

2023 Annual Groundwater Quality Monitoring Report

Trenton Commercial Park, Civic No. 34 Power Plant Road, Trenton, Nova Scotia

Build Nova Scotia
Final Report

April 12, 2024
2001576.005



eNGLOBE

Build Nova Scotia

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Revisions and publications log

REVISION No.	DATE	DESCRIPTION
00	April 5, 2024	Draft Report Issued
01	April 12, 2024	Final Report Issued

Distribution

1 PDF original (digital)	Build Nova Scotia
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Executive Summary

At the request of Build Nova Scotia, Englobe Corp. (Englobe) conducted groundwater sampling events in April and October 2023 including the sampling and testing of seven (7) specified groundwater monitor wells with interpretation of the analytical results in an annual report. Toxicity testing of surface water collected at three (3) locations adjacent to the facility was also carried out in April 2023. This work was completed as per details outlined in portions of Section 10 (Groundwater Monitoring), Section 7 (Surface Water) and Section 12 (Reporting) of the Nova Scotia Environment and Climate Change (NSE) Industrial Approval No. 2020-2690529-00, dated September 21, 2020.

Based on the field observations and analytical results obtained, we make the following conclusions and statements on the identification of any groundwater or surface water discharge impacts as a result of site activities completed by Englobe during the 2023 calendar year:

- Concentrations of modified TPH and BTEX in groundwater samples collected from the seven monitoring wells were below the NSE Tier I EQS of 20 mg/L for all parameters.
- Conductivity in the wells ranged from 400 $\mu\text{S}/\text{cm}$ (MW6) to 3,900 $\mu\text{S}/\text{cm}$ (MW1) in April 2023, and 350 $\mu\text{S}/\text{cm}$ (MW14) to 2,700 $\mu\text{S}/\text{cm}$ (MW1) in October 2023.
- pH values were reported between 6.89 and 7.74.
- Concentrations of arsenic, iron, lead, manganese and zinc in groundwater samples collected from the seven monitoring wells were below the NSE Tier II PSS for groundwater discharging to surface water (marine), where they exist, during either the April or October 2023 sampling events.
- Concentrations of VOCs in groundwater samples collected from MW6 were reported below NSE Tier I EQS.
- For all three surface water sampling locations (TW1, TW3 and TW4) where toxicity testing was completed in April 2023, the laboratory reported 0% Mortality (Pass).

Historic exceedances of metals concentrations in groundwater were documented when results were being compared to the NSE Tier II PSS for groundwater discharging to freshwater surface water (i.e., until 2023); however, these exceedances no longer exist, as NSE has concluded that the portion of the East River adjacent to the site is marine and only the PSS for groundwater discharge to marine surface water apply to the site.

Englobe recommends continuing the monitoring program at the site in April and October 2024 following the same sampling methodology and laboratory analytical program conducted for the 2023 monitoring events, with the exception that hardness analysis can be removed from the program (hardness was used for the adjustment of the NSE Tier II PSS for groundwater discharging to freshwater surface water, which are no longer applicable to the site).

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Englobe Corp.’s subcontractors who have carried out on-site or laboratory work are duly assessed according to the purchase procedure of our quality system. For further information, please contact your project manager.”

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1 Introduction

Englobe Corp. (Englobe) was retained by Build Nova Scotia to undertake semi-annual groundwater monitoring and annual toxicity testing for the Trenton Commercial Park in Trenton, Nova Scotia. The purpose of the work herein by Englobe is to satisfy requirements set out by Nova Scotia Environment and Climate Change (NSE) in their Approval 2020-2690529-00 (dated September 21, 2020). The groundwater program includes semi-annual sampling of seven (7) existing groundwater monitoring wells, laboratory testing for predetermined parameters, interpretation of results and publishing of the data with recommendations as required in an annual report as per Section 10 (Groundwater Monitoring - subsection 10(a), 10(b) and 10(f)). The annual toxicity testing includes the collection of surface water samples from three (3) pre-assigned locations as per Section 7 (subsection 7(b) - toxicity testing only, and 7(c)) of the NSE Approval (Approval 2020-2690529-00, dated September 21, 2020). Site plans showing the Trenton Commercial Park site, monitor well locations and toxicity sample locations are provided in Appendix A.

The Trenton Commercial Park site is located at Civic No. 34 Power Plant Road on the eastern bank of the East River of Pictou County in Trenton, Nova Scotia. It has an approximate area of 0.4 square kilometres and extends almost 1.6 kilometers from end to end. The site is located on the west side of Main Street and the main Canadian National Railway (CNR) rail line and extends adjacent to the waters of the East River. The site slopes downward toward the west-northwest in the southern portion of the site, and toward the northeast in the northern reaches.

Trenton Commercial Park has a history of industrial operations from 1872 until 2016 including steel mill and forge operations, shipbuilding, and wind tower production. The site has operated under several names throughout the years including Hope Iron Works, Nova Scotia Steel Company, Eastern Car Company, DOSCO, Hawker Siddeley Canada Inc., Trenton Works Lavalin Inc., TrentonWorks, and Daewoo Shipbuilding and Marine Engineering (DSME) Trenton; however, the collective legacy industrial lands inhabiting all of these former operations is currently named Trenton Commercial Park. There have been significant changes at the site throughout recent history including the closure of site operations in 2008, and the Industrial Approval for operation of a wind turbine manufacturing facility in 2010; the wind turbine facility ceased operations in February 2016.

2 Background

As discussed by MacGregor and Associates (MacGregor) in their Data Report: Groundwater and Discharge Monitoring - May 2013 - DSTN DSME TRENTON report (dated June 25, 2013), the property at 34 Power Plant Road was used as a railcar manufacturing facility operated by numerous owners from 1875 to May 2007. Between May 2007 and July 2010, the site was closed due to bankruptcy and managed by Ernst Young of Halifax, and in July 2010 DSME Trenton acquired the property from the Province of Nova Scotia. Since then, closure of the Nova Forge site, which shared a portion of the former TrentonWorks property with DSME Trenton, due to a large fire on January 24, 2012, was announced in December 2012. DSME Trenton obtained an Industrial Approval from NSE for 'operating a Windmill Manufacturing Facility where an anodizing process will be carried out' (effective January 1, 2013 and expiry February 27, 2018). We understand that, although the wind turbine facility is no longer in operation and the site was acquired by Build Nova Scotia (then identified as Nova Scotia Lands Inc.), Build Nova Scotia is now responsible for fulfilling the monitoring requirements of the

original NSE Approval. The Approval was reissued by NSE under Approval No. 2020-2690526-00 on September 21, 2020 and is valid through September 21, 2030.

Monthly discharge and semi-annual groundwater monitoring have been conducted on the site since 1996. Previous monitoring at the site has been largely conducted by MacGregor, and their annual reports have been provided to the property owner and to NSE. Since the mid-2000s, Englobe has reviewed many of these historical reports and has been provided the report from MacGregor (June 2013) for our files. Englobe completed the 2014 annual groundwater quality monitoring report for DSME Trenton, which contained data from the 2013 groundwater and toxicity sampling (dated February 4, 2014) and included the MacGregor report as an appendix in the report.

The June 2013 MacGregor report also included analytical results and discussion of effluent sampling at TW1, TW3 and TW4 (April and May 2013) as well as annual toxicity monitoring. These results were required as per Sections 5(c) and 5(d) of the original NSE Approval and were provided in Appendix 2 of the 2013 MacGregor report. However, additional monitoring of TW1, TW3 and TW4 had reportedly been conducted by DSME Trenton personnel and, apart from the annual toxicity testing results, are not included in this 'Groundwater Quality Monitoring' report by Englobe.

Englobe has completed annual groundwater quality monitoring and reporting from 2014 to 2023 (with the exception of 2019) for the former property owner, DSME Trenton, and Build Nova Scotia. The annual groundwater sampling events have historically been conducted in April and October and included the sampling and testing of seven specified groundwater monitor wells with interpretation of the analytical results in an annual report. Toxicity testing of surface water collected at TW1, TW3 and TW4 has also been carried out during the April events. The work was completed to satisfy Section 4 (Groundwater Monitoring) of DSME Trenton's NSE Industrial Approval No. 2010-072182-R02.

Based on the field observations and analytical results obtained during the previous year of monitoring in 2022, the following conclusions and statements on the identification of any groundwater or surface water discharge impacts as a result of site activities during the 2022 calendar year were made (see Englobe's 2022 Annual groundwater Quality Monitoring Report dated April 20, 2023):

- Concentrations of modified TPH and BTEX in groundwater samples collected from the seven monitoring wells did not exceed the NSE Tier I EQS of 20 mg/L for all parameters.
- Conductivity in the wells ranged from 270 $\mu\text{S}/\text{cm}$ (MW6) to 3,800 $\mu\text{S}/\text{cm}$ (MW1) in April 2022, and 300 $\mu\text{S}/\text{cm}$ (MW1) to 5,500 $\mu\text{S}/\text{cm}$ (MW9 and MW11) in October 2022.
- No pH values were reported outside the range of the available NSE Tier II PSS.
- Concentrations of arsenic, lead and zinc in groundwater samples collected from the seven monitoring wells did not exceed the NSE Tier II PSS for groundwater discharging to surface water during either the April or October 2022 sampling events.
- Concentrations of manganese in groundwater samples collected from MW1 in April and October 2022 exceeded the NSE Tier II PSS for groundwater discharging to freshwater surface water. It should be noted that the default criteria for manganese was adjusted via a calculation involving hardness and pH for the 2022 analytical program. MacGregor (June 2013) reported similar manganese concentrations at these locations dating back to at least April 2003, suggesting that elevated manganese concentrations may be the result of historic buried fill materials on site.
- Concentrations of VOCs in groundwater samples collected from MW6 were reported below NSE Tier I EQS.
- For all three surface water sampling locations (TW1, TW3 and TW4) where toxicity testing was completed in April 2022, the laboratory reported 0% Mortality (Pass).

In conclusion, the annual groundwater sampling from 2022 did not identify any impacts resulting from on-site activities.

3 Scope of Work

The purpose of the current work by Englobe is to satisfy requirements set out by NSE in Section 10 (Groundwater Monitoring - subsections 10(a), 10(b) and 10(f)) and Section 7 (subsection 7(b) - toxicity testing only, and 7(c)) of the Approval 2020-2690529-00 (dated September 21, 2020). In the Request for Proposals from Build Nova Scotia, it specified that seven (7) groundwater monitoring wells and three (3) surface water (effluent) locations are to be sampled, followed by laboratory testing for the predetermined parameters on the samples collected from those locations. Interpretation of the analytical results are to be provided in an annual report as per details outlined in selected portions of Section 10 and Section 7 of the Industrial Approval from the NSE (Approval 2020-2690529-00, dated September 21, 2020).

Section 10 of the NSE Approval specifies that seven (7) groundwater monitoring stations identified as MW1, MW3, MW4, MW6, MW9, MW11 and MW14 shall be monitored twice annually, April and October, for the following parameters (as listed in Section 10 subsection (a) of the NSE Industrial Approval):

- Conductivity and pH;
- Total petroleum hydrocarbons (TPH); and
- Metals parameters including iron, zinc, manganese, lead, and arsenic.

According to MacGregor (2013), the groundwater monitoring location identified as MW2 was decommissioned with the approval of NSE in the summer of 2011. Therefore, monitoring well MW2 has not been sampled as part of Englobe's monitoring events since April 2014.

Section 7 of the NSE Approval specifies that acute toxicity shall be monitored on an annual basis during the month of April at the following locations:

- TW-1 (North Weir Discharge);
- TW-3 (Outfall at East River); and
- TW-4 (Theilacker Crane Discharge).

The annual report shall summarize and interpret the groundwater monitoring data and identify any impacts as a result of site activities (during the previous calendar year).

Halocarbons, a class of VOC, were reported by the laboratory in both groundwater samples collected from monitoring well MW6 in 2013. Additional VOC analysis at MW6 was recommended in 2014 but was not approved. TPH and BTEX testing from both events in 2014 and 2015 did not report any halocarbon detections in the groundwater. VOCs were detected in the groundwater at MW6 during the October 2016 sampling event and the spring and fall sampling events in 2017, 2018, 2020, 2021 and 2022; the concentrations identified during these events satisfied the NSE Tier I EQS. VOC assessment in groundwater at MW6 was continued in 2023.

The 2022 monitoring program included the analysis of groundwater samples for hardness, which allows for the adjustment of the NSE Tier II PSS for select metals parameters.

4 Regulatory Framework

Considering current land use, future use of the site and knowledge of local geology, the site has been classified as a commercial site with coarse-grained soil. The site and surrounding area are serviced with municipal water and sewer. Therefore, groundwater results were compared to non-potable guidelines. Site groundwater generally flows west toward East River; this has historically been considered by Englobe to be a freshwater environment that discharges to a marine environment.

In August 2021, NSE provided comments to Build Nova Scotia on Englobe's annual report for the 2020 monitoring program. NSE requested that the results of the 2021 monitoring program be compared to the current and relevant NSE EQS. NSE also indicated that "there are currently discussions underway as to whether the receiving water (East River) is fresh or marine"; as such, comparison to the applicable criteria for groundwater discharging to both freshwater and marine water was provided in the annual reports for the 2021 and 2022 monitoring programs. Additional feedback from NSE came in September 2023 following their review of the 2022 annual report. NSE had concluded that the subject portion of the East River, adjacent to the Trenton Commercial Park, is considered marine; therefore, freshwater criteria are no longer relevant. As such, the results of the 2023 monitoring program are compared to marine criteria only.

4.1 TPH/BTEX

Analytical results for petroleum hydrocarbons in groundwater are compared to:

- 2021 (October 2022 revisions) NSE Tier I EQS for groundwater at a non-potable site with coarse-grained soil and commercial land use.

4.2 Conductivity and pH

There are no available NSE Tier 1 EQS or PSS guidelines for conductivity or pH in groundwater discharging to surface water (marine).

4.3 Metals

Analytical results for metals in groundwater are compared to:

- 2021 NSE PSS for groundwater discharging to marine surface water (>10m).

4.4 Volatile Organic Compounds

Analytical results for VOCs in groundwater are compared to:

- 2021 (October 2022 revisions) NSE Tier I EQS for groundwater at a non-potable site with coarse-grained soil and commercial land use.

5 Methodology

Figures 1 and 2 (Appendix A) show the monitor well and surface water sampling locations. Figure 1 shows the calculated groundwater flow gradient and hydraulic gradient for the April 2023 event; Figure 2 shows the same information for the October 2023 event.

5.1 Groundwater Sampling

On April 26 and October 17, 2023, Englobe personnel conducted monitoring of the specified groundwater wells for static water level and accessed each well for the purpose of sampling for laboratory testing.

Static water levels were measured, and the presence of free product was checked using a Testwell electronic product interface probe. Wells were purged of three well volumes (with Waterra tubing, which was located in some wells, or a new, factory wrapped groundwater bailer) and left to recover. For collection of the water samples for laboratory testing, a 1-litre (1.5" diameter) clear dedicated polyvinyl chloride (PVC) bailer was installed in each well to retrieve the groundwater samples.

In accordance with laboratory protocols, groundwater samples were collected for select metals, conductivity, hardness, pH, TPH/BTEX (Atlantic Partners in RBCA Implementation (PIRI) methodology), and VOC (at MW6 only) analysis.

Water samples were collected in laboratory-supplied containers, placed in cool storage and transported to the Bureau Veritas (BV) laboratory in Bedford, NS for analysis. Metals samples were field-filtered and preserved, and petroleum hydrocarbon samples were methanol preserved.

Due to the presence of free product (resembling lube oil) measured in MW11 during the April/October 2014, June/November 2015, and April/October 2016 monitoring events, samples from MW11 were not collected during those events. Samples were collected from this well during the 2017, 2018, 2020, 2021, 2022, and 2023 sampling events as there was no longer free product observed in this well.

5.2 Surface Water Sampling

On April 26, 2023 samples were collected from the three specified surface water (effluent) locations for the purpose of toxicity testing. For collection of the water samples, 20-litre buckets and liners (supplied by the laboratory) were used. The samples were delivered on the same day as they were collected to Harris Industrial Testing Service Ltd. in Waverley, NS for toxicity testing (96-hour single concentration acute lethality test using method EPS 1/RM/13 2nd Edition Dec. 2000 with Feb. 2016 Amendments).

5.3 Quality Assurance/Quality Control

During the collection, handling and transport of all quality assurance/quality control (QA/QC) samples the same protocols and best practices employed during sample collection were used.

Field duplicates were collected for groundwater (DUP1) (equivalent to approximately 10% of the samples collected). Field duplicates were collected at the same time as the corresponding primary samples.

Equipment blanks were collected by swirling the interface probe in a newly opened container of distilled water and pouring the water into laboratory supplied containers. Trip blanks consisted of

sample bottles prefilled with distilled deionized water provided by BV and transported with the site samples. All Englobe QA/QC samples were blind labelled prior to submission to the laboratory. The results of the QA/QC program are discussed in Section 7.3

Table 5-1 shows the duplicates collected, their collection location and analyses conducted.

Table 5-1: Summary of QA/QC Program Samples

Sample ID	Duplicate ID	SAMPLE DATE	Parameter
MW14	DUP1	26 April 2023	TPH/BTEX, metals, conductivity, hardness, pH
DUP1	Dup1 Lab-Dup	26 April 2023	Conductivity, pH
Equipment Blank	-	26 April 2023	TPH/BTEX, metals, conductivity, hardness, pH
Trip Blank	-	26 April 2023	TPH/BTEX, metals, conductivity, hardness, pH
MW3	DUP1	17 October 2023	TPH/BTEX, metals, conductivity, hardness, pH
MW14	MW14 Lab-Dup	17 October 2023	TPH
Equipment Blank	-	17 October 2023	TPH/BTEX, metals, conductivity, hardness, pH
Trip Blank	-	17 October 2023	TPH/BTEX, metals, conductivity, hardness, pH

6 Field Observations

During the site work, all monitoring wells appeared to be in good condition. Groundwater levels measured and observations made at each location (current and historical) are provided in Table B-1, Appendix B. It should be noted that the top of casing (TOC) elevations for MW11 and MW14 were not recorded in the Stantec Phase II ESA. Therefore, only the groundwater level below TOC is provided.

During the April and October 2023 sampling events, all monitor wells were observed to be protected against tampering with locked covers, as per the NSE Approval Section 10 (g).

Free product was not detected in any of the monitor wells.

7 Analytical Results

7.1 Groundwater Analytical Results

Groundwater analytical results are compared with the guidelines as listed in section 4. PHCs for each monitoring well are presented in Tables 1A through 7A (Appendix C). General chemistry results (pH, hardness and conductivity) and select metals parameters (iron, zinc, manganese, lead and arsenic) are presented in Tables 1B through 7B (Appendix C). VOC analytical results (for MW6 only) are presented in Table 4C (Appendix C). Where ranges of concentrations are stated in the report, the highest of the sample result or its duplicate (if applicable) is included.

The tables include both the April and October 2023 analytical results (collected and reported by Englobe) as well as the historical results from previous sampling events completed by others (2010 and 2013) and Englobe (2014 to 2021). Copies of the laboratory certificates for the 2023 sampling events are provided in Appendix D.

7.1.1 TPH/BTEX

Concentrations of modified TPH in groundwater collected from MW3, MW4, MW6 and MW14 were reported as below the laboratory detection limit (0.090 mg/L) and below the NSE Tier I EQS during both the April and October 2023 sampling events.

Concentrations of modified TPH in groundwater collected from MW1, MW9 and MW11 ranged from 0.24 mg/L (MW9 in April) to 13 mg/L (MW1 in October).

Modified TPH concentrations in all groundwater samples collected from the seven monitoring wells were below the NSE Tier I EQS of 20 mg/L.

Concentrations of BTEX in groundwater samples collected from MW3, MW4, MW6, MW9, MW11, and MW14 were reported as below the laboratory detection limits (0.0010 or 0.0020 mg/L) and below the NSE Tier I EQS during both the April and October 2023 sampling events.

BTEX concentrations in the samples collected from MW1 in April and October 2023 were reported above the laboratory detection limits but below the NSE Tier I EQS.

7.1.2 Conductivity and pH

There are no available and applicable guidelines for conductivity and pH in groundwater. Conductivity in the wells ranged from 400 $\mu\text{S}/\text{cm}$ (MW6) to 3,900 $\mu\text{S}/\text{cm}$ (MW1) in April 2023, and 350 $\mu\text{S}/\text{cm}$ (MW14) to 2,700 $\mu\text{S}/\text{cm}$ (MW1) in October 2023. In April 2023, pH ranged from 7.12 (MW4) to 7.74 (MW6), while in October 2023, the pH ranged from 6.89 (MW4) to 7.64 (MW9).

7.1.3 Metals

There are no NSE Tier I EQS for metals in groundwater at non-potable sites. Groundwater results for arsenic, iron, lead, manganese and zinc have been compared to NSE Tier II PSS for groundwater discharging to marine surface water. These results are tabulated in Tables 1B through 7B (Appendix C) and discussed below.

7.1.3.1 Arsenic

In April 2023, arsenic was reported at less than laboratory detection limits ($<1.0 \mu\text{g}/\text{L}$) in groundwater collected from MW3, MW6, MW11 and MW14. Arsenic was reported at $4.1 \mu\text{g}/\text{L}$ at MW1, $1.6 \mu\text{g}/\text{L}$ at MW4 and $1.9 \mu\text{g}/\text{L}$ at MW9.

In October 2023, arsenic was reported as less than laboratory detection limits ($<1.0 \mu\text{g}/\text{L}$) in groundwater collected from MW3, MW4, MW6, MW9 and MW14. Arsenic ranged from $8.8 \mu\text{g}/\text{L}$ (MW1) to $1.2 \mu\text{g}/\text{L}$ (MW11).

Concentrations of arsenic in groundwater samples collected from the seven monitoring wells were below the NSE Tier II PSS for groundwater discharging to marine surface water ($125 \mu\text{g}/\text{L}$) during the April and October 2023 sampling events.

7.1.3.2 Iron

In April 2023, iron was reported as less than laboratory detection limits ($<50 \mu\text{g}/\text{L}$) in groundwater collected from MW6 and MW14. Detected concentrations of iron in groundwater samples collected in April 2023 ranged from $650 \mu\text{g}/\text{L}$ (MW9) to $23,000 \mu\text{g}/\text{L}$ (MW1).

In October 2023, iron was reported as less than laboratory detection limits ($<50 \mu\text{g}/\text{L}$) in groundwater collected from MW6 and MW14. Detected concentrations of iron in groundwater samples collected in October 2023 ranged from $76 \mu\text{g}/\text{L}$ (MW4) to $11,000 \mu\text{g}/\text{L}$ (MW1).

No NSE Tier II PSS exists for iron in groundwater discharging to marine surface water.

7.1.3.3 Lead

Concentrations of lead in all groundwater samples collected from the seven monitoring wells in April 2023 were reported as less than laboratory detection limits (<0.50 µg/L).

Concentrations of lead in all groundwater samples collected from the seven monitoring wells in October 2023 were reported as less than laboratory detection limits (<0.50 µg/L).

Concentrations of lead in all groundwater samples were below the NSE Tier II PSS for groundwater discharging to marine surface water (20 µg/L) during both the April and October 2023 sampling events.

7.1.3.4 Manganese

Concentrations of manganese in groundwater samples collected in April 2023 ranged from 2.5 µg/L (MW6) to 22,000 µg/L (MW1).

Concentrations of manganese in groundwater samples collected in October 2023 ranged from 30 µg/L (MW9) to 13,000 µg/L (MW1).

No NSE Tier II PSS exists for manganese in groundwater discharging to marine surface water.

7.1.3.5 Zinc

In April 2023, detected concentrations of zinc in groundwater samples collected in April 2023 ranged from 5.2 µg/L (MW6) to 48 µg/L (MW4).

In October 2023, zinc was reported as less than laboratory detection limits (<5 µg/L) in groundwater collected from MW11. Detected concentrations of manganese in groundwater samples collected in October 2023 ranged from 6.2 µg/L (MW6) to 70 µg/L (MW4).

Concentrations of zinc in groundwater samples collected from the seven monitoring wells were below the NSE Tier II PSS for groundwater discharging to marine surface water (100 µg/L) during both the April and October 2023 sampling events.

7.1.4 VOCs

Concentrations of VOCs in groundwater samples collected from MW6 were reported as below laboratory detection limits with the exception of cis-1,2-dichloroethylene (1.8 µg/L in April and 8.1 µg/L in October, both below the NSE Tier I EQS of 4,600 µg/L), trichloroethylene (14 µg/L in April and 26 µg/L in October, both below the NSE Tier I EQS of 110 µg/L), and vinyl chloride (0.65 µg/L in April and 4.6 µg/L October, both below the NSE Tier 1 EQS of 99 µg/L).

7.1.5 Trends Discussion for Exceedances

7.1.5.1 Modified TPH (Exceeding NSE Tier I EQS)

Concentrations at MW1 were similar to those reported in previous sampling, with a slight overall downward trend observed from a high of 35 mg/L in 2010 to the 12 and 13 mg/L observed in April and October 2023.

At MW9, the concentration of modified TPH identified in October 2023 was higher than those reported during all monitoring programs from 2013 to 2022. Modified TPH concentrations at MW9 have consistently been significantly lower (i.e., ranging from 0.11 to 2.6 mg/L) than the maximum concentration of 68 mg/L documented in 2010 and the concentration identified in October 2023 (7.5 mg/L).

At MW11, free product was observed in groundwater during all monitoring events from 2013 to 2016. Concentrations of modified TPH identified in 2023 (2.4 and 2.5 mg/L) were similar to those reported since 2017 and slightly higher than those reported in 2022 (1.3 and 1.5 mg/L).

7.1.5.2 Iron (Exceeding NSE Tier II PSS)

Historically, concentrations of iron in groundwater at MW1, MW3 and MW11 have fluctuated somewhat during monitoring events at the site but have generally been above the NSE Tier II PSS (discharge to freshwater). However, since only the PSS for discharge to marine water are now applicable, iron exceedances no longer exist.

7.1.5.3 Manganese (Exceeding NSE Tier II PSS)

Historically, concentrations of manganese in groundwater at MW1 and MW4 have fluctuated somewhat during monitoring events at the site. Manganese has consistently exceeded the NSE Tier II PSS (discharge to freshwater) at MW1 and has mostly exceeded the PSS at MW4. However, since only the PSS for discharge to marine water are now applicable, manganese exceedances no longer exist.

7.2 Toxicity Testing Results

The NSE Approval indicates that samples collected for toxicity must “Pass” a 96-hour static fish toxicity test.

For all three locations tested (TW1, TW3 and TW4) in April 2023, the laboratory reported 0% Mortality (Pass). The laboratory certificates are provided in Appendix D.

7.3 Quality Assurance/Quality Control results

BV conducts their own internal QA/QC programs consistent with relevant standards and requirements for laboratory certification. The measured values and recoveries are compared to acceptable lower and upper limits. Englobe reviewed the results to verify that the sample result was representative of the QA/QC sample result.

Englobe also reviewed the results of the QA/QC blind field duplicate samples to verify that results were within the acceptable relative percent difference (RPD) ranges. RPD is defined as:

$$RPD = \frac{(\text{sample result} - \text{duplicate result})}{\frac{(\text{sample result} + \text{duplicate result})}{2}} \times 100$$

The laboratories have established criteria for performing QA/QC on field collected samples and states that no field duplicate pair should have an RPD greater than:

- 40% for general chemistry parameters in water
- 40% for individual metals in water
- 40% for other organic compounds (TPH/BTEX) in water

Tables 8A to 8C (Appendix C) provide a summary of the RPD results for the field and laboratory duplicate samples collected for analysis; it should be noted that RPDs are not calculated in instances where the analyzed parameters in the primary sample, the field duplicate, or both were found to be below the reportable detection limit (RDL) of the laboratory or less than five times the RDL. RPD values were within of the acceptable range in all field duplicates analyzed.

Tables 9 and 10 (Appendix C) provide a summary of the results for the equipment and trip blank samples analysed by BV. BV quality assurance reports were also reviewed for all analyses performed. Method blank, matrix spike and spiked blank results were within accepted laboratory limits.

8 Conclusions

Based on the field observations and analytical results obtained, we make the following conclusions and statements on the identification of any groundwater or surface water discharge impacts as a result of site activities completed by Englobe during the 2023 calendar year:

- Concentrations of modified TPH and BTEX in groundwater samples collected from the seven monitoring wells were below the NSE Tier I EQS of 20 mg/L for all parameters.
- Conductivity in the wells ranged from 400 $\mu\text{S}/\text{cm}$ (MW6) to 3,900 $\mu\text{S}/\text{cm}$ (MW1) in April 2023, and 350 $\mu\text{S}/\text{cm}$ (MW14) to 2,700 $\mu\text{S}/\text{cm}$ (MW1) in October 2023.
- pH values were reported between 6.89 and 7.74.
- Concentrations of arsenic, iron, lead, manganese and zinc in groundwater samples collected from the seven monitoring wells were below the NSE Tier II PSS for groundwater discharging to surface water (marine), where they exist, during either the April or October 2023 sampling events.
- Concentrations of VOCs in groundwater samples collected from MW6 were reported below NSE Tier I EQS.
- For all three surface water sampling locations (TW1, TW3 and TW4) where toxicity testing was completed in April 2023, the laboratory reported 0% Mortality (Pass).

Historic exceedances of metals concentrations in groundwater were documented when results were being compared to the NSE Tier II PSS for groundwater discharging to freshwater surface water (i.e., until 2023); however, these exceedances no longer exist, as NSE has concluded that the portion of the East River adjacent to the site is marine and only the PSS for groundwater discharge to marine surface water apply to the site.

9 Recommendations

Englobe recommends continuing the monitoring program at the site in April and October 2024 following the same sampling methodology and laboratory analytical program conducted for the 2023 monitoring events, with the exception that hardness analysis can be removed from the program (hardness was used for the adjustment of the NSE Tier II PSS for groundwater discharging to freshwater surface water, which are no longer applicable to the site).

10 Report Use and Conditions

This report was prepared for the exclusive use of Build Nova Scotia and is based on data and information obtained during site visits by Englobe Corp. personnel in April and October 2023 for the purpose of collection of groundwater samples from seven existing monitoring wells and surface water discharge from three sampling locations. The report is based solely upon the condition of the property on the dates of such site visits, supplemented by information obtained and described herein including tabulation and interpretation of selected laboratory groundwater and surface water toxicity analyses.

The scope of the services performed may not be appropriate to satisfy the needs of third parties. Any use which a third party makes of this report, or any reliance on or decisions made based on it, is the sole responsibility of the third party. Englobe Corp. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The statements and conclusions presented in this report are professional opinions based upon visual observations made during the scope of work identified herein.

Environmental conditions are dynamic in nature and changing circumstances in the environment and in the use of the property can alter radically the conclusions and information contained herein.

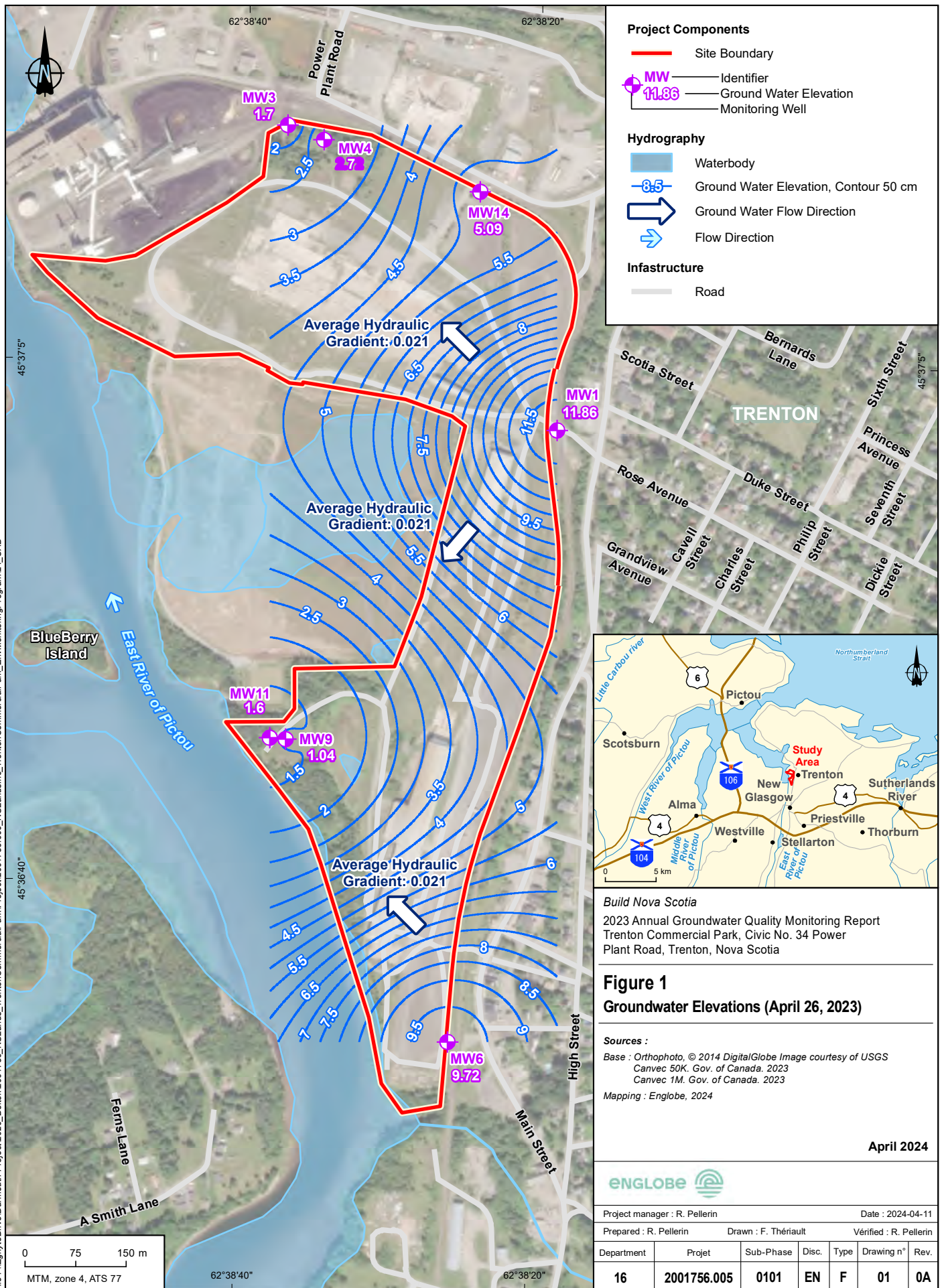
Appendix A

Site Figures

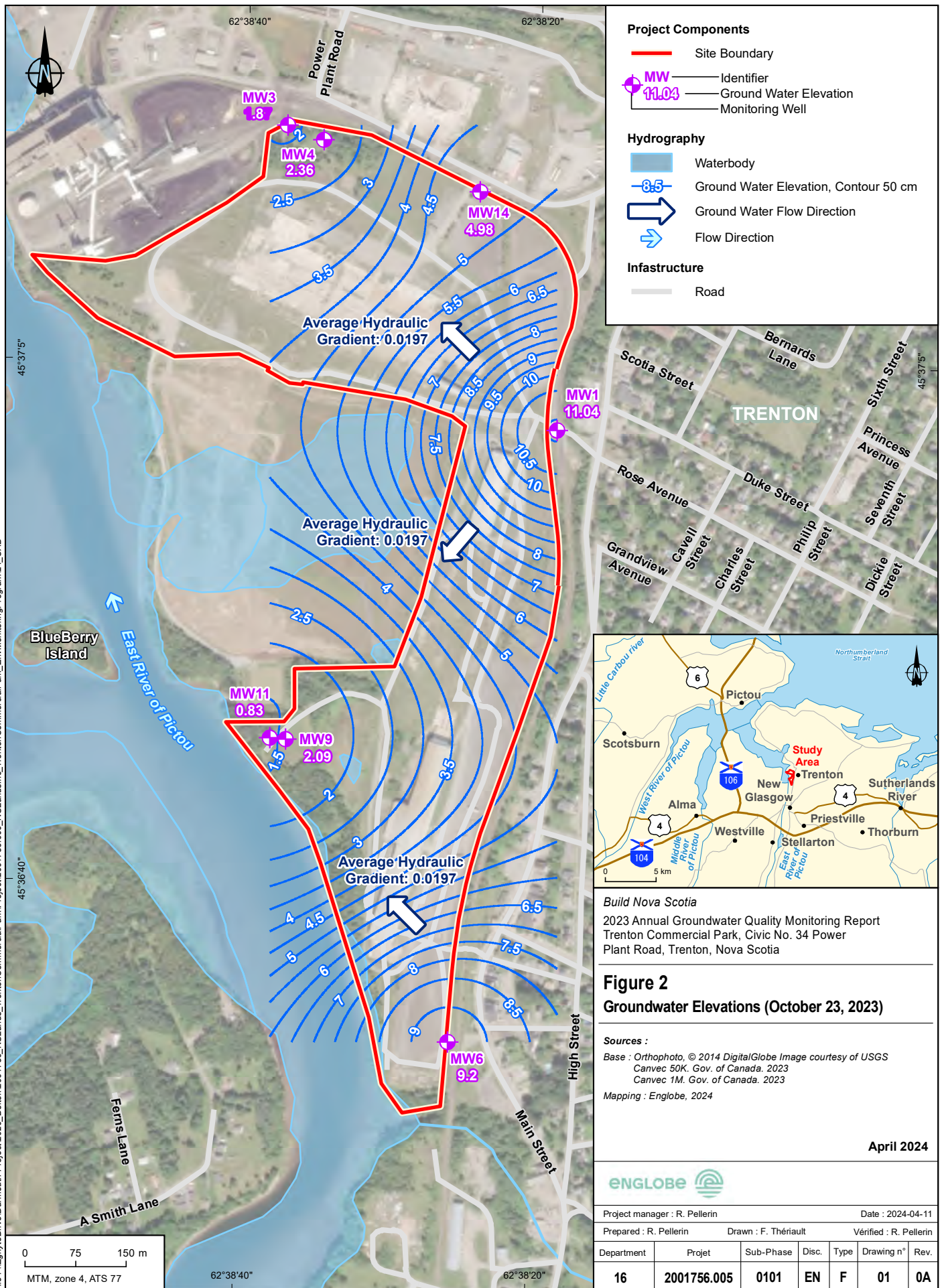


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Appendix B

Groundwater Field Observations



eNGLOBE

TABLE B-1: Groundwater Field Observations

Client: Build Nova Scotia

Site Location: Civic No. 34 Power Plant Road, Trenton, NS

Englobe Project No.: 2001756.004

Date	Field Observations						
	Location						
	MW1	MW3	MW4	MW6	MW9	MW11	MW14
May 21, 2013	-	-	-	-	-	-	-
October 25, 2013	Gasoline odour, light grey in colour, minor sediment	Dark grey in colour, silty, groundwater was light grey upon sampling	Light brown in colour, silty, light brown upon sampling	Clear, minor sediment noted	Petroleum sheen present, brown in colour, abundant iron flocculants, groundwater clear upon sampling	Free product (10mm)	Light brown in colour, silty, clear upon sampling
April 23, 2014	Dark grey to black, PHC odour and sheen	Dark grey to black, minor silt, no sheen	Light brown, silty, no sheen	Mostly clear	Red-brown, PHC odour and sheen, iron flocculants present	Free product (20mm)	Light brown, silty, no sheen
October 30, 2014	Dark grey to black, PHC odour and sheen	Dark grey to black, minor silt, no sheen	Light brown, silty, no sheen	Mostly clear	Red-brown, PHC odour and sheen, iron flocculants present	Free product (5mm)	Light brown, silty, no sheen
June 24, 2015	Mild PHC odour in sample	Discolored sample (Grey/black)	Discolored sample (Brown/red), heavy silt	Clear sample	Clear sample	Free product (1-2mm)	Clear sample
November 12, 2015	Strong PHC odour in sample	Significant sediment visible	Significant sediment visible	Clear sample	Clear sample, sulphur odour	Free product (2mm)	Clear sample
April 26, 2016	-	-	-	-	-	Free product (1-2mm)	-
October 24, 2016	-	-	-	-	-	Free product (1-2mm)	-
April 24, 2017	PHC odour	Silty	Silty	-	-	-	-
October 12, 2017	PHC odour	Silty	Silty	-	-	-	-
April 9, 2018	PHC odour	Silty	Silty	-	-	-	-
October 11, 2018	PHC odour	Silty	Silty	-	-	-	-
May 28, 2020	PHC odour	Silty	Silty	Sheen	Silty	PHC odour, sheen	-
October 28, 2020	PHC odour	Silty	Silty	-	PHC odour	PHC odour, sheen	-
April 28, 2021	Strong PHC odour	Black, organic odour	Light brown	Slight sheen	Light brown	PHC sheen	-
October 20, 2021	PHC odour and sheen	Sheen	Silty	-	PHC odour	PHC odour, sheen	-
April 28, 2022	Strong PHC odour, sheen, grey colour, trace silt.	Black, organic odour, silty. Area flooded in early spring	Brown, very silty.	Silty. PVC hammered down below steel casing.	PHC odour, heavy sheen, silty. Clear on sampling.	Black substance in MW, floating solids, clear to orange in colour. No PVC in well?	Brown, silty. PVC hammered down and flushmount reinstalled.
October 17, 2022	PHC odour, grey colour, silty	Brown, silty	Brown, silty	Brown, silty	Brown, silty	Floating solids, clear	Black, silty
April 26, 2023	Strong fuel/gasoline odour, clear	Brown, silty	Brown, silty	Brown, silty	Clear	Clear, trace silt	Brown, silty
October 17, 2023	Strong PHC odour, sheen. Slightly hazy.	Slightly hazy	Brown, silty	Slightly hazy	Faint PHC odour, slightly hazy	Yellow, silty, minor sheen, organit matter floating in water in bailer.	Slightly hazy

TABLE B-2: Groundwater Levels

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.004

Date	Measurement	Location						
		MW1	MW3	MW4	MW6	MW9	MW11	MW14
Ground Surface Elevation (masl) ¹		13.51	1.84	4.27	10.23	3.47	2.11	7.75
Top of Casing Elevation (masl) ¹		14.01	2.35	5.10	11.31	3.97	2.94	7.65
April 19, 2010	Depth to GW	2.63	1.71	3.76	2.88	2.84	-	2.77
	GW Elevation	11.38	0.64	1.34	8.43	1.13	-	4.88
May 21, 2013	Depth to GW	-	-	-	-	-	-	-
	GW Elevation	-	-	-	-	-	-	-
October 25, 2013	Depth to GW	3.91	1.66	3.39	2.52	2.86	2.74	2.77
	GW Elevation	10.10	0.69	1.70	8.79	1.11	0.20	4.89
April 23, 2014	Depth to GW	2.10	1.67	3.29	2.60	2.96	2.52	2.23
	GW Elevation	11.91	0.68	1.81	8.71	1.01	0.42	5.42
October 30, 2014	Depth to GW	4.87	1.50	3.37	2.47	3.01	2.75	2.87
	GW Elevation	9.14	0.85	1.73	8.84	0.96	0.19	4.78
June 24, 2015	Depth to GW	2.45	1.41	3.07	2.33	2.00	2.47	2.20
	GW Elevation	11.56	0.93	2.02	8.98	1.97	0.48	5.45
November 12, 2015	Depth to GW	4.60	1.68	3.41	2.64	3.22	2.88	2.99
	GW Elevation	9.41	0.67	1.69	8.67	0.75	0.06	4.66
April 26, 2016	Depth to GW	1.89	1.64	3.23	2.52	2.90	2.60	2.17
	GW Elevation	12.12	0.71	1.87	8.79	1.07	0.34	5.48
October 24, 2016	Depth to GW	3.00	3.22	1.44	2.38	2.67	2.58	2.85
	GW Elevation	11.01	-0.87	3.66	8.93	1.30	0.36	4.80
April 24, 2017	Depth to GW	2.29	1.59	3.42	2.67	3.15	2.73	2.73
	GW Elevation	11.72	0.76	1.68	8.64	0.82	0.21	4.92
October 12, 2017	Depth to GW	4.01	1.66	3.43	2.64	3.25	2.87	3.15
	GW Elevation	10.00	0.69	1.67	8.67	0.72	0.07	4.50
April 9, 2018	Depth to GW	2.83	1.15	2.98	2.57	2.64	2.68	2.51
	GW Elevation	11.18	1.20	2.12	8.74	1.33	0.26	5.14
October 11, 2018	Depth to GW	4.00	1.66	3.44	2.75	3.23	2.93	3.09
	GW Elevation	10.01	0.69	1.66	8.56	0.74	0.01	4.56
May 28, 2020	Depth to GW	2.58	2.56	3.52	2.66	4.2	2.66	2.59
	GW Elevation	11.43	-0.21	1.58	8.65	-0.23	0.28	5.06
October 28, 2020	Depth to GW	4.58	1.63	3.50	2.92	3.99	3.08	3.18
	GW Elevation	9.43	0.72	1.60	8.39	-0.02	-0.14	4.47
April 28, 2021	Depth to GW	2.64	1.57	3.28	2.67	3.09	2.44	2.45
	GW Elevation	11.37	0.78	1.82	8.64	0.88	0.50	5.20
October 20, 2021	Depth to GW	3.91	1.57	3.36	2.43	2.96	2.65	2.81
	GW Elevation	10.10	0.78	1.74	8.88	1.02	0.29	4.84
April 28, 2022	Depth to GW	1.30	0.30	2.11	1.32	2.39	1.62	2.19
	GW Elevation	12.71	2.05	2.99	9.99	1.58	1.32	5.46
October 17, 2022	Depth to GW	3.66	1.78	3.48	2.71	3.25	2.85	2.87
	GW Elevation	10.35	0.57	1.62	8.60	0.73	0.10	4.79
April 26, 2023	Depth to GW	2.15	0.65	2.38	1.59	2.37	1.90	2.57
	GW Elevation	11.86	1.70	2.72	9.72	1.60	1.04	5.09
Oct-23	Depth to GW	2.97	0.48	2.74	2.11	1.88	2.11	2.67
	GW Elevation	11.04	1.87	2.36	9.20	2.09	0.83	4.98

Notes:
masl - meters above sea level
Depth to Groundwater - meters below top of casing (mbTOC)
¹ Ground surface and Top of Casing elevations (masl) acquired by Englobe on October 17, 2022.

Appendix C

Analytical Tables



eNGLOBE

TABLE 1A: PETROLEUM HYDROCARBON COMPOUNDS in Groundwater (MW1)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	NSE Tier I EQS ¹	MW1											
				2010	2013		2014		2015		2016		2017		
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	Lab-Dup	12-Oct-17
BTEX	Benzene	mg/L	6.3	<0.001	0.016	<0.025	<0.025	0.03	0.01	0.028	<0.010	0.012	<0.010	-	<0.050
	Toluene	mg/L	20	0.23	0.1	0.1	0.071	0.085	0.039	0.06	0.043	0.029	0.024	-	<0.050
	Ethylbenzene	mg/L	20	4.0	2.3	2.2	1.9	1.8	2.0	1.7	1.8	0.99	1.5	-	1.4
	Xylenes	mg/L	20	8.9	3.6	3.3	2.7	2.7	1.7	2.3	2.0	1.3	1.5	-	2.0
Modified TPH	Gas Range	mg/L	-	31	17	18	15	15	16	15	14	12	13	-	14
	Fuel Range (C10-C16)	mg/L	-	4.1	2.4	1.9	2.5	2.3	1.9	2.3	2.8	3.0	2.7	2.7	4.1
	Fuel Range (>C16-C21)	mg/L	-		0.066	<0.050	<0.050	<0.050	0.054	<0.050	<0.050	<0.050	<0.050	<0.050	0
	Lube Range (>C21-C32)	mg/L	-	<0.1	0.5	<0.10	<0.10	<0.10	0.15	<0.10	0.13	<0.10	<0.10	<0.10	0.28
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	35	20	20	17	17	19	17	17	15	15	-	19
Product Resemblance		-	-	One product in the gas/fuel oil range.	Gasoline fraction. Lube oil fraction.	Gasoline fraction.	One product in the gasoline range.	One product in the gas/fuel oil range.	One product in the gas/fuel oil range.	One product in the gas/fuel oil range.	One product in the gas/fuel oil range.	Gasoline fraction.	One product in the gasoline range.	-	One product in the gas/fuel oil range.

Parameter		Units	NSE Tier I EQS ¹	MW1											
				2018			2020		2021			2022		2023	
				9-Apr-18	Lab-Dup	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	MW-DUP	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
BTEX	Benzene	mg/L	6.3	<0.025	-	<0.010	<0.0030	0.009	<0.0040	<0.0050	0.0063	<0.0030	<0. 0060	<0.0030 (1)	0.0038
	Toluene	mg/L	20	<0.025	-	0.02	0.0089	0.014	0.009	0.012	0.016	0.0073	0.019	0.0097	0.014
	Ethylbenzene	mg/L	20	0.86	-	0.89	0.79	0.87	0.81	0.68	0.82	0.77	0.62	0.52	0.62
	Xylenes	mg/L	20	1.0	-	1.2	0.79	1.0	0.77	0.72	0.89	0.72	0.73	0.52	0.62
Modified TPH	Gas Range	mg/L	-	7.6	-	12	10	12	9.4	9	8.7	11	8.8	9.6	11
	Fuel Range (C10-C16)	mg/L	-	2.3	2.3	2.4	2.5	2.7	2.2	2.8	2.5	3.5	2.7	2.6	2.2
	Fuel Range (>C16-C21)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.055	0.050	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	-	<0.10	<0.10	0.17	0.092	0.11	0.14	<0.090	0.093	0.1	<0.090	<0.090	<0.090
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	9.9	-	15	13	14	12	12	11	15	12	12	13
Product Resemblance		-	-	One product in the gasoline/fuel range.	-	One product in the gas/fuel oil range. Possible lube oil fraction.	One product in the gas/fuel oil range. Possible lube oil fraction.	One product in the gas/fuel oil range. Unidentified compound(s) in lube oil fraction.	One product in the gas/fuel oil range. Possible lube oil fraction.	One product in the gas/fuel oil range.	One product in the gas/fuel oil range.	One product in the gas/fuel oil range.	One product in the gas/fuel oil range.	One product in the gas/fuel oil range.	One product in the gas/fuel oil range.

Notes:

(1) Elevated VPH RDL(s) due to matrix interference.

value	- exceeds NSE EQS
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.

TABLE 1B: CONDUCTIVITY, pH and METALS in Groundwater (MW1)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW1										
				2010	2013		2014		2015		2016		2017	
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17
Laboratory Conductivity	µS/cm	-	-	-	3100	2300	4100	3500	4800	4300	4600	3500	3,500.00	3100
Field Conductivity	µS/cm													-
Laboratory pH	Units	-	-	-	7.37	7.30	6.97	7.23	7.16	7.17	7.06	7.04	7.02	7.43
Field pH	Units	-	-	-	-	-	7.07	-	-	-	-	-	-	-
Hardness	mg/L												-	-
Metals														
Dissolved Arsenic (As)	ug/L	-	125	-	<1.0	17	3.2	14	1.8	22	2.4	18	3	3.2
Dissolved Iron (Fe)	ug/L	-	-	-	<50	6500	24000	10000	29000	24000	31000	17000	17000	11000
Dissolved Lead (Pb)	ug/L	-	20	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	-	37200	21000	61000	30000	53000	37000	46000	22000	26000	17000
Dissolved Zinc (Zn)	ug/L	-	100	-	<5.0	<5.0	5.2	<5.0	20	<5.0	9.5	7.2	<5.0	<5.0

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW1										
				2018		2020		2021			2022		2023	
				9-Apr-18	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	MW-DUP	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
Laboratory Conductivity	µS/cm	-	-	3300	3800	4100	3300	3400	4000	3900	3800	3000	3900	2700
Field Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	4790	3040	2751	2620
Laboratory pH	Units	-	-	7.11	6.89	7.01	7.03	7.23	7.21	7.27	7.65	7.84	7.61	7.54
Field pH	Units	-	-	-	-	-	-	-	-	-	6.88	7.01	6.92	6.94
Hardness	mg/L	-	-	-	-	-	-	-	-	-	160	95	160	95
Metals														
Dissolved Arsenic (As)	ug/L	-	125	6.5	21	1.0	3.1	2.3	3.7	14	3.8	11	4.1	8.8
Dissolved Iron (Fe)	ug/L	-	-	14000	19000	24000	14000	20000	20000	19000	22000	11000	23000	11000
Dissolved Lead (Pb)	ug/L	-	20	0.76	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	23000	29000	31000	15000	23000	21000	21000	22000	12000	22000	13000
Dissolved Zinc (Zn)	ug/L	-	100	23	<5.0	7.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7	32

Notes:

value	- exceeds NSE EQS
value	- exceeds NSE PSS for marine water
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.
² 2021 Nova Scotia Environment and Climate Change (NSE) Tier II Pathway-Specific Standards (PSS) for groundwater discharging to marine surface water (>10m)

TABLE 2A: PETROLEUM HYDROCARBON COMPOUNDS in Groundwater (MW3)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	NSE Tier I EQS ¹	MW3										
				2010	2013		2014		2015		2016		2017	
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17
BTEX	Benzene	mg/L	6.3	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	0.01	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	0.002	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	0.01	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Fuel Range (C10-C16)	mg/L	-	<0.05	0.16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	-		0.16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	-	<0.1	0.40	<0.10	<0.10	<0.10	<0.10	<0.10	0.1	<0.10	0.11	0.13
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.1	<0.10	0.11	0.13
Product Resemblance		-	-	-	One product in fuel oil range. Lube oil fraction.	-	-	-	-	-	Possible lube oil fraction.	-	Lube oil fraction.	Possible lube oil fraction

Parameter		Units	NSE Tier I EQS ¹	MW3									
				2018		2020		2021		2022		2023	
				9-Apr-18	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
BTEX	Benzene	mg/L	6.3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.010	<0.010	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
	Fuel Range (C10-C16)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.051	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	-	<0.10	<0.10	<0.090	<0.090	<0.090	<0.090	<0.090	0.15	<0.090	<0.090
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	<0.10	<0.10	<0.090	<0.090	<0.090	<0.090	<0.090	0.2	<0.090	<0.090
Product Resemblance		-	-	-	-	-	-	-	-	-	Possible lube oil fraction.	-	-

Notes:

value	- exceeds NSE EQS
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.

TABLE 2B: CONDUCTIVITY, pH and METALS in Groundwater (MW3)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW3											
				2010	2013		2014		2015			2016		2017	
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	Lab-Dup	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17
Laboratory Conductivity	µS/cm	-	-	590	640	560	510	440	520	610	-	620	520.00	620	570
Field Conductivity	µS/cm			-	-	-	-	-	-	-	-	-	-	-	-
Laboratory pH	Units	-	-	6.65	6.99	6.82	6.77	6.92	7.40	6.97	-	7.28	7.02	6.92	6.95
Field pH	Units	-	-	-	-	-	7.11	6.79	-	-	-	-	-	-	-
Hardness	mg/L			-	-	-	-	-	-	-	-	-	-	-	-
Metals															
Dissolved Arsenic (As)	ug/L	-	125	5	<1.0	8.9	2.2	1.6	1.6	2.7	2.6	1.5	1.9	3.3	4.4
Dissolved Iron (Fe)	ug/L	-	-	8300	<50	2400	880	2100	3700	6400	6300	3500	4200	8400	8300
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	2800	3270	3400	2800	1500	2400	2700	2700	2300	2000	2900	2900
Dissolved Zinc (Zn)	ug/L	-	100	20	42	11	16	20	37	38	39	17	15	28	11

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW3									
				2018		2020		2021		2022		2023	
				9-Apr-18	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
Laboratory Conductivity	µS/cm	-	-	700	630	820	680	870	480	940	740	1800	610
Field Conductivity	µS/cm			-	-	-	-	-	-	1535	790	2001	1122
Laboratory pH	Units	-	-	7.02	6.77	6.99	6.91	6.97	7.28	7.51	7.42	7.4	7.31
Field pH	Units	-	-	-	-	-	-	-	-	6.86	6.67	6.63	6.48
Hardness	mg/L			-	-	-	-	-	-	96	130	270	71
Metals													
Dissolved Arsenic (As)	ug/L	-	125	2.3	4.3	3.7	2.0	1.4	2.3	<1.0	17	<1.0	<1.0
Dissolved Iron (Fe)	ug/L	-	-	7400	9200	<50	9400	4400	3100	1500	7400	3300	980
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	3200	3200	4500	5700	3600	3300	1400	3000	4700	1500
Dissolved Zinc (Zn)	ug/L	-	100	17	6.3	24	<5.0	14	7.8	16	8.6	34	14

Notes:

value	- exceeds NSE EQS
value	- exceeds NSE PSS for marine water
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.
² 2021 Nova Scotia Environment and Climate Change (NSE) Tier II Pathway-Specific Standards (PSS) for groundwater discharging to marine surface water (>10m)

TABLE 3A: PETROLEUM HYDROCARBON COMPOUNDS in Groundwater (MW4)

Client: Nova Scotia Lands Inc.
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	NSE Tier I EQS ¹	MW4										
				2010	2013		2014		2015		2016		2017	
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17
BTEX	Benzene	mg/L	6.3	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Fuel Range (C10-C16)	mg/L	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Product Resemblance		-	-	-	-	-	-	-	-	-	-	-	-	-

Parameter		Units	NSE Tier I EQS ¹	MW4									
				2018		2020		2021		2022		2023	
				9-Apr-18	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	4-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
BTEX	Benzene	mg/L	6.3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.010	<0.010	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
	Fuel Range (C10-C16)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	-	<0.10	<0.10	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	<0.10	<0.10	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Product Resemblance		-	-	-	-	-	-	-	-	-	-	-	-

Notes:

value	- exceeds NSE EQS
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.

TABLE 3B: CONDUCTIVITY, pH and METALS in Groundwater (MW4)

Client: Nova Scotia Lands Inc.
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW4										
				2010	2013		2014		2015		2016		2017	
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17
Laboratory Conductivity	µS/cm	-	-	-	710	420	380	400	400	380	370	340	340	340
Field Conductivity	µS/cm			-	-	-	-	-	-	-	-	-	-	-
Laboratory pH	Units	-	-	-	7.71	6.53	6.56	6.72	6.87	6.79	6.89	6.75	6.50	6.55
Field pH	Units	-	-	-	-	-	7.05	6.45	-	-	-	-	-	-
Hardness	mg/L				-	-	-	-	-	-	-	-	-	-
Metals														
Dissolved Arsenic (As)	ug/L	-	125	-	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0
Dissolved Iron (Fe)	ug/L	-	-	-	<50	130	82	50	<50	<50	<50	<50	<50	<50
Dissolved Lead (Pb)	ug/L	-	20	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	-	4240	3600	2700	4800	4700	4900	4100	5100	5100	4500
Dissolved Zinc (Zn)	ug/L	-	100	-	<5.0	59	82	47	64	37	72	45	54	56

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW4									
				2018		2020		2021		2022		2023	
				9-Apr-18	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
Laboratory Conductivity	µS/cm	-	-	350	340	330	330	330	400	340	360	440	380
Field Conductivity	µS/cm			-	-	-	-	-	-	1581	362	1018	1084
Laboratory pH	Units	-	-	6.69	6.77	6.59	6.57	6.65	6.97	7.16	7.23	7.12	6.89
Field pH	Units	-	-	-	-	-	-	-	-	6.64	6.62	6.66	6.24
Hardness	mg/L			-	-	-	-	-	-	76	370	90	74
Metals													
Dissolved Arsenic (As)	ug/L	-	125	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	1.4	<1.0	1.6	<1.0
Dissolved Iron (Fe)	ug/L	-	-	<50	<50	<50	<50	<50	57	330	<50	1500	76
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	4800	4900	5600	4200	5600	4400	5200	7300	6700	6600
Dissolved Zinc (Zn)	ug/L	-	100	64	50	55	47	49	54	54	38	48	70

Notes:

value	- exceeds NSE EQS
value	- exceeds NSE PSS for marine water
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.
² 2021 Nova Scotia Environment and Climate Change (NSE) Tier II Pathway-Specific Standards (PSS) for groundwater discharging to marine surface water (>10m)

TABLE 4A: PETROLEUM HYDROCARBON COMPOUNDS in Groundwater (MW6)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	NSE Tier I EQS ¹	MW6												
				2010	2013		2014		2015		2016		2017		2018	
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17	9-Apr-18	11-Oct-18
BTEX	Benzene	mg/L	6.3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.010	0.018*	0.024	<0.010	<0.010	<0.010	<0.010	0.012	0.03*	0.017	0.035	0.0162	0.0352
	Fuel Range (C10-C16)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	-		0.052	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
	Lube Range (>C21-C32)	mg/L	-	<0.10	0.74	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	<0.10	0.81	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Product Resemblance		-	-	-	Lube oil fraction.	-	-	-	-	-	-	-	-	-	-	-

Parameter		Units	NSE Tier I EQS ¹	MW6							
				2020		2021		2022		2023	
				28-May-20	28-Oct-20	28-Apr-21	22-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
BTEX	Benzene	mg/L	6.3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
	Fuel Range (C10-C16)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.08
	Fuel Range (>C16-C21)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	-	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Product Resemblance		-	-	-	-	-	-	-	-	-	-

Notes:

value	- exceeds NSE EQS
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.

TABLE 4B: CONDUCTIVITY, pH and METALS in Groundwater (MW6)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW6												
				2010	2013		2014		2015			2016		2017		2018
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	Lab-Dup	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17	9-Apr-18
Laboratory Conductivity	µS/cm	-	-	-	230	400	240	420	190	210	-	160	220.00	200	190	210
Field Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laboratory pH	Units	-	-	-	6.71	6.97	6.70	7.21	6.77	6.79	-	6.68	6.83	6.54	6.55	6.62
Field pH	Units	-	-	-	-	-	7.21	6.84	-	-	-	-	-	-	-	-
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																
Dissolved Arsenic (As)	ug/L	-	125	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Iron (Fe)	ug/L	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Dissolved Lead (Pb)	ug/L	-	20	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	-	2.8	170	23	190	4.5	41	40	2.7	24	6.9	13	8.4
Dissolved Zinc (Zn)	ug/L	-	100	-	<5.0	6.1	5.5	5.1	9.2	<5.0	<5.0	8.8	9.8	7.2	17	5.8

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW6										
				2018		2020		2021		2022		2023		
				9-Apr-18	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	22-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	Lab-Dup	17-Oct-23
Laboratory Conductivity	µS/cm	-	-	210	190	140	210	190	220	270	370	400	400	420
Field Conductivity	µS/cm	-	-	-	-	-	-	-	-	NR	347	379	-	390
Laboratory pH	Units	-	-	6.62	6.52	6.65	6.40	6.57	7.46	7.49	7.5	7.74	7.62	7.26
Field pH	Units	-	-	-	-	-	-	-	-	6.89	6.73	6.67	-	6.52
Hardness	mg/L	-	-	-	-	-	-	-	-	99	1100	170	-	170
Metals														
Dissolved Arsenic (As)	ug/L	-	125	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	-	<1.0
Dissolved Iron (Fe)	ug/L	-	-	<50	<50	<50	<50	<50	<50	<50	49000	<50	-	<50
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	-	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	8.4	17	6.4	37	12	44	2.1	4700	2.5	-	130
Dissolved Zinc (Zn)	ug/L	-	100	5.8	10	7.4	7.4	5.1	6.1	<5.0	<5.0	5.2	-	6.2

Notes:

value	- exceeds NSE EQS
value	- exceeds NSE PSS for marine water
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.
² 2021 Nova Scotia Environment and Climate Change (NSE) Tier II Pathway-Specific Standards (PSS) for groundwater discharging to marine surface water (>10m)

TABLE 4C: VOLATILE ORGANIC COMPOUNDS (VOCs) COMPOUNDS in Groundwater

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter	Units	NSE Tier I EQS ¹	MW6														
			2016	2017			2018		2020			2021		2022		2023	
			24-Oct-16	24-Apr-17	Lab-Dup	12-Oct-17	9-Apr-18	11-Oct-18	28-May-20	Lab-Dup	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
Chlorobenzenes																	
1,2-Dichlorobenzene	ug/L	64000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	ug/L	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	2600	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	ug/L	180	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Volatile Organics																	
1,1,1-Trichloroethane	ug/L	13000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	630	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/L	910	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	ug/L	6600	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethylene	ug/L	5600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	ug/L	130	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	ug/L	330	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/L	6300	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	ug/L	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	ug/L	84000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	ug/L	33	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride (Tetrachloromethane)	ug/L	6.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	ug/L	-	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Chloroform	ug/L	380	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	ug/L	-	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
cis-1,2-Dichloroethylene	ug/L	4600	10	6.3	6.2	8.8	6.9	11	2.5	2.5	8.6	6.2	12	2.0	9.3	1.8	8.2
cis-1,3-Dichloropropene	ug/L	100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	ug/L	10000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	ug/L	20000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylene Dibromide	ug/L	51	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl t-butyl ether (MTBE)	ug/L	4300	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methylene Chloride(Dichloromethane)	ug/L	43000	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
o-Xylene	ug/L	20000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p+m-Xylene	ug/L		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	ug/L	26000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethylene	ug/L	1200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	ug/L	20000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Trihalomethanes	ug/L	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	ug/L	20000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethylene	ug/L	4900	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,3-Dichloropropene	ug/L	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	ug/L	110	31	25	24	40	22	44	19	19	34	25	33	12	29	14	26
Trichlorofluoromethane (FREON 11)	ug/L	-	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Vinyl Chloride	ug/L	99	3.8	<0.50	<0.50	1.9	<0.50	2.4	<0.50	<0.50	2.3	<0.50	<8.1	<8.1	5	0.65	4.6

Notes:

value

-

- exceeds NSE EQS
- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.

TABLE 5A: PETROLEUM HYDROCARBON COMPOUNDS in Groundwater (MW9)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	NSE Tier I EQS ¹	MW9											
				2010	2013		2014		2015		2016		2017		2018
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17	9-Apr-18
BTEX	Benzene	mg/L	6.3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Fuel Range (C10-C16)	mg/L	-	5.7	0.051	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	-		0.32	0.05	0.053	<0.050	0.05	0.12	0.09	0.43	0.19	0.16	0.089
	Lube Range (>C21-C32)	mg/L	-	63	2.3	0.33	0.26	0.11	0.37	0.76	0.54	3.4	1.6	1.4	0.69
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	68	2.6	0.38	0.31	0.11	0.42	0.88	0.63	3.8	1.8	1.5	0.78
Product Resemblance		-	-	Lube oil fraction	Lube oil fraction	Lube oil fraction	Lube oil fraction	Lube oil fraction.	Lube oil fraction	Lube oil fraction.	Lube oil fraction	Lube oil fraction	Lube oil fraction.	Lube oil fraction	Lube oil fraction.

Parameter		Units	NSE Tier I EQS ¹	MW9										
				2018		2020		2021		2022		2023		
				9-Apr-18	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	Lab-Dup	17-Oct-23
BTEX	Benzene	mg/L	6.3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010
	Toluene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010
	Xylenes	mg/L	20	<0.0020	<0.0020	<0.0020	<0.0020	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	-	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.010	<0.010	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	-	<0.090
	Fuel Range (C10-C16)	mg/L	-	<0.050	<0.050	<0.050	0.051	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.073
	Fuel Range (>C16-C21)	mg/L	-	0.089	0.090	0.079	0.21	0.2	0.2	0.075	0.15	0.054	<0.050	0.84
	Lube Range (>C21-C32)	mg/L	-	0.69	0.64	0.58	1.3	1.7	1.6	0.58	0.93	0.19	0.12	6.6
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	0.78	0.73	0.66	1.5	1.9	1.8	0.66	1.1	0.24	-	7.5
Product Resemblance		-	-	Lube oil fraction.	Lube oil fraction.	Lube oil fraction.	Lube oil fraction.	Lube oil fraction.	Lube oil fraction.	Lube oil fraction.	Lube oil fraction.	Lube oil fraction.	-	Lube oil fraction.

Notes:

value	- exceeds NSE EQS
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.

TABLE 5B: CONDUCTIVITY, pH and METALS in Groundwater (MW9)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW9											
				2010	2013		2014		2015		2016		2017		
				16-Apr-10	21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	Lab-Dup	12-Oct-17
Laboratory Conductivity	µS/cm	-	-	-	820	660	650	690	500	670	560	560	460	-	630
Field Conductivity	µS/cm			-	-	-	-	-	-	-	-	-	-	-	-
Laboratory pH	Units	-	-	-	7.17	7.16	7.11	7.30	7.55	7.42	7.53	7.41	7.34	-	7.37
Field pH	Units	-	-	-	-	-	7.28	-	-	-	-	-	-	-	-
Hardness	mg/L			-	-	-	-	-	-	-	-	-	-	-	-
Metals															
Dissolved Arsenic (As)	ug/L	-	125	-	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Iron (Fe)	ug/L	-	-	-	<50	640	370	550	<50	890	220	260	480	470	820
Dissolved Lead (Pb)	ug/L	-	20	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	-	592	490	320	600	47	940	300	170	520	520	1000
Dissolved Zinc (Zn)	ug/L	-	100	-	10	5.2	9.5	12	12	<5.0	8.6	8.2	<5.0	<5.0	<5.0

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW9										
				2018			2020		2021		2022		2023	
				9-Apr-18	Lab-Dup	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
Laboratory Conductivity	µS/cm	-	-	520	-	630	540	700	530	640	510	5500	640	480
Field Conductivity	µS/cm			-	-	-	-	-	-	-	964	760	713	808
Laboratory pH	Units	-	-	7.33	-	7.25	7.52	7.39	7.14	7.40	7.75	7.79	7.57	7.64
Field pH	Units	-	-	-	-	-	-	-	-	-	6.90	6.93	6.86	6.80
Hardness	mg/L			-	-	-	-	-	-	-	240	790	290	230
Metals														
Dissolved Arsenic (As)	ug/L	-	125	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7
Dissolved Iron (Fe)	ug/L	-	-	69	470	620	220	1500	160	230	230	310	650	<50
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	300	520	850	780	1400	360	330	260	76	730	30
Dissolved Zinc (Zn)	ug/L	-	100	9.3	<5.0	<5.0	8.1	5.9	8.5	6.2	5.6	9	9.1	39

Notes:

value	- exceeds NSE EQS
value	- exceeds NSE PSS for marine water
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.
² 2021 Nova Scotia Environment and Climate Change (NSE) Tier II Pathway-Specific Standards (PSS) for groundwater discharging to marine surface water (>10m)

TABLE 6A: PETROLEUM HYDROCARBON COMPOUNDS in Groundwater (MW11)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	NSE Tier I EQS ¹	MW11											
				2013		2014		2015		2016		2017		2018	
				21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17	9-Apr-18	11-Oct-18
BTEX	Benzene	mg/L	6.3	<0.0010	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	<0.0010	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	<0.0020	-	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.010	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Fuel Range (C10-C16)	mg/L	-	0.37	-	-	-	-	-	-	-	0.21	0.16	0.21	0.21
	Fuel Range (>C16-C21)	mg/L	-	3.1	-	-	-	-	-	-	-	0.41	0.34	0.39	0.32
	Lube Range (>C21-C32)	mg/L	-	39	-	-	-	-	-	-	-	2.7	2.5	2.3	2.1
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	42	Free Product Detected	Free Product Detected	Free Product Detected	Free Product Detected	Free Product Detected	Free Product Detected	Free Product Detected	3.3	2.9	2.9	2.7
Product Resemblance		-	-	Lube oil fraction	Lube oil fraction	-	-	-	-	-	-	One propduct in fuel / lube oil range. Lube oil fraction.	One propduct in fuel / lube oil range. Lube oil fraction.	One propduct in fuel oil range. Lube oil fraction.	One product in fuel oil range. Lube oil fraction.

Parameter		Units	NSE Tier I EQS ¹	MW11									
				2020		2021		2022				2023	
				28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	DUP1	17-Oct-22	DUP1	26-Apr-23	17-Oct-23
BTEX	Benzene	mg/L	6.3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
	Fuel Range (C10-C16)	mg/L	-	0.17	0.24	0.099	0.15	0.15	0.15	0.073	0.078	0.12	0.12
	Fuel Range (>C16-C21)	mg/L	-	0.47	0.76	0.32	0.62	0.57	0.51	0.14	0.16	0.28	0.34
	Lube Range (>C21-C32)	mg/L	-	4.2	7.7	3.7	6.2	4.9	4.3	1.1	1.3	2	2.1
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	4.8	8.7	4.1	7.0	5.7	5	1.3	1.5	2.4	2.5
Product Resemblance		-	-	Lube oil fraction.	One product in fuel oil range. Lube oil fraction.	Lube oil fraction.	Lube oil fraction.	One product in fuel / lube range. Lube oil fraction.	One product in fuel / lube range. Lube oil fraction.	Lube oil fraction.	Lube oil fraction.	One product in fuel oil range. Lube oil fraction.	One product in fuel oil range. Lube oil fraction.

Notes:

value	- exceeds NSE EQS
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.

TABLE 6B: CONDUCTIVITY, pH and METALS in Groundwater (MW11)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW11												
				2013		2014		2015		2016		2017			2018	
				21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	Lab-Dup	12-Oct-17	9-Apr-18	Lab-Dup
Laboratory Conductivity	µS/cm	-	-	680	-	-	-	-	-	-	-	540	540	610	610	540
Field Conductivity	µS/cm			-	-	-	-	-	-	-	-	-	-	-	-	-
Laboratory pH	Units	-	-	7.38	-	-	-	-	-	-	-	7.31	7.34	7.49	7.42	7.34
Field pH	Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																
Dissolved Arsenic (As)	ug/L	-	125	<1.0	-	-	-	-	-	-	-	1.3	-	2.8	<1.0	<1.0
Dissolved Iron (Fe)	ug/L	-	-	<50	-	-	-	-	-	-	-	8200	-	9100	<50	<50
Dissolved Lead (Pb)	ug/L	-	20	<0.50	-	-	-	-	-	-	-	<0.50	-	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	1590	-	-	-	-	-	-	-	1600	-	1600	1800	1800
Dissolved Zinc (Zn)	ug/L	-	100	<5.0	-	-	-	-	-	-	-	<5.0	-	<5.0	<5.0	<5.0

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW11												
				2018			2020		2021			2022				
				9-Apr-18	Lab-Dup	11-Oct-18	28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	Lab-Dup	28-Apr-22	DUP1	Lab-Dup	17-Oct-22	DUP1
Laboratory Conductivity	µS/cm	-	-	610	540	610	600	640	610	690	700	490	480	490	5500	5500
Field Conductivity	µS/cm			-	-	-	-	-	-	-	-	1614	-	-	5600	-
Laboratory pH	Units	-	-	7.42	7.34	7.60	7.11	7.38	7.00	7.27	7.28	7.47	7.58	7.54	7.11	7.26
Field pH	Units	-	-	-	-	-	-	-	-	-	-	6.88	-	-	6.85	-
Hardness	mg/L			-	-	-	-	-	-	-	-	230	230	-	100	1100
Metals																
Dissolved Arsenic (As)	ug/L	-	125	<1.0	<1.0	2.6	1.8	1.3	<1.0	1.6	1.6	1.0	<1.0	-	<1.0	1.8
Dissolved Iron (Fe)	ug/L	-	-	<50	<50	9100	20000	4900	20000	18000	18000	16000	16000	-	<50	49000
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	1800	1800	1600	1600	1500	1500	1600	1600	1400	1400	-	76	76
Dissolved Zinc (Zn)	ug/L	-	100	<5.0	<5.0	<5.0	5.9	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	9	6.7

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW11	
				2023	
				26-Apr-23	17-Oct-23
Laboratory Conductivity	µS/cm	-	-	820	730
Field Conductivity	µS/cm			1284	924
Laboratory pH	Units	-	-	7.35	7.55
Field pH	Units	-	-	6.81	6.88
Hardness	mg/L			250	300
Metals					
Dissolved Arsenic (As)	ug/L	-	125	<1.0	1.2
Dissolved Iron (Fe)	ug/L	-	-	15000	7400
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	1300	1300
Dissolved Zinc (Zn)	ug/L	-	100	5.3	<5.0

Notes:

value	- exceeds NSE EQS
value	- exceeds NSE PSS for marine water
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.
² 2021 Nova Scotia Environment and Climate Change (NSE) Tier II Pathway-Specific Standards (PSS) for groundwater discharging to marine surface water (>10m)

TABLE 7A: PETROLEUM HYDROCARBON COMPOUNDS in Groundwater (MW14)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	NSE Tier I EQS ¹	MW14											
				2013		2014		2015		2016		2017		2018	
				21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17	9-Apr-18	11-Oct-18
BTEX	Benzene	mg/L	6.3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Fuel Range (C10-C16)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	-	0.19	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.12	<0.10	<0.10	<0.10
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	0.19	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.12	<0.10	<0.10	<0.10
Product Resemblance		-	-	Lube oil fraction	-	-	-	-	-	-	-	Lube oil fraction.	-	-	-

Parameter		Units	NSE Tier I EQS ¹	MW14											
				2020				2021		2022		2023			
				28-May-20	Lab-Dup	28-Oct-20	Lab-Dup	28-Apr-21	Duplicate	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	DUP1	17-Oct-23
BTEX	Benzene	mg/L	6.3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	-	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
	Fuel Range (C10-C16)	mg/L	-	0.074	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	-	0.096	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	-	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Total Modified TPH - Tier 1		mg/L	20 as gas 20 as fuel oil 20 as lube oil	0.17	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Product Resemblance		-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

value	- exceeds NSE EQS
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.

TABLE 7B: CONDUCTIVITY, pH and METALS in Groundwater (MW14)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW14										
				2013		2014		2015			2016		2017	
				21-May-13	25-Oct-13	23-Apr-14	30-Oct-14	24-Jun-15	12-Nov-15	Lab-Dup	26-Apr-16	24-Oct-16	24-Apr-17	12-Oct-17
Laboratory Conductivity	µS/cm	-	-	720	800	670	780	690	840	840	710	760	630	740
Field Conductivity	µS/cm													
Laboratory pH	Units	-	-	7.01	6.74	6.57	6.93	7.00	6.83	6.81	6.91	6.92	6.54	6.58
Field pH	Units	-	-	-	-	6.74	6.78	-	-	-	-	-	-	-
Hardness	mg/L													
Metals														
Dissolved Arsenic (As)	ug/L	-	125	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0
Dissolved Iron (Fe)	ug/L	-	-	<50	840	110	140	96	89	-	<50	<50	<50	<50
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	2810	2700	2900	2700	2300	3300	-	2200	1800	2000	1900
Dissolved Zinc (Zn)	ug/L	-	100	31.2	29	29	35	43	44	-	42	32	35	37

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW14											
				2018		2020				2021				2022	
				9-Apr-18	11-Oct-18	28-May-20	Lab-Dup	28-Oct-20	Lab-Dup	28-Apr-21	Duplicate	Lab-Dup	20-Oct-21	28-Apr-22	17-Oct-22
Laboratory Conductivity	µS/cm	-	-	660	720	530	550	630	640	570	560	570	600	550	660
Field Conductivity	µS/cm													1614	601
Laboratory pH	Units	-	-	6.78	6.86	6.71	6.63	6.58	6.63	6.79	6.65	6.59	6.98	7.27	7.26
Field pH	Units	-	-	-	-	-	-	-	-	-	-	-	-	6.57	6.69
Hardness	mg/L													130	150
Metals															
Dissolved Arsenic (As)	ug/L	-	125	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0
Dissolved Iron (Fe)	ug/L	-	-	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	1800	2300	1300	1300	1900	2000	1800	1800	-	1900	1400	1800
Dissolved Zinc (Zn)	ug/L	-	100	54	48	160	160	56	56	29	28	-	37	24	28

Parameter	Units	NSE Tier I EQS ¹	NSE Tier II PSS groundwater discharging to surface water (>10m, marine) ²	MW14		
				2023		
				26-Apr-23	DUP1	17-Oct-23
Laboratory Conductivity	µS/cm	-	-	580	580	350
Field Conductivity	µS/cm			1049	-	325
Laboratory pH	Units	-	-	7.17	7.14	7.41
Field pH	Units	-	-	6.40	-	6.65
Hardness	mg/L			130	130	150
Metals						
Dissolved Arsenic (As)	ug/L	-	125	<1.0	<1.0	<1.0
Dissolved Iron (Fe)	ug/L	-	-	<50	<50	<50
Dissolved Lead (Pb)	ug/L	-	20	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)	ug/L	-	-	1700	1700	250
Dissolved Zinc (Zn)	ug/L	-	100	23	26	9.8

Notes:

value	- exceeds NSE EQS
value	- exceeds NSE PSS for marine water
-	- no guideline

¹ 2021 (October 2022 revisions) Nova Scotia Environment and Climate Change (NSE)Tier I Environmental Quality Standards (EQS) at a commercial site with non-potable groundwater and coarse-grained soil.
² 2021 Nova Scotia Environment and Climate Change (NSE) Tier II Pathway-Specific Standards (PSS) for groundwater discharging to marine surface water (>10m)

TABLE 8A: Field and Laboratory Duplicate QA/QC - PHC
Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	RPD Limit	MW1										MW14									
				RDL	RDL x5	2017		RPD	RDL	RDL x5	2018		RPD	RDL	RDL x5	2020		RPD	RDL	RDL x5	2020		RPD
						24-Apr-17	Lab-Dup				9-Apr-18	Lab-Dup				28-May-20	MW-DUP				28-Oct-20	MW-DUP	
BTEX	Benzene	mg/L	40%	0.010	0.050	<0.010	-	-	0.025	0.125	<0.025	-	-	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	<0.0010	<0.0010	NC
	Toluene	mg/L	40%	0.010	0.05	0.024	-	-	0.025	0.13	<0.025	-	-	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	<0.0010	<0.0010	NC
	Ethylbenzene	mg/L	40%	0.025	0.13	1.5	-	-	0.025	0.13	0.86	-	-	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	<0.0010	<0.0010	NC
	Xylenes	mg/L	40%	0.020	0.10	1.5	-	-	0.050	0.25	1.0	-	-	0.0020	0.010	<0.0020	<0.0020	NC	0.0020	0.010	<0.0020	<0.0020	NC
Modified TPH	Gas Range	mg/L	40%	0.25	1.25	13	-	-	0.25	1.25	7.6	-	-	0.090	0.450	<0.090	<0.090	NC	0.090	0.450	<0.090	<0.090	NC
	Fuel Range (C10-C16)	mg/L	40%	0.050	0.25	2.7	2.7	0	0.050	0.25	2.3	2.3	0	0.050	0.250	0.074	<0.050	NC	0.050	0.250	<0.050	<0.050	NC
	Fuel Range (>C16-C21)	mg/L	40%	0.050	0.25	<0.050	<0.050	NC	0.050	0.25	<0.050	<0.050	NC	0.050	0.250	0.096	<0.050	NC	0.050	0.250	<0.050	<0.050	NC
	Lube Range (>C21-C32)	mg/L	40%	0.10	0.50	<0.10	<0.10	NC	0.1	0.50	<0.10	<0.10	NC	0.090	0.450	<0.090	<0.090	NC	0.090	0.450	<0.090	<0.090	NC
Total Modified TPH - Tier 1		mg/L	40%	0.25	1.25	15	-	-	0.25	1.25	9.9	-	-	0.090	0.450	0.17	<0.090	NC	0.090	0.450	<0.090	<0.090	NC

Parameter		Units	RPD Limit	MW14					MW1					MW11					MW11				
				RDL	RDL x5	2021		RPD	RDL	RDL x5	2021		RPD	RDL	RDL x5	2022		RPD	RDL	RDL x5	2022		RPD
						28-Apr-21	MW-DUP				20-Oct-21	MW-DUP				28-Apr-22	DUP1				17-Oct-22	DUP1	
BTEX	Benzene	mg/L	40%	0.0010	0.0050	<0.0010	<0.0010	NC	0.0050	0.0250	<0.0050	0.0063	NC	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	<0.0010	<0.0010	NC
	Toluene	mg/L	40%	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	0.012	0.016	29	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	<0.0010	<0.0010	NC
	Ethylbenzene	mg/L	40%	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	0.68	0.82	19	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	<0.0010	<0.0010	NC
	Xylenes	mg/L	40%	0.0020	0.010	<0.0020	<0.0020	NC	0.0020	0.010	0.72	0.89	21	0.0020	0.010	<0.0020	<0.0020	NC	0.0020	0.010	<0.0020	<0.0020	NC
Modified TPH	Gas Range	mg/L	40%	0.090	0.450	<0.090	<0.090	NC	0.090	0.450	9	8.7	3	0.090	0.450	<0.090	<0.090	NC	0.090	0.450	<0.090	<0.090	NC
	Fuel Range (C10-C16)	mg/L	40%	0.050	0.250	<0.050	<0.050	NC	0.050	0.250	2.8	2.5	11	0.050	0.250	0.15	0.15	NC	0.050	0.250	0.073	<0.078	NC
	Fuel Range (>C16-C21)	mg/L	40%	0.050	0.250	<0.050	<0.050	NC	0.050	0.250	<0.050	<0.050	NC	0.050	0.250	0.57	0.51	11	0.050	0.250	0.14	<0.16	NC
	Lube Range (>C21-C32)	mg/L	40%	0.090	0.450	<0.090	<0.090	NC	0.090	0.450	<0.090	0.093	NC	0.090	0.450	4.9	4.3	13	0.090	0.450	1.1	1.3	NC
Total Modified TPH - Tier 1		mg/L	40%	0.090	0.450	<0.090	<0.090	NC	0.0900	0.450	12	11	9	0.090	0.450	5.7	5.0	13	0.090	0.450	1.3	1.5	NC

Parameter		Units	RPD Limit	MW9					MW14					MW14				
				RDL	RDL x5	2023		RPD	RDL	RDL x5	2023		RPD	RDL	RDL x5	2023		RPD
						26-Apr-23	Lab-Dup				26-Apr-23	DUP1				17-Oct-23	DUP1	
BTEX	Benzene	mg/L	40%	0.0010	0.0050	<0.0010	-	-	0.0050	0.0250	<0.0010	<0.0010	NC	0.0050	0.0250	<0.0010	<0.0010	NC
	Toluene	mg/L	40%	0.0010	0.0050	<0.0010	-	-	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	<0.0010	<0.0010	NC
	Ethylbenzene	mg/L	40%	0.0010	0.0050	<0.0010	-	-	0.0010	0.0050	<0.0010	<0.0010	NC	0.0010	0.0050	<0.0010	<0.0010	NC
	Xylenes	mg/L	40%	0.0020	0.010	<0.0020	-	-	0.0020	0.010	<0.0020	<0.0020	NC	0.0020	0.010	<0.0020	<0.0020	NC
Modified TPH	Gas Range	mg/L	40%	0.090	0.450	<0.090	-	-	0.090	0.450	<0.090	<0.090	NC	0.090	0.450	<0.090	<0.090	NC
	Fuel Range (C10-C16)	mg/L	40%	0.050	0.250	<0.050	<0.050	NC	0.050	0.250	<0.050	<0.050	NC	0.050	0.250	<0.050	<0.050	NC
	Fuel Range (>C16-C21)	mg/L	40%	0.050	0.250	0.054	<0.050	NC	0.050	0.250	<0.050	<0.050	NC	0.050	0.250	<0.050	<0.050	NC
	Lube Range (>C21-C32)	mg/L	40%	0.090	0.450	0.19	0.12	NC	0.090	0.450	<0.090	<0.090	NC	0.090	0.450	<0.090	<0.090	NC
Total Modified TPH - Tier 1		mg/L	40%	0.090	0.450	0.24	-	NC	0.0900	0.450	<0.090	<0.090	NC	0.0900	0.450	<0.090	<0.090	NC

Notes:

value	- RDP outside of acceptable range
RPD	- Relative Percent Difference
RDL	- Reportable Detection Limit
NC	- Non-calculable

RPD is considered non-calculable where concentrations are less than five times the laboratory detection limit.
RPD results of within 40% are considered to be acceptable.
Where RPD is non-calculable, results are considered acceptable where the difference between concentrations is less than the laboratory detection limit.

TABLE 8B: Field and Laboratory Duplicate QA/QC - CONDUCTIVITY, pH and METALS

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter	Units	RPD Limit	MW3					MW6					MW14					MW11					MW9				
			RDL	RDL x5	2015		RPD	RDL	RDL x5	2015		RPD	RDL	RDL x5	2015		RPD	RDL	RDL x5	2017		RPD	RDL	RDL x5	2018		RPD
					12-Nov-15	Lab-Dup				12-Nov-15	Lab-Dup				12-Nov-15	Lab-Dup				24-Apr-17	Lab-Dup				9-Apr-18	Lab-Dup	
Laboratory Conductivity	µS/cm	40%	1.0	5.0	610	-	-	1.0	5.0	610	-	-	1.0	5.0	840	840	0	1.0	5.0	540	540	0	1.0	5.0	520	-	-
Laboratory pH	Units	40%	-	-	6.97	-	-	-	-	6.97	-	-	-	-	6.83	6.81	NC	-	-	7.31	7.34	NC	-	-	7.33	-	-
Hardness	mg/L	40%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																											
Dissolved Arsenic (As)	ug/L	40%	1.0	5.0	2.7	2.6	NC	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	-	-	1.0	5.0	<1.0	-	-	1.0	5.0	<1.0	<1.0	NC
Dissolved Iron (Fe)	ug/L	40%	50	250	6400	6300	2	50	250	<50	<50	NC	50	250	89	-	-	50	250	<50	-	-	50	250	69	470	149
Dissolved Lead (Pb)	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	-	-	0.50	2.5	<0.50	-	-	0.50	2.5	<0.50	<0.50	NC
Dissolved Manganese (Mn)	ug/L	40%	2.0	10	2700	2700	0	2.0	10	41	40	2	2.0	10	3300	-	-	2.0	10	41	-	-	2.0	10	300	520	54
Dissolved Zinc (Zn)	ug/L	40%	5.0	25	38	39	3	5.0	25	<5.0	<5.0	NC	5.0	25	44	-	-	5.0	25	<5.0	-	-	5.0	25	9.3	<5.0	NC

Parameter	Units	RPD Limit	MW11						MW14																		
			RDL	RDL x5	2018		RPD	RDL	RDL x5	2020		RPD	RDL	RDL x5	2020		RPD	RDL	RDL x5	2021		RPD	RDL	RDL x5	2021		RPD
					9-Apr-18	Lab-Dup				28-May-20	MW-DUP				28-Oct-20	MW-DUP				28-Apr-21	MW-DUP				MW-DUP	Lab-Dup	
Laboratory Conductivity	µS/cm	40%	1.0	5.0	540	540	0	1.0	5.0	530	550	4	1.0	5.0	630	640	2	1.0	5.0	570	560	2	1.0	5.0	560	570	2
Laboratory pH	Units	40%	-	-	7.31	7.34	NC	-	-	6.71	6.63	NC	-	-	6.58	6.63	NC	-	-	6.79	6.65	NC	-	-	6.65	6.59	NC
Hardness	mg/L	40%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																											
Dissolved Arsenic (As)	ug/L	40%	1.0	5.0	<1.0	-	-	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	-	-
Dissolved Iron (Fe)	ug/L	40%	50	250	<50	-	-	50	250	<50	<50	NC	50	250	<50	<50	NC	50	250	<50	<50	NC	50	250	<50	-	-
Dissolved Lead (Pb)	ug/L	40%	0.50	2.5	<0.50	-	-	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	-	-
Dissolved Manganese (Mn)	ug/L	40%	2.0	10	41	-	-	2.0	10	1300	1300	0	2.0	10	1900	2000	5	2.0	10	1800	1800	0	2.0	10	1800	-	-
Dissolved Zinc (Zn)	ug/L	40%	5.0	25	<5.0	-	-	5.0	25	160	160	0	5.0	25	56	56	0	5.0	25	29	28	4	5.0	25	28	-	-

Parameter	Units	RPD Limit	MW11									MW11											MW6				
			RDL	RDL x5	2022		RPD	RDL	RDL x5	2022		RPD	RDL	RDL x5	2022		RPD	RDL	RDL x5	2022		RPD	RDL	RDL x5	2023		RPD
					28-Apr-22	DUP1				DUP1	Lab-Dup				17-Oct-22	DUP1				DUP1	Lab-Dup				26-Apr-23	Lab-Dup	
Laboratory Conductivity	µS/cm	40%	1.0	5.0	490	480	2	1.0	5.0	480	490	2	1.0	5.0	5500	5500	0	1.0	5.0	5500	5500	0	1.0	5.0	400	400	0
Laboratory pH	Units	40%	-	-	7.47	7.58	NC	-	-	7.58	7.54	NC	-	-	7.11	7.26	NC	-	-	7.26	7.26	NC	-	-	7.12	7.74	NC
Hardness	mg/L	40%	1.0	5.0	230	230	0	1.0	5.0	230	-	-	1.0	5.0	100	1100	-	1.0	5.0	1100	-	-	1.0	5.0	90	170	62
Metals																											
Dissolved Arsenic (As)	ug/L	40%	1.0	5.0	1	<1.0	NC	1.0	5.0	<1.0	-	-	1.0	5.0	<1.0	1.8	NC	1.0	5.0	1.8	-	-	1.0	5.0	-	-	-
Dissolved Iron (Fe)	ug/L	40%	50	250	16000	16000	0	50	250	16000	-	-	50	250	<50	49000	NC	50	250	49000	-	-	50	250	-	-	-
Dissolved Lead (Pb)	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	-	-	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	-	-	0.50	2.5	-	-	-
Dissolved Manganese (Mn)	ug/L	40%	2.0	10	1400	1400	0	2.0	10	1400	-	-	2.0	10	76	4700	194	2.0	10	4700	-	-	2.0	10	-	-	-
Dissolved Zinc (Zn)	ug/L	40%	5.0	25	<5.0	<5.0	NC	5.0	25	<5.0	-	-	5.0	25	6.7	<5.0	NC	5.0	25	<5.0	-	-	5.0	25	-	-	-

Parameter	Units	RPD Limit	MW14					MW3				
			RDL	RDL x5	2023		RPD	RDL	RDL x5	2023		RPD
					26-Apr-23	DUP1				17-Oct-23	DUP1	
Laboratory Conductivity	µS/cm	40%	1.0	5.0	580	580	0	1.0	5.0	610	670	9
Laboratory pH	Units	40%	-	-	7.17	7.14	NC	-	-	7.31	7.49	NC
Hardness	mg/L	40%	1.0	5.0	130	130	0	1.0	5.0	71	72	1
Metals												
Dissolved Arsenic (As)	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	NC
Dissolved Iron (Fe)	ug/L	40%	50	250	<50	<50	NC	50	250	980	1000	2
Dissolved Lead (Pb)	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	NC
Dissolved Manganese (Mn)	ug/L	40%	2.0	10	1700	1700	0	2.0	10	1500	1600	6
Dissolved Zinc (Zn)	ug/L	40%	5.0	25	23	26	12	5.0	25	14	11	NC

- Notes:
- value

- RDP outside of acceptable range
- RPD

- Relative Percent Difference
- RDL

- Reportable Detection Limit
- NC

- Non-calculable

RPD is considered non-calculable where concentrations are less than five times the laboratory detection limit.
RPD results of within 40% are considered to be acceptable.
Where RPD is non-calculable, results are considered acceptable where the difference between concentrations is less than the laboratory detection limit.

TABLE 8C: Field and Laboratory Duplicate QA/QC - VOCs

Client: Build Nova Scotia

Site Location: Civic No. 34 Power Plant Road, Trenton, NS

Englobe Project No.: 2001756.005

Parameter	Units	RPD Limit	MW6													
			RDL	RDL x5	2017		RPD	RDL	RDL x5	2020		RPD				
					24-Apr-17	Lab-Dup				28-May-20	Lab-Dup					
Chlorobenzenes																
1,2-Dichlorobenzene	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				
1,3-Dichlorobenzene	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
1,4-Dichlorobenzene	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Chlorobenzene	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Volatile Organics																
1,1,1-Trichloroethane	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
1,1,2,2-Tetrachloroethane	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				
1,1,2-Trichloroethane	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
1,1-Dichloroethane	ug/L	40%	2.0	10	<2.0	<2.0	NC	2.0	10	<2.0	<2.0	<2.0				
1,1-Dichloroethylene	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				
1,2-Dichloroethane	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
1,2-Dichloropropane	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				
Benzene	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Bromodichloromethane	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Bromoform	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Bromomethane	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				
Carbon Tetrachloride (Tetrachloromethane)	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				
Chloroethane	ug/L	40%	8.0	40	<8.0	<8.0	NC	8.0	40	<8.0	<8.0	<8.0				
Chloroform	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Chloromethane	ug/L	40%	1.0	5.0	<8.0	<8.0	NC	1.0	5.0	<8.0	<8.0	<8.0				
cis-1,2-Dichloroethylene	ug/L	40%	0.50	2.5	6.3	6.2	2	0.50	2.5	2.5	2.5	6.2				
cis-1,3-Dichloropropene	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				
Dibromochloromethane	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Ethylbenzene	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Ethylene Dibromide	ug/L	40%	0.20	1.0	<0.20	<0.20	NC	0.20	1.0	<0.20	<0.20	<0.20				
Methyl t-butyl ether (MTBE)	ug/L	40%	2.0	10	<2.0	<2.0	NC	2.0	10	<2.0	<2.0	<2.0				
Methylene Chloride(Dichloromethane)	ug/L	40%	3.0	15	<3.0	<3.0	NC	3.0	15	<3.0	<3.0	<3.0				
o-Xylene	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
p+m-Xylene	ug/L	40%	2.0	10	<2.0	<2.0	NC	2.0	10	<2.0	<2.0	<2.0				
Styrene	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Tetrachloroethylene	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Toluene	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Total Trihalomethanes	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
Total Xylenes	ug/L	40%	1.0	5.0	<1.0	<1.0	NC	1.0	5.0	<1.0	<1.0	<1.0				
trans-1,2-Dichloroethylene	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				
trans-1,3-Dichloropropene	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				
Trichloroethylene	ug/L	40%	1.0	5.0	25	24	4	1.0	5.0	19	19	24				
Trichlorofluoromethane (FREON 11)	ug/L	40%	8.0	40	<8.0	<8.0	NC	8.0	40	<8.0	<8.0	<8.0				
Vinyl Chloride	ug/L	40%	0.50	2.5	<0.50	<0.50	NC	0.50	2.5	<0.50	<0.50	<0.50				

Notes:

value	- RDP outside of acceptable range
RPD	- Relative Percent Difference
RDL	- Reportable Detection Limit
NC	- Non-calculable

RPD is considered non-calculable where concentrations are less than five times the laboratory detection limit.

RPD results of within 40% are considered to be acceptable.

Where RPD is non-calculable, results are considered acceptable where the difference between concentrations is less than the laboratory detection limit.

TABLE 9A: PETROLEUM HYDROCARBON COMPOUNDS (Equipment Blank)

Client: Build Nova Scotia

Site Location: Civic No. 34 Power Plant Road, Trenton, NS

Englobe Project No.: 2001756.005

Parameter		Units	EQUIPMENT BLANK							
			2020		2021		2022		2023	
			28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
BTEX	Benzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	<0.010	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
	Fuel Range (C10-C16)	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	0.098	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Total Modified TPH - Tier 1		mg/L	0.098	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Product Resemblance		-	Possible lube oil fraction.	-	-	-	-	-	-	-

Notes:

value - detection in blank

The Equipment Blank was filled by englobe in the field following rinsing the interface probe in laboratory supplied water.

TABLE 9B: CONDUCTIVITY, pH and METALS (Equipment Blank)

Client: Build Nova Scotia

Site Location: Civic No. 34 Power Plant Road, Trenton, NS

Englobe Project No.: 2001756.005

Parameter		Units	EQUIPMENT BLANK							
			2020		2021		2022		2023	
			28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
Laboratory Conductivity		µS/cm	1.2	17	17	1.1	1.0	1.5	1.4	1.2
Laboratory pH		Units	6.06	6.62	6.62	6.31	6.21	6.09	6.5	5.98
Hardness		mg/L	-	-	-	-	<1.0	<1.0	<1.0	<1.0
Metals										
Dissolved Arsenic (As)		ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Iron (Fe)		ug/L	<50	<50	<50	<50	<50	<50	<50	<50
Dissolved Lead (Pb)		ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)		ug/L	3.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dissolved Zinc (Zn)		ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

Notes:

value - detection in blank

The Equipment Blank was filled by englobe in the field following rinsing the interface probe in laboratory supplied water.

TABLE 10A: PETROLEUM HYDROCARBON COMPOUNDS (Trip Blank)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	TRIP BLANK							
			2020		2021		2022		2023	
			28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
BTEX	Benzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Toluene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Ethylbenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Xylenes	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Modified TPH	Gas Range	mg/L	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
	Fuel Range (C10-C16)	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Fuel Range (>C16-C21)	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Lube Range (>C21-C32)	mg/L	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Total Modified TPH - Tier 1		mg/L	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Product Resemblance		-	-	-	-	-	-	-	-	-

Notes:

value - detection in blank

The Trip Blank was prefilled by the laboratory and transported with the field samples.

TABLE 10B: CONDUCTIVITY, pH and METALS (Trip Blank)

Client: Build Nova Scotia
Site Location: Civic No. 34 Power Plant Road, Trenton, NS
Englobe Project No.: 2001756.005

Parameter		Units	TRIP BLANK							
			2020		2021		2022		2023	
			28-May-20	28-Oct-20	28-Apr-21	20-Oct-21	28-Apr-22	17-Oct-22	26-Apr-23	17-Oct-23
Laboratory Conductivity		µS/cm	<1.0	<1.0	1.0	1.1	1.0	18	1.8	1.3
Laboratory pH		Units	6.14	5.99	6.01	6.41	5.98	6.79	6.3	5.85
Hardness		mg/L	-	-	-	-	<1.0	<1.0	<1.0	<1.0
Metals										
Dissolved Arsenic (As)		ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Iron (Fe)		ug/L	<50	<50	<50	<50	<50	<50	<50	<50
Dissolved Lead (Pb)		ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Manganese (Mn)		ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dissolved Zinc (Zn)		ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.2	<5.0	<5.0

Notes:

value - detection in blank

The Trip Blank was prefilled by the laboratory and transported with the field samples.

Appendix D

Laboratory Certificates



eNGLOBE

FISH TOXICITY REPORT (Single Concentration)



CLIENT INFORMATION	TEST FACILITY INFORMATION
Englobe Corp. 97 Troop Ave. Dartmouth, NS Contact: Ryan Pellerin	Harris Industrial Testing Service Ltd. 21 Old Cobequid Road, Waverley Nova Scotia B2R 1P4 Ph: 902 861-2232 office@harrisindustrial.ca

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 23-199-C Sample Name/Location: TW1 Sampling Method: Grab Sample Homogenized: No Sampler Name: D. Matthews Date & Time Sampled: Apr. 26 2023 1135 hrs Date & Time Received: Apr. 26 2023 1830 hrs Sample Description: Orange, translucent liquid.	Reference Method: EPS 1/RM/13 2 nd Ed. Dec. 2000 with Feb. 2016 Amendments Type: Single Concentration (Pass/Fail) Tox 9A General Test Procedures held on file Test Organism: <i>Oncorhynchus mykiss</i> (Rainbow trout)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 9.0 Pre-test D.O. Saturation (%): 92 Pre-test pH: 7.5 pH Adjusted: No Sample Conductivity (µS/cm): 564	Mandatory 30 minute Pre-aeration: Yes Rate (ml/min/L): 6.5 ± 1 Time: 1025 hrs D.O. (mg/L): 9.1 D.O. Saturation (%): 92 Pre-aeration Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- D.O. Saturation (%): -- Aeration continued throughout test by airstone @ 6.5 ± 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Apr. 27 2023 1055 Hrs Date & Time Test Terminated: May 01 2023 1055 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 351 % Mortality over 7 days prior to test: 0.2	Loading Density (g/L): 0.22 Mean Fork Length (mm): 36 ± 2.9 SD Range (mm): 32 - 41	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500
Test Volume (L): 20 Depth (cm): 36.2 Replicates: No Number of fish per vessel: 10	Mean Wet Weight (g): 0.43 ± 0.09 SD Range (g): 0.30 – 0.57	Static Test, Duration: 96 hours Control/Dilution Water: Recon. Dechlorinated Municipal Water

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	COND. µS/cm	TEMP. °C	D.O. mg/L	pH
100	16.0	9.1	7.5	568	15.5	9.5	8.2
Control	15.5	9.5	7.8	335	15.5	9.8	7.6

TEST RESULTS

		TOTAL MORTALITY				PERCENT MORTALITY			
		#				%			
CONC.		24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
%									
100		0/10	0/10	0/10	0/10	0	0	0	0
Control		0/10	0/10	0/10	0/10	0	0	0	0

		TOTAL STRESS				PERCENT STRESS			
		#				%			
CONC.		24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
%									
100		0/10	0/10	0/10	0/10	0	0	0	0
Control		0/10	0/10	0/10	0/10	0	0	0	0

96 HOUR ACUTE LETHALITY RESULTS

TOTAL MORTALITY 0 %

ACUTELY LETHAL No

Acutely Lethal:

No: Mortality 50% or less at 100% concentration

Yes: Mortality greater than 50% in 100% concentration

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 351

Test Date: Apr. 14 – 18 2023

Reference Substance: Phenol

LC₅₀ Value: 10.1 mg/L

95% Confidence Limits: 8.87 – 11.4 mg/L

Historical Mean: 8.70 mg/L

Warning Limits $\pm$ 2 SD: 7.23 – 10.5 mg/L

COMMENTS

Test meets all conditions for test validity.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): K. Marks

Verified by: H. Nickel

Date: May 01 2023

Signed: *H. Nickel*

REFERENCES

Tidepool Scientific Software, 2000 - 2022. Comprehensive Environmental Toxicity Information System – CETIS V2.1.0.12

Metals and Diamond Mining Effluent Regulations, SOR/2002-222, Dec. 20, 2020.

Pulp and Paper Effluent Regulations, SOR/92-269, Dec. 17 2020.

Wastewater Systems Effluent Regulations, SOR/2012-139, Dec. 17 2020.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

The test included in this report is within the scope of this accreditation.

Results apply to the sample as received. Results reported apply only to the sample tested. Results are based on nominal concentrations.

FISH TOXICITY REPORT (Single Concentration)



CLIENT INFORMATION	TEST FACILITY INFORMATION
Englobe Corp. 97 Troop Ave. Dartmouth, NS Contact: Ryan Pellerin	Harris Industrial Testing Service Ltd. 21 Old Cobequid Road, Waverley Nova Scotia B2R 1P4 Ph: 902 861-2232 office@harrisindustrial.ca

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 23-199-B Sample Name/Location: TW3 Sampling Method: Grab Sample Homogenized: No Sampler Name: D. Matthews Date & Time Sampled: Apr. 26 2023 1155 hrs Date & Time Received: Apr. 26 2023 1830 hrs Sample Description: Yellow-orange, translucent liquid.	Reference Method: EPS 1/RM/13 2 nd Ed. Dec. 2000 with Feb. 2016 Amendments Type: Single Concentration (Pass/Fail) Tox 9A General Test Procedures held on file Test Organism: <i>Oncorhynchus mykiss</i> (Rainbow trout)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 9.6 Pre-test D.O. Saturation (%): 97 Pre-test pH: 7.6 pH Adjusted: No Sample Conductivity (µS/cm): 890	Mandatory 30 minute Pre-aeration: Yes Rate (ml/min/L): 6.5 ± 1 Time: 1025 hrs D.O. (mg/L): 9.6 D.O. Saturation (%): 96 Pre-aeration Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- D.O. Saturation (%): -- Aeration continued throughout test by airstone @ 6.5 ± 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Apr. 27 2023 1055 Hrs Date & Time Test Terminated: May 01 2023 1055 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 351 % Mortality over 7 days prior to test: 0.2	Loading Density (g/L): 0.23 Mean Fork Length (mm): 39 ± 3.3 SD Range (mm): 34 - 44 Mean Wet Weight (g): 0.45 ± 0.14 SD Range (g): 0.26 – 0.68	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500 Static Test, Duration: 96 hours Control/Dilution Water: Recon. Dechlorinated Municipal Water
Test Volume (L): 20 Depth (cm): 36.2 Replicates: No Number of fish per vessel: 10		

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	COND. µS/cm	TEMP. °C	D.O. mg/L	pH
100	15.5	9.6	7.9	887	15.5	9.8	8.1
Control	15.5	9.6	7.8	332	15.5	9.7	7.6

TEST RESULTS

		TOTAL MORTALITY				PERCENT MORTALITY			
		#				%			
CONC.		24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
%									
100		0/10	0/10	0/10	0/10	0	0	0	0
Control		0/10	0/10	0/10	0/10	0	0	0	0

		TOTAL STRESS				PERCENT STRESS			
		#				%			
CONC.		24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
%									
100		0/10	0/10	0/10	0/10	0	0	0	0
Control		0/10	0/10	0/10	0/10	0	0	0	0

96 HOUR ACUTE LETHALITY RESULTS

TOTAL MORTALITY 0 %

ACUTELY LETHAL No

Acutely Lethal:

No: Mortality 50% or less at 100% concentration

Yes: Mortality greater than 50% in 100% concentration

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 351

Test Date: Apr. 14 – 18 2023

Reference Substance: Phenol

LC₅₀ Value: 10.1 mg/L

95% Confidence Limits: 8.87 – 11.4 mg/L

Historical Mean: 8.70 mg/L

Warning Limits $\pm$ 2 SD: 7.23 – 10.5 mg/L

COMMENTS

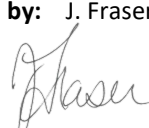
Test meets all conditions for test validity.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): K. Marks

Verified by: J. Fraser

Date: May 01 2023

Signed: 

REFERENCES

Tidepool Scientific Software, 2000 - 2022. Comprehensive Environmental Toxicity Information System – CETIS V2.1.0.12

Metals and Diamond Mining Effluent Regulations, SOR/2002-222, Dec. 20, 2020.

Pulp and Paper Effluent Regulations, SOR/92-269, Dec. 17 2020.

Wastewater Systems Effluent Regulations, SOR/2012-139, Dec. 17 2020.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

The test included in this report is within the scope of this accreditation.

Results apply to the sample as received. Results reported apply only to the sample tested. Results are based on nominal concentrations.

FISH TOXICITY REPORT (Single Concentration)



CLIENT INFORMATION	TEST FACILITY INFORMATION
Englobe Corp. 97 Troop Ave. Dartmouth, NS Contact: Ryan Pellerin	Harris Industrial Testing Service Ltd. 21 Old Cobequid Road, Waverley Nova Scotia B2R 1P4 Ph: 902 861-2232 office@harrisindustrial.ca

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 23-199-A Sample Name/Location: TW4 Sampling Method: Grab Sample Homogenized: No Sampler Name: D. Matthews Date & Time Sampled: Apr. 26 2023 1215 hrs Date & Time Received: Apr. 26 2023 1830 hrs Sample Description: Clear, colourless liquid with organic particulate.	Reference Method: EPS 1/RM/13 2 nd Ed. Dec. 2000 with Feb. 2016 Amendments Type: Single Concentration (Pass/Fail) Tox 9A General Test Procedures held on file Test Organism: <i>Oncorhynchus mykiss</i> (Rainbow trout)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 9.7 Pre-test D.O. Saturation (%): 98 Pre-test pH: 7.9 pH Adjusted: No Sample Conductivity (µS/cm): 727	Mandatory 30 minute Pre-aeration: Yes Rate (ml/min/L): 6.5 ± 1 Time: 1025 hrs D.O. (mg/L): 9.8 D.O. Saturation (%): 100 Pre-aeration Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- D.O. Saturation (%): -- Aeration continued throughout test by airstone @ 6.5 ± 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Apr. 27 2023 1055 Hrs Date & Time Test Terminated: May 01 2023 1055 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 351 % Mortality over 7 days prior to test: 0.2	Loading Density (g/L): 0.22 Mean Fork Length (mm): 38 ± 3.7 SD Range (mm): 30 - 43 Mean Wet Weight (g): 0.45 ± 0.13 SD Range (g): 0.23 - 0.70	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 - 500 Static Test, Duration: 96 hours Control/Dilution Water: Recon. Dechlorinated Municipal Water
Test Volume (L): 20 Depth (cm): 36.2 Replicates: No Number of fish per vessel: 10		

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	COND. µS/cm	TEMP. °C	D.O. mg/L	pH
100	16.0	9.8	7.8	730	15.5	9.7	8.3
Control	16.0	9.8	7.7	331	15.5	9.9	7.5

TEST RESULTS

		TOTAL MORTALITY				PERCENT MORTALITY			
		#				%			
CONC.		24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
%									
100		0/10	0/10	0/10	0/10	0	0	0	0
Control		0/10	0/10	0/10	0/10	0	0	0	0

		TOTAL STRESS				PERCENT STRESS			
		#				%			
CONC.		24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
%									
100		0/10	0/10	0/10	0/10	0	0	0	0
Control		0/10	0/10	0/10	0/10	0	0	0	0

96 HOUR ACUTE LETHALITY RESULTS**TOTAL MORTALITY** 0 %**ACUTELY LETHAL** No**Acutely Lethal:****No:** Mortality 50% or less at 100% concentration**Yes:** Mortality greater than 50% in 100% concentration**REFERENCE TOXICANT DATA**

Performed under laboratory conditions as above, no deviations

Batch: 351 Test Date: Apr. 14 – 18 2023

Reference Substance: Phenol

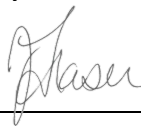
LC₅₀ Value: 10.1 mg/L

95% Confidence Limits: 8.87 – 11.4 mg/L

Historical Mean: 8.70 mg/L

Warning Limits $\pm$ 2 SD: 7.23 – 10.5 mg/L**COMMENTS**

Test meets all conditions for test validity.

TEST AUTHORIZATION AND VERIFICATION**Analyst(s):** K. Marks**Verified by:** J. Fraser**Date:** May 01 2023**Signed:****REFERENCES**

Tidepool Scientific Software, 2000 - 2022. Comprehensive Environmental Toxicity Information System – CETIS V2.1.0.12

Metals and Diamond Mining Effluent Regulations, SOR/2002-222, Dec. 20, 2020.

Pulp and Paper Effluent Regulations, SOR/92-269, Dec. 17 2020.

Wastewater Systems Effluent Regulations, SOR/2012-139, Dec. 17 2020.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

The test included in this report is within the scope of this accreditation.

Results apply to the sample as received. Results reported apply only to the sample tested. Results are based on nominal concentrations.



Your P.O. #: 49942
Your Project #: 2001756.005
Site#: DSME Trenton
Your C.O.C. #: 931553-01-01

Attention: Ryan Pellerin

Englobe Corp
97 Troop Ave
Dartmouth, NS
CANADA B3B 2A7

Report Date: 2023/05/04
Report #: R7614647
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3B9900

Received: 2023/04/27, 10:06

Sample Matrix: Ground Water
Samples Received: 10

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Conductance - water	10	N/A	2023/05/02	ATL SOP 00004	SM 24 2510B m
TEH in Water (PIRI)	9	2023/05/03	2023/05/03	ATL SOP 00113	Atl. RBCA v3.1 m
TEH in Water (PIRI)	1	2023/05/03	2023/05/04	ATL SOP 00113	Atl. RBCA v3.1 m
Hardness (calculated as CaCO ₃)	9	N/A	2023/05/03	ATL SOP 00048	Auto Calc
Hardness (calculated as CaCO ₃)	1	N/A	2023/05/04	ATL SOP 00048	Auto Calc
Metals Water Diss. MS (as rec'd)	9	N/A	2023/05/03	ATL SOP 00058	EPA 6020B R2 m
Metals Water Diss. MS (as rec'd)	1	N/A	2023/05/04	ATL SOP 00058	EPA 6020B R2 m
pH (1)	10	N/A	2023/05/02	ATL SOP 00003	SM 24 4500-H+ B m
ModTPH (T1) Calc. for Water	10	N/A	2023/05/04	N/A	Atl. RBCA v3 m
Volatile Organic Compounds in Water	1	N/A	2023/05/01	ATL SOP 00133	EPA 8260D R4 m
VPH in Water (PIRI)	9	N/A	2023/05/01	ATL SOP 00130	Atl. RBCA v3.1 m
VPH in Water (PIRI)	1	N/A	2023/05/02	ATL SOP 00130	Atl. RBCA v3.1 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. 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.



Your P.O. #: 49942
Your Project #: 2001756.005
Site#: DSME Trenton
Your C.O.C. #: 931553-01-01

Attention: Ryan Pellerin

Englobe Corp
97 Troop Ave
Dartmouth, NS
CANADA B3B 2A7

Report Date: 2023/05/04
Report #: R7614647
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3B9900

Received: 2023/04/27, 10:06

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

(1) The APHA Standard Method requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:

Keri Mackay, Customer Experience Team Lead

Email: Keri.MACKAY@bureauveritas.com

Phone# (902)420-0203 Ext:294

=====

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

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
Report Date: 2023/05/04

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: 49942
Sampler Initials: AC

RBCA HYDROCARBONS IN WATER (GROUND WATER)

Bureau Veritas ID		VRC394	VRC395		VRC396		VRC397			
Sampling Date		2023/04/26 15:00	2023/04/26 14:45		2023/04/26 14:30		2023/04/26 11:20			
COC Number		931553-01-01	931553-01-01		931553-01-01		931553-01-01			
	UNITS	TRIP BLANK	EQUIPMENT BLANK	RDL	MW1	RDL	MW3	RDL	MDL	QC Batch

Petroleum Hydrocarbons										
Benzene	mg/L	<0.0010	<0.0010	0.0010	<0.0030 (1)	0.0030	<0.0010	0.0010	N/A	8637722
Toluene	mg/L	<0.0010	<0.0010	0.0010	0.0097	0.0010	<0.0010	0.0010	N/A	8637722
Ethylbenzene	mg/L	<0.0010	<0.0010	0.0010	0.52	0.0010	<0.0010	0.0010	N/A	8637722
Total Xylenes	mg/L	<0.0020	<0.0020	0.0020	0.52	0.0020	<0.0020	0.0020	N/A	8637722
C6 - C10 (less BTEX)	mg/L	<0.090	<0.090	0.090	9.6	0.090	<0.090	0.090	N/A	8637722
>C10-C16 Hydrocarbons	mg/L	<0.050	<0.050	0.050	2.6	0.050	<0.050	0.050	N/A	8642894
>C16-C21 Hydrocarbons	mg/L	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	N/A	8642894
>C21-<C32 Hydrocarbons	mg/L	<0.090	<0.090	0.090	<0.090	0.090	<0.090	0.090	N/A	8642894
Modified TPH (Tier1)	mg/L	<0.090	<0.090	0.090	12	0.090	<0.090	0.090	N/A	8634409
Reached Baseline at C32	mg/L	NA	NA	N/A	Yes	N/A	NA	N/A	N/A	8642894
Hydrocarbon Resemblance	mg/L	NA	NA	N/A	COMMENT (2)	N/A	NA	N/A	N/A	8642894
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	95	94		97		93			8642894
n-Dotriacontane - Extractable	%	108	111		110		108 (3)			8642894
Isobutylbenzene - Volatile	%	94	98		92		85			8637722

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Elevated VPH RDL(s) due to matrix interference.

(2) One product in the gas/fuel oil range.

(3) TEH sample contained sediment.



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
Report Date: 2023/05/04

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: 49942
Sampler Initials: AC

RBCA HYDROCARBONS IN WATER (GROUND WATER)

Bureau Veritas ID		VRC398	VRC399	VRC400				VRC400			
Sampling Date		2023/04/26 10:30	2023/04/26 13:40	2023/04/26 13:00				2023/04/26 13:00			
COC Number		931553-01-01	931553-01-01	931553-01-01				931553-01-01			
	UNITS	MW4	MW6	MW9	RDL	MDL	QC Batch	MW9 Lab-Dup	RDL	MDL	QC Batch

Petroleum Hydrocarbons											
Benzene	mg/L	<0.0010	<0.0010	<0.0010	0.0010	N/A	8637722				
Toluene	mg/L	<0.0010	<0.0010	<0.0010	0.0010	N/A	8637722				
Ethylbenzene	mg/L	<0.0010	<0.0010	<0.0010	0.0010	N/A	8637722				
Total Xylenes	mg/L	<0.0020	<0.0020	<0.0020	0.0020	N/A	8637722				
C6 - C10 (less BTEX)	mg/L	<0.090	<0.090	<0.090	0.090	N/A	8637722				
>C10-C16 Hydrocarbons	mg/L	<0.050	<0.050	<0.050	0.050	N/A	8642894	<0.050	0.050	N/A	8642894
>C16-C21 Hydrocarbons	mg/L	<0.050	<0.050	0.054	0.050	N/A	8642894	<0.050	0.050	N/A	8642894
>C21-<C32 Hydrocarbons	mg/L	<0.090	<0.090	0.19	0.090	N/A	8642894	0.12	0.090	N/A	8642894
Modified TPH (Tier1)	mg/L	<0.090	<0.090	0.24	0.090	N/A	8634409				
Reached Baseline at C32	mg/L	NA	NA	Yes	N/A	N/A	8642894				
Hydrocarbon Resemblance	mg/L	NA	NA	COMMENT (1)	N/A	N/A	8642894				

Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	93	96	89			8642894	95			8642894
n-Dotriacontane - Extractable	%	110 (2)	114	97			8642894	106			8642894
Isobutylbenzene - Volatile	%	95	96	96			8637722				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Lube oil fraction.
(2) TEH sample contained sediment.



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
Report Date: 2023/05/04

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: 49942
Sampler Initials: AC

RBCA HYDROCARBONS IN WATER (GROUND WATER)

Bureau Veritas ID		VRC401	VRC402	VRC403			
Sampling Date		2023/04/26 12:30	2023/04/26 10:15	2023/04/26			
COC Number		931553-01-01	931553-01-01	931553-01-01			
	UNITS	MW11	MW14	DUP1	RDL	MDL	QC Batch
Petroleum Hydrocarbons							
Benzene	mg/L	<0.0010	<0.0010	<0.0010	0.0010	N/A	8637722
Toluene	mg/L	<0.0010	<0.0010	<0.0010	0.0010	N/A	8637722
Ethylbenzene	mg/L	<0.0010	<0.0010	<0.0010	0.0010	N/A	8637722
Total Xylenes	mg/L	<0.0020	<0.0020	<0.0020	0.0020	N/A	8637722
C6 - C10 (less BTEX)	mg/L	<0.090	<0.090	<0.090	0.090	N/A	8637722
>C10-C16 Hydrocarbons	mg/L	0.12	<0.050	<0.050	0.050	N/A	8642894
>C16-C21 Hydrocarbons	mg/L	0.28	<0.050	<0.050	0.050	N/A	8642894
>C21-C32 Hydrocarbons	mg/L	2.0	<0.090	<0.090	0.090	N/A	8642894
Modified TPH (Tier1)	mg/L	2.4	<0.090	<0.090	0.090	N/A	8634409
Reached Baseline at C32	mg/L	No	NA	NA	N/A	N/A	8642894
Hydrocarbon Resemblance	mg/L	COMMENT (1)	NA	NA	N/A	N/A	8642894
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%	95	92	97			8642894
n-Dotriacontane - Extractable	%	118	104 (2)	116 (2)			8642894
Isobutylbenzene - Volatile	%	98	96	94			8637722
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) One product in fuel oil range. Lube oil fraction. (2) TEH sample contained sediment.							



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
Report Date: 2023/05/04

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: 49942
Sampler Initials: AC

ATLANTIC VOCs - NON-CHLORINATED WATER (GROUND WATER)

Bureau Veritas ID		VRC399			
Sampling Date		2023/04/26 13:40			
COC Number		931553-01-01			
	UNITS	MW6	RDL	MDL	QC Batch
Volatile Organics					
1,1-Dichloroethane	ug/L	<2.0	2.0	N/A	8638131
1,1-Dichloroethylene	ug/L	<0.50	0.50	1.0	8638131
1,1,1-Trichloroethane	ug/L	<1.0	1.0	N/A	8638131
1,1,2-Trichloroethane	ug/L	<1.0	1.0	N/A	8638131
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	N/A	8638131
Ethylene Dibromide	ug/L	<0.20	0.20	0.50	8638131
1,2-Dichlorobenzene	ug/L	<0.50	0.50	N/A	8638131
1,2-Dichloroethane	ug/L	<1.0	1.0	N/A	8638131
cis-1,2-Dichloroethylene	ug/L	1.8	0.50	N/A	8638131
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	N/A	8638131
1,2-Dichloropropane	ug/L	<0.50	0.50	N/A	8638131
1,3-Dichlorobenzene	ug/L	<1.0	1.0	N/A	8638131
cis-1,3-Dichloropropene	ug/L	<0.50	0.50	N/A	8638131
trans-1,3-Dichloropropene	ug/L	<0.50	0.50	N/A	8638131
1,4-Dichlorobenzene	ug/L	<1.0	1.0	N/A	8638131
Benzene	ug/L	<1.0	1.0	N/A	8638131
Bromodichloromethane	ug/L	<1.0	1.0	0.20	8638131
Bromoform	ug/L	<1.0	1.0	0.20	8638131
Bromomethane	ug/L	<0.50	0.50	N/A	8638131
Carbon Tetrachloride	ug/L	<0.50	0.50	N/A	8638131
Chlorobenzene	ug/L	<1.0	1.0	N/A	8638131
Chloroethane	ug/L	<8.0	8.0	N/A	8638131
Chloroform	ug/L	<1.0	1.0	0.20	8638131
Chloromethane	ug/L	<8.0	8.0	N/A	8638131
Dibromochloromethane	ug/L	<1.0	1.0	0.20	8638131
Methylene Chloride(Dichloromethane)	ug/L	<3.0	3.0	N/A	8638131
Ethylbenzene	ug/L	<1.0	1.0	N/A	8638131
Methyl t-butyl ether (MTBE)	ug/L	<2.0	2.0	N/A	8638131
Styrene	ug/L	<1.0	1.0	N/A	8638131
Tetrachloroethylene	ug/L	<1.0	1.0	N/A	8638131
Toluene	ug/L	<1.0	1.0	N/A	8638131
Trichloroethylene	ug/L	14	1.0	N/A	8638131
Trichlorofluoromethane (FREON 11)	ug/L	<8.0	8.0	N/A	8638131
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900

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Englobe Corp

Client Project #: 2001756.005

Your P.O. #: 49942

Sampler Initials: AC

ATLANTIC VOCS - NON-CHLORINATED WATER (GROUND WATER)

Bureau Veritas ID		VRC399			
Sampling Date		2023/04/26 13:40			
COC Number		931553-01-01			
	UNITS	MW6	RDL	MDL	QC Batch
Vinyl Chloride	ug/L	0.65	0.50	2.0	8638131
o-Xylene	ug/L	<1.0	1.0	N/A	8638131
p+m-Xylene	ug/L	<2.0	2.0	N/A	8638131
Total Xylenes	ug/L	<1.0	1.0	1.0	8638131
Total Trihalomethanes	ug/L	<1.0	1.0	N/A	8638131
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	94			8638131
D4-1,2-Dichloroethane	%	118			8638131
D8-Toluene	%	95			8638131
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
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Sampler Initials: AC

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		VRC394	VRC395	VRC396	VRC397	VRC398			
Sampling Date		2023/04/26 15:00	2023/04/26 14:45	2023/04/26 14:30	2023/04/26 11:20	2023/04/26 10:30			
COC Number		931553-01-01	931553-01-01	931553-01-01	931553-01-01	931553-01-01			
	UNITS	TRIP BLANK	EQUIPMENT BLANK	MW1	MW3	MW4	RDL	MDL	QC Batch
Calculated Parameters									
Hardness (CaCO ₃)	mg/L	<1.0	<1.0	160	270	90	1.0	1.0	8635144
Inorganics									
pH	pH	6.30	6.50	7.61	7.40	7.12			8640100
Conductivity	uS/cm	1.8	1.4	3900	1800	440	1.0	N/A	8640091
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

Bureau Veritas ID		VRC399				VRC399				VRC400			
Sampling Date		2023/04/26 13:40				2023/04/26 13:40				2023/04/26 13:00			
COC Number		931553-01-01				931553-01-01				931553-01-01			
	UNITS	MW6	RDL	MDL	QC Batch	MW6 Lab-Dup	RDL	MDL	QC Batch	MW9	RDL	MDL	QC Batch
Calculated Parameters													
Hardness (CaCO ₃)	mg/L	170	1.0	1.0	8635144					290	1.0	1.0	8635144
Inorganics													
pH	pH	7.74			8640117	7.62			8640117	7.57			8640100
Conductivity	uS/cm	400	1.0	N/A	8640105	400	1.0	N/A	8640105	640	1.0	N/A	8640091
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable													

Bureau Veritas ID		VRC401	VRC402	VRC403			
Sampling Date		2023/04/26 12:30	2023/04/26 10:15	2023/04/26			
COC Number		931553-01-01	931553-01-01	931553-01-01			
	UNITS	MW11	MW14	DUP1	RDL	MDL	QC Batch
Calculated Parameters							
Hardness (CaCO ₃)	mg/L	250	130	130	1.0	1.0	8635144
Inorganics							
pH	pH	7.35	7.17	7.14			8640100
Conductivity	uS/cm	820	580	580	1.0	N/A	8640091
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable							



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
Report Date: 2023/05/04

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: 49942
Sampler Initials: AC

ELEMENTS BY ICP/MS (GROUND WATER)

Bureau Veritas ID		VRC394	VRC395	VRC396	VRC397	VRC398			
Sampling Date		2023/04/26 15:00	2023/04/26 14:45	2023/04/26 14:30	2023/04/26 11:20	2023/04/26 10:30			
COC Number		931553-01-01	931553-01-01	931553-01-01	931553-01-01	931553-01-01			
	UNITS	TRIP BLANK	EQUIPMENT BLANK	MW1	MW3	MW4	RDL	MDL	QC Batch

Metals									
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	4.1	<1.0	1.6	1.0	N/A	8640219
Dissolved Calcium (Ca)	ug/L	<100	<100	52000	79000	19000	100	N/A	8640219
Dissolved Iron (Fe)	ug/L	<50	<50	23000	3300	1500	50	N/A	8640219
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	N/A	8640219
Dissolved Manganese (Mn)	ug/L	<2.0	<2.0	22000	4700	6700	2.0	N/A	8640219
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	7.0	34	48	5.0	N/A	8640219

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

Bureau Veritas ID		VRC399	VRC400	VRC401	VRC402	VRC403			
Sampling Date		2023/04/26 13:40	2023/04/26 13:00	2023/04/26 12:30	2023/04/26 10:15	2023/04/26			
COC Number		931553-01-01	931553-01-01	931553-01-01	931553-01-01	931553-01-01			
	UNITS	MW6	MW9	MW11	MW14	DUP1	RDL	MDL	QC Batch

Metals									
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	N/A	8640219
Dissolved Calcium (Ca)	ug/L	59000	93000	73000	40000	40000	100	N/A	8640219
Dissolved Iron (Fe)	ug/L	<50	650	15000	<50	<50	50	N/A	8640219
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	N/A	8640219
Dissolved Manganese (Mn)	ug/L	2.5	730	1300	1700	1700	2.0	N/A	8640219
Dissolved Zinc (Zn)	ug/L	5.2	9.1	5.3	23	26	5.0	N/A	8640219

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable



GENERAL COMMENTS

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

Package 1	0.0°C
Package 2	1.3°C

TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
Report Date: 2023/05/04

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: 49942
Sampler Initials: AC

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8637722	JPA	Matrix Spike	Isobutylbenzene - Volatile	2023/05/01		102	%	70 - 130
			Benzene	2023/05/01		102	%	70 - 130
			Toluene	2023/05/01		98	%	70 - 130
			Ethylbenzene	2023/05/01		97	%	70 - 130
			Total Xylenes	2023/05/01		96	%	70 - 130
8637722	JPA	Spiked Blank	Isobutylbenzene - Volatile	2023/05/01		101	%	70 - 130
			Benzene	2023/05/01		98	%	70 - 130
			Toluene	2023/05/01		97	%	70 - 130
			Ethylbenzene	2023/05/01		96	%	70 - 130
			Total Xylenes	2023/05/01		96	%	70 - 130
8637722	JPA	Method Blank	Isobutylbenzene - Volatile	2023/05/01		99	%	70 - 130
			Benzene	2023/05/01	<0.0010		mg/L	
			Toluene	2023/05/01	<0.0010		mg/L	
			Ethylbenzene	2023/05/01	<0.0010		mg/L	
			Total Xylenes	2023/05/01	<0.0020		mg/L	
8637722	JPA	RPD	C6 - C10 (less BTEX)	2023/05/01	<0.090		mg/L	
			Benzene	2023/05/01	NC		%	40
			Toluene	2023/05/01	NC		%	40
			Ethylbenzene	2023/05/01	NC		%	40
			Total Xylenes	2023/05/01	NC		%	40
8638131	DBF	Matrix Spike	C6 - C10 (less BTEX)	2023/05/01	NC		%	40
			4-Bromofluorobenzene	2023/05/01		101	%	70 - 130
			D4-1,2-Dichloroethane	2023/05/01		99	%	70 - 130
			D8-Toluene	2023/05/01		101	%	70 - 130
			1,1-Dichloroethane	2023/05/01		105	%	70 - 130
			1,1-Dichloroethylene	2023/05/01		105	%	70 - 130
			1,1,1-Trichloroethane	2023/05/01		105	%	70 - 130
			1,1,2-Trichloroethane	2023/05/01		103	%	70 - 130
			1,1,2,2-Tetrachloroethane	2023/05/01		90	%	70 - 130
			Ethylene Dibromide	2023/05/01		105	%	70 - 130
			1,2-Dichlorobenzene	2023/05/01		96	%	70 - 130
			1,2-Dichloroethane	2023/05/01		97	%	70 - 130
			cis-1,2-Dichloroethylene	2023/05/01		100	%	70 - 130
			trans-1,2-Dichloroethylene	2023/05/01		102	%	70 - 130
			1,2-Dichloropropane	2023/05/01		98	%	70 - 130
			1,3-Dichlorobenzene	2023/05/01		92	%	70 - 130
			cis-1,3-Dichloropropene	2023/05/01		96	%	70 - 130
			trans-1,3-Dichloropropene	2023/05/01		103	%	70 - 130
			1,4-Dichlorobenzene	2023/05/01		96	%	70 - 130
			Benzene	2023/05/01		102	%	70 - 130
			Bromodichloromethane	2023/05/01		100	%	70 - 130
			Bromoform	2023/05/01		96	%	70 - 130
			Bromomethane	2023/05/01		101	%	60 - 140
			Carbon Tetrachloride	2023/05/01		97	%	70 - 130
			Chlorobenzene	2023/05/01		97	%	70 - 130
			Chloroethane	2023/05/01		100	%	60 - 140
			Chloroform	2023/05/01		98	%	70 - 130
			Chloromethane	2023/05/01		76	%	60 - 140
			Dibromochloromethane	2023/05/01		94	%	70 - 130
			Methylene Chloride(Dichloromethane)	2023/05/01		102	%	70 - 130
			Ethylbenzene	2023/05/01		103	%	70 - 130
			Methyl t-butyl ether (MTBE)	2023/05/01		103	%	70 - 130
			Styrene	2023/05/01		103	%	70 - 130



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
Report Date: 2023/05/04

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: 49942
Sampler Initials: AC

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8638131	DBF	Spiked Blank	Tetrachloroethylene	2023/05/01		94	%	70 - 130
			Toluene	2023/05/01		102	%	70 - 130
			Trichloroethylene	2023/05/01		99	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2023/05/01		100	%	60 - 140
			Vinyl Chloride	2023/05/01		86	%	60 - 140
			o-Xylene	2023/05/01		110	%	70 - 130
			p+m-Xylene	2023/05/01		107	%	70 - 130
			4-Bromofluorobenzene	2023/05/01		100	%	70 - 130
			D4-1,2-Dichloroethane	2023/05/01		99	%	70 - 130
			D8-Toluene	2023/05/01		102	%	70 - 130
			1,1-Dichloroethane	2023/05/01		105	%	70 - 130
			1,1-Dichloroethylene	2023/05/01		106	%	70 - 130
			1,1,1-Trichloroethane	2023/05/01		105	%	70 - 130
			1,1,2-Trichloroethane	2023/05/01		103	%	70 - 130
			1,1,2,2-Tetrachloroethane	2023/05/01		90	%	70 - 130
			Ethylene Dibromide	2023/05/01		105	%	70 - 130
			1,2-Dichlorobenzene	2023/05/01		96	%	70 - 130
			1,2-Dichloroethane	2023/05/01		98	%	70 - 130
			cis-1,2-Dichloroethylene	2023/05/01		101	%	70 - 130
			trans-1,2-Dichloroethylene	2023/05/01		104	%	70 - 130
			1,2-Dichloropropane	2023/05/01		98	%	70 - 130
			1,3-Dichlorobenzene	2023/05/01		93	%	70 - 130
			cis-1,3-Dichloropropene	2023/05/01		97	%	70 - 130
			trans-1,3-Dichloropropene	2023/05/01		103	%	70 - 130
			1,4-Dichlorobenzene	2023/05/01		97	%	70 - 130
			Benzene	2023/05/01		102	%	70 - 130
			Bromodichloromethane	2023/05/01		100	%	70 - 130
			Bromoform	2023/05/01		95	%	70 - 130
			Bromomethane	2023/05/01		102	%	60 - 140
			Carbon Tetrachloride	2023/05/01		97	%	70 - 130
			Chlorobenzene	2023/05/01		97	%	70 - 130
			Chloroethane	2023/05/01		102	%	60 - 140
			Chloroform	2023/05/01		99	%	70 - 130
			Chloromethane	2023/05/01		78	%	60 - 140
			Dibromochloromethane	2023/05/01		95	%	70 - 130
			Methylene Chloride(Dichloromethane)	2023/05/01		103	%	70 - 130
			Ethylbenzene	2023/05/01		104	%	70 - 130
			Methyl t-butyl ether (MTBE)	2023/05/01		105	%	70 - 130
			Styrene	2023/05/01		104	%	70 - 130
			Tetrachloroethylene	2023/05/01		94	%	70 - 130
			Toluene	2023/05/01		103	%	70 - 130
			Trichloroethylene	2023/05/01		100	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2023/05/01		100	%	60 - 140
			Vinyl Chloride	2023/05/01		88	%	60 - 140
			o-Xylene	2023/05/01		110	%	70 - 130
			p+m-Xylene	2023/05/01		108	%	70 - 130
8638131	DBF	Method Blank	4-Bromofluorobenzene	2023/05/01		97	%	70 - 130
			D4-1,2-Dichloroethane	2023/05/01		95	%	70 - 130
			D8-Toluene	2023/05/01		99	%	70 - 130
			1,1-Dichloroethane	2023/05/01	<2.0		ug/L	
			1,1-Dichloroethylene	2023/05/01	<0.50		ug/L	
			1,1,1-Trichloroethane	2023/05/01	<1.0		ug/L	
			1,1,2-Trichloroethane	2023/05/01	<1.0		ug/L	



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
Report Date: 2023/05/04

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: 49942
Sampler Initials: AC

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8638131	DBF	RPD	1,1,2,2-Tetrachloroethane	2023/05/01	<0.50		ug/L	
			Ethylene Dibromide	2023/05/01	<0.20		ug/L	
			1,2-Dichlorobenzene	2023/05/01	<0.50		ug/L	
			1,2-Dichloroethane	2023/05/01	<1.0		ug/L	
			cis-1,2-Dichloroethylene	2023/05/01	<0.50		ug/L	
			trans-1,2-Dichloroethylene	2023/05/01	<0.50		ug/L	
			1,2-Dichloropropane	2023/05/01	<0.50		ug/L	
			1,3-Dichlorobenzene	2023/05/01	<1.0		ug/L	
			cis-1,3-Dichloropropene	2023/05/01	<0.50		ug/L	
			trans-1,3-Dichloropropene	2023/05/01	<0.50		ug/L	
			1,4-Dichlorobenzene	2023/05/01	<1.0		ug/L	
			Benzene	2023/05/01	<1.0		ug/L	
			Bromodichloromethane	2023/05/01	<1.0		ug/L	
			Bromoform	2023/05/01	<1.0		ug/L	
			Bromomethane	2023/05/01	<0.50		ug/L	
			Carbon Tetrachloride	2023/05/01	<0.50		ug/L	
			Chlorobenzene	2023/05/01	<1.0		ug/L	
			Chloroethane	2023/05/01	<8.0		ug/L	
			Chloroform	2023/05/01	<1.0		ug/L	
			Chloromethane	2023/05/01	<8.0		ug/L	
			Dibromochloromethane	2023/05/01	<1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2023/05/01	<3.0		ug/L	
			Ethylbenzene	2023/05/01	<1.0		ug/L	
			Methyl t-butyl ether (MTBE)	2023/05/01	<2.0		ug/L	
			Styrene	2023/05/01	<1.0		ug/L	
			Tetrachloroethylene	2023/05/01	<1.0		ug/L	
			Toluene	2023/05/01	<1.0		ug/L	
			Trichloroethylene	2023/05/01	<1.0		ug/L	
			Trichlorofluoromethane (FREON 11)	2023/05/01	<8.0		ug/L	
			Vinyl Chloride	2023/05/01	<0.50		ug/L	
			o-Xylene	2023/05/01	<1.0		ug/L	
			p+m-Xylene	2023/05/01	<2.0		ug/L	
			Total Xylenes	2023/05/01	<1.0		ug/L	
			Total Trihalomethanes	2023/05/01	<1.0		ug/L	
			1,1-Dichloroethane	2023/05/01	NC		%	40
			1,1-Dichloroethylene	2023/05/01	NC		%	40
			1,1,1-Trichloroethane	2023/05/01	NC		%	40
			1,1,2-Trichloroethane	2023/05/01	NC		%	40
			1,1,2,2-Tetrachloroethane	2023/05/01	NC		%	40
			Ethylene Dibromide	2023/05/01	NC		%	40
			1,2-Dichlorobenzene	2023/05/01	NC		%	40
			1,2-Dichloroethane	2023/05/01	NC		%	40
			cis-1,2-Dichloroethylene	2023/05/01	NC		%	40
			trans-1,2-Dichloroethylene	2023/05/01	NC		%	40
			1,2-Dichloropropane	2023/05/01	NC		%	40
			1,3-Dichlorobenzene	2023/05/01	NC		%	40
			cis-1,3-Dichloropropene	2023/05/01	NC		%	40
			trans-1,3-Dichloropropene	2023/05/01	NC		%	40
			1,4-Dichlorobenzene	2023/05/01	NC		%	40
			Benzene	2023/05/01	NC		%	40
			Bromodichloromethane	2023/05/01	NC		%	40
			Bromoform	2023/05/01	NC		%	40
			Bromomethane	2023/05/01	NC		%	40



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900
Report Date: 2023/05/04

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: 49942
Sampler Initials: AC

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Carbon Tetrachloride	2023/05/01	NC		%	40
			Chlorobenzene	2023/05/01	NC		%	40
			Chloroethane	2023/05/01	NC		%	40
			Chloroform	2023/05/01	NC		%	40
			Chloromethane	2023/05/01	NC		%	40
			Dibromochloromethane	2023/05/01	NC		%	40
			Methylene Chloride(Dichloromethane)	2023/05/01	NC		%	40
			Ethylbenzene	2023/05/01	NC		%	40
			Methyl t-butyl ether (MTBE)	2023/05/01	NC		%	40
			Styrene	2023/05/01	NC		%	40
			Tetrachloroethylene	2023/05/01	NC		%	40
			Toluene	2023/05/01	NC		%	40
			Trichloroethylene	2023/05/01	NC		%	40
			Trichlorofluoromethane (FREON 11)	2023/05/01	NC		%	40
			Vinyl Chloride	2023/05/01	NC		%	40
			o-Xylene	2023/05/01	NC		%	40
			p+m-Xylene	2023/05/01	NC		%	40
			Total Xylenes	2023/05/01	NC		%	40
			Total Trihalomethanes	2023/05/01	NC		%	40
8640091	NGI	Spiked Blank	Conductivity	2023/05/02		98	%	80 - 120
8640091	NGI	Method Blank	Conductivity	2023/05/02	<1.0		uS/cm	
8640091	NGI	RPD	Conductivity	2023/05/02	0.37		%	10
8640100	NGI	Spiked Blank	pH	2023/05/02		99	%	97 - 103
8640100	NGI	RPD	pH	2023/05/02	2.6		%	N/A
8640105	NGI	Spiked Blank	Conductivity	2023/05/02		97	%	80 - 120
8640105	NGI	Method Blank	Conductivity	2023/05/02	<1.0		uS/cm	
8640105	NGI	RPD [VRC399-01]	Conductivity	2023/05/02	0.25		%	10
8640117	NGI	Spiked Blank	pH	2023/05/02		100	%	97 - 103
8640117	NGI	RPD [VRC399-01]	pH	2023/05/02	1.6		%	N/A
8640219	BCZ	Matrix Spike	Dissolved Arsenic (As)	2023/05/04		97	%	80 - 120
			Dissolved Calcium (Ca)	2023/05/04		NC	%	80 - 120
			Dissolved Iron (Fe)	2023/05/04		97	%	80 - 120
			Dissolved Lead (Pb)	2023/05/04		97	%	80 - 120
			Dissolved Manganese (Mn)	2023/05/04		NC	%	80 - 120
			Dissolved Zinc (Zn)	2023/05/04		99	%	80 - 120
8640219	BCZ	Spiked Blank	Dissolved Arsenic (As)	2023/05/03		96	%	80 - 120
			Dissolved Calcium (Ca)	2023/05/03		99	%	80 - 120
			Dissolved Iron (Fe)	2023/05/03		102	%	80 - 120
			Dissolved Lead (Pb)	2023/05/03		99	%	80 - 120
			Dissolved Manganese (Mn)	2023/05/03		101	%	80 - 120
			Dissolved Zinc (Zn)	2023/05/03		103	%	80 - 120
8640219	BCZ	Method Blank	Dissolved Arsenic (As)	2023/05/03	<1.0		ug/L	
			Dissolved Calcium (Ca)	2023/05/03	<100		ug/L	
			Dissolved Iron (Fe)	2023/05/03	<50		ug/L	
			Dissolved Lead (Pb)	2023/05/03	<0.50		ug/L	
			Dissolved Manganese (Mn)	2023/05/03	<2.0		ug/L	
			Dissolved Zinc (Zn)	2023/05/03	<5.0		ug/L	
8640219	BCZ	RPD	Dissolved Arsenic (As)	2023/05/04	NC		%	20
			Dissolved Calcium (Ca)	2023/05/04	0.078		%	20
			Dissolved Iron (Fe)	2023/05/04	0.072		%	20
			Dissolved Lead (Pb)	2023/05/04	NC		%	20
			Dissolved Manganese (Mn)	2023/05/04	0.77		%	20
			Dissolved Zinc (Zn)	2023/05/04	NC		%	20



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900

Report Date: 2023/05/04

Englobe Corp

Client Project #: 2001756.005

Your P.O. #: 49942

Sampler Initials: AC

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8642894	MGN	Matrix Spike [VRC394-02]	Isobutylbenzene - Extractable	2023/05/03		96	%	70 - 130
			n-Dotriacontane - Extractable	2023/05/03		114	%	70 - 130
			>C10-C16 Hydrocarbons	2023/05/03		85	%	70 - 130
			>C16-C21 Hydrocarbons	2023/05/03		87	%	70 - 130
			>C21-<C32 Hydrocarbons	2023/05/03		83	%	70 - 130
8642894	MGN	Spiked Blank	Isobutylbenzene - Extractable	2023/05/03		97	%	70 - 130
			n-Dotriacontane - Extractable	2023/05/03		112	%	70 - 130
			>C10-C16 Hydrocarbons	2023/05/03		91	%	70 - 130
			>C16-C21 Hydrocarbons	2023/05/03		89	%	70 - 130
			>C21-<C32 Hydrocarbons	2023/05/03		84	%	70 - 130
8642894	MGN	Method Blank	Isobutylbenzene - Extractable	2023/05/03		98	%	70 - 130
			n-Dotriacontane - Extractable	2023/05/03		109	%	70 - 130
			>C10-C16 Hydrocarbons	2023/05/03	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2023/05/03	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2023/05/03	<0.090		mg/L	
8642894	MGN	RPD [VRC400-02]	>C10-C16 Hydrocarbons	2023/05/03	NC		%	40
			>C16-C21 Hydrocarbons	2023/05/03	7.5		%	40
			>C21-<C32 Hydrocarbons	2023/05/03	NC		%	40

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).



BUREAU
VERITAS

Bureau Veritas Job #: C3B9900

Report Date: 2023/05/04

Englobe Corp

Client Project #: 2001756.005

Your P.O. #: 49942

Sampler Initials: AC

VALIDATION SIGNATURE PAGE

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

Mike MacGillivray, Scientific Specialist (Inorganics)

Phil Deveau, Scientific Specialist (Organics)



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Your P.O. #: TO FOLLOW
Your Project #: 2001756.005
Site#: DSME Trenton
Your C.O.C. #: 959121-01-01

Attention: Ryan Pellerin

Englobe Corp
97 Troop Ave
Dartmouth, NS
CANADA B3B 2A7

Report Date: 2023/11/02
Report #: R7890994
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3W3296

Received: 2023/10/18, 11:05

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Conductance - water	10	N/A	2023/10/24	ATL SOP 00004	SM 24 2510B m
TEH in Water (PIRI)	9	2023/10/19	2023/10/19	ATL SOP 00113	Atl. RBCA v3.1 m
TEH in Water (PIRI)	1	2023/10/20	2023/10/20	ATL SOP 00113	Atl. RBCA v3.1 m
Hardness (calculated as CaCO ₃)	10	N/A	2023/10/30	ATL SOP 00048	Auto Calc
Metals Water Diss. MS (as rec'd)	10	N/A	2023/10/28	ATL SOP 00058	EPA 6020B R2 m
pH (1)	10	N/A	2023/10/24	ATL SOP 00003	SM 24 4500-H+ B m
ModTPH (T1) Calc. for Water	8	N/A	2023/10/20	N/A	Atl. RBCA v3 m
ModTPH (T1) Calc. for Water	2	N/A	2023/10/23	N/A	Atl. RBCA v3 m
Volatile Organic Compounds in Water	1	N/A	2023/10/26	ATL SOP 00133	EPA 8260D R4 m
VPH in Water (PIRI)	3	N/A	2023/10/19	ATL SOP 00130	Atl. RBCA v3.1 m
VPH in Water (PIRI)	7	N/A	2023/10/20	ATL SOP 00130	Atl. RBCA v3.1 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, MELCCFP, 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. 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.

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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) The APHA Standard Method requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this



Your P.O. #: TO FOLLOW
Your Project #: 2001756.005
Site#: DSME Trenton
Your C.O.C. #: 959121-01-01

Attention: Ryan Pellerin

Englobe Corp
97 Troop Ave
Dartmouth, NS
CANADA B3B 2A7

Report Date: 2023/11/02
Report #: R7890994
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3W3296

Received: 2023/10/18, 11:05

report are reported past the APHA Standard Method holding time.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Gemarie Balatico, Project Manager
Email: Gemarie.Balatico@bureauveritas.com
Phone# (905)817-5787

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Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C3W3296
Report Date: 2023/11/02

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: TO FOLLOW
Sampler Initials: DN

RBCA HYDROCARBONS IN WATER (WATER)

Bureau Veritas ID		XHZ234	XHZ235	XHZ236	XHZ237	XHZ238		
Sampling Date		2023/10/17 18:30	2023/10/17 18:20	2023/10/17 17:15	2023/10/17 15:35	2023/10/17 15:15		
COC Number		959121-01-01	959121-01-01	959121-01-01	959121-01-01	959121-01-01		
	UNITS	TRIP BLANK	EQUIPMENT BLANK	MW1	MW3	MW4	RDL	QC Batch
Petroleum Hydrocarbons								
Benzene	mg/L	<0.0010	<0.0010	0.0038	<0.0010	<0.0010	0.0010	8992066
Toluene	mg/L	<0.0010	<0.0010	0.014	<0.0010	<0.0010	0.0010	8992066
Ethylbenzene	mg/L	<0.0010	<0.0010	0.62	<0.0010	<0.0010	0.0010	8992066
Total Xylenes	mg/L	<0.0020	<0.0020	0.62	<0.0020	<0.0020	0.0020	8992066
C6 - C10 (less BTEX)	mg/L	<0.090	<0.090	11	<0.090	<0.090	0.090	8992066
>C10-C16 Hydrocarbons	mg/L	<0.050	<0.050	2.2	<0.050	<0.050	0.050	8991178
>C16-C21 Hydrocarbons	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8991178
>C21-<C32 Hydrocarbons	mg/L	<0.090	<0.090	<0.090	<0.090	<0.090	0.090	8991178
Modified TPH (Tier1)	mg/L	<0.090	<0.090	13	<0.090	<0.090	0.090	8988404
Reached Baseline at C32	mg/L	NA	NA	Yes	NA	NA	N/A	8991178
Hydrocarbon Resemblance	mg/L	NA	NA	COMMENT (1)	NA	NA	N/A	8991178
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	105	105	83	101	100		8991178
n-Dotriacontane - Extractable	%	109	111	101	104	105 (2)		8991178
Isobutylbenzene - Volatile	%	106	104	89	106	107 (3)		8992066
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) One product in the gas/fuel oil range. (2) TEH sample contained sediment. (3) VPH sample contained sediment.								



BUREAU
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Bureau Veritas Job #: C3W3296
Report Date: 2023/11/02

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: TO FOLLOW
Sampler Initials: DN

RBCA HYDROCARBONS IN WATER (WATER)

Bureau Veritas ID		XHZ239	XHZ240	XHZ241		XHZ242		
Sampling Date		2023/10/17 17:45	2023/10/17 16:00	2023/10/17 16:15		2023/10/17 16:45		
COC Number		959121-01-01	959121-01-01	959121-01-01		959121-01-01		
	UNITS	MW6	MW9	MW11	QC Batch	MW14	RDL	QC Batch
Petroleum Hydrocarbons								
Benzene	mg/L	<0.0010	<0.0010	<0.0010	8992066	<0.0010	0.0010	8992064
Toluene	mg/L	<0.0010	<0.0010	<0.0010	8992066	<0.0010	0.0010	8992064
Ethylbenzene	mg/L	<0.0010	<0.0010	<0.0010	8992066	<0.0010	0.0010	8992064
Total Xylenes	mg/L	<0.0020	<0.0020	<0.0020	8992066	<0.0020	0.0020	8992064
C6 - C10 (less BTEX)	mg/L	<0.090	<0.090	<0.090	8992066	<0.090	0.090	8992064
>C10-C16 Hydrocarbons	mg/L	0.080	0.073	0.12	8991178	<0.050	0.050	8991178
>C16-C21 Hydrocarbons	mg/L	<0.050	0.84	0.34	8991178	<0.050	0.050	8991178
>C21-<C32 Hydrocarbons	mg/L	<0.090	6.6	2.1	8991178	<0.090	0.090	8991178
Modified TPH (Tier1)	mg/L	<0.090	7.5	2.5	8988404	<0.090	0.090	8988404
Reached Baseline at C32	mg/L	NA	No	No	8991178	NA	N/A	8991178
Hydrocarbon Resemblance	mg/L	NA	COMMENT (1)	COMMENT (2)	8991178	NA	N/A	8991178
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	101	100	101	8991178	97		8991178
n-Dotriacontane - Extractable	%	106	80	96	8991178	116		8991178
Isobutylbenzene - Volatile	%	106	108	110	8992066	109		8992064
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Lube oil fraction. (2) One product in fuel oil range. Lube oil fraction.								



RBCA HYDROCARBONS IN WATER (WATER)

Bureau Veritas ID		XHZ242			XHZ243		
Sampling Date		2023/10/17 16:45			2023/10/17 15:40		
COC Number		959121-01-01			959121-01-01		
	UNITS	MW14 Lab-Dup	RDL	QC Batch	DUP1	RDL	QC Batch
Petroleum Hydrocarbons							
Benzene	mg/L	<0.0010	0.0010	8992064	<0.0010	0.0010	8992064
Toluene	mg/L	<0.0010	0.0010	8992064	<0.0010	0.0010	8992064
Ethylbenzene	mg/L	<0.0010	0.0010	8992064	<0.0010	0.0010	8992064
Total Xylenes	mg/L	<0.0020	0.0020	8992064	<0.0020	0.0020	8992064
C6 - C10 (less BTEX)	mg/L	<0.090	0.090	8992064	<0.090	0.090	8992064
>C10-C16 Hydrocarbons	mg/L				<0.050	0.050	8994200
>C16-C21 Hydrocarbons	mg/L				<0.050	0.050	8994200
>C21-<C32 Hydrocarbons	mg/L				<0.090	0.090	8994200
Modified TPH (Tier1)	mg/L				<0.090	0.090	8988404
Reached Baseline at C32	mg/L				NA	N/A	8994200
Hydrocarbon Resemblance	mg/L				NA	N/A	8994200
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%				82		8994200
n-Dotriacontane - Extractable	%				94		8994200
Isobutylbenzene - Volatile	%	105		8992064	107		8992064
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable							



BUREAU
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Bureau Veritas Job #: C3W3296
Report Date: 2023/11/02

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: TO FOLLOW
Sampler Initials: DN

ATLANTIC VOCS - NON-CHLORINATED WATER (WATER)

Bureau Veritas ID		XHZ239		
Sampling Date		2023/10/17 17:45		
COC Number		959121-01-01		
	UNITS	MW6	RDL	QC Batch
Volatile Organics				
1,1-Dichloroethane	ug/L	<2.0	2.0	9007172
1,1-Dichloroethylene	ug/L	<0.50	0.50	9007172
1,1,1-Trichloroethane	ug/L	<1.0	1.0	9007172
1,1,2-Trichloroethane	ug/L	<1.0	1.0	9007172
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	9007172
Ethylene Dibromide	ug/L	<0.20	0.20	9007172
1,2-Dichlorobenzene	ug/L	<0.50	0.50	9007172
1,2-Dichloroethane	ug/L	<1.0	1.0	9007172
cis-1,2-Dichloroethylene	ug/L	8.2	0.50	9007172
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	9007172
1,2-Dichloropropane	ug/L	<0.50	0.50	9007172
1,3-Dichlorobenzene	ug/L	<1.0	1.0	9007172
cis-1,3-Dichloropropene	ug/L	<0.50	0.50	9007172
trans-1,3-Dichloropropene	ug/L	<0.50	0.50	9007172
1,4-Dichlorobenzene	ug/L	<1.0	1.0	9007172
Benzene	ug/L	<1.0	1.0	9007172
Bromodichloromethane	ug/L	<1.0	1.0	9007172
Bromoform	ug/L	<1.0	1.0	9007172
Bromomethane	ug/L	<0.50	0.50	9007172
Carbon Tetrachloride	ug/L	<0.50	0.50	9007172
Chlorobenzene	ug/L	<1.0	1.0	9007172
Chloroethane	ug/L	<8.0	8.0	9007172
Chloroform	ug/L	<1.0	1.0	9007172
Chloromethane	ug/L	<8.0	8.0	9007172
Dibromochloromethane	ug/L	<1.0	1.0	9007172
Methylene Chloride(Dichloromethane)	ug/L	<3.0	3.0	9007172
Ethylbenzene	ug/L	<1.0	1.0	9007172
Methyl t-butyl ether (MTBE)	ug/L	<2.0	2.0	9007172
Styrene	ug/L	<1.0	1.0	9007172
Tetrachloroethylene	ug/L	<1.0	1.0	9007172
Toluene	ug/L	<1.0	1.0	9007172
Trichloroethylene	ug/L	26	1.0	9007172
Trichlorofluoromethane (FREON 11)	ug/L	<8.0	8.0	9007172
Vinyl Chloride	ug/L	4.6	0.50	9007172
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

Bureau Veritas Job #: C3W3296

Report Date: 2023/11/02

Englobe Corp

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ATLANTIC VOCS - NON-CHLORINATED WATER (WATER)

Bureau Veritas ID		XHZ239		
Sampling Date		2023/10/17 17:45		
COC Number		959121-01-01		
	UNITS	MW6	RDL	QC Batch
o-Xylene	ug/L	<1.0	1.0	9007172
p+m-Xylene	ug/L	<2.0	2.0	9007172
Total Xylenes	ug/L	<1.0	1.0	9007172
Total Trihalomethanes	ug/L	<1.0	1.0	9007172
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	92		9007172
D4-1,2-Dichloroethane	%	106		9007172
D8-Toluene	%	96		9007172
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		XHZ234	XHZ235	XHZ236	XHZ237	XHZ238	XHZ239		
Sampling Date		2023/10/17 18:30	2023/10/17 18:20	2023/10/17 17:15	2023/10/17 15:35	2023/10/17 15:15	2023/10/17 17:45		
COC Number		959121-01-01	959121-01-01	959121-01-01	959121-01-01	959121-01-01	959121-01-01		
	UNITS	TRIP BLANK	EQUIPMENT BLANK	MW1	MW3	MW4	MW6	RDL	QC Batch

Calculated Parameters									
Hardness (CaCO ₃)	mg/L	<1.0	<1.0	95	71	74	170	1.0	8988399
Inorganics									
pH	pH	5.85	5.98	7.54	7.31	6.89	7.26		8999671
Conductivity	uS/cm	1.3	1.2	2700	610	380	420	1.0	8999679
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

Bureau Veritas ID		XHZ240	XHZ241	XHZ242	XHZ243		
Sampling Date		2023/10/17 16:00	2023/10/17 16:15	2023/10/17 16:45	2023/10/17 15:40		
COC Number		959121-01-01	959121-01-01	959121-01-01	959121-01-01		
	UNITS	MW9	MW11	MW14	DUP1	RDL	QC Batch

Calculated Parameters							
Hardness (CaCO ₃)	mg/L	230	300	150	72	1.0	8989230
Inorganics							
pH	pH	7.64	7.55	7.41	7.49		8999671
Conductivity	uS/cm	480	730	350	670	1.0	8999679
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



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ELEMENTS BY ICP/MS (WATER)

Bureau Veritas ID		XHZ234	XHZ235	XHZ236	XHZ237	XHZ238	XHZ239		
Sampling Date		2023/10/17 18:30	2023/10/17 18:20	2023/10/17 17:15	2023/10/17 15:35	2023/10/17 15:15	2023/10/17 17:45		
COC Number		959121-01-01	959121-01-01	959121-01-01	959121-01-01	959121-01-01	959121-01-01		
	UNITS	TRIP BLANK	EQUIPMENT BLANK	MW1	MW3	MW4	MW6	RDL	QC Batch

Metals									
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	8.8	<1.0	<1.0	<1.0	1.0	9011131
Dissolved Calcium (Ca)	ug/L	<100	<100	31000	20000	15000	57000	100	9011131
Dissolved Iron (Fe)	ug/L	<50	<50	11000	980	76	<50	50	9011131
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9011131
Dissolved Magnesium (Mg)	ug/L	<100	<100	4300	5400	8800	6000	100	9011131
Dissolved Manganese (Mn)	ug/L	<2.0	<2.0	13000	1500	6600	130	2.0	9011131
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	32	14	70	6.2	5.0	9011131

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Bureau Veritas ID		XHZ240	XHZ241	XHZ242	XHZ243		
Sampling Date		2023/10/17 16:00	2023/10/17 16:15	2023/10/17 16:45	2023/10/17 15:40		
COC Number		959121-01-01	959121-01-01	959121-01-01	959121-01-01		
	UNITS	MW9	MW11	MW14	DUP1	RDL	QC Batch

Metals							
Dissolved Arsenic (As)	ug/L	1.7	1.2	<1.0	<1.0	1.0	9011131
Dissolved Calcium (Ca)	ug/L	77000	86000	53000	20000	100	9011131
Dissolved Iron (Fe)	ug/L	<50	7400	<50	1000	50	9011131
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9011131
Dissolved Magnesium (Mg)	ug/L	9300	20000	3000	5400	100	9011131
Dissolved Manganese (Mn)	ug/L	30	1300	250	1600	2.0	9011131
Dissolved Zinc (Zn)	ug/L	39	<5.0	9.8	11	5.0	9011131

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



GENERAL COMMENTS

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

Package 1	1.3°C
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Results relate only to the items tested.



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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8991178	SPY	Matrix Spike	Isobutylbenzene - Extractable	2023/10/19		97	%	70 - 130
			n-Dotriacontane - Extractable	2023/10/19		114	%	70 - 130
			>C10-C16 Hydrocarbons	2023/10/19		82	%	70 - 130
			>C16-C21 Hydrocarbons	2023/10/19		86	%	70 - 130
			>C21-<C32 Hydrocarbons	2023/10/19		82	%	70 - 130
8991178	SPY	Spiked Blank	Isobutylbenzene - Extractable	2023/10/19		104	%	70 - 130
			n-Dotriacontane - Extractable	2023/10/19		114	%	70 - 130
			>C10-C16 Hydrocarbons	2023/10/19		91	%	70 - 130
			>C16-C21 Hydrocarbons	2023/10/19		91	%	70 - 130
			>C21-<C32 Hydrocarbons	2023/10/19		82	%	70 - 130
8991178	SPY	Method Blank	Isobutylbenzene - Extractable	2023/10/19		104	%	70 - 130
			n-Dotriacontane - Extractable	2023/10/19		112	%	70 - 130
			>C10-C16 Hydrocarbons	2023/10/19	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2023/10/19	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2023/10/19	<0.090		mg/L	
8991178	SPY	RPD	>C10-C16 Hydrocarbons	2023/10/19	NC		%	40
			>C16-C21 Hydrocarbons	2023/10/19	NC		%	40
			>C21-<C32 Hydrocarbons	2023/10/19	NC		%	40
8992064	THL	Matrix Spike [XHZ243-02]	Isobutylbenzene - Volatile	2023/10/20		108	%	70 - 130
			Benzene	2023/10/20		94	%	70 - 130
			Toluene	2023/10/20		92	%	70 - 130
			Ethylbenzene	2023/10/20		93	%	70 - 130
			Total Xylenes	2023/10/20		92	%	70 - 130
8992064	THL	Spiked Blank	Isobutylbenzene - Volatile	2023/10/20		112	%	70 - 130
			Benzene	2023/10/20		99	%	70 - 130
			Toluene	2023/10/20		95	%	70 - 130
			Ethylbenzene	2023/10/20		98	%	70 - 130
			Total Xylenes	2023/10/20		98	%	70 - 130
8992064	THL	Method Blank	Isobutylbenzene - Volatile	2023/10/20		107	%	70 - 130
			Benzene	2023/10/20	<0.0010		mg/L	
			Toluene	2023/10/20	<0.0010		mg/L	
			Ethylbenzene	2023/10/20	<0.0010		mg/L	
			Total Xylenes	2023/10/20	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2023/10/20	<0.090		mg/L	
8992064	THL	RPD [XHZ242-02]	Benzene	2023/10/20	NC		%	40
			Toluene	2023/10/20	NC		%	40
			Ethylbenzene	2023/10/20	NC		%	40
			Total Xylenes	2023/10/20	NC		%	40
			C6 - C10 (less BTEX)	2023/10/20	NC		%	40
8992066	THL	Matrix Spike	Isobutylbenzene - Volatile	2023/10/19		106	%	70 - 130
			Benzene	2023/10/19		95	%	70 - 130
			Toluene	2023/10/19		93	%	70 - 130
			Ethylbenzene	2023/10/19		94	%	70 - 130
			Total Xylenes	2023/10/19		94	%	70 - 130
8992066	THL	Spiked Blank	Isobutylbenzene - Volatile	2023/10/19		108	%	70 - 130
			Benzene	2023/10/19		101	%	70 - 130
			Toluene	2023/10/19		96	%	70 - 130
			Ethylbenzene	2023/10/19		98	%	70 - 130
			Total Xylenes	2023/10/19		98	%	70 - 130
8992066	THL	Method Blank	Isobutylbenzene - Volatile	2023/10/19		108	%	70 - 130
			Benzene	2023/10/19	<0.0010		mg/L	
			Toluene	2023/10/19	<0.0010		mg/L	
			Ethylbenzene	2023/10/19	<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
8992066	THL	RPD	Total Xylenes	2023/10/19	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2023/10/19	<0.090		mg/L	
			Benzene	2023/10/19	3.0		%	40
			Toluene	2023/10/19	4.2		%	40
			Ethylbenzene	2023/10/19	4.1		%	40
			Total Xylenes	2023/10/19	3.2		%	40
8994200	SPY	Matrix Spike	C6 - C10 (less BTEX)	2023/10/19	2.7		%	40
			Isobutylbenzene - Extractable	2023/10/20		81	%	70 - 130
			n-Dotriacontane - Extractable	2023/10/20		87	%	70 - 130
			>C10-C16 Hydrocarbons	2023/10/20		73	%	70 - 130
			>C16-C21 Hydrocarbons	2023/10/20		77	%	70 - 130
			>C21-<C32 Hydrocarbons	2023/10/20		70	%	70 - 130
8994200	SPY	Spiked Blank	Isobutylbenzene - Extractable	2023/10/20		89	%	70 - 130
			n-Dotriacontane - Extractable	2023/10/20		97	%	70 - 130
			>C10-C16 Hydrocarbons	2023/10/20		86	%	70 - 130
			>C16-C21 Hydrocarbons	2023/10/20		88	%	70 - 130
			>C21-<C32 Hydrocarbons	2023/10/20		82	%	70 - 130
			Isobutylbenzene - Extractable	2023/10/20		90	%	70 - 130
8994200	SPY	Method Blank	n-Dotriacontane - Extractable	2023/10/20		101	%	70 - 130
			>C10-C16 Hydrocarbons	2023/10/20	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2023/10/20	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2023/10/20	<0.090		mg/L	
			>C10-C16 Hydrocarbons	2023/10/20	NC		%	40
			>C16-C21 Hydrocarbons	2023/10/20	NC		%	40
8994200	SPY	RPD	>C21-<C32 Hydrocarbons	2023/10/20	NC		%	40
			pH	2023/10/24		100	%	97 - 103
			pH	2023/10/24	0.53		%	N/A
8999671	LJV	Spiked Blank	Conductivity	2023/10/24		103	%	80 - 120
8999679	LJV	Method Blank	Conductivity	2023/10/24	<1.0		uS/cm	
8999679	LJV	RPD	Conductivity	2023/10/24	0.22		%	10
9007172	SHL	Matrix Spike	4-Bromofluorobenzene	2023/10/26		100	%	70 - 130
			D4-1,2-Dichloroethane	2023/10/26		114	%	70 - 130
			D8-Toluene	2023/10/26		88	%	70 - 130
			1,1-Dichloroethane	2023/10/26		105	%	70 - 130
			1,1-Dichloroethylene	2023/10/26		100	%	70 - 130
			1,1,1-Trichloroethane	2023/10/26		108	%	70 - 130
			1,1,2-Trichloroethane	2023/10/26		116	%	70 - 130
			1,1,2,2-Tetrachloroethane	2023/10/26		111	%	70 - 130
			Ethylene Dibromide	2023/10/26		113	%	70 - 130
			1,2-Dichlorobenzene	2023/10/26		103	%	70 - 130
			1,2-Dichloroethane	2023/10/26		119	%	70 - 130
			cis-1,2-Dichloroethylene	2023/10/26		96	%	70 - 130
			trans-1,2-Dichloroethylene	2023/10/26		101	%	70 - 130
			1,2-Dichloropropane	2023/10/26		108	%	70 - 130
			1,3-Dichlorobenzene	2023/10/26		94	%	70 - 130
			cis-1,3-Dichloropropene	2023/10/26		108	%	70 - 130
			trans-1,3-Dichloropropene	2023/10/26		110	%	70 - 130
			1,4-Dichlorobenzene	2023/10/26		92	%	70 - 130
			Benzene	2023/10/26		92	%	70 - 130
			Bromodichloromethane	2023/10/26		102	%	70 - 130
			Bromoform	2023/10/26		118	%	70 - 130
			Bromomethane	2023/10/26		100	%	60 - 140
			Carbon Tetrachloride	2023/10/26		98	%	70 - 130



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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9007172	SHL	Spiked Blank	Chlorobenzene	2023/10/26		99	%	70 - 130
			Chloroethane	2023/10/26		91	%	60 - 140
			Chloroform	2023/10/26		104	%	70 - 130
			Chloromethane	2023/10/26		96	%	60 - 140
			Dibromochloromethane	2023/10/26		107	%	70 - 130
			Methylene Chloride(Dichloromethane)	2023/10/26		92	%	70 - 130
			Ethylbenzene	2023/10/26		89	%	70 - 130
			Methyl t-butyl ether (MTBE)	2023/10/26		102	%	70 - 130
			Styrene	2023/10/26		106	%	70 - 130
			Tetrachloroethylene	2023/10/26		94	%	70 - 130
			Toluene	2023/10/26		95	%	70 - 130
			Trichloroethylene	2023/10/26		94	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2023/10/26		84	%	60 - 140
			Vinyl Chloride	2023/10/26		86	%	60 - 140
			o-Xylene	2023/10/26		95	%	70 - 130
			p+m-Xylene	2023/10/26		90	%	70 - 130
			4-Bromofluorobenzene	2023/10/26		101	%	70 - 130
			D4-1,2-Dichloroethane	2023/10/26		103	%	70 - 130
			D8-Toluene	2023/10/26		90	%	70 - 130
			1,1-Dichloroethane	2023/10/26		102	%	70 - 130
			1,1-Dichloroethylene	2023/10/26		100	%	70 - 130
			1,1,1-Trichloroethane	2023/10/26		109	%	70 - 130
			1,1,2-Trichloroethane	2023/10/26		102	%	70 - 130
			1,1,2,2-Tetrachloroethane	2023/10/26		95	%	70 - 130
			Ethylene Dibromide	2023/10/26		95	%	70 - 130
			1,2-Dichlorobenzene	2023/10/26		100	%	70 - 130
			1,2-Dichloroethane	2023/10/26		103	%	70 - 130
			cis-1,2-Dichloroethylene	2023/10/26		89	%	70 - 130
			trans-1,2-Dichloroethylene	2023/10/26		100	%	70 - 130
			1,2-Dichloropropane	2023/10/26		102	%	70 - 130
			1,3-Dichlorobenzene	2023/10/26		94	%	70 - 130
			cis-1,3-Dichloropropene	2023/10/26		99	%	70 - 130
			trans-1,3-Dichloropropene	2023/10/26		98	%	70 - 130
			1,4-Dichlorobenzene	2023/10/26		91	%	70 - 130
			Benzene	2023/10/26		90	%	70 - 130
			Bromodichloromethane	2023/10/26		95	%	70 - 130
			Bromoform	2023/10/26		102	%	70 - 130
			Bromomethane	2023/10/26		93	%	60 - 140
			Carbon Tetrachloride	2023/10/26		99	%	70 - 130
			Chlorobenzene	2023/10/26		98	%	70 - 130
			Chloroethane	2023/10/26		90	%	60 - 140
			Chloroform	2023/10/26		100	%	70 - 130
			Chloromethane	2023/10/26		91	%	60 - 140
			Dibromochloromethane	2023/10/26		95	%	70 - 130
			Methylene Chloride(Dichloromethane)	2023/10/26		83	%	70 - 130
			Ethylbenzene	2023/10/26		92	%	70 - 130
			Methyl t-butyl ether (MTBE)	2023/10/26		95	%	70 - 130
			Styrene	2023/10/26		105	%	70 - 130
			Tetrachloroethylene	2023/10/26		96	%	70 - 130
			Toluene	2023/10/26		95	%	70 - 130
			Trichloroethylene	2023/10/26		94	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2023/10/26		86	%	60 - 140
			Vinyl Chloride	2023/10/26		86	%	60 - 140



**BUREAU
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9007172	SHL	Method Blank	o-Xylene	2023/10/26		96	%	70 - 130
			p+m-Xylene	2023/10/26		92	%	70 - 130
			4-Bromofluorobenzene	2023/10/26		93	%	70 - 130
			D4-1,2-Dichloroethane	2023/10/26		98	%	70 - 130
			D8-Toluene	2023/10/26		99	%	70 - 130
			1,1-Dichloroethane	2023/10/26	<2.0		ug/L	
			1,1-Dichloroethylene	2023/10/26	<0.50		ug/L	
			1,1,1-Trichloroethane	2023/10/26	<1.0		ug/L	
			1,1,2-Trichloroethane	2023/10/26	<1.0		ug/L	
			1,1,2,2-Tetrachloroethane	2023/10/26	<0.50		ug/L	
			Ethylene Dibromide	2023/10/26	<0.20		ug/L	
			1,2-Dichlorobenzene	2023/10/26	<0.50		ug/L	
			1,2-Dichloroethane	2023/10/26	<1.0		ug/L	
			cis-1,2-Dichloroethylene	2023/10/26	<0.50		ug/L	
			trans-1,2-Dichloroethylene	2023/10/26	<0.50		ug/L	
			1,2-Dichloropropane	2023/10/26	<0.50		ug/L	
			1,3-Dichlorobenzene	2023/10/26	<1.0		ug/L	
			cis-1,3-Dichloropropene	2023/10/26	<0.50		ug/L	
			trans-1,3-Dichloropropene	2023/10/26	<0.50		ug/L	
			1,4-Dichlorobenzene	2023/10/26	<1.0		ug/L	
			Benzene	2023/10/26	<1.0		ug/L	
			Bromodichloromethane	2023/10/26	<1.0		ug/L	
			Bromoform	2023/10/26	<1.0		ug/L	
			Bromomethane	2023/10/26	<0.50		ug/L	
			Carbon Tetrachloride	2023/10/26	<0.50		ug/L	
			Chlorobenzene	2023/10/26	<1.0		ug/L	
			Chloroethane	2023/10/26	<8.0		ug/L	
			Chloroform	2023/10/26	<1.0		ug/L	
			Chloromethane	2023/10/26	<8.0		ug/L	
			Dibromochloromethane	2023/10/26	<1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2023/10/26	<3.0		ug/L	
			Ethylbenzene	2023/10/26	<1.0		ug/L	
			Methyl t-butyl ether (MTBE)	2023/10/26	<2.0		ug/L	
			Styrene	2023/10/26	<1.0		ug/L	
			Tetrachloroethylene	2023/10/26	<1.0		ug/L	
			Toluene	2023/10/26	<1.0		ug/L	
			Trichloroethylene	2023/10/26	<1.0		ug/L	
			Trichlorofluoromethane (FREON 11)	2023/10/26	<8.0		ug/L	
			Vinyl Chloride	2023/10/26	<0.50		ug/L	
			o-Xylene	2023/10/26	<1.0		ug/L	
			p+m-Xylene	2023/10/26	<2.0		ug/L	
			Total Xylenes	2023/10/26	<1.0		ug/L	
			Total Trihalomethanes	2023/10/26	<1.0		ug/L	
9007172	SHL	RPD	1,1-Dichloroethane	2023/10/26	NC		%	40
			1,1-Dichloroethylene	2023/10/26	NC		%	40
			1,1,1-Trichloroethane	2023/10/26	NC		%	40
			1,1,2-Trichloroethane	2023/10/26	NC		%	40
			1,1,2,2-Tetrachloroethane	2023/10/26	NC		%	40
			Ethylene Dibromide	2023/10/26	NC		%	40
			1,2-Dichlorobenzene	2023/10/26	NC		%	40
			1,2-Dichloroethane	2023/10/26	NC		%	40
			cis-1,2-Dichloroethylene	2023/10/26	NC		%	40
			trans-1,2-Dichloroethylene	2023/10/26	NC		%	40



BUREAU
VERITAS

Bureau Veritas Job #: C3W3296
Report Date: 2023/11/02

Englobe Corp
Client Project #: 2001756.005
Your P.O. #: TO FOLLOW
Sampler Initials: DN

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,2-Dichloropropane	2023/10/26	NC		%	40
			1,3-Dichlorobenzene	2023/10/26	NC		%	40
			cis-1,3-Dichloropropene	2023/10/26	NC		%	40
			trans-1,3-Dichloropropene	2023/10/26	NC		%	40
			1,4-Dichlorobenzene	2023/10/26	NC		%	40
			Benzene	2023/10/26	NC		%	40
			Bromodichloromethane	2023/10/26	NC		%	40
			Bromoform	2023/10/26	NC		%	40
			Bromomethane	2023/10/26	NC		%	40
			Carbon Tetrachloride	2023/10/26	NC		%	40
			Chlorobenzene	2023/10/26	NC		%	40
			Chloroethane	2023/10/26	NC		%	40
			Chloroform	2023/10/26	NC		%	40
			Chloromethane	2023/10/26	NC		%	40
			Dibromochloromethane	2023/10/26	NC		%	40
			Methylene Chloride(Dichloromethane)	2023/10/26	NC		%	40
			Ethylbenzene	2023/10/26	NC		%	40
			Methyl t-butyl ether (MTBE)	2023/10/26	NC		%	40
			Styrene	2023/10/26	NC		%	40
			Tetrachloroethylene	2023/10/26	NC		%	40
			Toluene	2023/10/26	NC		%	40
			Trichloroethylene	2023/10/26	NC		%	40
			Trichlorofluoromethane (FREON 11)	2023/10/26	NC		%	40
			Vinyl Chloride	2023/10/26	NC		%	40
			o-Xylene	2023/10/26	NC		%	40
			p+m-Xylene	2023/10/26	NC		%	40
			Total Xylenes	2023/10/26	NC		%	40
			Total Trihalomethanes	2023/10/26	NC		%	40
9011131	JHY	Matrix Spike	Dissolved Arsenic (As)	2023/10/28		98	%	80 - 120
			Dissolved Calcium (Ca)	2023/10/28		NC	%	80 - 120
			Dissolved Iron (Fe)	2023/10/28		102	%	80 - 120
			Dissolved Lead (Pb)	2023/10/28		100	%	80 - 120
			Dissolved Magnesium (Mg)	2023/10/28		106	%	80 - 120
			Dissolved Manganese (Mn)	2023/10/28		NC	%	80 - 120
			Dissolved Zinc (Zn)	2023/10/28		99	%	80 - 120
9011131	JHY	Spiked Blank	Dissolved Arsenic (As)	2023/10/28		96	%	80 - 120
			Dissolved Calcium (Ca)	2023/10/28		103	%	80 - 120
			Dissolved Iron (Fe)	2023/10/28		105	%	80 - 120
			Dissolved Lead (Pb)	2023/10/28		100	%	80 - 120
			Dissolved Magnesium (Mg)	2023/10/28		102	%	80 - 120
			Dissolved Manganese (Mn)	2023/10/28		106	%	80 - 120
			Dissolved Zinc (Zn)	2023/10/28		101	%	80 - 120
9011131	JHY	Method Blank	Dissolved Arsenic (As)	2023/10/28	<1.0		ug/L	
			Dissolved Calcium (Ca)	2023/10/28	<100		ug/L	
			Dissolved Iron (Fe)	2023/10/28	<50		ug/L	
			Dissolved Lead (Pb)	2023/10/28	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2023/10/28	<100		ug/L	
			Dissolved Manganese (Mn)	2023/10/28	<2.0		ug/L	
			Dissolved Zinc (Zn)	2023/10/28	<5.0		ug/L	
9011131	JHY	RPD	Dissolved Arsenic (As)	2023/10/28	NC		%	20
			Dissolved Calcium (Ca)	2023/10/28	0.082		%	20
			Dissolved Iron (Fe)	2023/10/28	2.6		%	20
			Dissolved Lead (Pb)	2023/10/28	NC		%	20



QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				Dissolved Magnesium (Mg)	2023/10/28	0.12		%	20
				Dissolved Manganese (Mn)	2023/10/28	1.8		%	20
				Dissolved Zinc (Zn)	2023/10/28	NC		%	20
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).									



BUREAU
VERITAS

Bureau Veritas Job #: C3W3296

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Sampler Initials: DN

VALIDATION SIGNATURE PAGE

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

Janah Rhyno, Scientific Specialist

Phil Deveau, Scientific Specialist (Organics)



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