium	mg/L					15.60	39.40
	Dissolved Potassium	mg/L					1.00	5.46
	Dissolved Calcium	mg/L					39.70	1.04
	Dissolved Magnesium	mg/L					7.10	16.60
	Bicarb. Alkalinity (as CaCO3)	mg/L	128.00	125.00	115.00		124.00	119.00
	Carb. Alkalinity (as CaCO3)	mg/L	<10	<10	<10		<10	<10
	Hydroxide	mg/L	<5	<5	<5		<5	<5
	Calculated TDS	mg/L	181.00	172.00	167.00		172.00	164.00
	Hardness	mg/L	143.00	140.00	136.00		128.00	121.00
	Langelier Index (@20C)	NA	0.32	0.32	0.04		0.13	0.11
	Langelier Index (@ 4C)	NA	0.00	0.00	-0.28		-0.19	-0.21
	Saturation pH (@ 20C)	NA	7.86	7.87	7.95		7.92	7.94
	Saturation pH (@ 4C)	NA	8.18	8.19	8.27		8.24	8.26
	Anion Sum	me/L	3.46	3.29	3.09		3.40	3.20
	Cation sum	me/L	3.62	3.50	3.57		3.27	3.17
	% Difference/ Ion Balance	%	2.30	3.20	7.20		2.00	0.40
	Bromide	mg/L						
	Conductivity	uS/cm						
	Total Hardness (calc)	ug CaCO3/L						
	Total Kjeldahl Nitrogen as N	mg/L						
	Total Kjeldahl Nitrogen	mg/L						
	Dissolved Organic Carbon	mg/L						
UVT (Water)	UV Transmittance	% UVT						
	Total Aluminum	ug/L	119.00			15.00		
	Total Antimony	ug/L	<2			<2		
	Total Arsenic	ug/L	<2			<2		
	Total Barium	ug/L	27.00			29.00		
	Total Beryllium	ug/L	<2			<2		
	Total Bismuth	ug/L	<2			<2		
	Total Boron	ug/L	11.00			10.00		
	Total Cadmium	ug/L	<0.017			<0.017		
	Total Chromium	ug/L	2.00			2.00		
	Total Cobalt	ug/L	<1			<1		

Table 1 Groundwater chemistry for BH1 (page 2 of 4).

Workorder No.			17K289906	19K479456	20K614700	20K658687	21K767120	22K912449
Date Sampled			28-Nov-17	11-Jun-19	15-Jun-20	28-Sep-20	06/22/2021	06/22/2022
Sample Description			3113-BH1-WS1	3113-BH1-WS2	3113-BH1-WS-200615	3113-BH1-WS-200928	3113-BH1-WS-210622	3113-BH1-WS-220622
Package Name	**Parameter Name**	**Unit**	**8944411**	**272195**	**1207836**	**1514447**	**2668129**	**4017814**
Total Metals	Total Copper	ug/L	<1			1.00		
	Total Iron	ug/L	258.00			90.00		
	Total Lead	ug/L	<0.5			<0.5		
	Total Manganese	ug/L	32.00			<2		
	Total Molybdenum	ug/L	2.00			<2		
	Total Nickel	ug/L	4.00			3.00		
	Total Phosphorous	mg/L	0.03					
	Total Selenium	ug/L	<1			<1		
	Total Silver	ug/L	<0.1			<0.1		
	Total Strontium	ug/L	143.00			149.00		
	Total Thallium	ug/L	<0.1			<0.1		
	Total Tin	ug/L	<2			<2		
	Total Titanium	ug/L	7.00			<2		
	Total Uranium	ug/L	0.50			0.50		
	Total Vanadium	ug/L	<2			<2		
	Total Zinc	ug/L	6.00			<5		
	Total Mercury	ug/L		<0.026		<0.026		
	Sulphide as Hydrogen Sulphide Calc.	mg/L						
	Total Calcium							
	Total Lithium							
Dissolved Metals	Dissolved Aluminum	ug/L	13.00	7.00	15.00	<5	<5	14.00
	Dissolved Antimony	ug/L	<2	<2	<2	<2	<2	<1.0
	Dissolved Arsenic	ug/L	<2	<2	<2	<2	<2	<1.0
	Dissolved Barium	ug/L	26.00	25.00	30.00	30.00	29.00	24.10
	Dissolved Beryllium	ug/L	<2	<2	<2	<2	<2	<0.50
	Dissolved Bismuth	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Boron	ug/L	10.00	8.00	8.00	9.00	<5	10.20
	Dissolved Cadmium	ug/L	<0.017	<0.09	0.05	<0.09	<0.017	0.18
	Dissolved Chromium	ug/L	**3.00**	**3.00**	**3.00**	**2.00**	**3.00**	<2.0
	Dissolved Cobalt	ug/L	<1	<1	<1	<1	<1	<0.50
	Dissolved Copper	ug/L	<2	<2	<2	<2	<2	<1.0
	Dissolved Iron	ug/L	<50	<50	51.00	95.00	<50	14.00
	Dissolved Lead	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50
	Dissolved Lithium	ug/L						
	Dissolved Manganese	ug/L	21.00	<2	<2	<2	<2	<2.0
	Dissolved Molybdenum	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Nickel	ug/L	<2	<2	<2	<2	<2	<1.0
	Dissolved Phosphorus	mg/L		<0.02	<0.02		<0.02	<0.05
	Dissolved Selenium	ug/L	<1	<1	1.00	<1	<1	**2.30**
	Dissolved Silicon	ug/L						
	Dissolved Silver	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10
	Dissolved Strontium	ug/L	123.00	109.00	176.00	118.00	127.00	101.00
	Dissolved Thallium	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.30
	Dissolved Tin	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Titanium	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Uranium	ug/L	0.40	0.40	0.60	0.50	0.40	<0.50
	Dissolved Vanadium	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Zinc	ug/L	7.00	<5	<5	<5	<5	<5.0
	Dissolved Zirconium	ug/L						
	Dissolved Mercury	ug/L			<0.026	<0.026	<0.026	<0.026
Other Inorganics	Biochem. Oxy. Demand, 5 Day (BOD5)	mg/L						
	Chem. Oxy. Demand	mg/L						
	Benzene	mg/L	<0.001	<0.001	<0.001		<0.001	
	Toluene	mg/L	<0.001	<0.001	<0.001		<0.001	
	Ethylbenzene	mg/L	<0.001	<0.001	<0.001		<0.001	

Table 1 Groundwater chemistry for BH1 (page 3 of 4).

Workorder No.			17K289906	19K479456	20K614700	20K658687	21K767120	22K912449
Date Sampled			28-Nov-17	11-Jun-19	15-Jun-20	28-Sep-20	06/22/2021	06/22/2022
Sample Description			3113-BH1-WS1	3113-BH1-WS2	3113-BH1-WS-200615	3113-BH1-WS-200928	3113-BH1-WS-210622	3113-BH1-WS-220622
Package Name	**Parameter Name**	**Unit**	**8944411**	**272195**	**1207836**	**1514447**	**2668129**	**4017814**
Atlantic RBCA Tier 1 Hydrocarbons	Xylene (Total)	mg/L	<0.001	<0.001	<0.001		<0.001	
	C6-C10 (less BTEX)	mg/L	<0.01	<0.01	<0.01		<0.01	
	>C10-C16 Hydrocarbons	mg/L	<0.05	<0.05	<0.05		<0.05	
	>C16-C21 Hydrocarbons	mg/L	<0.05	<0.05	<0.05		<0.05	
	>C21-C32 Hydrocarbons	mg/L	<0.01	<0.01	0.03		<0.01	
	Modified TPH (Tier 1)	mg/L	<0.1	<0.1	<0.05		<0.05	
	Resemblance Comment		NR	NR	LR		NR	
	Return to Baseline at C32		Y	Y	Y		Y	
	Isobutylbenzene - EPH	%	94.00	84.00	100.00		96.00	
	Isobutylbenzene - VPH	%	100.00	84.00	112.00		78.00	
	n-Dotriacontane - EPH	%	98.00	102.00	98.00		85.00	
Polycyclic Aromatic Hydrocarbons (PAH)	1-Methylnaphthalene	ug/L						
	2-Methylnaphthalene	ug/L						
	Acenaphthene	ug/L						
	Acenaphthylene	ug/L						
	Acridine	ug/L						
	Anthracene	ug/L						
	Benzo(a)anthracene	ug/L						
	Benzo(a)pyrene	ug/L						
	Benzo(b)fluoranthene	ug/L						
	Benzo(e)pyrene	ug/L						
	Benzo(ghi)perylene	ug/L						
	Benzo(k)fluoranthene	ug/L						
	Chrysene	ug/L						
	Dibenzo(a,h)anthracene	ug/L						
	Fluoranthene	ug/L						
	Fluorene	ug/L						
	Indeno(1,2,3-cd)pyrene	ug/L						
	Naphthalene	ug/L						
	Perylene	ug/L						
	Phenanthrene	ug/L						
	Pyrene	ug/L						
	Quinoline	ug/L						
	Nitrobenzene-d5	%						
	2-Fluorobiphenyl	%						
	Terphenyl-d14	%						
PCBs	Total PCB	ug/L						
Phenols	Total Phenolics	mg/L						
OC Pesticides	Gamma-Hexachlorocyclohexane	µg/L		<0.01	<0.01			
	Heptachlor	µg/L		<0.01	<0.01			
	Aldrin	µg/L		<0.01	<0.01			
	Heptachlor Epoxide	µg/L		<0.01	<0.01			
	Endosulfan	µg/L		<0.05	<0.05			
	Chlordane	µg/L		<0.04	<0.04			
	DDE	µg/L		<0.01	<0.01			
	DDD	µg/L		<0.05	<0.05			
	DDT	µg/L		<0.04	<0.04			
	Dieldrin	µg/L		<0.02	<0.02			
	Endrin	µg/L		<0.05	<0.05			
	Methoxychlor	µg/L		<0.04	<0.04			
	Hexachlorobenzene	ug/L		<0.01	<0.01			
	Hexachlorobutadiene	ug/L		<0.01	<0.01			
	Hexachloroethane	ug/L		<0.01	<0.01			
	TCMX	%		70.00	73.00			
	Decachlorobiphenyl	%		74.00	76.00			
	alpha-BHC	µg/L					<0.01	

Table 1 Groundwater chemistry for BH1 (page 4 of 4).

Workorder No.			17K289906	19K479456	20K614700	20K658687	21K767120	22K912449
Date Sampled			28-Nov-17	11-Jun-19	15-Jun-20	28-Sep-20	06/22/2021	06/22/2022
Sample Description			3113-BH1-WS1	3113-BH1-WS2	3113-BH1-WS-200615	3113-BH1-WS-200928	3113-BH1-WS-210622	3113-BH1-WS-220622
Package Name	**Parameter Name**	**Unit**	**8944411**	**272195**	**1207836**	**1514447**	**2668129**	**4017814**
	Hexachlorobenzene	ug/L					<0.01	
	beta-BHC	µg/L					<0.05	
	Gamma-Hexachlorocyclohexane	µg/L					<0.01	
	delta-BHC	µg/L					<0.01	
	Heptachlor	µg/L					<0.01	
	Aldrin	µg/L					<0.01	
	Heptachlor Epoxide	µg/L					<0.01	
	Oxychlordane	µg/L					<0.05	
	gamma-Chlordane	µg/L					<0.1	
	op'-DDE	µg/L					<0.01	
	Endosulfan I	µg/L					<0.002	
	alpha - chlordane	µg/L					<0.05	
	pp'-DDE	µg/L					<0.05	
	Dieldrin	µg/L					<0.02	
	op'-DDD	µg/L					<0.05	
	Endrin	µg/L					<0.05	
	Endosulfan II	µg/L					<0.002	
	pp'-DDD	µg/L					<0.05	
	op'-DDT	µg/L					<0.04	
	Endrin Aldehyde	µg/L					<0.05	
	Endosulfan Sulfate	µg/L					<0.05	
	pp'-DDT	µg/L					<0.05	
	Endrin Ketone	µg/L					<0.05	
	Methoxychlor	µg/L					<0.04	
	Mirex	µg/L					<0.05	
	TCMX	%					73.00	
	Decachlorobiphenyl	%					85.00	
Triazine Pesticides	Trifluralin	µg/L		<1.0				
	Simazine	µg/L		<1.0				
	Atrazine	µg/L		<0.5				
	Metribuzin	µg/L		<0.25				
	Prometryne	µg/L		<0.25				
	Metolachlor	µg/L		<0.11				
	Alachlor	µg/L		<0.5				
	Cyanazine	µg/L		<1.0				
Phenoxy Acid Herbicides	2,4-D	µg/L			<0.5		<0.5	
	2,4,5-T	µg/L			<0.5		<0.5	
	2,4,5-TP	µg/L			<0.5		<0.5	
	Dicamba	µg/L			<0.5		<0.5	
	Dichlorprop	µg/L			<0.5		<0.5	
	Dinoseb	µg/L			<0.5		<0.5	
	Picloram	µg/L			<0.5		<0.5	
	Diclofop-methyl	µg/L			<0.5		<0.5	
	2,3,4,6-Tetrachlorophenol	µg/L			<0.5		<0.5	
	2,4-Dichlorophenol	µg/L			<0.2		<0.2	
	2,4,5-Trichlorophenol	µg/L			<0.5		<0.5	
	2,4,6-Trichlorophenol	µg/L			<0.5		<0.5	
	Bromoxynil	µg/L			<0.3		<0.3	
	MCPA	ug/L			<5.0		<5.0	
	MCPP	µg/L			<5.0		<5.0	
	Pentachlorophenol	µg/L			<0.1		<0.1	
	DCAA	%			96.00		70.00	

Table 2 Groundwater chemistry for FMW10 (page 1 of 4).

Workorder No.			18K399778	19K479456	20K614700	20K658687	21K767498	22K913584
Date Sampled			20-Oct-18	11-Jun-19	16-Jun-20	28-Sep-20	06/24/2021	06/23/2022
Sample Description			3113-FMW10-WS1	3113-FMW10-WS2	3113-FMW10-WS-200616	3113-FMW10-WS-200928	3113-FMW10-WS-210624	3113-FMW10-WS-220623
Package Name	**Parameter Name**	**Unit**	**9640943**	**272177**	**1207843**	**1514448**	**2672614**	**4028196**
Field Paramaters	pH		7.40	7.42	7.45	7.23	7.53	7.66
	Temperature	°C	8.90	10.30	9.80	9.90	8.10	9.40
	Turbidity	NTU		25.50	9.60	4.73	0.05	0.16
	Electrical Conductivity	umho/cm	501.40	450.00	473.20	607.60	485.10	347.20
	Dissolved Oxygen	mg/L		9.57	8.40	8.34	5.60	7.80
	Temperature (DO Meter)	°C						
Standard Water Analysis	pH		8.11	8.09	7.87		8.04	7.53
	Reactive Silica as SiO2	mg/L	10.00	7.10	7.60		9.30	7.40
	Chloride	mg/L	38.00	47.00	53.00		33.00	24.00
	Fluoride	mg/L	<0.12	<0.12	<0.12		<0.12	<0.12
	Sulphate	mg/L	20.00	4.00	6.00		4.00	3.00
	Alkalinity	mg/L	207.00	161.00	133.00		172.00	122.00
	True Color	TCU	<5	8.00	10.00		6.45	18.40
	Turbidity	NTU	340.00	44.60	45.10		<0.5	1.60
	Electrical Conductivity	umho/cm	520.00	504.00	459.00		489.00	323.00
	Nitrate + Nitrite as N	mg/L	0.69	0.29	0.28		0.18	0.23
	Nitrate as N	mg/L	0.69	0.29	0.28		0.18	0.23
	Nitrite as N	mg/L	<0.05	<0.05	<0.05		<0.05	<0.05
	Ammonia as N	mg/L	0.06	0.04	0.05		<0.03	17.60
	Total Organic Carbon	mg/L	1.50	1.90	1.40		1.80	1.40
	Ortho-Phosphate as P	mg/L	<0.01	<0.01	0.01		0.02	0.01
	Total Sodium	mg/L	25.60	33.60	28.60			
	Total Potassium	mg/L	2.00	1.30	1.50			
	Total Calcium	mg/L	75.50	61.20	60.70			
	Total Magnesium	mg/L	8.10	6.00	6.30			
	Dissolved Sodium	mg/L					29.20	17.70
	Dissolved Potassium	mg/L					1.30	0.66
	Dissolved Calcium	mg/L					60.80	36.30
	Dissolved Magnesium	mg/L					6.00	3.49
	Bicarb. Alkalinity (as CaCO3)	mg/L	207.00	161.00	133.00		172.00	122.00
	Carb. Alkalinity (as CaCO3)	mg/L	<10	<10	<10		<10	<10
	Hydroxide	mg/L	<5	<5	<5		<5	<5
	Calculated TDS	mg/L	297.00	251.00	237.00		238.00	182.00
	Hardness	mg/L	222.00	178.00	178.00		177.00	105.00
	Langelier Index (@20C)	NA	0.67	0.46	0.15		0.43	-0.44
	Langelier Index (@ 4C)	NA	0.35	0.14	-0.17		0.11	-0.76
	Saturation pH (@ 20C)	NA	7.44	7.63	7.72		7.61	7.97
	Saturation pH (@ 4C)	NA	7.76	7.95	8.04		7.93	8.29
	Anion Sum	me/L	5.68	4.65	4.30		4.47	3.20
	Cation sum	me/L	5.61	5.05	4.84		4.83	4.15
	% Difference/ Ion Balance	%	0.60	4.10	5.90		4.00	13.00
	Bromide	mg/L						
	Conductivity	uS/cm						
	Total Hardness (calc)	ug CaCO3/L						
	Total Kjeldahl Nitrogen as N	mg/L						
	Total Kjeldahl Nitrogen	mg/L						
	Dissolved Organic Carbon	mg/L						
UVT (Water)	UV Transmittance	% UVT						
	Total Aluminum	ug/L	11100.00			304.00		
	Total Antimony	ug/L	<2			<2		
	Total Arsenic	ug/L	6.00			<2		
	Total Barium	ug/L	97.00			34.00		
	Total Beryllium	ug/L	<2			<2		
	Total Bismuth	ug/L	<2			<2		
	Total Boron	ug/L	10.00			5.00		
	Total Cadmium	ug/L	0.15			<0.017		
	Total Chromium	ug/L	27.00			2.00		
	Total Cobalt	ug/L	17.00			1.00		

Table 2 Groundwater chemistry for FMW10 (page 2 of 4).

Workorder No.			18K399778	19K479456	20K614700	20K658687	21K767498	22K913584
Date Sampled			20-Oct-18	11-Jun-19	16-Jun-20	28-Sep-20	06/24/2021	06/23/2022
Sample Description			3113-FMW10-WS1	3113-FMW10-WS2	3113-FMW10-WS-200616	3113-FMW10-WS-200928	3113-FMW10-WS-210624	3113-FMW10-WS-220623
Package Name	**Parameter Name**	**Unit**	**9640943**	**272177**	**1207843**	**1514448**	**2672614**	**4028196**
Total Metals	Total Copper	ug/L	52.00			3.00		
	Total Iron	ug/L	19400.00			844.00		
	Total Lead	ug/L	9.80			0.90		
	Total Manganese	ug/L	1270.00			89.00		
	Total Molybdenum	ug/L	<2			<2		
	Total Nickel	ug/L	26.00			4.00		
	Total Phosphorous	mg/L						
	Total Selenium	ug/L	<1			<1		
	Total Silver	ug/L	<0.1			<0.1		
	Total Strontium	ug/L	151.00			113.00		
	Total Thallium	ug/L	0.10			<0.1		
	Total Tin	ug/L	<2			<2		
	Total Titanium	ug/L	948.00			24.00		
	Total Uranium	ug/L	1.20			0.80		
	Total Vanadium	ug/L	31.00			<2		
	Total Zinc	ug/L	43.00			<5		
	Total Mercury	ug/L		<0.026		<0.026		
	Sulphide as Hydrogen Sulphide Calc.	mg/L						
	Total Calcium							
	Total Lithium							
Dissolved Metals	Dissolved Aluminum	ug/L	15.00	<5	<5	<5	<5	15.40
	Dissolved Antimony	ug/L	<2	<2	<2	<2	<2	<1.0
	Dissolved Arsenic	ug/L	<2	<2	<2	<2	<2	<1.0
	Dissolved Barium	ug/L	35.00	30.00	26.00	36.00	32.00	21.40
	Dissolved Beryllium	ug/L	<2	<2	3.00	<2	<2	<0.50
	Dissolved Bismuth	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Boron	ug/L	7.00	6.00	<5	6.00	<5	<10.0
	Dissolved Cadmium	ug/L	<0.09	<0.09	0.28	<0.09	<0.017	0.26
	Dissolved Chromium	ug/L	5.00	3.00	3.00	3.00	4.00	<2.0
	Dissolved Cobalt	ug/L	<1	<1	<1	<1	<1	<0.50
	Dissolved Copper	ug/L	<2	<2	<2	<2	<2	1.80
	Dissolved Iron	ug/L	<50	<50	<50	103.00	<50	<10
	Dissolved Lead	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50
	Dissolved Lithium	ug/L						
	Dissolved Manganese	ug/L	112.00	<2	3.00	<2	<2	<2.0
	Dissolved Molybdenum	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Nickel	ug/L	<2	<2	3.00	3.00	<2	<1.0
	Dissolved Phosphorus	mg/L	<0.02	<0.02	<0.02		<0.02	<0.05
	Dissolved Selenium	ug/L	<1	<1	1.00	<1	<1	<1.0
	Dissolved Silicon	ug/L						
	Dissolved Silver	ug/L	0.20	<0.1	<0.1	<0.1	<0.1	0.11
	Dissolved Strontium	ug/L	150.00	101.00	135.00	107.00	119.00	84.00
	Dissolved Thallium	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.30
	Dissolved Tin	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Titanium	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Uranium	ug/L	1.00	0.80	1.10	0.90	0.90	0.71
	Dissolved Vanadium	ug/L	<2	<2	<2	<2	<2	<2.0
	Dissolved Zinc	ug/L	<5	14.00	<5	<5	<5	7.70
	Dissolved Zirconium	ug/L						
	Dissolved Mercury	ug/L			<0.026	<0.026	<0.026	<0.026
Other Inorganics	Biochem. Oxy. Demand, 5 Day (BOD5)	mg/L						
	Chem. Oxy. Demand	mg/L						
	Benzene	mg/L	<0.001	<0.001	<0.001		<0.001	
	Toluene	mg/L	<0.001	<0.001	<0.001		<0.001	
	Ethylbenzene	mg/L	<0.001	<0.001	<0.001		<0.001	

Table 2 Groundwater chemistry for FMW10 (page 3 of 4).

Workorder No.			18K399778	19K479456	20K614700	20K658687	21K767498	22K913584
Date Sampled			20-Oct-18	11-Jun-19	16-Jun-20	28-Sep-20	06/24/2021	06/23/2022
Sample Description			3113-FMW10-WS1	3113-FMW10-WS2	3113-FMW10-WS-200616	3113-FMW10-WS-200928	3113-FMW10-WS-210624	3113-FMW10-WS-220623
Package Name	**Parameter Name**	**Unit**	**9640943**	**272177**	**1207843**	**1514448**	**2672614**	**4028196**
Atlantic RBCA Tier 1 Hydrocarbons	Xylene (Total)	mg/L	<0.002	<0.001	0.00		<0.001	
	C6-C10 (less BTEX)	mg/L	<0.01	<0.01	<0.01		<0.01	
	>C10-C16 Hydrocarbons	mg/L	<0.05	<0.05	<0.05		<0.05	
	>C16-C21 Hydrocarbons	mg/L	<0.10	<0.05	<0.05		<0.05	
	>C21-C32 Hydrocarbons	mg/L	<0.1	<0.01	0.02		<0.01	
	Modified TPH (Tier 1)	mg/L	<0.1	<0.1	<0.05		<0.05	
	Resemblance Comment		NR	NR	LR		NR	
	Return to Baseline at C32		Y	Y	Y		Y	
	Isobutylbenzene - EPH	%	110.00	100.00	102.00		105.00	
	Isobutylbenzene - VPH	%	76.00	84.00	100.00		88.00	
	n-Dotriacontane - EPH	%	114.00	121.00	101.00		105.00	
Polycyclic Aromatic Hydrocarbons (PAH)	1-Methylnaphthalene	ug/L						
	2-Methylnaphthalene	ug/L						
	Acenaphthene	ug/L						
	Acenaphthylene	ug/L						
	Acridine	ug/L						
	Anthracene	ug/L						
	Benzo(a)anthracene	ug/L						
	Benzo(a)pyrene	ug/L						
	Benzo(b)fluoranthene	ug/L						
	Benzo(e)pyrene	ug/L						
	Benzo(ghi)perylene	ug/L						
	Benzo(k)fluoranthene	ug/L						
	Chrysene	ug/L						
	Dibenzo(a,h)anthracene	ug/L						
	Fluoranthene	ug/L						
	Fluorene	ug/L						
	Indeno(1,2,3-cd)pyrene	ug/L						
	Naphthalene	ug/L						
	Perylene	ug/L						
	Phenanthrene	ug/L						
	Pyrene	ug/L						
	Quinoline	ug/L						
	Nitrobenzene-d5	%						
	2-Fluorobiphenyl	%						
	Terphenyl-d14	%						
PCBs	Total PCB	ug/L						
Phenols	Total Phenolics	mg/L						
OC Pesticides	Gamma-Hexachlorocyclohexane	µg/L		<0.01	<0.01			
	Heptachlor	µg/L		<0.01	<0.01			
	Aldrin	µg/L		<0.01	<0.01			
	Heptachlor Epoxide	µg/L		<0.01	<0.01			
	Endosulfan	µg/L		<0.05	<0.05			
	Chlordane	µg/L		<0.04	<0.04			
	DDE	µg/L		<0.01	<0.01			
	DDD	µg/L		<0.05	<0.05			
	DDT	µg/L		<0.04	<0.04			
	Dieldrin	µg/L		<0.02	<0.02			
	Endrin	µg/L		<0.05	<0.05			
	Methoxychlor	µg/L		<0.04	<0.04			
	Hexachlorobenzene	ug/L		<0.01	<0.01			
	Hexachlorobutadiene	ug/L		<0.01	<0.01			
	Hexachloroethane	ug/L		<0.01	<0.01			
	TCMX	%		64.00	71.00			
	Decachlorobiphenyl	%		91.00	73.00			
	alpha-BHC	µg/L					<0.01	

Table 2 Groundwater chemistry for FMW10 (page 4 of 4).

Workorder No.			18K399778	19K479456	20K614700	20K658687	21K767498	22K913584
Date Sampled			20-Oct-18	11-Jun-19	16-Jun-20	28-Sep-20	06/24/2021	06/23/2022
Sample Description			3113-FMW10-WS1	3113-FMW10-WS2	3113-FMW10-WS-200616	3113-FMW10-WS-200928	3113-FMW10-WS-210624	3113-FMW10-WS-220623
Package Name	**Parameter Name**	**Unit**	**9640943**	**272177**	**1207843**	**1514448**	**2672614**	**4028196**
	Hexachlorobenzene	ug/L					<0.01	
	beta-BHC	µg/L					<0.05	
	Gamma-Hexachlorocyclohexane	µg/L					<0.01	
	delta-BHC	µg/L					<0.01	
	Heptachlor	µg/L					<0.01	
	Aldrin	µg/L					<0.01	
	Heptachlor Epoxide	µg/L					<0.01	
	Oxychlordane	µg/L					<0.05	
	gamma-Chlordane	µg/L					<0.1	
	op'-DDE	µg/L					<0.01	
	Endosulfan I	µg/L					<0.002	
	alpha - chlordane	µg/L					<0.05	
	pp'-DDE	µg/L					<0.05	
	Dieldrin	µg/L					<0.02	
	op'-DDD	µg/L					<0.05	
	Endrin	µg/L					<0.05	
	Endosulfan II	µg/L					<0.002	
	pp'-DDD	µg/L					<0.05	
	op'-DDT	µg/L					<0.04	
	Endrin Aldehyde	µg/L					<0.05	
	Endosulfan Sulfate	µg/L					<0.05	
	pp'-DDT	µg/L					<0.05	
	Endrin Ketone	µg/L					<0.05	
	Methoxychlor	µg/L					<0.04	
	Mirex	µg/L					<0.05	
	TCMX	%					83.00	
	Decachlorobiphenyl	%					89.00	
	Trifluralin	µg/L		<1.0				
	Simazine	µg/L		<1.0				
	Atrazine	µg/L		<0.5				
Triazine Pesticides	Metribuzin	µg/L		<0.25				
	Prometryne	µg/L		<0.25				
	Metolachlor	µg/L		<0.11				
	Alachlor	µg/L		<0.5				
	Cyanazine	µg/L		<1.0				
	2,4-D	µg/L			<0.5		<0.5	
	2,4,5-T	µg/L			<0.5		<0.5	
	2,4,5-TP	µg/L			<0.5		<0.5	
	Dicamba	µg/L			<0.5		<0.5	
	Dichlorprop	µg/L			<0.5		<0.5	
	Dinoseb	µg/L			<0.5		<0.5	
	Picloram	µg/L			<0.5		<0.5	
Phenoxy Acid Herbicides	Diclofop-methyl	µg/L			<0.5		<0.5	
	2,3,4,6-Tetrachlorophenol	µg/L			<0.5		<0.5	
	2,4-Dichlorophenol	µg/L			<0.2		<0.2	
	2,4,5-Trichlorophenol	µg/L			<0.5		<0.5	
	2,4,6-Trichlorophenol	µg/L			<0.5		<0.5	
	Bromoxynil	µg/L			<0.3		<0.3	
	MCPA	ug/L			<5.0		<5.0	
	MCPP	µg/L			<5.0		<5.0	
	Pentachlorophenol	µg/L			<0.1		<0.1	
	DCAA	%			96.00		94.00	

Table 3 Groundwater chemistry for FMW11 (page 1 of 5).

Workorder No.			18K399778	19K481097	20K613477	21K767120	22K912449
Date Sampled			17-Oct-18	15-Jun-19	11-Jun-20	06/22/2021	06/22/2022
Sample Description			3113-FMW11-WS1	3113 - FMW11-WS2	3113-FMW11-WS-200611	3113-FMW11-WS-210622	3113-FMW11-WS-220622
Package Name	**Parameter Name**	**Unit**	**9640945**	**283773**	**1201479**	**2668128**	**4017815**
Field Paramaters	pH		6.58	6.59	6.76	6.78	6.77
	Temperature	°C	7.30	7.40	6.30	7.20	8.60
	Turbidity	NTU		28.80	2.75	0.03	0.85
	Electrical Conductivity	umho/cm	1278.00	828.70	519.70	592.30	1015.00
	Dissolved Oxygen	mg/L		3.58	5.18	4.57	1.05
	Temperature (DO Meter)	°C					
Standard Water Analysis	pH		7.39	7.36	7.51	7.61	7.37
	Reactive Silica as SiO2	mg/L	22.10	16.90	9.90	13.50	9.20
	Chloride	mg/L	83.00	42.00	12.00	18.00	49.00
	Fluoride	mg/L	<0.12	<0.12	<0.12	<0.12	<0.12
	Sulphate	mg/L	2.00	3.00	4.00	3.00	3.00
	Alkalinity	mg/L	610.00	435.00	246.00	303.00	493.00
	True Color	TCU	12.00	<5	11.00	5.24	<5.00
	Turbidity	NTU	1900.00	85.30	17.10	<0.5	0.50
	Electrical Conductivity	umho/cm	1270.00	915.00	531.00	634.00	1109.00
	Nitrate + Nitrite as N	mg/L	0.12	<0.05	0.16	<0.05	0.08
	Nitrate as N	mg/L	0.12	<0.05	0.16	<0.05	0.08
	Nitrite as N	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
	Ammonia as N	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03
	Total Organic Carbon	mg/L	24.30	<0.5	6.00	4.00	8.90
	Ortho-Phosphate as P	mg/L	<0.01	<0.01	<0.01	0.25	<0.01
	Total Sodium	mg/L	140.00	53.30	20.10		
	Total Potassium	mg/L	2.20	2.00	1.40		
	Total Calcium	mg/L	109.00	90.80	72.60		
	Total Magnesium	mg/L	44.20	26.60	17.00		
	Dissolved Sodium	mg/L				19.30	101.00
	Dissolved Potassium	mg/L				1.40	22.30
	Dissolved Calcium	mg/L				64.30	2.05
	Dissolved Magnesium	mg/L				14.10	55.00
	Bicarb. Alkalinity (as CaCO3)	mg/L	610.00	435.00	246.00	303.00	493.00
	Carb. Alkalinity (as CaCO3)	mg/L	<10	<10	<10	<10	<10
	Hydroxide	mg/L	<5	<5	<5	<5	<5
	Calculated TDS	mg/L	762.00	479.00	275.00	302.00	529.00
	Hardness	mg/L	454.00	336.00	251.00	219.00	344.00
	Langelier Index (@20C)	NA	0.54	0.30	0.13	0.26	0.41
	Langelier Index (@ 4C)	NA	0.22	-0.02	-0.19	-0.06	0.09
	Saturation pH (@ 20C)	NA	6.85	7.06	7.38	7.35	6.96
	Saturation pH (@ 4C)	NA	7.17	7.38	7.70	7.67	7.28
	Anion Sum	me/L	14.60	9.95	5.35	6.63	11.30
	Cation sum	me/L	15.80	9.10	5.93	5.25	9.32
	% Difference/ Ion Balance	%	3.90	4.40	5.10	11.60	9.60
	Bromide	mg/L					
	Conductivity	uS/cm					
	Total Hardness (calc)	ug CaCO3/L					
	Total Kjeldahl Nitrogen as N	mg/L					
	Total Kjeldahl Nitrogen	mg/L					
	Dissolved Organic Carbon	mg/L					
UVT (Water)	UV Transmittance	% UVT					
	Total Aluminum	ug/L	23800.00				
	Total Antimony	ug/L	<2				
	Total Arsenic	ug/L	25.00				
	Total Barium	ug/L	437.00				
	Total Beryllium	ug/L	<2				

Table 3 Groundwater chemistry for FMW11 (page 2 of 5).

Workorder No.			18K399778	19K481097	20K613477	21K767120	22K912449
Date Sampled			17-Oct-18	15-Jun-19	11-Jun-20	06/22/2021	06/22/2022
Sample Description			3113-FMW11-WS1	3113 - FMW11-WS2	3113-FMW11-WS-200611	3113-FMW11-WS-210622	3113-FMW11-WS-220622
Package Name	**Parameter Name**	**Unit**	**9640945**	**283773**	**1201479**	**2668128**	**4017815**
Total Metals	Total Bismuth	ug/L	<2				
	Total Boron	ug/L	33.00				
	Total Cadmium	ug/L	**0.77**				
	Total Chromium	ug/L	47.00				
	Total Cobalt	ug/L	38.00				
	Total Copper	ug/L	**137.00**				
	Total Iron	ug/L	**48900.00**				
	Total Lead	ug/L	**32.40**				
	Total Manganese	ug/L	**19700.00**				
	Total Molybdenum	ug/L	<2				
	Total Nickel	ug/L	**69.00**				
	Total Phosphorous	mg/L					
	Total Selenium	ug/L	**2.00**				
	Total Silver	ug/L	0.10				
	Total Strontium	ug/L	324.00				
	Total Thallium	ug/L	0.20				
	Total Tin	ug/L	<2				
	Total Titanium	ug/L	1240.00				
	Total Uranium	ug/L	8.30				
	Total Vanadium	ug/L	65.00				
	Total Zinc	ug/L	149.00				
	Total Mercury	ug/L		<0.026			
	Sulphide as Hydrogen Sulphide Calc.	mg/L					
	Total Calcium						
	Total Lithium						
Dissolved Metals	Dissolved Aluminum	ug/L	<5	<5	<5	<5	9.20
	Dissolved Antimony	ug/L	<2	<2	<2	<2	<1.0
	Dissolved Arsenic	ug/L	<2	<2	<2	<2	<1.0
	Dissolved Barium	ug/L	112.00	62.00	23.00	36.00	41.00
	Dissolved Beryllium	ug/L	<2	<2	<2	<2	<0.50
	Dissolved Bismuth	ug/L	<2	<2	<2	<2	<2.0
	Dissolved Boron	ug/L	20.00	28.00	20.00	13.00	25.60
	Dissolved Cadmium	ug/L	0.31	<0.09	<0.017	<0.017	<0.10
	Dissolved Chromium	ug/L	**18.00**	**9.00**	**7.00**	**7.00**	<2.0
	Dissolved Cobalt	ug/L	4.00	<1	<1	<1	<0.50
	Dissolved Copper	ug/L	**6.00**	2.00	<2	<2	<1.0
	Dissolved Iron	ug/L	<50	<50	<50	<50	<10
	Dissolved Lead	ug/L	<0.5	<0.5	<0.5	<0.5	<0.50
	Dissolved Lithium	ug/L					
	Dissolved Manganese	ug/L	**15500.00**	346.00	15.00	208.00	5.70
	Dissolved Molybdenum	ug/L	<2	<2	<2	<2	<2.0
	Dissolved Nickel	ug/L	10.00	10.00	3.00	<2	<1.0
	Dissolved Phosphorus	mg/L	<0.02	<0.02	<0.02	<0.02	<0.05
	Dissolved Selenium	ug/L	**2.00**	1.00	<1	<1	<1.0
	Dissolved Silicon	ug/L					
	Dissolved Silver	ug/L	<0.1	<0.1	<0.1	<0.1	<0.10
	Dissolved Strontium	ug/L	254.00	169.00	120.00	152.00	162.00
	Dissolved Thallium	ug/L	<0.1	<0.1	<0.1	<0.1	<0.30
	Dissolved Tin	ug/L	<2	<2	<2	<2	<2.0
	Dissolved Titanium	ug/L	<2	<2	<2	<2	2.30
	Dissolved Uranium	ug/L	6.50	6.20	4.60	4.00	4.19
	Dissolved Vanadium	ug/L	<2	<2	<2	<2	<2.0

Table 3 Groundwater chemistry for FMW11 (page 3 of 5).

Workorder No.			18K399778	19K481097	20K613477	21K767120	22K912449
Date Sampled			17-Oct-18	15-Jun-19	11-Jun-20	06/22/2021	06/22/2022
Sample Description			3113-FMW11-WS1	3113 - FMW11-WS2	3113-FMW11-WS-200611	3113-FMW11-WS-210622	3113-FMW11-WS-220622
Package Name	**Parameter Name**	**Unit**	**9640945**	**283773**	**1201479**	**2668128**	**4017815**
	Dissolved Zinc	ug/L	<5	7.00	<5	<5	<5.0
	Dissolved Zirconium	ug/L					
	Dissolved Mercury	ug/L			<0.026	<0.026	<0.026
	Biochem. Oxy. Demand, 5 Day (BOD5)	mg/L					
Other Inorganics	Chem. Oxy. Demand	mg/L					
	Benzene	mg/L	<0.001	<0.001	<0.001	<0.001	
	Toluene	mg/L	<0.001	<0.001	<0.001	<0.001	
	Ethylbenzene	mg/L	<0.001	<0.001	<0.001	<0.001	
	Xylene (Total)	mg/L	<0.002	<0.001	<0.001	<0.001	
	C6-C10 (less BTEX)	mg/L	<0.01	<0.01	<0.01	<0.01	
	>C10-C16 Hydrocarbons	mg/L	<0.05	<0.05	<0.05	<0.05	
Atlantic RBCA Tier 1 Hydrocarbons	>C16-C21 Hydrocarbons	mg/L	<0.10	<0.05	<0.05	<0.05	
	>C21-C32 Hydrocarbons	mg/L	<0.1	<0.01	<0.01	<0.01	
	Modified TPH (Tier 1)	mg/L	<0.1	<0.1	<0.1	<0.05	
	Resemblance Comment		NR	NR	NR	NR	
	Return to Baseline at C32		Y	Y	Y	Y	
	Isobutylbenzene - EPH	%	108.00	87.00	101.00	94.00	
	Isobutylbenzene - VPH	%	70.00	103.00	86.00	77.00	
	n-Dotriacontane - EPH	%	115.00	89.00	102.00	86.00	
	1-Methylnaphthalene	ug/L					
	2-Methylnaphthalene	ug/L					
	Acenaphthene	ug/L					
	Acenaphthylene	ug/L					
	Acridine	ug/L					
	Anthracene	ug/L					
	Benzo(a)anthracene	ug/L					
	Benzo(a)pyrene	ug/L					
	Benzo(b)fluoranthene	ug/L					
	Benzo(e)pyrene	ug/L					
	Benzo(ghi)perylene	ug/L					
	Benzo(k)fluoranthene	ug/L					
Polycyclic Aromatic Hydrocarbons (PAH)	Chrysene	ug/L					
	Dibenzo(a,h)anthracene	ug/L					
	Fluoranthene	ug/L					
	Fluorene	ug/L					
	Indeno(1,2,3-cd)pyrene	ug/L					
	Naphthalene	ug/L					
	Perylene	ug/L					
	Phenanthrene	ug/L					
	Pyrene	ug/L					
	Quinoline	ug/L					
	Nitrobenzene-d5	%					
	2-Fluorobiphenyl	%					
	Terphenyl-d14	%					
PCBs	Total PCB	ug/L					
Phenols	Total Phenolics	mg/L					
	Gamma-Hexachlorocyclohexane	µg/L		<0.01	<0.01		
	Heptachlor	µg/L		<0.01	<0.01		
	Aldrin	µg/L		<0.01	<0.01		

Table 3 Groundwater chemistry for FMW11 (page 4 of 5).

Workorder No.			18K399778	19K481097	20K613477	21K767120	22K912449
Date Sampled			17-Oct-18	15-Jun-19	11-Jun-20	06/22/2021	06/22/2022
Sample Description			3113-FMW11-WS1	3113 - FMW11-WS2	3113-FMW11-WS-200611	3113-FMW11-WS-210622	3113-FMW11-WS-220622
Package Name	**Parameter Name**	**Unit**	**9640945**	**283773**	**1201479**	**2668128**	**4017815**
	Heptachlor Epoxide	µg/L		<0.01	<0.01		
	Endosulfan	µg/L		<0.05	<0.05		
	Chlordane	µg/L		<0.04	<0.04		
	DDE	µg/L		<0.01	<0.01		
	DDD	µg/L		<0.05	<0.05		
OC Pesticides	DDT	µg/L		<0.04	<0.04		
	Dieldrin	µg/L		<0.02	<0.02		
	Endrin	µg/L		<0.05	<0.05		
	Methoxychlor	µg/L		<0.04	<0.04		
	Hexachlorobenzene	ug/L		<0.01	<0.01		
	Hexachlorobutadiene	ug/L		<0.01	<0.01		
	Hexachloroethane	ug/L		<0.01	<0.01		
	TCMX	%		73.00	85.00		
	Decachlorobiphenyl	%		72.00	92.00		
	alpha-BHC	µg/L				<0.01	
	Hexachlorobenzene	ug/L				<0.01	
	beta-BHC	µg/L				<0.05	
	Gamma-Hexachlorocyclohexane	µg/L				<0.01	
	delta-BHC	µg/L				<0.01	
	Heptachlor	µg/L				<0.01	
	Aldrin	µg/L				<0.01	
	Heptachlor Epoxide	µg/L				<0.01	
	Oxychlordane	µg/L				<0.05	
	gamma-Chlordane	µg/L				<0.1	
	op'-DDE	µg/L				<0.01	
	Endosulfan I	µg/L				<0.002	
	alpha - chlordane	µg/L				<0.05	
	pp'-DDE	µg/L				<0.05	
	Dieldrin	µg/L				<0.02	
	op'-DDD	µg/L				<0.05	
	Endrin	µg/L				<0.05	
	Endosulfan II	µg/L				<0.002	
	pp'-DDD	µg/L				<0.05	
	op'-DDT	µg/L				<0.04	
	Endrin Aldehyde	µg/L				<0.05	
	Endosulfan Sulfate	µg/L				<0.05	
	pp'-DDT	µg/L				<0.05	
	Endrin Ketone	µg/L				<0.05	
	Methoxychlor	µg/L				<0.04	
	Mirex	µg/L				<0.05	
	TCMX	%				106.00	
	Decachlorobiphenyl	%				109.00	
	Trifluralin	µg/L			<1.0		
	Simazine	µg/L			<1.0		
	Atrazine	µg/L			<0.5		
Triazine Pesticides	Metribuzin	µg/L			<0.25		
	Prometryne	µg/L			<0.25		
	Metolachlor	µg/L			<0.11		
	Alachlor	µg/L			<0.5		
	Cyanazine	µg/L			<1.0		
	2,4-D	µg/L		<0.5		<0.5	
	2,4,5-T	µg/L		<0.5		<0.5	

Table 3 Groundwater chemistry for FMW11 (page 5 of 5).

Workorder No.				18K399778	19K481097	20K613477	21K767120	22K912449
Date Sampled				17-Oct-18	15-Jun-19	11-Jun-20	06/22/2021	06/22/2022
Sample Description				3113-FMW11-WS1	3113 - FMW11-WS2	3113-FMW11-WS-200611	3113-FMW11-WS-210622	3113-FMW11-WS-220622
Package Name	**Parameter Name**	**Unit**		**9640945**	**283773**	**1201479**	**2668128**	**4017815**
Phenoxy Acid Herbicides	2,4,5-TP	µg/L			<0.5		<0.5	
	Dicamba	µg/L			<0.5		<0.5	
	Dichlorprop	µg/L			<0.5		<0.5	
	Dinoseb	µg/L			<0.5		<0.5	
	Picloram	µg/L			<0.5		<0.5	
	Diclofop-methyl	µg/L			<0.5		<0.5	
	2,3,4,6-Tetrachlorophenol	µg/L			<0.5		<0.5	
	2,4-Dichlorophenol	µg/L			<0.2		<0.2	
	2,4,5-Trichlorophenol	µg/L			<0.5		<0.5	
	2,4,6-Trichlorophenol	µg/L			<0.5		<0.5	
	Bromoxynil	µg/L			<0.3		<0.3	
	MCPA	ug/L			<5.0		<5.0	
	MCPP	µg/L			<5.0		<5.0	
	Pentachlorophenol	µg/L			<0.1		<0.1	
	DCAA	%			75.00		76.00	