

PHASE 2 INITIAL BOREHOLE DRILLING AND TESTING, SOUTH BRUCE

*WP13: Technical Report for Monitoring Well
(SB_MW01) Installation at SB_BH02*

APM-REP-01332-0313

February 2022

Geofirma Engineering Ltd.

nwmo

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MANAGEMENT
ORGANIZATION

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DES DÉCHETS
NUCLÉAIRES

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Phase 2 Initial Borehole Drilling and Testing, South Bruce

WP13: Technical Report for Monitoring Well (SB_MW01) Installation at SB_BH02

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1 INTRODUCTION

Geofirma Engineering Ltd. (Geofirma) coordinated drilling, purging, and sampling of two monitoring wells near the SB_BH02 drill site at 1257 Concession Road 8, northwest of Teeswater, Ontario. The well installation and sampling program was completed to determine pre-drilling groundwater conditions near the SB_BH02 drill site and establish a well cluster that could be used to monitor shallow groundwater conditions at the site during drilling activities at SB_BH02. This report provides a detailed summary of the field activities and results from the well installation and sampling program.

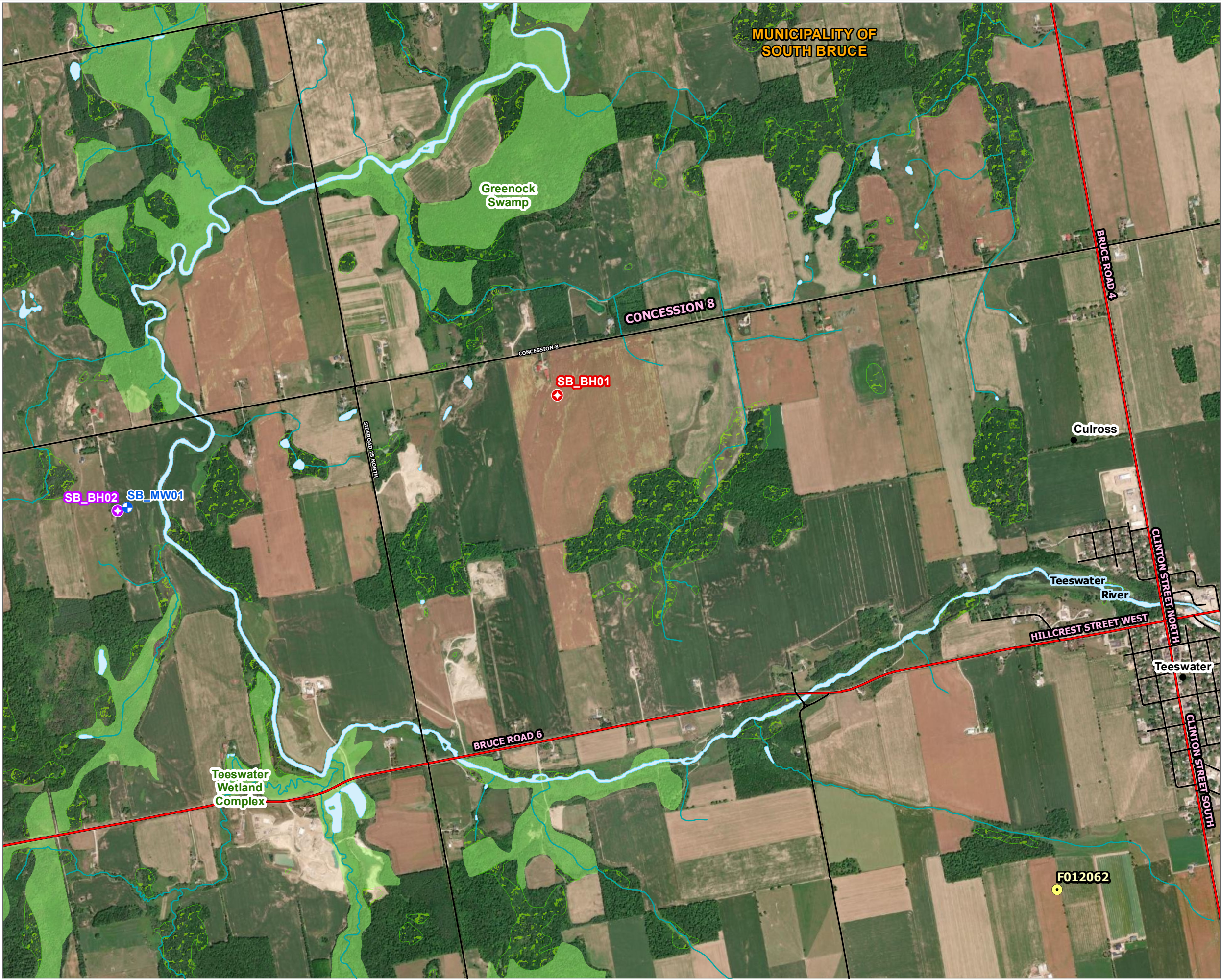
1.1 Background

The Initial Borehole Drilling and Testing project in South Bruce, Ontario is part of the Phase 2 Geoscientific Preliminary Field Investigations of the NWMO's Adaptive Phased Management (APM) Site Selection Phase.

This project involves the drilling and testing of two deep boreholes (SB_BH01 and SB_BH02) in the South Bruce area and comprises a total of 11 work packages. The project will be carried out by a team led by Geofirma Engineering Ltd. on behalf of the NWMO.

Boreholes SB_BH01 and SB_BH02 are located approximately four (4) km northwest of the community of Teeswater, Ontario (Figure 1). The boreholes will be drilled to a total target depth of approximately 900 m below ground surface (m BGS) through the entire sedimentary bedrock sequence down to the Cambrian sandstone (or Precambrian bedrock if Cambrian is absent). The boreholes will be drilled using PQ3 wireline coring equipment that produces a 123 mm nominal diameter borehole and 83 mm nominal diameter core.

Work Package WP13 is composed of three main activities: a baseline water well testing program for domestic water wells and conventional monitoring wells along Concession Road 8, installation of a monitoring well cluster near SB_BH02, and monitoring of water levels and water chemistry at select wells during drilling of SB_BH01 and SB_BH02. The baseline water well testing was completed during Fall 2020 with results reported in a draft report by Geofirma in March 2021 (Geofirma, 2021d). This report describes the WP13 activities that were completed to install a monitoring well cluster near SB_BH02 including the drilling, development, and sampling of the two monitoring wells (SB_MW01-01 and SB_MW01-02).



LEGEND

Municipality of South Bruce

Provincially Significant Wetland

Wetland

Waterbody

Watercourse

Major Road

Local / Street

OGSRL Well Locations

SB_MW01

SB_BH01 Drill Site

SB_BH02 Drill Site

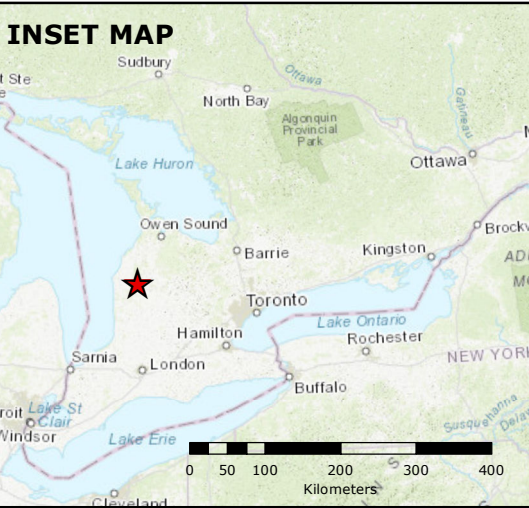
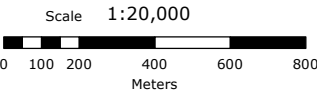


Figure 1
SB_BH01, SB_BH02, and
SB_MW01 Locations



Projection: NAD 1983 UTM Zone 17N

Source: NWMO, Ontario GeoBase

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

PROJECT No. 20-211-1
NWMO South Bruce
Drilling and Testing

DESIGN: ADG
CAD/GIS: ADG
CHECK: CAM
REV: 0

DATE: 2021-04-06



1.2 Purpose and Objectives.

The primary objective of the monitoring well installation program was to drill and instrument two monitoring wells near the SB_BH02 drill site. Specific objectives of the program included:

- Establish a monitoring well cluster near the SB_BH02 location that is optimally located to observe potential impacts of drilling at SB_BH02 on groundwater levels and groundwater quality, including one well in the overburden and a second in the shallow bedrock;
- Evaluate pre-drilling water quality and quantity at each of the monitoring wells;
- Monitor for impact on groundwater quality during drilling of SB_BH02; and
- Mitigate the risk of perceived or claimed impacts from drilling and testing activities.

2 DESCRIPTION OF ACTIVITIES

2.1 Utility Locates

Prior to the start of drilling, Geofirma obtained private and public utility locates for all buried utilities near the drill site. Public locates from Wightman Telecom and G-Tel were obtained through Ontario OneCall and private locates were completed by OnSite Locates.

2.2 Drilling and Well Installation

2.2.1 SB_MW01-01

SB_MW01-01 was drilled and completed in the overburden by Strata Drilling Group (Strata) on May 20-21, 2021. Geofirma field staff provided supervision of the drilling operations and completed logging of the soil core produced during drilling (Section 2.3). Drilling of SB_MW01-01 started using a Geoprobe 3230DT rig with direct push. Using direct push, soil cores were recovered in 1.5 m (5 ft) tubes from ground surface to 6 m below ground surface (BGS). The direct push method could not drill past 6 m BGS, so the drilling technique switched to a 0.15 m (6 inch) diameter auger with split spoon sampling. The final drilled depth of the borehole was 12.8 m BGS.

SB_MW01-01 was instrumented with a 51 mm (2 inch) diameter PVC monitoring well, including a 3 m (10 ft) slotted screen that straddles the water table. Details of the well completion, including screen interval and backfill (sand pack, bentonite seals) depths are provided in Section 3.1.1. Soil cuttings produced during drilling of SB_MW01-01 were contained in drums and disposed offsite.

2.2.2 SB_MW01-02

SB_MW01-02 was drilled and completed in the shallow bedrock by Steffen Drilling on May 24-25, 2021. Geofirma field staff provided supervision of the drilling operations and completed logging of the rock cuttings produced during drilling (Section 2.3). Drilling of SB_MW01-02 was completed using a DareEx air rotary drilling rig. The drilled depth of the borehole was 38.7 m BGS. Approximately 0.5 m of the hole was lost due to sloughing, so the final bottom depth of the borehole was 38.2 m BGS.

Details of the well completion, including casing and open hole intervals are provided in Section 3.1.2. Rock cuttings and water produced during drilling of SB_MW01-02 were contained in berms and disposed offsite.

2.3 Soil Core and Cuttings Logging

Geofirma staff completed sample photography and geological/geotechnical logging of samples produced during drilling of the two monitoring wells. Logging was completed using a purpose-built logging form in the DQC workbook and generally followed Geofirma's field protocol (FP03-Direct Push Drilling). Sample descriptions included lithology, soil type/texture (e.g. grain size), colour, composition, and moisture content (for soil core).

Photographs of each core run (for continuous soil cores) were captured using a digital SLR camera, with up to three photos taken per run. The position of the three photographs were set up to provide overlap

between images, so a high-resolution record of each core run is captured. Each core run photograph included a colour card, measuring tape for scale, and a card with borehole information (borehole ID, core run number, depth).

Photographs of rock cutting samples were taken against a white background and included a colour card, grain size card for scale, and a card with borehole information (borehole ID, depth).

2.4 Well Survey

Both monitoring wells were surveyed by Geofirma to obtain accurate measurements of the well locations. The position (Northing and Easting) and elevation for all wells were measured using a Trimble Catalyst DA1 System. All survey measurements collected using the Trimble Catalyst system were collected at minimum vertical/horizontal accuracy of ± 0.15 m. The horizontal and vertical datums for the survey data were the North American Datum 1983 (NAD83), Zone 17N, and the Canadian Geodetic Vertical Datum 2013 (CGVD2013a), respectively.

2.5 Well Development and Groundwater Sampling

Well development and groundwater sampling were completed by Geofirma staff on May 31, 2021. Records of well development and groundwater sampling activities, including water levels and field parameter measurements were recorded in the Data Quality Confirmation (DQC) workbook.

2.5.1 Well Development

SB_MW01-01 was developed using an inertial Waterra foot valve attached to 12.7 mm (1/2 inch) diameter high density polyethylene (HDPE) tubing. Three well volumes (~100 L) were purged prior to field parameter measurements and sampling. Well volume calculations for SB_MW01-01 included the volume in the PVC riser and the volume in the sand pack.

SB_MW01-02 was developed using a submersible Grundfos RediFlo2 pump attached to 12.7 mm (1/2 inch) diameter high density polyethylene (HDPE) tubing. The pump intake was lowered to 36 m below the top of casing (TOC). Over three well volumes were purged from SB_MW01-02 prior to sampling, with a total volume of approximately 1877 L purged. Purging was completed for 110 minutes at a flow rate of 17 L/min. The water level in SB_MW01-02 during well development was recorded using a Solinst Levellogger and manually using an electronic water level tape.

Purge water from SB_MW01-01 was discharged directly to surface on the edge of the drill pad. Purge water from SB_MW01-02 was contained and tested throughout well development with a hydrometer. Specific gravity (SG) measurements indicated that the water was fresh ($SG < 1.005$), so the water was discharged to ground surface on the edge of the drill pad.

2.5.2 Groundwater Sampling

Two water samples were collected at the end of well development: one sample from SB_MW01-01 and one sample from SB_MW01-02. Both samples were collected directly from the 12.7 mm (1/2 inch) diameter HDPE discharge line that was installed in each well.

For each sample set collected, field parameters (pH, temperature, EC, ORP, turbidity, DO, TDS) were measured using a Horiba U52 multiparameter probe (in a flow through cell), fluorescein was measured with a Turner Designs AquaFluor Fluorometer, and total chlorine was measured using a DR900 colorimeter. Each instrument was calibrated in accordance with the WP13 test plan, with all calibration records and field parameter measurements recorded in the DQC workbook.

All samples for laboratory analysis were collected in laboratory-supplied bottles, in accordance with laboratory requirements, and stored in rigid sided coolers on ice. The samples were hand-delivered to Bureau Veritas' Waterloo office following chain of custody procedures. Samples were subsequently shipped from the Bureau Veritas Waterloo office to the Bureau Veritas Laboratory in Mississauga for analysis.

2.5.2.1 Sample Naming Conventions

Groundwater samples were named to be consistent with NWMO's naming convention in acQuire, as shown below:

Well ID_GW00x

Where:

- Well ID is well ID for the water well sampled.
- GW is the type of sample (groundwater).
- And 00x is a sequential sample number (e.g. 001 unless multiple samples are collected from a single water well).

2.6 Laboratory Analysis

Laboratory analysis of the water samples was completed by Bureau Veritas Laboratories in Mississauga, Ontario. Bureau Veritas is accredited through the Canadian Association for Laboratory Accreditation (CALA) and Standards Council of Canada for the listed analytes. All water samples were analyzed for the suite of analyses outlined below:

- pH
- Total alkalinity (as CaCO₃)
- Anions (Br, Cl, F, NO₃, NO₂, PO₄, SO₄)
- Cations (metals)
- Mercury (by CVAA/AF)
- Bacteriological (Total Coliform + E Coli)
- Organic Parameters (O.Reg. 170, Schedule 24)
- Hydrocarbons (BTEX, F1 PHC, F2-F4 PHC)

3 RESULTS

The results described in the following section provide a summary of the field and laboratory results from the monitoring well drilling, installation, and sampling program.

3.1 Drilling and Well Installation

3.1.1 SB_MW01-01

Table 1 provides a summary of the SB_MW01-01 completion details and a borehole/well completion diagram for SB_MW01-01 is provided in Appendix B. The geological log for SB_MW01-01 shows that the shallow unconsolidated sediments at the site are composed of predominately coarse-grained material, including sand, gravel, and cobbles, with minor clay/silt.

Table 1: SB_MW01-01 Borehole and Well Completion Details

Borehole Details	
Drilled Depth	12.80 m BGS
Borehole Diameter	0.15 m (6 inch)
Well Details	
Well Diameter	0.051 m (2 inch)
Stickup	0.95 m AGS
Screen Interval	4.88 – 7.92 m BGS
Sand Pack	4.88 – 8.53 m BGS
Bentonite Seal(s)	0.00 – 4.88 m BGS 8.53 – 12.80 m BGS
Static Water Level (May 31, 2021)	4.765 m BGS

m BGS = meters below ground surface

m AGS = meters above ground surface

3.1.2 SB_MW01-02

Table 2 provides a summary of the SB_MW01-02 completion details and a borehole/well completion diagram for SB_MW01-02 is provided in Appendix B. The geological log for SB_MW01-02 shows that the shallow unconsolidated sediments at the site are composed of predominately coarse-grained material, including sand, gravel, and cobbles from ground surface to 18.3 m BGS. A 6 m thick clay-rich till unit with some sand and gravel is present from 18.3 to 24.3 m BGS. The clay rich till is underlain by gravel rich till and a gravel unit from 24.3 m BGS to the top of bedrock at 32.6 m BGS. The shallow bedrock at the site is composed of heavily weathered and fractured brown limestone that is interpreted as the Lucas Formation.

Table 2: SB_MW01-02 Borehole and Well Completion Details

Borehole Details	
Drilled Depth	38.70 m BGS
Borehole Diameter	0.25 m (casing interval)
	0.15 m (open interval)
Well Details	
Casing Diameter	0.168 m (6.625 inch)
Stickup	0.90 m AGS
Casing Depth	37.3 m BGS
Open Interval	37.30 – 38.20m BGS
Static Water Level (May 31, 2021)	10.025 m BGS

m BGS = meters below ground surface

m AGS = meters above ground surface

3.2 Well Survey Data

Survey results for both monitoring wells are summarized in Table 3. The horizontal and vertical accuracy of the survey data were ± 0.04 m or better.

Table 3: Water Well Coordinates and Elevations

Well ID	Northing ¹	Easting ¹	Ground Surface Elevation (m ASL)	Top of Casing Elevation (m ASL)	Northing/Easting Accuracy (m)	Vertical Accuracy (m)
SB_MW01-01	4872610.428	471374.301	288.75	289.70	0.02	0.04
SB_MW01-02	4872611.013	471375.186	288.69	289.59	0.02	0.03

1. Horizontal Datum: North American Datum 1983 (NAD83), Zone 17N

2. Vertical Datum: Canadian Geodetic Vertical Datum 2013 (CGVD2013a)

3.3 Water Quality

3.3.1 Field Parameters

Field parameter measurements collected at the time of sample collection are provided in Table 4. Additional field parameter measurements collected throughout well development are presented in the DQC workbook (Appendix C).

Table 4: Field Parameter Measurements from SB_MW01 Wells at Time of Sampling

Well ID	Date/Time	pH	Temp (°C)	EC (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Fluorescein (ppb)
SB_MW01-01	31-May-21 19:15	7.31	9.0	0.482 ¹	189	9.30	>1000	<0.4
SB_MW01-02	31-May21 19:30	7.36	10.0	0.487	-288	0.00	41.3	<0.4

1. Not collected at time of sampling on May 31, 2021. EC measured after purging a second time on August 18, 2021.

3.3.2 Laboratory Results

Water quality results from the laboratory analysis were reviewed by Geofirma and were compared to the Ontario Drinking Water Standards (ODWS) and MECP O.Reg. 153/04 Table 2 Full Depth Generic Site Condition Standards in a Potable Groundwater Condition. The ODWS Maximum Acceptable Concentrations (MAC) and Aesthetic Objectives (AO) were both used for evaluation of water quality results.

Highlights of the laboratory water quality results are provided in Table 5. Water quality for the two samples was generally acceptable, with only one exceedance of the ODWS and O.Reg. 153/04 Table 2 standards. Reported nitrate in sample SB_MW01-01_GW001 (10.1 mg/L) slightly exceeds the ODWS for nitrate (10 mg/L). Low concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) were also detected in the sample SB_MW01-01 but were below the ODWS and O.Reg.153/04 standards. There were no exceedances for the sample SB_MW01-02_GW001.

Table 5: Summary of Laboratory-Reported Water Quality Results

Sample ID	Well Type/Description	Summary of ODWS and O.Reg. 153/04 Table 2 Exceedances
SB_MW01-01_GW001	Overburden	Nitrate (10.1 mg/L) exceeds ODWS (10 mg/L)
SB_MW01-02_GW001	Bedrock	No exceedances reported

Note: Regulatory values shown in brackets

Tables showing the complete set of water quality results for SB_MW01-01_GW001 and SB_MW01-02_GW001 are provided in Appendix D. The certificate of analysis from Bureau Veritas is provided in Appendix E.

4 DATA QUALITY ASSURANCE AND QUALITY CONTROL

Several data quality assurance and quality control (QA/QC) measures were implemented by Geofirma staff during the field program and subsequent analysis and reporting. Verification of results was completed following acceptance criteria and verification procedures outlined in Section 6.2 of the Water Well Testing Test Plan (Geofirma, 2021a) and within the Geofirma Project Quality Plan (Geofirma, 2021b). All data acquisition and analysis were reviewed, verified, dated, and signed by a second Geofirma technical staff member who was not directly involved in the work being reviewed.

Bureau Veritas (BV) Laboratories also completes a rigorous internal laboratory QA/QC program. Analysis completed by BV is completed *“in accordance with procedures and practices ordinarily exercised by professionals in BV labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected.”* Details of the BV QA/QC program are provided as part of the laboratory certificates of analysis included in Appendix E.

5 HEALTH, SAFETY AND ENVIRONMENT

All field activities were completed in accordance with the requirements outlined in the accompanying project-specific Health, Safety, and Environment Plan (HSEP) prepared by Geofirma and approved by the NWMO (Geofirma, 2021c). Pre-job briefings were conducted at the beginning of every field day onsite to discuss the daily plan, health and safety concerns, and any relevant changes to procedures.

There were no health and safety issues reported during the monitoring well drilling, installation, and sampling program.

6 CONCLUSIONS

Geofirma Engineering Ltd. (Geofirma) was retained by NWMO to complete drilling, development, and sampling of two monitoring wells in the overburden and shallow bedrock near the SB_BH02 drill site. Field activities were completed by Geofirma between May 20-31, 2021. The following conclusions are based on Geofirma's review of the field data and water quality results:

- Two boreholes were drilled and instrumented as monitoring wells near the SB_BH02 drill site: one in the overburden (SB_MW01-01), and the second in the shallow bedrock (SB_MW01-02). SB_MW01-01 was installed so that the screen interval straddled the water table.
- The stratigraphy of the site is composed of unconsolidated sand, clay, and gravel from ground surface to the top of bedrock at 32.6 m below ground surface (m BGS). The shallow bedrock is a heavily weathered and fractured brown limestone that is interpreted as the Lucas Formation.
- Water levels measured on May 31, 2021, were 4.765 m BGS in SB_MW01-01 and 10.025 m BGS in SB_MW01-02.
- Water quality results for samples from the two monitoring wells were compared to the Ontario Drinking Water Quality Standards (ODWS) and the O.Reg. 153/04 Table 2 Full Depth Generic Site Condition Standards in a Potable Groundwater Condition. Water quality was generally acceptable for both samples, with the following exceptions for SB_MW01-01:
 - Reported nitrate in sample SB_MW01-01 (10.1 mg/L), slightly exceeds the ODWS of 10 mg/L.
 - Low concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) were detected in SB_MW01-01, these concentrations were below the ODWS and O.Reg.153/04 standards.

7 REFERENCES

Geofirma Engineering Ltd., 2021a. WP13 Test Plan: Monitoring Well Installation and Monitoring at SB_BH02, Phase 2 Initial Borehole Drilling and Testing, South Bruce Area, Revision 0, May 03, 2021.

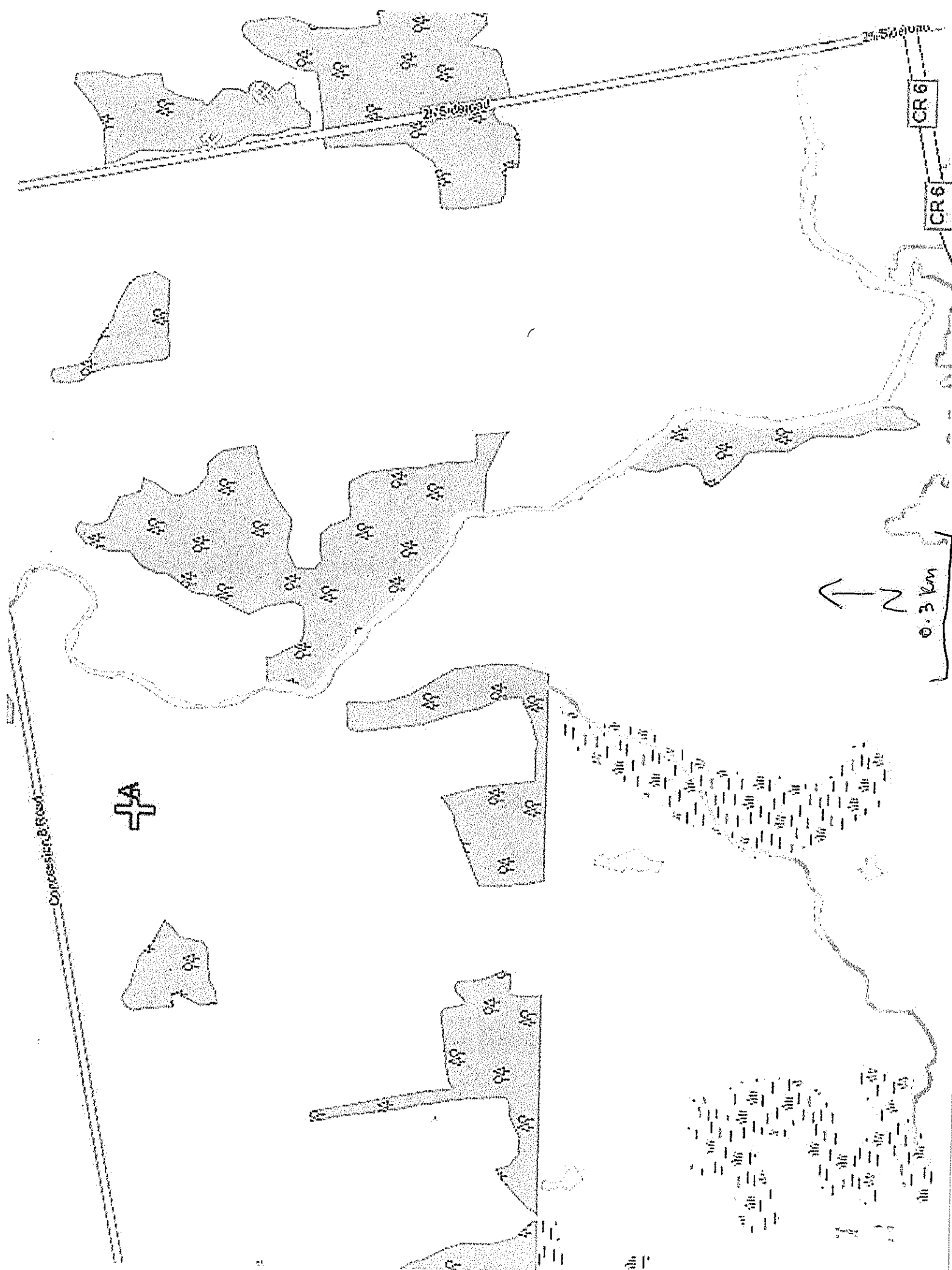
Geofirma Engineering Ltd., 2021b. Project Quality Plan – Phase 2 Initial Borehole Drilling and Testing South Bruce Area, Revision 2, July 28, 2021.

Geofirma Engineering Ltd., 2021c. Environment, Health and Safety Plan – Phase 2 Initial Borehole Drilling and Testing, South Bruce Area, Revision 5, September 22, 2021

Geofirma Engineering Ltd., 2021d. WP13: Technical Report for Water Well Testing near SB_BH01 and SB_BH02, Phase 2 Initial Borehole Drilling and Testing, South Bruce, Revision 0A, March 24, 2021.

**WP13: Technical Report for Monitoring Well
Installation (SB_MW01) at SB_BH02**

Appendix A
MECP Water Well Records



**WP13: Technical Report for Monitoring Well
Installation (SB_MW01) at SB_BH02**

Appendix B

Borehole/Well Completion Diagrams

BOREHOLE STRATIGRAPHIC AND INSTRUMENTATION LOG

Borehole Number: MW01-1

Project Number: 20-211-1

Client: NWMO

Site Location: 1257 Concession Road 8, Teeswater

Coordinates: 471374.301E, 4872610.428N (UTM Zone 17)

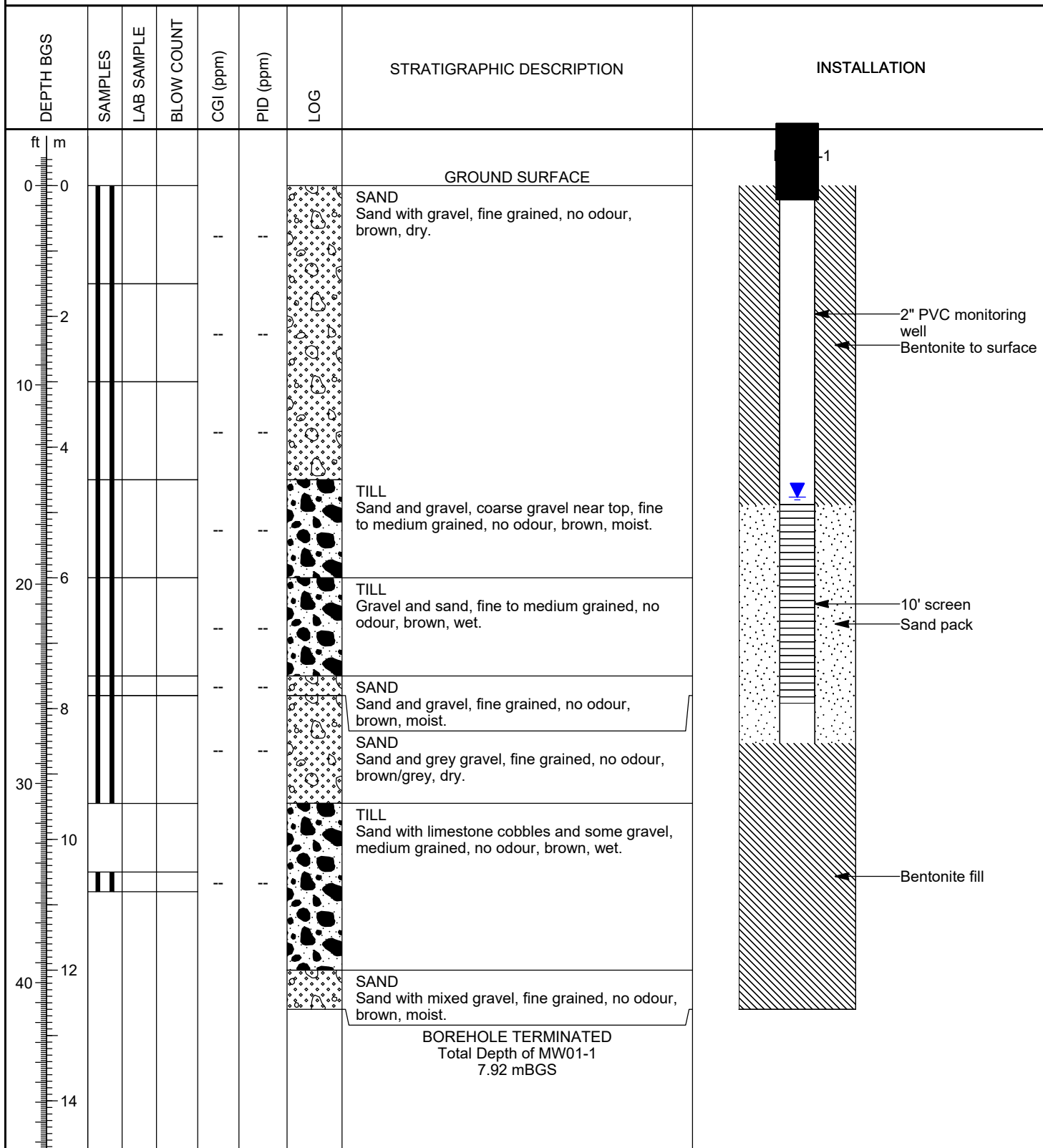
Drilling Method: Direct Push and Auger

Drilling Rig: Geoprobe 3230DT

Date Completed: May 20, 2021

Supervisor: MdK

Logged By: ACMC



Prepared By: MdK

Reviewed By: CAM

Doc: 20-211-1_BH02_WELL INSTALLATION_MW01_MAY 2021.GPJ

Template: GEOFIRMA_TEMPLATE.GDT

BOREHOLE STRATIGRAPHIC AND INSTRUMENTATION LOG

Borehole Number: MW01-2

Project Number: 20-211-1

Client: NWMO

Site Location: 1257 Concession Road 8, Teeswater

Coordinates: 471375.186E, 4872611.013N (UTM Zone 17)

Drilling Method: Air Rotary

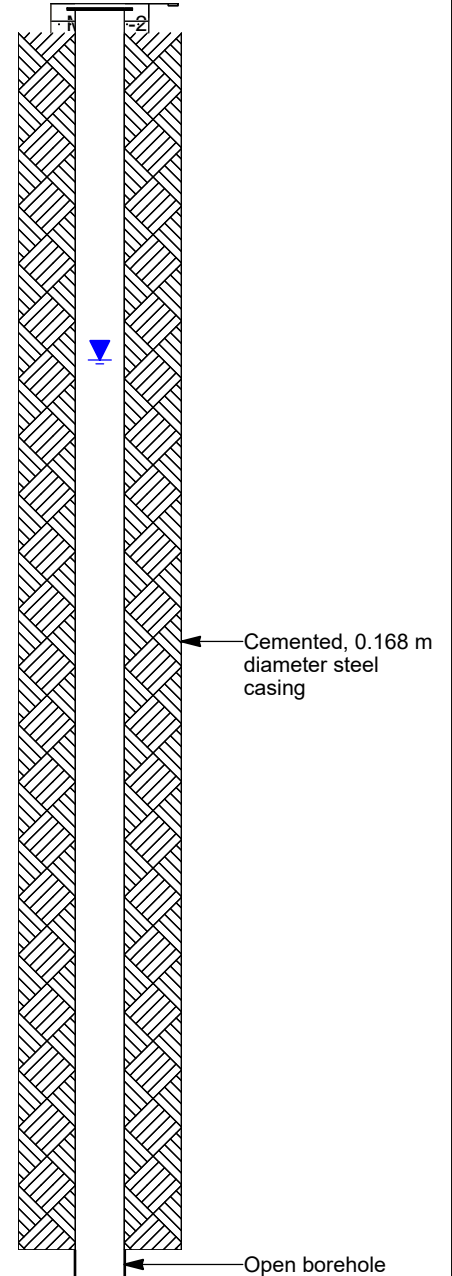
Drilling Rig: Dare-Ex

Date Completed: May 25, 2021

Supervisor: MdK

Logged By: ACMC

DEPTH BGS	SAMPLES	LAB SAMPLE	BLOW COUNT	CGI (ppm)	PID (ppm)	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
ft m								
0 0				--	--		GROUND SURFACE	
2 0.6				--	--		OVERBURDEN Sand and gravel, fine grained, no odour, brown, dry.	
4 1.2				--	--		OVERBURDEN Gravel with trace sand, fine to medium grained, no odour, brown/grey, dry.	
6 1.8				--	--		OVERBURDEN Sand with mixed grey/brown gravel, fine grained, no odour, brown/grey, moist.	
8 2.4				--	--		OVERBURDEN Gravel with trace brown sand, fine to medium grained, no odour, brown, dry.	
10 3.0				--	--		OVERBURDEN Sand with gravel, fine grained, no odour, brown, moist.	
12 3.6				--	--		OVERBURDEN Sand with some gravel, fine grained, hydrocarbon odour, greyish-brown, moist.	
14 4.2				--	--			
16 4.8				--	--			
18 5.4				--	--		OVERBURDEN Clay with some gravel, fine grained, no odour, grey, wet.	
20 6.0				--	--			
22 6.6				--	--			
24 7.2				--	--			
26 7.8				--	--			
28 8.4				--	--		TILL Till with gravel Chips (green/brown/dark), fine to medium grained, no odour, brown/green/black/white, wet.	
30 9.0				--	--			
32 9.6				--	--			
34 10.2				--	--		BEDROCK Limestone with laminations and needle like porosity, no odour, brown, wet.	
36 10.8				--	--		BEDROCK Limestone with needle like pores, minor laminations, stylolites, and dark rock chips, no odour, light brown, wet.	
38 11.4							BOREHOLE TERMINATED Total Depth of MW01-2 38.19 mBGS	
40 12.0								
42 12.6								



Prepared By: MdK

Reviewed By: CAM

Doc: 20-211-1_BH02_WELL INSTALLATION_MW01_MAY 2021.GPJ

Template: GEOFIRMA_TEMPLATE.GDT

**WP13: Technical Report for Monitoring Well
Installation (SB_MW01) at SB_BH02**

Appendix C

Data Quality Confirmation Workbook

20-211-1: Equipment Calibration Tracking Sheet

Date	Time	Personnel	Equipment Type	Serial Number	Calibration Check			Calibration Performed			Comments
					Check Method & Standard(s) Used	Equipment Reading(s)	Calibration Required (Y/N)	Calibration Method & Standard(s) Used	Equipment Reading(s)	Calibration Completed (Y/N)	
31-May-21	18:00	MdK	Horiba U52	40M7XHMF				AutoCal	pH:3.98 EC:4.53 NTU:0.0	Y	See calibration in DQC of WP02
31-May-21	11:00	MdK	AquaFluor Fluorometer	807511				3 point cal	0.17 = 0.00 ppb 8.30 = 10 ppb 87.70 = 100 ppb	Y	See calibration in DQC of WP02

Completed by: CAM	Verified by: OJB
Date: 31-May-21	Date: 16-Jul-21

20-211-1: Survey Data Sheet

Survey Personnel	MdK, AMSC	Survey Equipment Make/Model: Trimble Catalayst DA1	Serial #:	6033X004411
		Electronic WL Meter Make/Model: Solinst 101 Electronic	Serial #:	379681

[illegible]

1. Vertical Datum: Canadian Geodetic Vertical Datum 2013 (CGVD2013a)

2.Horizontal Datum: North American Datum 1983 (NAD83), Zone 17N

Completed by: CAM	Verified by: OJB
Date: 31-May-21	Date: 16-Jul-21

20-211-1: Water Levels Data Sheet

Water Well ID:	MW01-01
Sampling Personnel	CAM,MEOR, LMB, KML

Note: A separate field data sheet is to be completed for each well during yield testing

[illegible]

Completed by:	CAM	Verified by:	OJB
Date:	31-May-21	Date:	16-Jul-21

20-211-1: Field Parameter Data Sheet

Well ID	MW01-01	Multiparameter Probe:	Horiba U52	Comments:
Sampling Personnel:	CAM, ACD	Fluorometer:	TurnerDesigns Aquafluor	

Note: A separate field data sheet is to be completed for each well during yield testing

Date	Time	Multiparameter Probe							Fluorometer		Sample Collected (Y/N)	Comments (sample ID, sample collection method, odour, etc)
		Calibrated	pH	Temp (°C)	EC (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Calibrated	Fluorescein (ppb)		
31-May-21	19:15	Y	7.31	9	0.482 ¹	189	9.3	>1000	Y	0.123	Y	Sample collected after 100L purged, water very silty, Sample ID = SB_MW01-01_GW001

1. EC measured on August 18, 2021 while purging SB_MW01 for ongoing monitoring

Completed by:	CAM	Verified by:	OJB
Date:	31-May-21	Date:	16-Jul-21

20-211-1: Geological/Geotechnical Log

Sample ID	Date/Time	Interval Top Depth (m BGS)	Interval Bottom Depth (m BGS)	Sample Type (Core/Drill Cuttings)	Sample Weight (g)	Geological/Geotechnical Log									
						Description/Comments	Lithology (Primary)	Lithology (Secondary)	Colour	Grain Size (Primary)	Grain Size (Secondary)	Roundness	Sorting	Moisture Content	Odour
SB_MW01-01_SC001	2021-05-18 13:35	0	1.5	Soil Core	--	Fine grained sand with gravel. 1.5m recovery	Sand	Gravel	brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Dry	None
SB_MW01-01_SC002	2021-05-19 13:50	1.5	3	Soil Core	--	Fine grained sand with gravel. 1.5 m recovery	Sand	Gravel	brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Dry	None
SB_MW01-01_SC003	2021-05-20 13:55	3	4.5	Soil Core	--	Upper unit is sand and gravel lower unit is moist sand and gravel. 1.5m recovery	Sand	Gravel	brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	None
SB_MW01-01_SC004	2021-05-20 14:10	4.5	6	Soil Core	--	Upper unit is coarse gravel and lower unit is moist sand and gravel. 1.5m recovery	Gravel	Sand	brown	Pebbles/Gravel (2-64 mm)	FG Sand (0.125-0.25 mm)	Angular	Very Poor	Moist	None
SB_MW01-01_SC005	2021-05-20 14:15	6	7.5	Soil Core	--	Upper unit (first 30cm) is very wet gravel and sand, lower unit is moist sand and gravel. 1.5m recovery	Gravel	Sand	brown	Pebbles/Gravel (2-64 mm)	FG Sand (0.125-0.25 mm)	Angular	Very Poor	Saturated	None
SB_MW01-01_SC006	2021-05-20 15:40	7.5	7.8	Soil Core	--	Moist sand and gravel. 0.3 m recovery	Sand	Gravel	brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	None
SB_MW01-01_SC007	2021-05-20 16:00	7.8	9.45	Soil Core	--	Upper 10 cm is sand, middle 10 cm is grey gravel and bottom 10 cm is sand and grey gravel. 0.3m recovery	Sand	Gravel	brown, grey	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Well	Dry	None
SB_MW01-01_SC008	2021-05-20 16:40	10.5	10.8	Soil Core	--	First 20 cm is brown limestone cobbles, last 10 cm is sand (carbonate sand-fizzes with hcl). 0.3 m recovery	Gravel	Sand	brown	Cobbles (>64 mm)	FG Sand (0.125-0.25 mm)	Sub Angular	Poor	Wet	None
SB_MW01-01_SC009	2021-05-20 17:10	12	12.6	Soil Core	--	Sand mixed with gravel (0.5m recovery)	Sand	Gravel	brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	None

Completed by:	ACMC	Date:	20-May-21
Verified by:	OJB	Date:	16-Jul-21

20-211-1: Water Levels Data Sheet

Water Well ID:	MW01-02	General Comments:
Sampling Personnel	CAM,MEOR, LMB, KML	

Note: A separate field data sheet is to be completed for each well during yield testing

Date	Time (HH:MM:SS)	Water Level (m BTOC)	Measurment Device (e.g. WL-01)	Comments
30-May-21	18:45	10.924	WL-10	
31-May-21	16:30	10.935	WL-10	Pre-purging
31-May-21	17:15	10.945	WL-10	Pre-test
31-May-21	17:25	11.000	WL-10	
31-May-21	17:38	11.040	WL-10	
31-May-21	17:58	11.090	WL-10	
31-May-21	18:18	11.100	WL-10	
31-May-21	18:30	11.105	WL-10	
31-May-21	18:55	11.120	WL-10	

Completed by:	AMSC	Verified by:	OJB
Date:	31-May-21	Date:	16-Jul-21

20-211-1: Flow Rates Data Sheet

Water Well ID:	MW01-02	General Comments:
Sampling Personnel	CAM,MEOR, LMB, KML	

Note: A separate field data sheet is to be completed for each well during yield testing

Date	Time (HH:MM:SS)	Volume (L)	Time (sec)	Flow Rate (L/s)	Flow Rate (L/min)	Comments
31-May-21	17:30	18.9	66	0.29	17.18	
31-May-21	17:35	18.9	66	0.29	17.18	
31-May-21	17:55	18.9	66	0.29	17.18	
31-May-21	18:15	18.9	66	0.29	17.18	
31-May-21	18:30	18.9	67	0.28	16.93	

Completed by:	CAM	Verified by:	OJB
Date:	31-May-21	Date:	16-Jul-21

20-211-1: Field Parameter Data Sheet

Well ID	MW01-02	Multiparameter Probe:	Horiba U52	Comments:
Sampling Personnel:	CAM,MEOR, LMB, KML	Fluorometer:	Turner Designs AquaFluor	

Note: A separate field data sheet is to be completed for each well during yield testing

Date	Time	Multiparameter Probe							Fluorometer		Sample Collected (Y/N)	Comments (sample ID, sample collection method, odour, etc)
		Calibrated	pH	Temp (°C)	EC (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Calibrated	Fluorescein (ppb)		
31-May-21	18:00	Y	7.28	10.71	0.481	-127	14.5	28.2				
31-May-21	18:10	Y	7.22	10.33	0.485	-200	11.45	25.4				
31-May-21	18:15	Y	7.09	10.3	0.484	-253	0.00	34.3				
31-May-21	18:25	Y	7.32	10.13	0.484	-233	0.00	40				
31-May-21	18:40	Y	7.33	10.11	0.485	-287	0.00	41.7				
31-May-21	18:53	Y	7.34	10.06	0.487	-288	0.00	41.4				
31-May-21	19:30	Y	7.36	10.01	0.487	-288	0.00	41.3	Y	0.094	Y	Sample collected = SB_MW01-02_GW001

Completed by:	CAM	Verified by:	OJB
Date:	31-May-21	Date:	16-Jul-21

20-211-1: Geological/Geotechnical Log

Sample ID	Date/Time	Interval Top Depth (m BGS)	Interval Bottom Depth (m BGS)	Sample Type (Core/Drill Cuttings)	Sample Weight (g)	Geological/Geotechnical Log									
						Description/Comments	Lithology (Primary)	Lithology (Secondary)	Colour	Grain Size (Primary)	Grain Size (Secondary)	Roundness	Sorting	Moisture Content	Odour
SB_MW01-02_DC001	May 25-2021 12:15	0	1	Rock Cuttings	675.40	Overburden-light brown sand and gravel	Sand	Gravel	brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Dry	none
SB_MW01-02_DC002	May 25-2021 12:15	1	2	Rock Cuttings	654	Overburden-Brown sand and gravel	Sand	Gravel	Brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	none
SB_MW01-02_DC003	May 25-2021 12:15	2	3	Rock Cuttings	859	Overburden-Brown and with gravel	Sand	Gravel	brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	None
SB_MW01-02_DC004	May 25-2021 12:35	3	4	Rock Cuttings	1072.5	Overburden- gravel with minor sand	Gravel	Sand	brown/grey	Pebbles/Gravel (2-64 mm)	FG Sand (0.125-0.25 mm)	Angular	Very Poor	Dry	None
SB_MW01-02_DC005	May 25-2021 12:15	4	5	Rock Cuttings	1007.9	Overburden- gravel with sand	Gravel	Sand	brown	Pebbles/Gravel (2-64 mm)	FG Sand (0.125-0.25 mm)	Angular	Very Poor	Moist	None
SB_MW01-02_DC006	May 25-2021 12:15	5	6	Rock Cuttings	1038	Overburden- brown sand and mixed grey,brown gravel	Sand	Gravel	brown, grey	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	None
SB_MW01-02_DC007	May 25-2021 12:50	6	7	Rock Cuttings	801.3	Overburden- brown sand small angular pieces of gravel	Sand	Gravel	Brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	None
SB_MW01-02_DC008	May 25-2021 12:50	7	8	Rock Cuttings	974.4	Overburden-brown gravel with minor brown sand	Gravel	Sand	brown	Pebbles/Gravel (2-64 mm)	FG Sand (0.125-0.25 mm)	Sub Angular	Poor	Dry	None
SB_MW01-02_DC009	May 25-2021 12:50	8	9	Rock Cuttings	901.2	Overburden-brown sand with minor gravel	Sand	Gravel	brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	None
SB_MW01-02_DC010	May 25-2021 13:20	9	10	Rock Cuttings	1015.8	Overburden- Brown sand with angular gravel	Sand	Gravel	Brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	None
SB_MW01-02_DC011	May 25-2021 13:20	10	12	Rock Cuttings	1010.3	Overburden- Brown sand with brown and grey gravel	Sand	Gravel	Brown, grey	VFG Sand (0.062-0.125 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	Hydrocarbon
SB_MW01-02_DC012	May 25-2021 13:45	12.2	15.2	Rock Cuttings	1047.7	Overburden- greyish to brown sand with some small gravel chips	Sand	Gravel	greyish-brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	Hydrocarbon
SB_MW01-02_DC013	May 25-2021 14:25	15.2	18.2	Rock Cuttings	951	Overburden-Grey to brown sand with some gravel	Sand	Gravel	greyish-brown	FG Sand (0.125-0.25 mm)	Pebbles/Gravel (2-64 mm)	Well Rounded	Very Well	Moist	None
SB_MW01-02_DC014	May 25-2021 14:30	18.3	21.3	Rock Cuttings	825.9	Overburden- Clay and gravel (water saturated)	Clay	Gravel	grey	Silt/Clay (<0.062 mm)	Pebbles/Gravel (2-64 mm)	N/A	N/A	Saturated	None
SB_MW01-02_DC015	May 25-2021 15:00	21.3	24.3	Rock Cuttings	870.9	Stiff clay with some gravel	Clay	Gravel	grey	Silt/Clay (<0.062 mm)	Pebbles/Gravel (2-64 mm)	N/A	N/A	Saturated	None
SB_MW01-02_DC016	May 25-2021 15:20	24.4	27.4	Rock Cuttings	1288.6	Gravel and clay mixed with a bit of sand. Different population of gravel ranging from angular to subangular pieces	Gravel	Clay	Grey	Pebbles/Gravel (2-64 mm)	Silt/Clay (<0.062 mm)	Sub Angular	Very Poor	Saturated	None
SB_MW01-02_DC017	May 25-2021 15:00	27.4	30.4	Rock Cuttings	1047.6	Chips of gravel of various colours (green,brown, dark)	Gravel		Brown,green, black,white	Pebbles/Gravel (2-64 mm)		Angular	Very Poor	Saturated	None
SB_MW01-02_DC018	May 25-2021 15:20	30.5	33.5	Rock Cuttings	1282.1	Gravel(brown,dark,white rock cuttings mixed with minor sand	Gravel	Sand	brown, green, dark	Pebbles/Gravel (2-64 mm)	VFG Sand (0.062-0.125 mm)	Angular	Very Poor	Saturated	none
SB_MW01-02_DC019	May 25-2021 16:20	33.5	35.7	Rock Cuttings	1104.3	Bedrock- bedrock contact at approx 32.6 m- light brown limestones with laminations and needle like porosity visible in rock chips	Limestone		brown	N/A	N/A	N/A	N/A	Saturated	none

20-211-1: Geological/Geotechnical Log

SB_MW01-02_DC020	May 26-2021 10:00	35.7	36.7	Rock Cuttings	1084.6	Light brown limestone with needle like pores, minor laminations and stylolites and dark rock chips	Limestone		light brown	N/A	N/A	N/A	N/A	Saturated	None
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Completed by:	ACMC	Verified by:	OJB
Date:	26-May-21	Date:	16-Jul-21

20-211-1: Chain of Custody Tracking Sheet

COC Number/ID	Sample IDs	Shipping Information						Receiving Information				Comments
		Shipped Date	Shipped Time	Temp. Shipped (deg C)	COC Signed by Geofirma (Y/N)	Shipping Address	Shipping Method	Received Date	Received Time	Temp Received (deg C)	COC Signed By Receiving Lab (Y/N)	
C1E8269	SB_MW01-01_GW001 SB_MW01-02_GW001	31-May-21	21:30	4	Y	BV Waterloo Drop off	Hand delivered	01-Jun-21	8:40	3,2,0	Y	

Completed by:	CAM	Verified by:	OJB
Date:	05-Jun-21	Date:	16-Jul-21

Laboratory Report Date	11-Jun-21
Laboratory Name	Bureau Veritas Laboratories
Laboratory Report ID (If applicable)	PSF294
Analyses Completed	pH, alkalinity, anions (Br, Cl, F, NO3, NO2, PO4, SO4), metals, Hg (by CVAA/AF), bacteriological (total coliform, E.Coli), Organic Parameters (O.Reg.170, Sch. 24), Hydrocarbons (BTEX, F1 PHC, F2-F4 PHC)

Associated COC #(s)	C1E8269
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Samples Included in Laboratory Report
<p>SB_MW01-01_GW001 SB_MW01-02_GW001</p>

Quality Check and Verification	Verified By (Initials)	Comments
Results received from laboratory	OJB	
All samples were tested or accounted for. Justification provided for any untested samples (e.g. spare sample)	OJB	
Laboratory data report provided with results	OJB	
Laboratory testing methods/techniques included in data report	OJB	
Laboratory QA procedures and equipment calibration included in data report	OJB	
Laboratory results are within reasonable/expected range	OJB	

Other Comments/Notes:

Note: A copy of this form is to be complete for each laboratory data report that is received by Geofirma

Completed by: OJB	Verified by: CAM
Date: 16-Jul-21	Date: 16-Jul-21

**WP13: Technical Report for Monitoring Well
Installation (SB_MW01) at SB_BH02**

Appendix D

Water Quality Results and Field Parameters

Table D1: Groundwater Quality Results

Table D1.1: Water Quality Results - Inorganics and Microbiological

Parameter	Unit	RDL ¹	Regulation - Ontario Drinking Water Quality Standards (ODWS), Objectives and Guidelines		Reg 153/04 (2011) Table 2 Potable Groundwater	SB_MW01- 01_ GW001	SB_MW01- 02_ GW001
			MAC ²	AO ³		31-May-21	31-May-21
Inorganics							
Fluoride (F-)	mg/L	0.1	1.5	--	--	0.74	1.5
Orthophosphate (P)	mg/L	0.01	--	--	--	<0.010	<0.010
pH	pH	--	--	7.0 - 10.5	--	7.95	7.98
Alkalinity (Total as CaCO3)	mg/L	1	--	--	--	240	230
Dissolved Chloride (Cl-)	mg/L	1	--	250	790	9.9	12
Nitrite (N)	mg/L	0.01	1	--	--	0.037	<0.010
Nitrate (N)	mg/L	0.1	10	--	--	10.1	<0.10
Nitrate + Nitrite (N)	mg/L	0.1	10	--	--	10.1	<0.10
Dissolved Bromide (Br-)	mg/L	1	--	--	--	<1.0	<1.0
Dissolved Sulphate (SO4)	mg/L	1	--	500	--	8.5	36
Microbiological							
Background	CFU/100mL	--	--	--	--	ND	0
Total Coliforms	CFU/100mL	--	--	--	--	ND	0
Escherichia coli	CFU/100mL	--	--	--	--	ND	0

Notes:

- 1 RDL = Laboratory Reporting Detection Limit
- 2 MAC = Maximum Allowable Concentration
- 3 AO = Aesthetic Objective
- < Indicates parameter not detected above laboratory method detection limit.
- > Indicates parameter detected above equipment analytical range.
- Chemical not analyzed or criteria not defined.
- ND No data due to overgrowth. Total coliforms and / or E.coli not detected

Value	Parameter exceeds the ODWS - Maximum Allowable Concentration (MAC)
Value	Parameter exceeds the ODWS - Aesthetic Objective (AO)
Value	Parameter exceeds Reg 153/04 (2011)-Table 2 Potable Groundwater

Table D1.2: Water Quality Results - Metals

Parameter	Unit	RDL ¹	Regulation - Ontario Drinking Water Standards (ODWS), Objectives and Guidelines		Reg 153/04 (2011) Table 2 Potable Groundwater	SB_MW01- 01_ GW001	SB_MW01- 02_ GW001
			MAC ²	AO ³		31-May-21	31-May-21
Metals							
Mercury (Hg)	ug/L	0.1	1	--	0.29	<0.10	<0.10
Dissolved Aluminum (Al)	ug/L	4.9	--	100	--	15	8.8
Dissolved Antimony (Sb)	ug/L	0.5	6	--	6	<0.50	<0.50
Dissolved Arsenic (As)	ug/L	1	10	--	25	<1.0	1.2
Dissolved Barium (Ba)	ug/L	2	2,000	--	1,000	44	140
Dissolved Beryllium (Be)	ug/L	0.4	--	--	4	<0.40	<0.40
Dissolved Bismuth (Bi)	ug/L	1	--	--	--	<1.0	<1.0
Dissolved Boron (B)	ug/L	10	5,000	--	5,000	12	16
Dissolved Cadmium (Cd)	ug/L	0.09	7	--	2.7	<0.090	<0.090
Dissolved Calcium (Ca)	ug/L	200	--	--	--	71000	63000
Dissolved Cesium (Cs)	ug/L	0.2	--	--	--	<0.20	<0.20
Dissolved Chromium (Cr)	ug/L	5	50	--	50	<5.0	<5.0
Dissolved Cobalt (Co)	ug/L	0.5	--	--	3.8	<0.50	<0.50
Dissolved Copper (Cu)	ug/L	0.9	2,000	1,000	87	<0.90	<0.90
Dissolved Iron (Fe)	ug/L	100	--	300	--	<100	490
Dissolved Lead (Pb)	ug/L	0.5	5	--	10	<0.50	<0.50
Dissolved Lithium (Li)	ug/L	5	--	--	--	<5.0	<5.0
Dissolved Magnesium (Mg)	ug/L	50	--	--	--	25000	26000
Dissolved Manganese (Mn)	ug/L	2	120	20	--	13	23
Dissolved Molybdenum (Mo)	ug/L	0.5	--	--	70	1.3	1.2
Dissolved Nickel (Ni)	ug/L	1	--	--	100	<1.0	<1.0
Dissolved Phosphorus (P)	ug/L	100	--	--	--	<100	<100
Dissolved Potassium (K)	ug/L	200	--	--	--	1300	910
Dissolved Rubidium (Rb)	ug/L	0.2	--	--	--	0.85	0.45
Dissolved Selenium (Se)	ug/L	2	50	--	10	<2.0	<2.0
Dissolved Silicon (Si)	ug/L	50	--	--	--	3900	6300
Dissolved Silver (Ag)	ug/L	0.09	--	--	1.5	<0.090	<0.090
Dissolved Sodium (Na)	ug/L	100	--	200,000	490,000	3400	8400
Dissolved Strontium (Sr)	ug/L	1	7,000	--	--	99	170
Dissolved Tellurium (Te)	ug/L	1	--	--	--	<1.0	<1.0
Dissolved Thallium (Tl)	ug/L	0.05	--	--	2	<0.050	<0.050
Dissolved Tin (Sn)	ug/L	1	--	--	--	<1.0	<1.0
Dissolved Titanium (Ti)	ug/L	5	--	--	--	<5.0	<5.0
Dissolved Tungsten (W)	ug/L	1	--	--	--	<1.0	<1.0
Dissolved Uranium (U)	ug/L	0.1	20	--	20	0.54	0.51
Dissolved Vanadium (V)	ug/L	0.5	--	--	6.2	<0.50	<0.50
Dissolved Zinc (Zn)	ug/L	5	--	5,000	1100	<5.0	<5.0
Dissolved Zirconium (Zr)	ug/L	1	--	--	--	<1.0	<1.0

Notes:

- 1 RDL = Laboratory Reporting Detection Limit
- 2 MAC = Maximum Allowable Concentration
- 3 AO = Aesthetic Objective
- < Indicates parameter not detected above laboratory method detection limit.
- > Indicates parameter detected above equipment analytical range.
- Chemical not analyzed or criteria not defined.

Value	Parameter exceeds the ODWS - Maximum Allowable Concentration (MAC)
Value	Parameter exceeds the ODWS - Aesthetic Objective (AO)
Value	Parameter exceeds Reg 153/04 (2011)-Table 2 Potable Groundwater

Table D1.3: Water Quality Results - Semivolatile Organics

Parameter	Unit	RDL ¹	Regulation - Ontario Drinking Water Standards (ODWS), Objectives and Guidelines		Reg 153/04 (2011) Table 2 Potable Groundwater	SB_MW01- 01_ GW001	SB_MW01- 02_ GW001
			MAC ²	AO ³		31-May-21	31-May-21
Semivolatile Organics							
2,3,4,6-Tetrachlorophenol	mg/L	0.0005	--	--	--	<0.00050	<0.00050
2,4,6-Trichlorophenol	mg/L	0.0005	0.005	0.002	--	<0.00050	<0.00050
2,4-D	mg/L	0.001	--	--	--	<0.0010	<0.0010
2,4-Dichlorophenol	mg/L	0.00025	0.9	0.0003	--	<0.00025	<0.00025
Alachlor	mg/L	0.0005	--	--	--	<0.00050	<0.00050
Atrazine	mg/L	0.0005	--	--	--	<0.00050	<0.00050
Des-ethyl atrazine	mg/L	0.0005	--	--	--	<0.00050	<0.00050
Atrazine + Desethyl-atrazine	mg/L	0.001	--	--	--	<0.0010	<0.0010
Bromoxynil	mg/L	0.0005	--	--	--	<0.00050	<0.00050
Carbaryl	mg/L	0.005	--	--	--	<0.0050	<0.0050
Carbofuran	mg/L	0.005	--	--	--	<0.0050	<0.0050
Chlorpyrifos (Dursban)	mg/L	0.001	--	--	--	<0.0010	<0.0010
Diazinon	mg/L	0.001	--	--	--	<0.0010	<0.0010
Dicamba	mg/L	0.001	--	--	--	<0.0010	<0.0010
Diclofop-methyl	mg/L	0.0009	0.009	--	--	<0.00090	<0.00090
Dimethoate	mg/L	0.0025	0.02	--	--	<0.0025	<0.0025
Malathion	mg/L	0.005	0.19	--	--	<0.0050	<0.0050
MCPA	mg/L	0.01	--	--	--	<0.010	<0.010
Metolachlor	mg/L	0.0005	0.05	--	--	<0.00050	<0.00050
Metribuzin (Sencor)	mg/L	0.005	0.08	--	--	<0.0050	<0.0050
Pentachlorophenol	mg/L	0.0005	0.06	0.03	0.03	<0.00050	<0.00050
Phorate	mg/L	0.0005	--	--	--	<0.00050	<0.00050
Picloram	mg/L	0.005	0.19	--	--	<0.0050	<0.0050
Prometryne	mg/L	0.00025	--	--	--	<0.00025	<0.00025
Simazine	mg/L	0.001	0.01	--	--	<0.0010	<0.0010
Terbufos	mg/L	0.0005	0.001	--	--	<0.00050	<0.00050
Triallate	mg/L	0.001	--	--	--	<0.0010	<0.0010
Trifluralin	mg/L	0.001	0.045	--	--	<0.0010	<0.0010
Benzo(a)pyrene	mg/L	0.000005	0.00004	--	0.00001	<0.0000050	<0.0000050

Notes:

- 1 RDL = Laboratory Reporting Detection Limit
- 2 MAC = Maximum Allowable Concentration
- 3 AO = Aesthetic Objective
- < Indicates parameter not detected above laboratory method detection limit.
- > Indicates parameter detected above equipment analytical range.
- Chemical not analyzed or criteria not defined.

Value	Parameter exceeds the ODWS - Maximum Allowable Concentration (MAC)
Value	Parameter exceeds the ODWS - Aesthetic Objective (AO)
Value	Parameter exceeds Reg 153/04 (2011)-Table 2 Potable Groundwater

Table D1.4: Water Quality Results - Volatile Organics and Petroleum Hydrocarbons (PHCs)

Parameter	Unit	RDL ¹	Regulation - Ontario Drinking Water Standards (ODWS), Objectives and Guidelines		Reg 153/04 (2011) Table 2 Potable Groundwater	SB_MW01- 01_ GW001	SB_MW01- 02_ GW001
			MAC ²	AO ³		31-May-21	31-May-21
Volatile Organics							
1,1-Dichloroethylene	mg/L	0.0001	0.014	--	--	<0.00010	<0.00010
1,2-Dichlorobenzene	mg/L	0.0002	0.2	0.003	--	<0.00020	<0.00020
1,2-Dichloroethane	mg/L	0.0002	0.005	--	--	<0.00020	<0.00020
1,4-Dichlorobenzene	mg/L	0.0002	0.005	0.001	--	<0.00020	<0.00020
Benzene	mg/L	0.0001	0.005	--	0.005	<0.00010	<0.00010
Carbon Tetrachloride	mg/L	0.0001	0.002	--	0.00079	<0.00010	<0.00010
Chlorobenzene	mg/L	0.0001	0.08	0.03	0.03	<0.00010	<0.00010
Methylene Chloride (Dichloromethane)	mg/L	0.0005	0.05	--	0.05	<0.00050	<0.00050
Ethylbenzene	mg/L	0.0001	0.14	0.0016	0.0024	<0.00010	<0.00010
Tetrachloroethylene	mg/L	0.0001	0.01	--	--	<0.00010	<0.00010
Toluene	mg/L	0.0002	0.06	0.024	0.024	<0.00020	<0.00020
Trichloroethylene	mg/L	0.0001	0.005	--	0.0016	<0.00010	<0.00010
Vinyl Chloride	mg/L	0.0002	0.002	--	0.0005	<0.00020	<0.00020
o-Xylene	mg/L	0.0001	--	--	--	<0.00010	<0.00010
p+m-Xylene	mg/L	0.0001	--	--	--	<0.00010	<0.00010
BTEX and F1 Hydrocarbons							
Benzene	ug/L	0.2	5	--	--	0.36	<0.20
Toluene	ug/L	0.2	60	--	--	0.69	<0.20
Ethylbenzene	ug/L	0.2	140	--	--	0.32	<0.20
o-Xylene	ug/L	0.2	--	--	--	<0.20	<0.20
p+m-Xylene	ug/L	0.4	--	--	--	0.41	<0.40
Total Xylenes	ug/L	0.4	90	--	--	0.41	<0.40
F1 (C6-C10)	ug/L	25	--	--	0.75	<25	<25
F1 (C6-C10) - BTEX	ug/L	25	--	--	--	<25	<25
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	100	--	--	150	<100	<100
F3 (C16-C34 Hydrocarbons)	ug/L	200	--	--	500	<200	<200
F4 (C34-C50 Hydrocarbons)	ug/L	200	--	--	500	<200	<200
Reached Baseline at C50	--	--	--	--	--	Yes	Yes

Notes:

- 1 RDL = Laboratory Reporting Detection Limit
- 2 MAC = Maximum Allowable Concentration
- 3 AO = Aesthetic Objective
- < Indicates parameter not detected above laboratory method detection limit.
- > Indicates parameter detected above equipment analytical range.
- Chemical not analyzed or criteria not defined.

Value	Parameter exceeds the ODWS - Maximum Allowable Concentration (MAC)
Value	Parameter exceeds the ODWS - Aesthetic Objective (AO)
Value	Parameter exceeds Reg 153/04 (2011)-Table 2 Potable Groundwater

Table D1.5: Water Quality Results - PCBs, Pesticides and Herbicides

Parameter	Unit	RDL ¹	Regulation - Ontario Drinking Water Standards (ODWS), Objectives and Guidelines		Reg 153/04 (2011) Table 2 Potable Groundwater	SB_MW01- 01_ GW001	SB_MW01- 02_ GW001
			MAC ²	AO ³		31-May-21	31-May-21
PCBs							
Aroclor 1016	ug/L	0.05	--	--	--	<0.05	<0.05
Aroclor 1221	ug/L	0.05	--	--	--	<0.05	<0.05
Aroclor 1232	ug/L	0.05	--	--	--	<0.05	<0.05
Aroclor 1242	ug/L	0.05	--	--	--	<0.05	<0.05
Aroclor 1248	ug/L	0.05	--	--	--	<0.05	<0.05
Aroclor 1254	ug/L	0.05	--	--	--	<0.05	<0.05
Aroclor 1260	ug/L	0.05	--	--	--	<0.05	<0.05
Total PCB	ug/L	0.05	--	--	--	<0.05	<0.05
Pesticides and Herbicides							
Glyphosate	mg/L	0.01	0.28	--	--	<0.010	<0.010
Diquat	mg/L	0.007	0.07	--	--	<0.0070	<0.0070
Diuron	ug/L	10	150	--	--	<10	<10
Guthion (Azinphos-methyl)	ug/L	2	--	--	--	<2.0	<2.0
Paraquat	mg/L	0.001	0.01	--	--	<0.0010	<0.0010

Notes:

- 1 RDL = Laboratory Reporting Detection Limit
- 2 MAC = Maximum Allowable Concentration
- 3 AO = Aesthetic Objective
- < Indicates parameter not detected above laboratory method detection limit.
- > Indicates parameter detected above equipment analytical range.
- Chemical not analyzed or criteria not defined.

Value	Parameter exceeds the ODWS - Maximum Allowable Concentration (MAC)
Value	Parameter exceeds the ODWS - Aesthetic Objective (AO)
Value	Parameter exceeds Reg 153/04 (2011)-Table 2 Potable Groundwater

Appendix E

Laboratory Certificate of Analysis



Your Project #: 202111-001
Your C.O.C. #: 813032-01-01

Attention: Chris Morgan

Geofirma Engineering Ltd
1 Raymond St
Suite 200
Ottawa, ON
CANADA K1R 1A2

Report Date: 2021/06/11
Report #: R6672537
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1E8269

Received: 2021/06/01, 08:40

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/06/04	CAM SOP-00448	SM 23 2320 B m
Anions	2	N/A	2021/06/04	CAM SOP-00435	SM 23 4110 B m
Chloride by Automated Colourimetry	2	N/A	2021/06/04	CAM SOP-00463	SM 23 4500-Cl E m
Diuron, Guthion, Temephos	2	2021/06/08	2021/06/09	CAM SOP-00306	EPA 532 m
Diquat / Paraquat	2	2021/06/02	2021/06/03	CAM SOP-00327	EPA 549.2 m
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2021/06/03	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1)	2	2021/06/04	2021/06/04	CAM SOP-00316	CCME PHC-CWS m
Fluoride	2	2021/06/03	2021/06/04	CAM SOP-00449	SM 23 4500-F C m
Glyphosate	2	2021/06/02	2021/06/02	CAM SOP-00305	HPLC in-house method
Mercury	2	2021/06/04	2021/06/04	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	2	N/A	2021/06/03	CAM SOP-00447	EPA 6020B m
Total Coliforms/ E. coli, CFU/100mL	2	N/A	2021/06/01	CAM SOP-00551	MOE E3407
Nitrate (NO3) and Nitrite (NO2) in Water (2)	2	N/A	2021/06/04	CAM SOP-00440	SM 23 4500-NO3/NO2B
ODWS - Semi-Volatiles	2	2021/06/10	2021/06/11	CAM SOP-00301	EPA 8270 m
Polychlorinated Biphenyl in Water	2	2021/06/03	2021/06/04	CAM SOP-00309	EPA 8082A m
pH	2	2021/06/03	2021/06/04	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	2	N/A	2021/06/04	CAM SOP-00461	EPA 365.1 m
VOCs (Drinking Water)	2	N/A	2021/06/07	CAM SOP-00226	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report.



Your Project #: 202111-001
Your C.O.C. #: 813032-01-01

Attention: Chris Morgan

Geofirma Engineering Ltd
1 Raymond St
Suite 200
Ottawa, ON
CANADA K1R 1A2

Report Date: 2021/06/11
Report #: R6672537
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1E8269

Received: 2021/06/01, 08:40

Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key



Bureau Veritas

11 Jun 2021 18:26:49

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Katherine Szozda, Project Manager

Email: Katherine.Szozda@bureauveritas.com

Phone# (613)274-0573 Ext:7063633

=====

This report has been generated and distributed using a secure automated process.

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

RESULTS OF ANALYSES OF WATER

BV Labs ID		PSF294	PSF295		
Sampling Date		2021/05/31 19:00	2021/05/31 19:15		
COC Number		813032-01-01	813032-01-01		
	UNITS	SB_MW01-01_GW001	SB_MW01-02_GW001	RDL	QC Batch
Inorganics					
Fluoride (F-)	mg/L	0.74	1.5	0.10	7388403
Orthophosphate (P)	mg/L	<0.010	<0.010	0.010	7388404
pH	pH	7.95	7.98		7388414
Alkalinity (Total as CaCO ₃)	mg/L	240	230	1.0	7388444
Dissolved Chloride (Cl-)	mg/L	9.9	12	1.0	7388373
Nitrite (N)	mg/L	0.037	<0.010	0.010	7388110
Nitrate (N)	mg/L	10.1	<0.10	0.10	7388110
Nitrate + Nitrite (N)	mg/L	10.1	<0.10	0.10	7388110
Dissolved Bromide (Br-)	mg/L	<1.0	<1.0	1.0	7388362
Dissolved Sulphate (SO ₄)	mg/L	8.5	36	1.0	7388362
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		PSF294	PSF295		
Sampling Date		2021/05/31 19:00	2021/05/31 19:15		
COC Number		813032-01-01	813032-01-01		
	UNITS	SB_MW01-01_GW001	SB_MW01-02_GW001	RDL	QC Batch
Metals					
Mercury (Hg)	ug/L	<0.10	<0.10	0.10	7389222
Dissolved Aluminum (Al)	ug/L	15	8.8	4.9	7387332
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	7387332
Dissolved Arsenic (As)	ug/L	<1.0	1.2	1.0	7387332
Dissolved Barium (Ba)	ug/L	44	140	2.0	7387332
Dissolved Beryllium (Be)	ug/L	<0.40	<0.40	0.40	7387332
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	7387332
Dissolved Boron (B)	ug/L	12	16	10	7387332
Dissolved Cadmium (Cd)	ug/L	<0.090	<0.090	0.090	7387332
Dissolved Calcium (Ca)	ug/L	71000	63000	200	7387332
Dissolved Cesium (Cs)	ug/L	<0.20	<0.20	0.20	7387332
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	5.0	7387332
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	0.50	7387332
Dissolved Copper (Cu)	ug/L	<0.90	<0.90	0.90	7387332
Dissolved Iron (Fe)	ug/L	<100	490	100	7387332
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	7387332
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	5.0	7387332
Dissolved Magnesium (Mg)	ug/L	25000	26000	50	7387332
Dissolved Manganese (Mn)	ug/L	13	23	2.0	7387332
Dissolved Molybdenum (Mo)	ug/L	1.3	1.2	0.50	7387332
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	1.0	7387332
Dissolved Phosphorus (P)	ug/L	<100	<100	100	7387332
Dissolved Potassium (K)	ug/L	1300	910	200	7387332
Dissolved Rubidium (Rb)	ug/L	0.85	0.45	0.20	7387332
Dissolved Selenium (Se)	ug/L	<2.0	<2.0	2.0	7387332
Dissolved Silicon (Si)	ug/L	3900	6300	50	7387332
Dissolved Silver (Ag)	ug/L	<0.090	<0.090	0.090	7387332
Dissolved Sodium (Na)	ug/L	3400	8400	100	7387332
Dissolved Strontium (Sr)	ug/L	99	170	1.0	7387332
Dissolved Tellurium (Te)	ug/L	<1.0	<1.0	1.0	7387332
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	0.050	7387332
Dissolved Tin (Sn)	ug/L	<1.0	<1.0	1.0	7387332
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	7387332
Dissolved Tungsten (W)	ug/L	<1.0	<1.0	1.0	7387332
Dissolved Uranium (U)	ug/L	0.54	0.51	0.10	7387332
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		PSF294	PSF295		
Sampling Date		2021/05/31 19:00	2021/05/31 19:15		
COC Number		813032-01-01	813032-01-01		
	UNITS	SB_MW01-01_GW001	SB_MW01-02_GW001	RDL	QC Batch
Dissolved Vanadium (V)	ug/L	<0.50	<0.50	0.50	7387332
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	7387332
Dissolved Zirconium (Zr)	ug/L	<1.0	<1.0	1.0	7387332
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		PSF294	PSF295		
Sampling Date		2021/05/31 19:00	2021/05/31 19:15		
COC Number		813032-01-01	813032-01-01		
	UNITS	SB_MW01-01_GW001	SB_MW01-02_GW001	RDL	QC Batch
Semivolatile Organics					
2,3,4,6-Tetrachlorophenol	mg/L	<0.00050	<0.00050	0.00050	7399714
2,4,6-Trichlorophenol	mg/L	<0.00050	<0.00050	0.00050	7399714
2,4-D	mg/L	<0.0010	<0.0010	0.0010	7399714
2,4-Dichlorophenol	mg/L	<0.00025	<0.00025	0.00025	7399714
Alachlor	mg/L	<0.00050	<0.00050	0.00050	7399714
Atrazine	mg/L	<0.00050	<0.00050	0.00050	7399714
Des-ethyl atrazine	mg/L	<0.00050	<0.00050	0.00050	7399714
Atrazine + Desethyl-atrazine	mg/L	<0.0010	<0.0010	0.0010	7399714
Bromoxynil	mg/L	<0.00050	<0.00050	0.00050	7399714
Carbaryl	mg/L	<0.0050	<0.0050	0.0050	7399714
Carbofuran	mg/L	<0.0050	<0.0050	0.0050	7399714
Chlorpyrifos (Dursban)	mg/L	<0.0010	<0.0010	0.0010	7399714
Diazinon	mg/L	<0.0010	<0.0010	0.0010	7399714
Dicamba	mg/L	<0.0010	<0.0010	0.0010	7399714
Diclofop-methyl	mg/L	<0.00090	<0.00090	0.00090	7399714
Dimethoate	mg/L	<0.0025	<0.0025	0.0025	7399714
Malathion	mg/L	<0.0050	<0.0050	0.0050	7399714
MCPA	mg/L	<0.010	<0.010	0.010	7399714
Metolachlor	mg/L	<0.00050	<0.00050	0.00050	7399714
Metribuzin (Sencor)	mg/L	<0.0050	<0.0050	0.0050	7399714
Pentachlorophenol	mg/L	<0.00050	<0.00050	0.00050	7399714
Phorate	mg/L	<0.00050	<0.00050	0.00050	7399714
Picloram	mg/L	<0.0050	<0.0050	0.0050	7399714
Prometryne	mg/L	<0.00025	<0.00025	0.00025	7399714
Simazine	mg/L	<0.0010	<0.0010	0.0010	7399714
Terbufos	mg/L	<0.00050	<0.00050	0.00050	7399714
Triallate	mg/L	<0.0010	<0.0010	0.0010	7399714
Trifluralin	mg/L	<0.0010	<0.0010	0.0010	7399714
Benzo(a)pyrene	mg/L	<0.0000050	<0.0000050	0.0000050	7399714
Surrogate Recovery (%)					
2,4,6-Tribromophenol	%	88	95		7399714
2,4-Dichlorophenyl Acetic Acid	%	88	96		7399714
2-Fluorobiphenyl	%	84	94		7399714
D14-Terphenyl (FS)	%	95	106		7399714
D5-Nitrobenzene	%	89	102		7399714
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID		PSF294	PSF295	PSF295		
Sampling Date		2021/05/31 19:00	2021/05/31 19:15	2021/05/31 19:15		
COC Number		813032-01-01	813032-01-01	813032-01-01		
	UNITS	SB_MW01-01_GW001	SB_MW01-02_GW001	SB_MW01-02_GW001 Lab-Dup	RDL	QC Batch
Volatile Organics						
1,1-Dichloroethylene	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7385156
1,2-Dichlorobenzene	mg/L	<0.00020	<0.00020	<0.00020	0.00020	7385156
1,2-Dichloroethane	mg/L	<0.00020	<0.00020	<0.00020	0.00020	7385156
1,4-Dichlorobenzene	mg/L	<0.00020	<0.00020	<0.00020	0.00020	7385156
Benzene	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7385156
Carbon Tetrachloride	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7385156
Chlorobenzene	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7385156
Methylene Chloride(Dichloromethane)	mg/L	<0.00050	<0.00050	<0.00050	0.00050	7385156
Ethylbenzene	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7385156
Tetrachloroethylene	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7385156
Toluene	mg/L	<0.00020	<0.00020	<0.00020	0.00020	7385156
Trichloroethylene	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7385156
Vinyl Chloride	mg/L	<0.00020	<0.00020	<0.00020	0.00020	7385156
o-Xylene	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7385156
p+m-Xylene	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7385156
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	102	101	101		7385156
D4-1,2-Dichloroethane	%	105	105	104		7385156
D8-Toluene	%	97	97	98		7385156
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate						



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		PSF294	PSF295			PSF295		
Sampling Date		2021/05/31 19:00	2021/05/31 19:15			2021/05/31 19:15		
COC Number		813032-01-01	813032-01-01			813032-01-01		
	UNITS	SB_MW01-01_GW001	SB_MW01-02_GW001	RDL	QC Batch	SB_MW01-02_GW001 Lab-Dup	RDL	QC Batch
BTEX & F1 Hydrocarbons								
Benzene	ug/L	0.36	<0.20	0.20	7387881	<0.20	0.20	7387881
Toluene	ug/L	0.69	<0.20	0.20	7387881	<0.20	0.20	7387881
Ethylbenzene	ug/L	0.32	<0.20	0.20	7387881	<0.20	0.20	7387881
o-Xylene	ug/L	<0.20	<0.20	0.20	7387881	<0.20	0.20	7387881
p+m-Xylene	ug/L	0.41	<0.40	0.40	7387881	<0.40	0.40	7387881
Total Xylenes	ug/L	0.41	<0.40	0.40	7387881	<0.40	0.40	7387881
F1 (C6-C10)	ug/L	<25	<25	25	7387881	<25	25	7387881
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	7387881	<25	25	7387881
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	7388988			
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	7388988			
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	7388988			
Reached Baseline at C50	ug/L	Yes	Yes		7388988			
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	104	104		7387881	102		7387881
4-Bromofluorobenzene	%	91	87		7387881	91		7387881
D10-o-Xylene	%	109	108		7387881	108		7387881
D4-1,2-Dichloroethane	%	109	105		7387881	107		7387881
o-Terphenyl	%	89	88		7388988			
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

BV Labs ID		PSF294	PSF295		
Sampling Date		2021/05/31 19:00	2021/05/31 19:15		
COC Number		813032-01-01	813032-01-01		
	UNITS	SB_MW01-01_GW001	SB_MW01-02_GW001	RDL	QC Batch
PCBs					
Aroclor 1016	ug/L	<0.05	<0.05	0.05	7387989
Aroclor 1221	ug/L	<0.05	<0.05	0.05	7387989
Aroclor 1232	ug/L	<0.05	<0.05	0.05	7387989
Aroclor 1242	ug/L	<0.05	<0.05	0.05	7387989
Aroclor 1248	ug/L	<0.05	<0.05	0.05	7387989
Aroclor 1254	ug/L	<0.05	<0.05	0.05	7387989
Aroclor 1260	ug/L	<0.05	<0.05	0.05	7387989
Total PCB	ug/L	<0.05	<0.05	0.05	7387989
Surrogate Recovery (%)					
Decachlorobiphenyl	%	81	93		7387989
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

PESTICIDES & HERBICIDES BY HPLC (WATER)

BV Labs ID		PSF294	PSF295			PSF295		
Sampling Date		2021/05/31 19:00	2021/05/31 19:15			2021/05/31 19:15		
COC Number		813032-01-01	813032-01-01			813032-01-01		
	UNITS	SB_MW01-01_GW001	SB_MW01-02_GW001	RDL	QC Batch	SB_MW01-02_GW001 Lab-Dup	RDL	QC Batch
Pesticides & Herbicides								
Glyphosate	mg/L	<0.010	<0.010	0.010	7384603			
Diquat	mg/L	<0.0070	<0.0070	0.0070	7383929			
Diuron	ug/L	<10	<10	10	7395912	<10	10	7395912
Guthion (Azinphos-methyl)	ug/L	<2.0	<2.0	2.0	7395912	<2.0	2.0	7395912
Paraquat	mg/L	<0.0010	<0.0010	0.0010	7383929			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate								



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

MICROBIOLOGY (WATER)

BV Labs ID		PSF294	PSF295	
Sampling Date		2021/05/31 19:00	2021/05/31 19:15	
COC Number		813032-01-01	813032-01-01	
	UNITS	SB_MW01-01_GW001	SB_MW01-02_GW001	QC Batch
Microbiological				
Background	CFU/100mL	NDOGN (1)	0	7383058
Total Coliforms	CFU/100mL	NDOGN (1)	0	7383058
Escherichia coli	CFU/100mL	NDOGN (1)	0	7383058
QC Batch = Quality Control Batch				
(1) NDOGN: No data due to overgrowth. Total coliforms and / or E.coli not detected				



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

TEST SUMMARY

BV Labs ID: PSF294
Sample ID: SB_MW01-01_GW001
Matrix: Water

Collected: 2021/05/31
Shipped:
Received: 2021/06/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7388444	N/A	2021/06/04	Surinder Rai
Anions	IC	7388362	N/A	2021/06/04	Fari Dehdezi
Chloride by Automated Colourimetry	KONE	7388373	N/A	2021/06/04	Alina Dobreanu
Diuron, Guthion, Temephos	LC/UV	7395912	2021/06/08	2021/06/09	Kimberley Linde
Diquat / Paraquat	LC/UV	7383929	2021/06/02	2021/06/03	James Lee
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7387881	N/A	2021/06/03	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7388988	2021/06/04	2021/06/04	(Kent) Maolin Li
Fluoride	ISE	7388403	2021/06/03	2021/06/04	Surinder Rai
Glyphosate	LC/FLU	7384603	2021/06/02	2021/06/02	James Lee
Mercury	CV/AA	7389222	2021/06/04	2021/06/04	Gagandeep Rai
Dissolved Metals by ICPMS	ICP/MS	7387332	N/A	2021/06/03	Azita Fazaeli
Total Coliforms/ E. coli, CFU/100mL	PL	7383058	N/A	2021/06/01	Soham Patel
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7388110	N/A	2021/06/04	Chandra Nandlal
ODWS - Semi-Volatiles	GC/MS	7399714	2021/06/10	2021/06/11	Wendy Zhao
Polychlorinated Biphenyl in Water	GC/ECD	7387989	2021/06/03	2021/06/04	Svitlana Shaula
pH	AT	7388414	2021/06/03	2021/06/04	Surinder Rai
Orthophosphate	KONE	7388404	N/A	2021/06/04	Avneet Kour Sudan
VOCs (Drinking Water)	P&T/MS	7385156	N/A	2021/06/07	Gladys Guerrero

BV Labs ID: PSF295
Sample ID: SB_MW01-02_GW001
Matrix: Water

Collected: 2021/05/31
Shipped:
Received: 2021/06/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7388444	N/A	2021/06/04	Surinder Rai
Anions	IC	7388362	N/A	2021/06/04	Fari Dehdezi
Chloride by Automated Colourimetry	KONE	7388373	N/A	2021/06/04	Alina Dobreanu
Diuron, Guthion, Temephos	LC/UV	7395912	2021/06/08	2021/06/09	Kimberley Linde
Diquat / Paraquat	LC/UV	7383929	2021/06/02	2021/06/03	James Lee
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7387881	N/A	2021/06/03	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7388988	2021/06/04	2021/06/04	(Kent) Maolin Li
Fluoride	ISE	7388403	2021/06/03	2021/06/04	Surinder Rai
Glyphosate	LC/FLU	7384603	2021/06/02	2021/06/02	James Lee
Mercury	CV/AA	7389222	2021/06/04	2021/06/04	Gagandeep Rai
Dissolved Metals by ICPMS	ICP/MS	7387332	N/A	2021/06/03	Azita Fazaeli
Total Coliforms/ E. coli, CFU/100mL	PL	7383058	N/A	2021/06/01	Soham Patel
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7388110	N/A	2021/06/04	Chandra Nandlal
ODWS - Semi-Volatiles	GC/MS	7399714	2021/06/10	2021/06/11	Wendy Zhao
Polychlorinated Biphenyl in Water	GC/ECD	7387989	2021/06/03	2021/06/04	Svitlana Shaula
pH	AT	7388414	2021/06/03	2021/06/04	Surinder Rai
Orthophosphate	KONE	7388404	N/A	2021/06/04	Avneet Kour Sudan
VOCs (Drinking Water)	P&T/MS	7385156	N/A	2021/06/07	Gladys Guerrero



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

TEST SUMMARY

BV Labs ID: PSF295 Dup
Sample ID: SB_MW01-02_GW001
Matrix: Water

Collected: 2021/05/31
Shipped:
Received: 2021/06/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Diuron, Guthion, Temephos	LC/UV	7395912	2021/06/08	2021/06/09	Kimberley Linde
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7387881	N/A	2021/06/03	Haibin Wu
VOCs (Drinking Water)	P&T/MS	7385156	N/A	2021/06/07	Gladys Guerrero



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.7°C
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Results relate only to the items tested.



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7383929	JLE	Matrix Spike	Diquat	2021/06/02		100	%	50 - 130
			Paraquat	2021/06/02		105	%	50 - 130
7383929	JLE	Spiked Blank	Diquat	2021/06/02		90	%	50 - 130
			Paraquat	2021/06/02		94	%	50 - 130
7383929	JLE	Method Blank	Diquat	2021/06/02	<0.0070		mg/L	
			Paraquat	2021/06/02	<0.0010		mg/L	
7383929	JLE	RPD	Diquat	2021/06/03	NC		%	40
			Paraquat	2021/06/03	NC		%	40
7384603	JLE	Matrix Spike	Glyphosate	2021/06/02		87	%	50 - 130
7384603	JLE	Spiked Blank	Glyphosate	2021/06/02		107	%	50 - 130
7384603	JLE	Method Blank	Glyphosate	2021/06/02	<0.010		mg/L	
7384603	JLE	RPD	Glyphosate	2021/06/02	NC		%	40
7385156	GGU	Matrix Spike [PSF294-11]	4-Bromofluorobenzene	2021/06/07		101	%	70 - 130
			D4-1,2-Dichloroethane	2021/06/07		98	%	70 - 130
			D8-Toluene	2021/06/07		100	%	70 - 130
			1,1-Dichloroethylene	2021/06/07		97	%	70 - 130
			1,2-Dichlorobenzene	2021/06/07		89	%	70 - 130
			1,2-Dichloroethane	2021/06/07		91	%	70 - 130
			1,4-Dichlorobenzene	2021/06/07		101	%	70 - 130
			Benzene	2021/06/07		86	%	70 - 130
			Carbon Tetrachloride	2021/06/07		99	%	70 - 130
			Chlorobenzene	2021/06/07		95	%	70 - 130
			Methylene Chloride(Dichloromethane)	2021/06/07		90	%	70 - 130
			Ethylbenzene	2021/06/07		90	%	70 - 130
			Tetrachloroethylene	2021/06/07		88	%	70 - 130
			Toluene	2021/06/07		90	%	70 - 130
			Trichloroethylene	2021/06/07		104	%	70 - 130
			Vinyl Chloride	2021/06/07		93	%	70 - 130
			o-Xylene	2021/06/07		92	%	70 - 130
			p+m-Xylene	2021/06/07		88	%	70 - 130
7385156	GGU	Spiked Blank	4-Bromofluorobenzene	2021/06/07		101	%	70 - 130
			D4-1,2-Dichloroethane	2021/06/07		99	%	70 - 130
			D8-Toluene	2021/06/07		100	%	70 - 130
			1,1-Dichloroethylene	2021/06/07		94	%	70 - 130
			1,2-Dichlorobenzene	2021/06/07		96	%	70 - 130
			1,2-Dichloroethane	2021/06/07		92	%	70 - 130
			1,4-Dichlorobenzene	2021/06/07		110	%	70 - 130
			Benzene	2021/06/07		93	%	70 - 130
			Carbon Tetrachloride	2021/06/07		97	%	70 - 130
			Chlorobenzene	2021/06/07		97	%	70 - 130
			Methylene Chloride(Dichloromethane)	2021/06/07		97	%	70 - 130
			Ethylbenzene	2021/06/07		92	%	70 - 130
			Tetrachloroethylene	2021/06/07		90	%	70 - 130
			Toluene	2021/06/07		93	%	70 - 130
			Trichloroethylene	2021/06/07		101	%	70 - 130
			Vinyl Chloride	2021/06/07		91	%	70 - 130
			o-Xylene	2021/06/07		92	%	70 - 130
			p+m-Xylene	2021/06/07		95	%	70 - 130
7385156	GGU	Method Blank	4-Bromofluorobenzene	2021/06/07		100	%	70 - 130
			D4-1,2-Dichloroethane	2021/06/07		98	%	70 - 130
			D8-Toluene	2021/06/07		100	%	70 - 130
			1,1-Dichloroethylene	2021/06/07	<0.00010		mg/L	



QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7385156	GGU	RPD [PSF295-11]		1,2-Dichlorobenzene	2021/06/07	<0.00020		mg/L	
				1,2-Dichloroethane	2021/06/07	<0.00020		mg/L	
				1,4-Dichlorobenzene	2021/06/07	<0.00020		mg/L	
				Benzene	2021/06/07	<0.00010		mg/L	
				Carbon Tetrachloride	2021/06/07	<0.00010		mg/L	
				Chlorobenzene	2021/06/07	<0.00010		mg/L	
				Methylene Chloride(Dichloromethane)	2021/06/07	<0.00050		mg/L	
				Ethylbenzene	2021/06/07	<0.00010		mg/L	
				Tetrachloroethylene	2021/06/07	<0.00010		mg/L	
				Toluene	2021/06/07	<0.00020		mg/L	
				Trichloroethylene	2021/06/07	<0.00010		mg/L	
				Vinyl Chloride	2021/06/07	<0.00020		mg/L	
				o-Xylene	2021/06/07	<0.00010		mg/L	
				p+m-Xylene	2021/06/07	<0.00010		mg/L	
				1,1-Dichloroethylene	2021/06/07	NC		%	30
				1,2-Dichlorobenzene	2021/06/07	NC		%	30
				1,2-Dichloroethane	2021/06/07	NC		%	30
				1,4-Dichlorobenzene	2021/06/07	NC		%	30
				Benzene	2021/06/07	NC		%	30
				Carbon Tetrachloride	2021/06/07	NC		%	30
7387332	AFZ	Matrix Spike		Chlorobenzene	2021/06/07	NC		%	30
				Methylene Chloride(Dichloromethane)	2021/06/07	NC		%	30
				Ethylbenzene	2021/06/07	NC		%	30
				Tetrachloroethylene	2021/06/07	NC		%	30
				Toluene	2021/06/07	NC		%	30
				Trichloroethylene	2021/06/07	NC		%	30
				Vinyl Chloride	2021/06/07	NC		%	30
				o-Xylene	2021/06/07	NC		%	30
				p+m-Xylene	2021/06/07	NC		%	30
				Dissolved Aluminum (Al)	2021/06/03		102	%	80 - 120
				Dissolved Antimony (Sb)	2021/06/03		102	%	80 - 120
				Dissolved Arsenic (As)	2021/06/03		101	%	80 - 120
				Dissolved Barium (Ba)	2021/06/03		99	%	80 - 120
				Dissolved Beryllium (Be)	2021/06/03		101	%	80 - 120
				Dissolved Bismuth (Bi)	2021/06/03		98	%	80 - 120
				Dissolved Boron (B)	2021/06/03		99	%	80 - 120
				Dissolved Cadmium (Cd)	2021/06/03		100	%	80 - 120
				Dissolved Calcium (Ca)	2021/06/03		NC	%	80 - 120
				Dissolved Cesium (Cs)	2021/06/03		100	%	80 - 120
				Dissolved Chromium (Cr)	2021/06/03		101	%	80 - 120
				Dissolved Cobalt (Co)	2021/06/03		98	%	80 - 120
				Dissolved Copper (Cu)	2021/06/03		99	%	80 - 120
				Dissolved Iron (Fe)	2021/06/03		99	%	80 - 120
				Dissolved Lead (Pb)	2021/06/03		96	%	80 - 120
				Dissolved Lithium (Li)	2021/06/03		100	%	80 - 120
				Dissolved Magnesium (Mg)	2021/06/03		101	%	80 - 120
				Dissolved Manganese (Mn)	2021/06/03		100	%	80 - 120
				Dissolved Molybdenum (Mo)	2021/06/03		103	%	80 - 120
				Dissolved Nickel (Ni)	2021/06/03		97	%	80 - 120
				Dissolved Phosphorus (P)	2021/06/03		108	%	80 - 120
				Dissolved Potassium (K)	2021/06/03		102	%	80 - 120
				Dissolved Rubidium (Rb)	2021/06/03		99	%	80 - 120



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7387332	AFZ	Spiked Blank		Dissolved Selenium (Se)	2021/06/03		104	%	80 - 120
				Dissolved Silicon (Si)	2021/06/03		103	%	80 - 120
				Dissolved Silver (Ag)	2021/06/03		99	%	80 - 120
				Dissolved Sodium (Na)	2021/06/03		102	%	80 - 120
				Dissolved Strontium (Sr)	2021/06/03		99	%	80 - 120
				Dissolved Tellurium (Te)	2021/06/03		101	%	80 - 120
				Dissolved Thallium (Tl)	2021/06/03		96	%	80 - 120
				Dissolved Tin (Sn)	2021/06/03		103	%	80 - 120
				Dissolved Titanium (Ti)	2021/06/03		103	%	80 - 120
				Dissolved Tungsten (W)	2021/06/03		98	%	80 - 120
				Dissolved Uranium (U)	2021/06/03		104	%	80 - 120
				Dissolved Vanadium (V)	2021/06/03		103	%	80 - 120
				Dissolved Zinc (Zn)	2021/06/03		99	%	80 - 120
				Dissolved Zirconium (Zr)	2021/06/03		103	%	80 - 120
				Dissolved Aluminum (Al)	2021/06/03		100	%	80 - 120
				Dissolved Antimony (Sb)	2021/06/03		100	%	80 - 120
				Dissolved Arsenic (As)	2021/06/03		99	%	80 - 120
				Dissolved Barium (Ba)	2021/06/03		96	%	80 - 120
				Dissolved Beryllium (Be)	2021/06/03		98	%	80 - 120
				Dissolved Bismuth (Bi)	2021/06/03		96	%	80 - 120
				Dissolved Boron (B)	2021/06/03		96	%	80 - 120
				Dissolved Cadmium (Cd)	2021/06/03		97	%	80 - 120
				Dissolved Calcium (Ca)	2021/06/03		102	%	80 - 120
				Dissolved Cesium (Cs)	2021/06/03		98	%	80 - 120
				Dissolved Chromium (Cr)	2021/06/03		97	%	80 - 120
				Dissolved Cobalt (Co)	2021/06/03		97	%	80 - 120
				Dissolved Copper (Cu)	2021/06/03		97	%	80 - 120
				Dissolved Iron (Fe)	2021/06/03		96	%	80 - 120
				Dissolved Lead (Pb)	2021/06/03		95	%	80 - 120
				Dissolved Lithium (Li)	2021/06/03		98	%	80 - 120
				Dissolved Magnesium (Mg)	2021/06/03		97	%	80 - 120
				Dissolved Manganese (Mn)	2021/06/03		96	%	80 - 120
				Dissolved Molybdenum (Mo)	2021/06/03		99	%	80 - 120
				Dissolved Nickel (Ni)	2021/06/03		97	%	80 - 120
				Dissolved Phosphorus (P)	2021/06/03		105	%	80 - 120
				Dissolved Potassium (K)	2021/06/03		98	%	80 - 120
				Dissolved Rubidium (Rb)	2021/06/03		98	%	80 - 120
				Dissolved Selenium (Se)	2021/06/03		102	%	80 - 120
				Dissolved Silicon (Si)	2021/06/03		101	%	80 - 120
				Dissolved Silver (Ag)	2021/06/03		98	%	80 - 120
				Dissolved Sodium (Na)	2021/06/03		98	%	80 - 120
				Dissolved Strontium (Sr)	2021/06/03		97	%	80 - 120
				Dissolved Tellurium (Te)	2021/06/03		98	%	80 - 120
				Dissolved Thallium (Tl)	2021/06/03		93	%	80 - 120
				Dissolved Tin (Sn)	2021/06/03		98	%	80 - 120
				Dissolved Titanium (Ti)	2021/06/03		101	%	80 - 120
				Dissolved Tungsten (W)	2021/06/03		96	%	80 - 120
				Dissolved Uranium (U)	2021/06/03		102	%	80 - 120
				Dissolved Vanadium (V)	2021/06/03		98	%	80 - 120
				Dissolved Zinc (Zn)	2021/06/03		97	%	80 - 120
				Dissolved Zirconium (Zr)	2021/06/03		98	%	80 - 120
7387332	AFZ	Method Blank		Dissolved Aluminum (Al)	2021/06/03	<4.9		ug/L	



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7387332	AFZ	RPD	Dissolved Antimony (Sb)	2021/06/03	<0.50		ug/L	
			Dissolved Arsenic (As)	2021/06/03	<1.0		ug/L	
			Dissolved Barium (Ba)	2021/06/03	<2.0		ug/L	
			Dissolved Beryllium (Be)	2021/06/03	<0.40		ug/L	
			Dissolved Bismuth (Bi)	2021/06/03	<1.0		ug/L	
			Dissolved Boron (B)	2021/06/03	<10		ug/L	
			Dissolved Cadmium (Cd)	2021/06/03	<0.090		ug/L	
			Dissolved Calcium (Ca)	2021/06/03	<200		ug/L	
			Dissolved Cesium (Cs)	2021/06/03	<0.20		ug/L	
			Dissolved Chromium (Cr)	2021/06/03	<5.0		ug/L	
			Dissolved Cobalt (Co)	2021/06/03	<0.50		ug/L	
			Dissolved Copper (Cu)	2021/06/03	<0.90		ug/L	
			Dissolved Iron (Fe)	2021/06/03	<100		ug/L	
			Dissolved Lead (Pb)	2021/06/03	<0.50		ug/L	
			Dissolved Lithium (Li)	2021/06/03	<5.0		ug/L	
			Dissolved Magnesium (Mg)	2021/06/03	<50		ug/L	
			Dissolved Manganese (Mn)	2021/06/03	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2021/06/03	<0.50		ug/L	
			Dissolved Nickel (Ni)	2021/06/03	<1.0		ug/L	
			Dissolved Phosphorus (P)	2021/06/03	<100		ug/L	
			Dissolved Potassium (K)	2021/06/03	<200		ug/L	
			Dissolved Rubidium (Rb)	2021/06/03	<0.20		ug/L	
			Dissolved Selenium (Se)	2021/06/03	<2.0		ug/L	
			Dissolved Silicon (Si)	2021/06/03	<50		ug/L	
			Dissolved Silver (Ag)	2021/06/03	<0.090		ug/L	
			Dissolved Sodium (Na)	2021/06/03	<100		ug/L	
			Dissolved Strontium (Sr)	2021/06/03	<1.0		ug/L	
			Dissolved Tellurium (Te)	2021/06/03	<1.0		ug/L	
			Dissolved Thallium (Tl)	2021/06/03	<0.050		ug/L	
			Dissolved Tin (Sn)	2021/06/03	<1.0		ug/L	
			Dissolved Titanium (Ti)	2021/06/03	<5.0		ug/L	
			Dissolved Tungsten (W)	2021/06/03	<1.0		ug/L	
			Dissolved Uranium (U)	2021/06/03	<0.10		ug/L	
			Dissolved Vanadium (V)	2021/06/03	<0.50		ug/L	
			Dissolved Zinc (Zn)	2021/06/03	<5.0		ug/L	
			Dissolved Zirconium (Zr)	2021/06/03	<1.0		ug/L	
7387332	AFZ	RPD	Dissolved Arsenic (As)	2021/06/03	NC		%	20
			Dissolved Barium (Ba)	2021/06/03	13		%	20
			Dissolved Boron (B)	2021/06/03	NC		%	20
			Dissolved Cadmium (Cd)	2021/06/03	NC		%	20
			Dissolved Calcium (Ca)	2021/06/03	2.1		%	20
			Dissolved Chromium (Cr)	2021/06/03	NC		%	20
			Dissolved Copper (Cu)	2021/06/03	5.3		%	20
			Dissolved Iron (Fe)	2021/06/03	NC		%	20
			Dissolved Lead (Pb)	2021/06/03	NC		%	20
			Dissolved Magnesium (Mg)	2021/06/03	1.0		%	20
			Dissolved Manganese (Mn)	2021/06/03	NC		%	20
			Dissolved Potassium (K)	2021/06/03	5.7		%	20
			Dissolved Sodium (Na)	2021/06/03	0.10		%	20
			Dissolved Zinc (Zn)	2021/06/03	NC		%	20
7387881	H_W	Matrix Spike [PSF295-09]	1,4-Difluorobenzene	2021/06/03		94	%	70 - 130
			4-Bromofluorobenzene	2021/06/03		101	%	70 - 130



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7387881	H_W	Spiked Blank		D10-o-Xylene	2021/06/03		100	%	70 - 130
				D4-1,2-Dichloroethane	2021/06/03		97	%	70 - 130
				Benzene	2021/06/03		96	%	50 - 140
				Toluene	2021/06/03		100	%	50 - 140
				Ethylbenzene	2021/06/03		113	%	50 - 140
				o-Xylene	2021/06/03		113	%	50 - 140
				p+m-Xylene	2021/06/03		113	%	50 - 140
				F1 (C6-C10)	2021/06/03		100	%	60 - 140
				1,4-Difluorobenzene	2021/06/03		94	%	70 - 130
				4-Bromofluorobenzene	2021/06/03		105	%	70 - 130
				D10-o-Xylene	2021/06/03		97	%	70 - 130
				D4-1,2-Dichloroethane	2021/06/03		97	%	70 - 130
				Benzene	2021/06/03		96	%	50 - 140
				Toluene	2021/06/03		99	%	50 - 140
				Ethylbenzene	2021/06/03		113	%	50 - 140
				o-Xylene	2021/06/03		112	%	50 - 140
7387881	H_W	Method Blank		p+m-Xylene	2021/06/03		113	%	50 - 140
				F1 (C6-C10)	2021/06/03		99	%	60 - 140
				1,4-Difluorobenzene	2021/06/03		101	%	70 - 130
				4-Bromofluorobenzene	2021/06/03		90	%	70 - 130
				D10-o-Xylene	2021/06/03		104	%	70 - 130
				D4-1,2-Dichloroethane	2021/06/03		109	%	70 - 130
				Benzene	2021/06/03	<0.20		ug/L	
				Toluene	2021/06/03	<0.20		ug/L	
				Ethylbenzene	2021/06/03	<0.20		ug/L	
				o-Xylene	2021/06/03	<0.20		ug/L	
				p+m-Xylene	2021/06/03	<0.40		ug/L	
				Total Xylenes	2021/06/03	<0.40		ug/L	
				F1 (C6-C10)	2021/06/03	<25		ug/L	
				F1 (C6-C10) - BTEX	2021/06/03	<25		ug/L	
				Benzene	2021/06/03	NC		%	30
				Toluene	2021/06/03	NC		%	30
7387881	H_W	RPD [PSF295-09]		Ethylbenzene	2021/06/03	NC		%	30
				o-Xylene	2021/06/03	NC		%	30
				p+m-Xylene	2021/06/03	NC		%	30
				Total Xylenes	2021/06/03	NC		%	30
				F1 (C6-C10)	2021/06/03	NC		%	30
				F1 (C6-C10) - BTEX	2021/06/03	NC		%	30
	7387989	SVS	Matrix Spike	Decachlorobiphenyl	2021/06/04		68	%	60 - 130
				Aroclor 1260	2021/06/04		62	%	60 - 130
				Total PCB	2021/06/04		62	%	60 - 130
	7387989	SVS	Spiked Blank	Decachlorobiphenyl	2021/06/04		73	%	60 - 130
				Aroclor 1260	2021/06/04		82	%	60 - 130
				Total PCB	2021/06/04		82	%	60 - 130
	7387989	SVS	Method Blank	Decachlorobiphenyl	2021/06/04		78	%	60 - 130
				Aroclor 1016	2021/06/04	<0.05		ug/L	
				Aroclor 1221	2021/06/04	<0.05		ug/L	
				Aroclor 1232	2021/06/04	<0.05		ug/L	
				Aroclor 1242	2021/06/04	<0.05		ug/L	
				Aroclor 1248	2021/06/04	<0.05		ug/L	
				Aroclor 1254	2021/06/04	<0.05		ug/L	
				Aroclor 1260	2021/06/04	<0.05		ug/L	



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7387989	SVS	RPD	Total PCB	2021/06/04	<0.05		ug/L	
			Aroclor 1016	2021/06/04	NC		%	40
			Aroclor 1221	2021/06/04	NC		%	40
			Aroclor 1232	2021/06/04	NC		%	40
			Aroclor 1242	2021/06/04	NC		%	30
			Aroclor 1248	2021/06/04	NC		%	30
			Aroclor 1254	2021/06/04	NC		%	30
			Aroclor 1260	2021/06/04	NC		%	30
7388110	C_N	Matrix Spike	Total PCB	2021/06/04	NC		%	40
			Nitrite (N)	2021/06/04		106	%	80 - 120
			Nitrate (N)	2021/06/04		101	%	80 - 120
7388110	C_N	Spiked Blank	Nitrite (N)	2021/06/04		108	%	80 - 120
			Nitrate (N)	2021/06/04		106	%	80 - 120
7388110	C_N	Method Blank	Nitrite (N)	2021/06/04	<0.010		mg/L	
			Nitrate (N)	2021/06/04	<0.10		mg/L	
7388110	C_N	RPD	Nitrite (N)	2021/06/04	NC		%	20
			Nitrate (N)	2021/06/04	NC		%	20
7388362	FD	Matrix Spike	Dissolved Bromide (Br-)	2021/06/04		103	%	80 - 120
			Dissolved Sulphate (SO4)	2021/06/04		NC	%	80 - 120
7388362	FD	Spiked Blank	Dissolved Bromide (Br-)	2021/06/04		105	%	80 - 120
			Dissolved Sulphate (SO4)	2021/06/04		100	%	80 - 120
7388362	FD	Method Blank	Dissolved Bromide (Br-)	2021/06/04	<1.0		mg/L	
			Dissolved Sulphate (SO4)	2021/06/04	<1.0		mg/L	
7388362	FD	RPD	Dissolved Bromide (Br-)	2021/06/04	NC		%	20
			Dissolved Sulphate (SO4)	2021/06/04	0.28		%	20
7388373	ADB	Matrix Spike	Dissolved Chloride (Cl-)	2021/06/04		NC	%	80 - 120
7388373	ADB	Spiked Blank	Dissolved Chloride (Cl-)	2021/06/04		102	%	80 - 120
7388373	ADB	Method Blank	Dissolved Chloride (Cl-)	2021/06/04	<1.0		mg/L	
7388373	ADB	RPD	Dissolved Chloride (Cl-)	2021/06/04	1.3		%	20
7388403	SAU	Matrix Spike	Fluoride (F-)	2021/06/04		98	%	80 - 120
7388403	SAU	Spiked Blank	Fluoride (F-)	2021/06/04		101	%	80 - 120
7388403	SAU	Method Blank	Fluoride (F-)	2021/06/04	<0.10		mg/L	
7388403	SAU	RPD	Fluoride (F-)	2021/06/04	0		%	20
7388404	AKD	Matrix Spike	Orthophosphate (P)	2021/06/04		103	%	75 - 125
7388404	AKD	Spiked Blank	Orthophosphate (P)	2021/06/04		101	%	80 - 120
7388404	AKD	Method Blank	Orthophosphate (P)	2021/06/04	<0.010		mg/L	
7388404	AKD	RPD	Orthophosphate (P)	2021/06/04	NC		%	25
7388414	SAU	Spiked Blank	pH	2021/06/04		102	%	98 - 103
7388414	SAU	RPD	pH	2021/06/04	0.44		%	N/A
7388444	SAU	Spiked Blank	Alkalinity (Total as CaCO3)	2021/06/04		95	%	85 - 115
7388444	SAU	Method Blank	Alkalinity (Total as CaCO3)	2021/06/04	<1.0		mg/L	
7388444	SAU	RPD	Alkalinity (Total as CaCO3)	2021/06/04	0.89		%	20
7388988	KLI	Matrix Spike	o-Terphenyl	2021/06/04		89	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2021/06/04		95	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2021/06/04		93	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2021/06/04		90	%	60 - 130
			o-Terphenyl	2021/06/04		93	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2021/06/04		101	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2021/06/04		99	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2021/06/04		95	%	60 - 130
7388988	KLI	Method Blank	o-Terphenyl	2021/06/04		90	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2021/06/04	<100		ug/L	



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7388988	KLI	RPD	F3 (C16-C34 Hydrocarbons)	2021/06/04	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2021/06/04	<200		ug/L	
			F2 (C10-C16 Hydrocarbons)	2021/06/04	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2021/06/04	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2021/06/04	NC		%	30
7389222	GR1	Matrix Spike	Mercury (Hg)	2021/06/04		84	%	75 - 125
7389222	GR1	Spiked Blank	Mercury (Hg)	2021/06/04		106	%	80 - 120
7389222	GR1	Method Blank	Mercury (Hg)	2021/06/04	<0.10		ug/L	
7389222	GR1	RPD	Mercury (Hg)	2021/06/04	NC		%	20
7395912	KIH	Matrix Spike [PSF294-03]	Diuron	2021/06/09		82	%	40 - 130
			Guthion (Azinphos-methyl)	2021/06/09		98	%	40 - 130
			Diuron	2021/06/09		85	%	40 - 130
			Guthion (Azinphos-methyl)	2021/06/09		100	%	40 - 130
			Diuron	2021/06/09	<10		ug/L	
7395912	KIH	Method Blank	Guthion (Azinphos-methyl)	2021/06/09	<2.0		ug/L	
			Diuron	2021/06/09	NC		%	40
			Guthion (Azinphos-methyl)	2021/06/09	NC		%	40
			Diuron	2021/06/09	NC		%	40
			Guthion (Azinphos-methyl)	2021/06/09	NC		%	40
7399714	WZ	Matrix Spike [PSF294-01]	2,4,6-Tribromophenol	2021/06/10		88	%	30 - 130
			2,4-Dichlorophenyl Acetic Acid	2021/06/10		88	%	30 - 130
			2-Fluorobiphenyl	2021/06/10		85	%	30 - 130
			D14-Terphenyl (FS)	2021/06/10		98	%	30 - 130
			D5-Nitrobenzene	2021/06/10		89	%	30 - 130
			2,3,4,6-Tetrachlorophenol	2021/06/10		108	%	30 - 130
			2,4,6-Trichlorophenol	2021/06/10		105	%	30 - 130
			2,4-D	2021/06/10		97	%	30 - 130
			2,4-Dichlorophenol	2021/06/10		82	%	30 - 130
			Alachlor	2021/06/10		126	%	40 - 130
			Atrazine	2021/06/10		98	%	30 - 130
			Des-ethyl atrazine	2021/06/10		50	%	30 - 130
			Atrazine + Desethyl-atrazine	2021/06/10		74	%	30 - 130
			Bromoxynil	2021/06/10		103	%	40 - 130
			Carbaryl	2021/06/10		124	%	40 - 130
			Carbofuran	2021/06/10		115	%	40 - 130
			Chlorpyrifos (Dursban)	2021/06/10		101	%	40 - 130
			Diazinon	2021/06/10		94	%	40 - 130
			Dicamba	2021/06/10		94	%	30 - 130
			Diclofop-methyl	2021/06/10		105	%	40 - 130
			Dimethoate	2021/06/10		99	%	40 - 130
			Malathion	2021/06/10		102	%	40 - 130
			MCPA	2021/06/10		100	%	10 - 130
			Metolachlor	2021/06/10		90	%	40 - 130
			Metribuzin (Sencor)	2021/06/10		119	%	40 - 130
			Pentachlorophenol	2021/06/10		104	%	25 - 130
			Phorate	2021/06/10		82	%	40 - 130
			Picloram	2021/06/10		64	%	10 - 130
			Prometryne	2021/06/10		95	%	30 - 130
			Simazine	2021/06/10		89	%	40 - 130
			Terbufos	2021/06/10		85	%	40 - 130
			Triallate	2021/06/10		98	%	40 - 130
			Trifluralin	2021/06/10		106	%	40 - 130
			Benzo(a)pyrene	2021/06/10		103	%	30 - 130
			2,4,6-Tribromophenol	2021/06/10		94	%	30 - 130



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			2,4-Dichlorophenyl Acetic Acid	2021/06/10		72	%	30 - 130
			2-Fluorobiphenyl	2021/06/10		89	%	30 - 130
			D14-Terphenyl (FS)	2021/06/10		109	%	30 - 130
			D5-Nitrobenzene	2021/06/10		91	%	30 - 130
			2,3,4,6-Tetrachlorophenol	2021/06/10		110	%	30 - 130
			2,4,6-Trichlorophenol	2021/06/10		105	%	30 - 130
			2,4-D	2021/06/10		94	%	30 - 130
			2,4-Dichlorophenol	2021/06/10		83	%	30 - 130
			Alachlor	2021/06/10		129	%	40 - 130
			Atrazine	2021/06/10		100	%	30 - 130
			Des-ethyl atrazine	2021/06/10		55	%	30 - 130
			Atrazine + Desethyl-atrazine	2021/06/10		78	%	30 - 130
			Bromoxynil	2021/06/10		105	%	40 - 130
			Carbaryl	2021/06/10		123	%	40 - 130
			Carbofuran	2021/06/10		112	%	40 - 130
			Chlorpyrifos (Dursban)	2021/06/10		102	%	40 - 130
			Diazinon	2021/06/10		94	%	40 - 130
			Dicamba	2021/06/10		96	%	30 - 130
			Diclofop-methyl	2021/06/10		109	%	40 - 130
			Dimethoate	2021/06/10		97	%	40 - 130
			Malathion	2021/06/10		103	%	40 - 130
			MCPA	2021/06/10		100	%	10 - 130
			Metolachlor	2021/06/10		91	%	40 - 130
			Metribuzin (Sencor)	2021/06/10		123	%	40 - 130
			Pentachlorophenol	2021/06/10		106	%	25 - 130
			Phorate	2021/06/10		81	%	40 - 130
			Picloram	2021/06/10		71	%	10 - 130
			Prometryne	2021/06/10		97	%	30 - 130
			Simazine	2021/06/10		91	%	40 - 130
			Terbufos	2021/06/10		83	%	40 - 130
			Triallate	2021/06/10		100	%	40 - 130
			Trifluralin	2021/06/10		105	%	40 - 130
			Benzo(a)pyrene	2021/06/10		105	%	30 - 130
7399714	WZ	RPD	2,3,4,6-Tetrachlorophenol	2021/06/10	0.27		%	40
			2,4,6-Trichlorophenol	2021/06/10	2.1		%	40
			2,4-D	2021/06/10	2.0		%	40
			2,4-Dichlorophenol	2021/06/10	1.5		%	40
			Alachlor	2021/06/10	0.054		%	40
			Atrazine	2021/06/10	2.2		%	40
			Des-ethyl atrazine	2021/06/10	1.1		%	40
			Atrazine + Desethyl-atrazine	2021/06/10	1.0		%	40
			Bromoxynil	2021/06/10	0.73		%	40
			Carbaryl	2021/06/10	1.1		%	40
			Carbofuran	2021/06/10	3.1		%	40
			Chlorpyrifos (Dursban)	2021/06/10	0.22		%	40
			Diazinon	2021/06/10	2.5		%	40
			Dicamba	2021/06/10	0.28		%	40
			Diclofop-methyl	2021/06/10	2.1		%	40
			Dimethoate	2021/06/10	3.9		%	40
			Malathion	2021/06/10	0.31		%	40
			MCPA	2021/06/10	0.27		%	40
			Metolachlor	2021/06/10	1.4		%	40



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7399714	WZ	Method Blank	Metribuzin (Sencor)	2021/06/10	3.1		%	40
			Pentachlorophenol	2021/06/10	0.80		%	40
			Phorate	2021/06/10	1.8		%	40
			Picloram	2021/06/10	3.3		%	40
			Prometryne	2021/06/10	4.1		%	40
			Simazine	2021/06/10	2.0		%	40
			Terbufos	2021/06/10	2.7		%	40
			Triallate	2021/06/10	0.34		%	40
			Trifluralin	2021/06/10	4.0		%	40
			Benzo(a)pyrene	2021/06/10	5.1		%	40
			2,4,6-Tribromophenol	2021/06/10		89	%	30 - 130
			2,4-Dichlorophenyl Acetic Acid	2021/06/10		89	%	30 - 130
			2-Fluorobiphenyl	2021/06/10		84	%	30 - 130
			D14-Terphenyl (FS)	2021/06/10		102	%	30 - 130
			D5-Nitrobenzene	2021/06/10		95	%	30 - 130
			2,3,4,6-Tetrachlorophenol	2021/06/10	<0.00050		mg/L	
			2,4,6-Trichlorophenol	2021/06/10	<0.00050		mg/L	
			2,4-D	2021/06/10	<0.0010		mg/L	
			2,4-Dichlorophenol	2021/06/10	<0.00025		mg/L	
			Alachlor	2021/06/10	<0.00050		mg/L	
			Atrazine	2021/06/10	<0.00050		mg/L	
			Des-ethyl atrazine	2021/06/10	<0.00050		mg/L	
			Atrazine + Desethyl-atrazine	2021/06/10	<0.0010		mg/L	
			Bromoxynil	2021/06/10	<0.00050		mg/L	
			Carbaryl	2021/06/10	<0.0050		mg/L	
			Carbofuran	2021/06/10	<0.0050		mg/L	
			Chlorpyrifos (Dursban)	2021/06/10	<0.0010		mg/L	
			Diazinon	2021/06/10	<0.0010		mg/L	
			Dicamba	2021/06/10	<0.0010		mg/L	
			Diclofop-methyl	2021/06/10	<0.00090		mg/L	
			Dimethoate	2021/06/10	<0.0025		mg/L	
			Malathion	2021/06/10	<0.0050		mg/L	
			MCPA	2021/06/10	<0.010		mg/L	
			Metolachlor	2021/06/10	<0.00050		mg/L	
			Metribuzin (Sencor)	2021/06/10	<0.0050		mg/L	
			Pentachlorophenol	2021/06/10	<0.00050		mg/L	
			Phorate	2021/06/10	<0.00050		mg/L	
			Picloram	2021/06/10	<0.0050		mg/L	
			Prometryne	2021/06/10	<0.00025		mg/L	
			Simazine	2021/06/10	<0.0010		mg/L	
			Terbufos	2021/06/10	<0.00050		mg/L	
			Triallate	2021/06/10	<0.0010		mg/L	
			Trifluralin	2021/06/10	<0.0010		mg/L	



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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				Benzo(a)pyrene	2021/06/10	<0.0000050		mg/L	
N/A = Not Applicable									
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.									
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.									
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.									
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.									
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.									
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)									
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).									



BV Labs Job #: C1E8269
Report Date: 2021/06/11

Geofirma Engineering Ltd
Client Project #: 202111-001
Sampler Initials: CM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Soham Patel, Analyst 2

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.



Bureau Veritas Laboratories
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01-Jun-21 08:40

Katherine Szozda

C1E8269

Page of

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name: #12078 Geofirma Engineering Ltd	Company Name: Chris Morgan	Quotation #: C03488			
Attention: Chris Morgan	Attention: Chris Morgan	P.O. #:			
Address: 1 Raymond St Suite 200	Address:	Project: 202111-001			
Ottawa ON K1R 1A2		Project Name:			
Tel: (613) 232-2525 Fax: (613) 232-7149	Tel: 613-402-1701 Fax:	Site #:			
Email: cmorgan@geofirma.com; tgalt@geofirma.com	Email: cmorgan@geofirma.com	Sampled By:			

URE ENV-1366

Only:

Bottle Order #:

813032

Project Manager:

Katherine Szozda

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects			
Regulation 153 (2011)		Other Regulations		Special Instructions		Field Filtered (please circle): Metals / Hg / Cr VI	CCME PHCs, BTEXMF, F4	Reg 170, Schedule 24 (NEW 2016)	Total Coliforms/ E. coli, CFU/100mL	Dissolved Metals by ICPMS	Mercury	Arsenic - Br, Cl, F, NO3/N02, PO4, SO4	pH	Alkalinity	Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.				
<input checked="" type="checkbox"/> Table 1 <input type="checkbox"/> Table 2 <input type="checkbox"/> Table 3 <input type="checkbox"/> Table	<input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC	<input type="checkbox"/> CCME <input type="checkbox"/> Reg 558 <input type="checkbox"/> MISA <input type="checkbox"/> PWQO <input type="checkbox"/> Other	<input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> Municipality <input type="checkbox"/> Reg 406 Table												Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: Rush Confirmation Number: (call lab for #)				
Include Criteria on Certificate of Analysis (Y/N)?																# of Bottles		Comments	
1	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix														
2		SB_MW01-01-GW001	31-May-21	19:00	GW	X	X	X	X	X	X	X	X	X		17			
3		SB_MW01-02-GW001	31-May-21	19:15	GW	X	X	X	X	X	X	X	X	X		17			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

MICRO

REC'D IN WATERLOO

Ice had melted

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only	
Chris Morgan		31/05/21	19:30	JACQUEE KAVR		2021/06/01	08:40		Time Sensitive	Temperature (°C) on Reel
										3:2:10

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.		* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.		* SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.	
Bureau Veritas Canada (2019) Inc.		SAMPLER MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS		White: BV Labs Yellow: Client	