

2021 Groundwater Monitoring Program Ryley Class I Waste Management Facility Ryley, Alberta



PRESENTED TO
Clean Harbors Environmental Services, Inc.

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EXECUTIVE SUMMARY

Clean Harbors Environmental Services Inc. (Clean Harbors) retained Tetra Tech Canada Inc. (Tetra Tech) to conduct the 2021 Groundwater Monitoring and Sampling Program (GMP) at the Ryley Landfill facility (the facility). The facility is located at the southeast quarter section of Section 9, Township 50, Range 17, west of the 4th meridian, approximately 2 km north of the Village of Ryley, Alberta.

The facility is a Class I landfill, storage, and disposal facility, licensed to accept various hazardous waste liquids and solids for disposal and/or transfer to authorized treatment or disposal facilities in accordance with the Alberta's *Environmental Protection and Enhancement Act* (EPEA). The facility operates under Alberta Environment and Parks (AEP), EPEA Approval No. 10348-03-00 (as amended) (Approval). This Approval was renewed in March 2017 and is effective until March 31, 2027. As per the renewed approval requirements, Tetra Tech submitted a revised Groundwater Monitoring Program (revised GMP) proposal to AEP on behalf of Clean Harbors in September 2017 (Tetra Tech 2017a). The revised GMP was authorized on May 25, 2018 and has been implemented since 2018.

The objectives of the 2021 GMP were to provide an assessment of the groundwater flow conditions and quality compared to historical data and guidelines, comment on the results, and provide recommendations for future groundwater monitoring.

Tetra Tech conducted groundwater monitoring and sampling at the 2021 GMP at the facility on May 27, 2021 and June 2 to June 4, 2021. The 2021 GMP included monitoring and sampling of 48 monitoring wells present at the facility plus duplicate samples.

The 2021 GMP findings are summarized as follows:

- The interpreted groundwater flow directions in surficial materials, clay shale, and deep bedrock are relatively unchanged compared to previous years.
- The natural groundwater type is sodium sulphate and natural mineralization accounts for high concentrations of sodium, sulphate, and total dissolved solids (TDS) concentrations in the groundwater across the facility.
- In 2021, dissolved metal and routine water chemistry parameters were generally within the historical concentration ranges.
- Total phenol concentrations greater than laboratory detection limits have been present since 2018.
- Overall, there were no indications of adverse groundwater impacts resulting from facility activities.

Based on the results from the work conducted in 2021, the following is recommended for Clean Harbors' consideration:

- The 2022 groundwater monitoring and sampling fieldwork should continue to be conducted in late May or early June to minimize the number of frozen wells and maximize groundwater availability for sampling. The parameters that were analyzed in 2021 should be continued to be analyzed in 2022.
- The geodetic elevations of several wells should be surveyed in 2022 to support groundwater contouring.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION.....	1
1.1 Objectives	1
1.2 Scope of Work	1
2.0 GROUNDWATER REGULATORY CONTEXT	2
3.0 BACKGROUND INFORMATION	2
3.1 Groundwater Users.....	2
3.2 Surface Water Users	2
3.3 Surface Water Drainage	3
3.4 Geology and Hydrogeology	3
3.5 Groundwater Monitoring Network	3
4.0 FIELD WORK METHODS	4
4.1 Safety.....	4
4.2 Groundwater Monitoring and Sampling	4
5.0 RESULTS.....	5
5.1 Groundwater Flow Conditions	5
5.2 Groundwater Chemistry.....	7
5.3 Quality Assurance and Quality Control.....	9
5.4 Discussion.....	11
6.0 CONCLUSIONS	12
7.0 RECOMMENDATIONS.....	12
8.0 CLOSURE	13
REFERENCES	14

LIST OF TABLES IN TEXT

Table A: Water Well Information Database Summary	2
Table B: Monitoring well Hydro-Stratigraphic Units	4
Table C: Vertical Hydraulic Gradients	7
Table D: Horizontal Hydraulic Gradients	7
Table E: 2021 Analytical Results Summary for Select Parameters	8
Table F: TKN, COD and DOC Summary.....	11
Table G: Parameters with RPD greater than 20%.....	12
Table H: Detection Value Exceedances	12

APPENDIX SECTIONS

TABLES

Table 1	2021 Groundwater Analytical Schedule
Table 2	Monitoring Well Details
Table 3a	Groundwater Monitoring Results - Surficial Materials
Table 3b	Groundwater Monitoring Results - Upper Sandstone
Table 3c	Groundwater Monitoring Results – Clay Shale
Table 3d	Groundwater Monitoring Results – Lower Bedrock
Table 4a	Field and Groundwater Analytical Results Summary – Surficial Material Wells
Table 4b	Field and Groundwater Analytical Results Summary – Upper Sandstone Wells
Table 4c	Field and Groundwater Analytical Results Summary –Clay Shale Wells
Table 4d	Field and Groundwater Analytical Results Summary – Lower Bedrock Wells
Table 5a	Groundwater Quality Assurance and Quality Control – Field Duplicates
Table 5b	Groundwater Quality Assurance and Quality Control - Blanks

FIGURES

Figure 1	Site Location Plan
Figure 2	Site Plan Showing Site and Proposed Expansion Boundaries
Figure 3	Monitoring Well Location Plan and Surface Water Drainage
Figure 4a	Cross-Section Location
Figure 4b	Cross-Section A-A'
Figure 4c	Cross-Section B-B'
Figure 4d	Cross-Section C-C'
Figure 4e	Cross-Section D-D'
Figure 5a	Surficial Materials West - Hydrograph
Figure 5b	Surficial Materials East - Hydrograph
Figure 5c	Upper Sandstone West - Hydrograph
Figure 5d	Upper Sandstone East - Hydrograph
Figure 5e	Clay Shale West - Hydrograph
Figure 5f	Clay Shale East - Hydrograph
Figure 5g	Lower Bedrock - Hydrograph
Figure 6a	Groundwater Elevation Contours Surficial Materials - May 27, 2021
Figure 6b	Groundwater Elevation Contours Upper Sandstone - May 27, 2021
Figure 6c	Groundwater Elevation Contours Clay Shale - May 27, 2021

APPENDICES

- Appendix A Regulatory Approval - Alberta Environment and Record of Site Condition
- Appendix B Water Well and Surface Water Search Results
- Appendix C Borehole Logs
- Appendix D Laboratory Analytical Reports
- Appendix E Historical Analytical Results
- Appendix F Concentration Trends
- Appendix G Tetra Tech's Limitations on the Use of this Document

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Clean Harbors Environmental Services, Inc., and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Clean Harbors Environmental Services, Inc., or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on the Use of this Document attached in Appendix G or Contractual Terms and Conditions executed by both parties.

1.0 INTRODUCTION

Clean Harbors Environmental Services Inc. (Clean Harbors) retained Tetra Tech Canada Inc. (Tetra Tech) to conduct the 2021 Groundwater Monitoring and Sampling Program (GMP) at the Ryley Landfill facility (the facility). The facility is located at the southeast quarter section of Section 9, Township 50, Range 17, west of the 4th meridian, approximately 2 km north of the Village of Ryley, Alberta (Figure 1). The facility is a Class I landfill, storage, and disposal facility, licensed to accept various hazardous waste liquids and solids for disposal and/or transfer to authorized treatment or disposal facilities in accordance with the Alberta's *Environmental Protection and Enhancement Act* (EPEA).

The facility operates under Alberta Environment and Parks (AEP), EPEA Approval No. 10348-03-00 (as amended) (Approval). This approval was renewed in March 2017 and is effective until March 31, 2027. As per the renewed approval requirements, Tetra Tech submitted a revised Groundwater Monitoring Program (revised GMP) proposal to AEP on behalf of Clean Harbors in September 2017 (Tetra Tech 2017a). The revised GMP was authorized on May 25, 2018 and has been implemented since 2018. A copy of the Approval, the AEP letter approving the revised GMP, and the Record of Site Conditions, are presented in Appendix A.

This report provides the methods and results of the 2021 GMP.

Stan Yuha, Facility Manager at Clean Harbors, provided Tetra Tech written authorization to proceed with this work on March 24, 2021.

1.1 Objectives

The objectives of the 2021 GMP were to:

- Provide an assessment of the groundwater flow conditions and groundwater quality at the facility and compare to historical data and applicable guidelines; and
- Comment on the results and provide recommendations for future groundwater monitoring programs.

1.2 Scope of Work

The scope of work for the 2021 GMP included:

- Monitoring and sampling each groundwater monitoring well at the landfill, and submitting samples for laboratory chemical analyses of parameters as per the Approval (Table 1);
- Evaluating groundwater flow conditions and quality, and reporting any unusual findings; and
- Preparing an annual report to summarize the field activities undertaken during the year and providing and interpreting the measured groundwater levels and groundwater analytical results.

2.0 GROUNDWATER REGULATORY CONTEXT

As per Section 4.9.7(a) of the Approval, groundwater analytical results were compared to the Canadian Environmental Quality Guidelines (CEQG) for drinking water, published by the Canadian Council of Ministers of the Environment (CCME¹) until 2018. Once the revised GMP was issued, the groundwater analytical results were compared to Alberta's Tier 1 Soil and Groundwater Remediation Guidelines (Tier 1 Guidelines) for fine-grained material under agricultural land use (AEP 2019). The surficial soils and bedrock material in the area is primarily fine-grained (clay till, overlaying shale bedrock) and surrounding land use is primarily agricultural.

3.0 BACKGROUND INFORMATION

This section describes background information pertaining to local groundwater and surface water users, surface water drainage, geology and hydrogeology and the existing groundwater monitoring network.

3.1 Groundwater Users

As required in Section 4.9.14(e) of the Approval, a search of water wells was conducted using the Alberta Water Well Information Database (AEP 2021). The required search radius is 1.6 km, however, to account for the distance from the centre of the facility, and spatial inaccuracies within the water well database, a 2.0 km radius was used. The search showed records of 42 water wells as of January 2022.

Table A summarizes the number of wells according to their reported use within the search radius.

Table A: Water Well Information Database Summary

Domestic	Domestic & Industrial	Domestic & Stock	Industrial	Municipal	Observation Monitoring/ Investigation	Stock	Unknown/ Other
6	2	4	1	2	13	2	12

The average drilling depth of the water wells is 52.0 metres below ground level (mbgl), and the maximum depth is 140.2 mbgl. A reconnaissance report and map showing locations of the groundwater users are provided in Appendix B.

3.2 Surface Water Users

A map showing the locations of the surface water users, and a table containing the water allocation details are contained in Appendix B. Surface water sampling locations surrounding the facility (dugout sites as shown on Figure 2) are sampled annually in the fall of each year. The analytical results for these surface water sampling locations are reported under a separate cover (Tetra Tech 2022).

¹ The CCME now directs users to the Health Canada Federal Provincial Territorial Committee on Drinking Water Guidelines for Canadian Drinking Water Quality (CDWQ guidelines) (Health Canada. 2021)

3.3 Surface Water Drainage

Figure 3 shows the surface water drainage and monitoring well locations at the facility. The northwest corner of the facility is a local topographic high point for surface water drainage. Ditches have been constructed around the waste cells to collect surface water and allow perimeter drainage to the retention pond, located on the east side of the facility. A ditch on the northern edge is sloped downward to the east along the north base of Cells 1 and 2 to a gravelled storage pad. It then drains water into a second ditch that conveys the surface runoff east to connect to the ditch that drains water to the retention pond. Surface water from the northwest corner also drains south through a perimeter ditch that collects water from the west base of Cells 2 and 3A. At the southwest corner of Cell 3A, the ditch turns east to collect perimeter drainage along the south portion of the facility. Surface water then drains east into the retention pond. All surface water runoff is collected and not discharged off site until it is tested and meets surface water quality discharge requirements and then released to the east across Highway 854. Surface water from outside of the facility is diverted from flowing onto the facility.

3.4 Geology and Hydrogeology

Various regional studies (HCL 1999; Stein & Carlson 2005) have compiled regional geology and hydrogeology of the area. The data gathered from various reports is presented as Figures A (Wells), B (Surface Water Users), and C (Regional Hydrogeology) in Appendix B.

The regional information suggests that the surficial geology in the area consists of unconsolidated glacial deposits (till), of Quaternary age. The till is up to 4 m thick beneath the facility and overlies Cretaceous sedimentary bedrock. The Bearpaw Formation underlies the till and consists of marine shales, silty shales, sandstone, and bentonite beds that interfinger with sandstone. The Belly River Group lies underneath the Bearpaw Formation. The group contains the Oldman Formation and the Continental and Marine Foremost Formations. In the upper portion of the group, bedrock consists mainly of non-marine, grey to greenish grey, thick bedded, feldspathic sandstone; grey, clayey siltstone; and grey and green mudstone (Stein & Carlson, 2005., Fenton, et al. 2013). Due to the similarities between the two units, and the overlapping deposition and subsequent interfingering of the layers, distinct boundaries are not well defined. Together these formations are estimated up to approximately 24 m thick beneath the facility (Prior, et al. 2013). The nearest buried valley is reported to exist approximately 5 km to the north of the site, (Appendix B, Figure A).

Based on review of a hydrogeological report and map of the area east of Edmonton (Stein and Carlson, 2005), the regional groundwater flow is inferred to generally mimic the surface topography in the area. This would suggest a flow towards the north to Beaverhill Lake and eventually to the North Saskatchewan River, although local flow direction may vary. Hydraulic conductivity values for the Belly River and Bearpaw Formations are reported to be approximately 0.5 m/day (5.8×10^{-6} m/s). The facility is situated in an area where natural groundwater in the bedrock contains concentrations of total dissolved solids (TDS) ranging from 1,500 mg/L to more than 8,000 mg/L. Groundwater chemistry within the till material is naturally mineralized and is sodium sulphate water type.

Geologic cross-section alignments are shown on Figure 4a and cross-sections through different portions of the facility are presented in Figures 4b to 4e. Borehole logs of the monitoring wells are presented in Appendix C.

3.5 Groundwater Monitoring Network

The 2021 GMP included 48 wells, which were monitored and/or sampled in May and June 2021. The locations of the existing monitoring wells are shown on Figure 3.

The lithology beneath the site was divided in four hydro-stratigraphical units including Surficial Material, Upper Sandstone, Clay Shale, and Lower Bedrock.

Table B presents each well and corresponding hydro-stratigraphic unit.

Table B: Monitoring well Hydro-Stratigraphic Units

Wells	Hydro-stratigraphic Unit
MW10, MW18B, MW19B, MW20B, MW21B, MW22B, MW29B, MW30B, MW31B, MW32B, MW33B, 15MW35C, 19MW37B and 19MW38B	Surficial Materials
MW1C, MW8B, MW11, MW12A, MW23B, MW25B, MW26B, MW27B, MW28B, MW29A, MW30A, MW31A, MW33A, 15MW35B, 19MW37A and 19MW38A	Upper Sandstone
MW1B, MW8A, MW12B, MW18A, MW19A, MW20A, MW21A, MW22A, MW23A, MW25A, MW26A, MW27A, MW28A, MW32A, 15MW35A and 15MW36A	Clay Shale
15MW35-Deep and 15MW36-Deep	Lower Bedrock

In addition to the wells mentioned in Table A, a series of monitoring wells were installed in 2016 in the adjacent quarter section north of the facility as part of an application to expand the facility. Baseline monitoring and sampling at these wells was conducted in 2016 and 2017 (Tetra Tech 2021); however, the wells have not been included in this annual GMP. The site development timeline will be determined by ongoing operations at the existing Ryley Facility; therefore, the timing of baseline and operational monitoring is not yet established (Tetra Tech 2017b).

4.0 FIELD WORK METHODS

This section provides details of the field work methods related to safety and groundwater monitoring and sampling.

4.1 Safety

Tetra Tech contacted Clean Harbors prior to starting fieldwork to coordinate field activities. A sign-in/sign-out form was completed daily in Clean Harbors front office at the facility. A Tetra Tech safe work form (SWF) which identifies hazards on site and the associated hazard controls was completed before beginning the fieldwork. Tetra Tech personnel reviewed, updated if needed and signed the SWF before starting work each day. Tetra Tech work methods WM4203 (Groundwater Sample Collection) and WM4212 (Manual Water Level Measurement) were followed.

4.2 Groundwater Monitoring and Sampling

Tetra Tech personnel followed environmental industry accepted practices to ensure that representative groundwater samples were obtained for analysis. Monitoring and sampling of the monitoring well network was conducted on May 27, 2021 and from June 2 to 4, 2021, respectively. Field staff completed the following field activities and data collection process:

- Recorded static groundwater levels in each well using an interface probe;
- Purged groundwater from each monitoring well by removing three well volumes, or until the monitoring well was practically dry, using either dedicated bailers or Waterra tubing with a foot valve;
- Recorded the volume of groundwater removed from the well, and a description of the groundwater purged (colour, odour, sediment, volume etc.);

- Recorded field measured parameters including electrical conductivity (EC), pH, and temperature using a multi-meter probe;
- Allowed wells to recover groundwater levels to sufficient levels in order to obtain representative samples; and
- Collected groundwater samples with equipment used to purge the well. Deep monitoring wells 15MW35-Deep and 15MW36-Deep were sampled using Hydrasleeves™ and were not purged beforehand.

Groundwater samples were collected in laboratory-supplied containers, field filtered, stored in coolers with ice to keep sample temperature below 10°C throughout the fieldwork, and submitted to ALS Laboratories (ALS), in Edmonton, Alberta under chain-of-custody (COC).

A total of 54 samples were submitted including:

- Forty-eight (48) groundwater samples from wells in the monitoring network that had sufficient groundwater to sample. The following monitoring wells had insufficient groundwater to collect a full sample set:
 - MW26A and 15MW35A - field measurements were not collected
- Four duplicate sets of samples from monitoring wells MW29A (Duplicate 1), MW25B (Duplicate 2), MW22B (Duplicate 3) and MW32A (Duplicate 4). (Approximately 10%)
- One Trip Blank
- One Field Blank

Samples were analyzed for the following parameters as required by the Approval:

- Major ions (routine water chemistry), including pH, electrical conductivity (EC), and nitrate and nitrite
- Trace metals (dissolved)
- Nutrients (total Kjeldahl nitrogen [TKN] and ammonia)
- Chemical oxygen demand (COD)
- Dissolved organic carbon (DOC)
- Benzene, toluene, ethylbenzene and xylenes (BTEX) and petroleum hydrocarbon (PHC) fractions F1 and F2
- Total phenols
- Volatile Organic Compounds (VOCs)

5.0 RESULTS

The laboratory analytical schedule for groundwater samples collected in 2021 is provided in Table 1. Table 2 shows the dates the monitoring wells were installed and the hydro-stratigraphic units of the well groupings. Tables 3a to 3d summarize the water levels for 2021 by hydro-stratigraphic group. Tables 4a to 4d summarize the laboratory analytical results from 2014 to 2021. Groundwater chemistry is compared to the Alberta Tier 1 Guidelines for fine-textured soils under agricultural land use.

The following Sections 5.1 and 5.2 provide 2021 and historical results of the physical groundwater flow conditions and the groundwater chemistry results, respectively.

5.1 Groundwater Flow Conditions

The 2021 groundwater elevations in 48 monitoring wells were compared to historic groundwater elevations from April 1991 to May 2020.

The lithology beneath the site is divided in four hydro-stratigraphic units; surficial material, upper sandstone, clay shale, and lower bedrock. The hydrographs based on the groundwater elevations measured in the monitoring wells installed in the surficial material, upper sandstone, clay shale, and lower bedrock units are shown on Figures 5a through 5g. The groundwater elevations measured in 2021 are generally consistent with historical groundwater elevations with the following observed visual trends:

- **Surficial Material** – Groundwater elevations at monitoring wells MW18B, MW30B, MW31B and MW32B decreased from the highest measured elevations to date in 2020 to within historical ranges in 2021. Groundwater elevations in monitoring wells MW10, MW20B and 15MW35C increased in 2021 compared to 2020, however, they remained within historical ranges.
- **Upper Sandstone** – Groundwater elevations were similar to historical ranges in 2021. An increasing visual trend was observed at MW8B and 15MW35B and both monitoring wells had the highest elevation to date in 2021.
- **Clay shale** – Groundwater elevations in 2021 were generally similar to historical elevations. Monitoring wells MW1B, MW18A, MW25A, MW26A and MW27A had slight decreasing trends from 2016 to 2019, however, in 2020 and 2021, a slight increase was observed in each of these wells. In monitoring well MW8A, the groundwater elevation decreased from a stable visual trend to the lowest elevation measured to date in 2020 and remained at a similar lower range in 2021.
- **Lower Bedrock** – Groundwater elevations in 2021 were consistent with historical ranges. Monitoring well 15MW35-Deep has been slightly decreasing since 2019.

Groundwater elevations measured during the 2021 monitoring event were contoured using Surfer Mapping System Version 16. Groundwater elevation contours were created by grouping wells within the same water bearing units, and interpolating groundwater elevation data between wells. Monitoring wells which are screened across multiple units were not used to create these contour maps. Professional judgement was applied to ensure that the information presented in the figures is reasonably applicable given site history and known hydrogeological conditions.

Figures 6a through 6d show groundwater flow directions in four geologic units beneath the site including surficial material, upper sandstone, clay shale, and lower bedrock. The 2021 groundwater flow patterns in all units beneath the site were similar to historical patterns and are discussed below.

- Figure 6a shows the 2021 groundwater elevation contour map for the clay till (surficial) unit. The screen depths range from 1.4 mbgl to 5.38 mbgl. Groundwater in this unit flows to the southeast based on the 2021 groundwater elevations, although historical groundwater flow has been more to the northeast. It is likely that groundwater flow through this unit is discontinuous across the facility due to the depth of the landfill cells and above and below ground infrastructure. Based on the 2021 groundwater monitoring information, an average groundwater elevation in the surficial materials was 1.39 m below ground level.
- Figure 6b shows the 2021 groundwater elevation contour map for the upper sandstone unit. This unit is likely laterally continuous in wells across the facility. Screen depths in this unit range from 1.50 mbgl to 14.77 mbgl. Groundwater in this unit appears to be split through the centre of the facility. Groundwater flow direction in the eastern half of the facility is to the southeast, in the northeastern portion of the site it is to the northwest, and to the west in the southwestern portion of the site, respectively. There is little to no hydraulic gradient under Cell 3C. Changes in groundwater flow direction compared to previous years have been observed in this area, indicating that the groundwater flow, and recharge conditions may be shifting as a result of construction activities on Cell 4.
- Figure 6c shows the 2021 groundwater elevation contour map for the clay shale unit. This material is laterally continuous in wells across the facility. Screen depths range from 7.28 mbgl to 14.98 mbgl. Historically, the groundwater flow direction has been to the east under Cells 3C, 3D, and 3E, and continued to be east in 2021. On the west side of the facility, groundwater flow is to the southwest in the southwestern corner and to the north-northeast in the northwestern corner of the facility.

- Groundwater elevations are measured in two wells screening the Belly River Formation termed the “Lower Bedrock’ formation. Well depths in this zone range from 32.59 to 34.64 mbgl. The groundwater flow direction could not be determined in the Lower Bedrock formation due to only having groundwater elevations from two monitoring wells in 2021. The elevations in 2021 were similar to elevations in 2020.

Calculated vertical and horizontal hydraulic gradients based on 2021 groundwater elevations are reported in Tables C and D below, respectively.

Table C: Vertical Hydraulic Gradients

Wells	Vertical Groundwater Flow Direction
MW1B/MW1C, MW8A/MW8B, MW18A/MW18B, MW20A/MW20B, MW21A/MW21B, MW22A/MW22B, MW23A/MW23B, MW25A/MW25B, MW26A/MW26B, MW30A/MW30B, MW31A/MW31B, MW33A/MW33B, 15MW35A/15MW35B, 15MW36-Deep/MW36A, MW37A/MW37B, 19MW38A/19MW38B	Downward
MW12A/MW12B, MW19A/MW19B, MW27A/MW27B, MW28A/MW28B	Upward

No vertical gradient was observed at nested well pair, MW29A/MW29B and MW32A/MW32B. Vertical groundwater flow direction varies across the site, and the area has predominantly downward flow direction.

No survey data is available for 19MW37A/19MW37B and 19MW38A/19MW38B and therefore the wells were not included in the gradient calculations.

Table D: Horizontal Hydraulic Gradients

Hydro-stratigraphic Unit	Horizontal Hydraulic Gradient (m/m)
Surficial Material	0.01
Upper Sandstone	0.011 to 0.021
Clay Shale	0.008 to 0.021
Lower Bedrock	Not calculated

5.2 Groundwater Chemistry

Parameters with concentrations greater than the Tier 1 Guidelines or outside of the guideline range are shaded on Tables 4a to 4d. Laboratory certificates of analysis are presented in Appendix D. Historical chemistry results are contained in Appendix E. Concentration trend graphs are provided in Appendix F.

The three nested wells 15MW35A/B/Deep are located to the southwest of the site and are considered to represent background groundwater conditions. This location generally has an average concentration of sulphate approximately 3,500 mg/L in the upper sandstone unit and concentrations from 10 mg/L to 40 mg/L in the deeper units. Chloride concentrations in the background wells increase with depth, the upper sandstone chloride concentrations are an average of 7 mg/L, the clay shale 38 mg/L and deeper bedrock 1,380 mg/L. These chloride concentrations are interpreted to be naturally occurring.

As with previous years, groundwater data collected in 2021 from the site overall shows a moderate to high degree of mineralization, likely caused by concentrations of sodium, sulphate, and TDS in native soils. The parameters exceeding the Tier 1 Guidelines and other key parameters are discussed in the following Table E.

Table E: 2021 Analytical Results Summary for Select Parameters

Parameter	Tier 1 Guideline	2021 Measured Concentrations	Wells greater than Tier 1 Guideline Value in 2021	Comments
Sodium Appendix F1	200 mg/L	399 - 3,440 mg/L	All wells sampled for sodium	<ul style="list-style-type: none"> Sodium concentrations have generally remained within historical ranges, no notable trends are observed. Sodium concentrations in monitoring wells MW29B and MW27B show an increasing visual trend since 2015 and 2010, respectively.
Chloride Appendix F2	100 mg/L	0.71 – 1,480 mg/L	MW27B, MW32B, 15MW35-Deep, and 15MW36-Deep	<ul style="list-style-type: none"> Chloride concentrations have remained within historical ranges at most wells. Chloride concentrations in monitoring well MW18B and MW32B show an increasing visual trend since 2015. MW32B has been greater than the referenced guideline since monitoring began at this well in 2015. At MW18B chloride concentrations exceeded guideline for the first time in 2020 but decreased to less than 100 mg/L in 2021. Chloride concentration at MW27B increased to greater than guideline for the first time in 2021 and has shown an increasing trend since 2015. 15MW35-Deep, and 15MW36-Deep have slight increasing chloride concentration visual trends. Increasing visual trends are observed in monitoring wells MW8B and MW11 however concentrations have remained less than the guideline.
Nitrate Appendix F3	3.0 mg/L	<0.010 – 12.9 mg/L	MW22A	<ul style="list-style-type: none"> Visual trends show monitoring well MW22A has been consistently exceeding the guideline since 2006 and spiked to 70 mg/L in 2017; however, concentrations decreased to within historical range from 2018 to 2021. Nitrate concentrations appear to have spiked in multiple wells in 2017. Concentrations decreased to pre-2017 ranges in 2018 and have remained within the range until present.
Sulphate Appendix F4, Appendix G (Figures G1, G2, and G3)	128 – 429 mg/L (Guideline varies with hardness)	0.49 to 7,990 mg/L	All wells sampled for sulphate except MW18A, MW21A, MW23A, MW25A, MW31A, MW33A, 15MW35A, 15MW35-DEEP, 15MW36A and 15MW36-DEEP	<ul style="list-style-type: none"> Sulphate concentrations have remained within historical ranges at most wells. Most monitoring wells had an increase in sulphate concentration from the 2020 to 2021 monitoring event. Concentrations in well MW20B and 19MW35A in 2021 were the highest measured to date (3,520 mg/L and 7,720 mg/L, respectively). Concentrations in well MW12A have increased since 2018, and in 2021 had the highest concentration measured (7,280 mg/L), since 2002.
TDS , Appendix F5	500 mg/L	957 – 12,300 mg/L	All wells sampled for TDS	<ul style="list-style-type: none"> TDS concentrations have generally remained within historical ranges at most monitoring wells. Wells 15MW35-Deep, and 15MW36-Deep show slight increasing concentration visual trends in 2021. Monitoring well 19MW38A had the highest TDS concentration measured to date in 2021 (12,300 mg/L).
pH (Laboratory) , Appendix F6	6.5 – 8.5	7.86 – 8.95	MW1B, MW8A, MW18A, MW19B, MW20A, MW21A, MW21B, MW23A, MW25A, MW26A, MW27A, MW28A, MW30A, MW31A, MW31B, MW33A, 15MW35A, 15MW36A, 15MW36-Deep, 19MW37A, 19MW38A	<ul style="list-style-type: none"> Laboratory pH values have remained within historical ranges, no notable trends are observed. Field pH values overall show a similar visual trend. The deeper of the nested well pair appears to have higher pH values. Most pH values increased in 2021 from the 2020 event.
pH (Field) , Appendix F7		7.07 – 9.01	MW18A, MW23A, MW33A, 15MW36A and 19MW38A	
Dissolved Aluminum	0.007 – 0.050 mg/L (Guideline varies with pH)	<0.0050 – 0.22 mg/L	MW12B, MW31A, 19MW38A	<ul style="list-style-type: none"> Dissolved aluminum concentrations have generally remained within historical ranges at most wells, no notable visual trends were observed.
Dissolved Iron (greater than guideline) , Appendix F8	0.3 mg/L	<0.050 – 0.196 mg/L	None	<ul style="list-style-type: none"> Dissolved iron concentrations have generally remained within historical ranges. Some isolated spikes in dissolved iron concentrations have been observed; however, no increasing dissolved iron concentration visual trends are observed.
Dissolved Iron (detection limit greater than guideline)		<0.050	None	
Dissolved Manganese Appendix F9	0.05 mg/L	<0.0010 – 0.69 mg/L	MW1C, MW8A, MW8B, MW10, MW12B, MW18B, MW19A, MW19B, MW21A, MW23B, MW25A, MW25B, MW26B, MW28B, MW29A, MW29B, MW32A, MW32B, MW33B, 19MW37A, 19MW37B, 19MW38B, 15MW35B, 15MW36A, 15MW35-Deep and 15MW36-Deep	<ul style="list-style-type: none"> Dissolved manganese concentrations across the facility appear to be generally stable and within historical ranges. Wells 15MW35-Deep and 15MW36-Deep have increasing concentration visual trends.
Dissolved Uranium	0.01 mg/L	0.0001 – 0.059 mg/L	MW11, MW12B, MW20B and MW35C	<ul style="list-style-type: none"> Dissolved uranium concentration at monitoring well MW20B increased from previous concentrations and was greater than the Tier 1 guideline in 2020 and 2021. MW11 and MW12B have had consistent concentrations of dissolved uranium greater than guideline, however no visual trend is observed. Monitoring well MW35C had a concentration greater than guideline in 2021. This was the first time the well has been sampled.
Ammonia Appendix F10	0.018-190 mg-N/L (Guideline varies with pH and temperature)	0.06 – 2.4 mg-N/L	MW8A, MW12B, MW18A, MW19B, MW23A, MW25A, MW27A, MW28A, MW32A, MW33A, 19MW37A, 19MW38A, 15MW35A, 15MW36A, 15MW35-Deep and 15MW36-Deep	<ul style="list-style-type: none"> Ammonia concentrations have generally remained within historical ranges, no notable trends are observed.

BTEX, Styrene and PHC fraction F1 and F2 concentrations were non-detect in all wells with the following one exception. Benzene concentration at MW8A were greater than the detection limit, however less than the applicable Tier 1 guidelines. Concentrations of VOCs were non-detect at all wells.

There are no Tier 1 Guidelines for total phenols. Detectable concentrations of total phenols were observed in most wells with the exception of; MW1B, MW8A, MW12B, MW18A, MW20A, MW21A, MW22A, MW23A, MW25A, MW10, MW11, MW21B, MW22B, MW23B, MW29A, MW29B, MW30A, MW31B, 115MW35A and 15MW36A. Concentrations of total phenols were within 2-3 times of the detection limits at most wells and were similar to historical results.

There are no Tier 1 Guidelines for TKN, COD, or DOC. The table below summarizes the results of these parameters in 2021. No notable increasing visual trends have been observed for any of the parameters listed below, most results are within historical ranges.

Table F: TKN, COD and DOC Summary

Parameter	Maximum Concentration (mg/L)	Monitoring Well	Minimum Concentration (mg/L)	Monitoring Well	Average in All Wells (mg/L)
TKN, Appendix F11	7.11	MW12B	0.27	MW21B	1.41
COD, Appendix F12	237.0	MW12B	10.0	MW20A	64.4
DOC, Appendix F13	36.1	MW11	5.9	MW22B	16.4

5.3 Quality Assurance and Quality Control

To verify water sample integrity a trip blank and a field blank sample were used. A trip blank sample is prepared in a laboratory with clean sample matrix and travels in the same cooler as the sample bottles, to and from the sample site. They are used to determine if contamination is introduced from the bottle itself or from conditions during transport. Field blanks are similar to trip blanks but are opened and handled as a regular sample. This shows any contamination from bottles, collection methods, atmosphere and chemical preservatives.

ALS commented on sample quality items in the laboratory report. Upon receiving the samples, some sample coolers exceeded the ALS recommended hold time for COD and four samples exceeded the hold time for BTEX, Styrene and F1 and volatile compounds. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised (Appendix D).

To evaluate field sampling reproducibility, duplicate groundwater samples were collected during the sampling event in 2021. Duplicates were collected from MW29A (Duplicate 1), MW25B (Duplicate 2), MW22B (Duplicate 3) and MW32A (Duplicate 4) and submitted for laboratory analysis for the same suite of parameters as the parent samples.

The field sampling and laboratory testing reproducibility of each sample-duplicate pair was evaluated using the relative percent difference (RPD) method, involving calculation of RPD when both sample-duplicate concentrations were greater than, or equal to, five times the laboratory method detection limit (MDL), as shown in Equation 1.

Equation 1:

$$\%RPD = \left(\frac{|Sample - Duplicate|}{\bar{X}} \right) * 100$$

Where \bar{X} is the calculated average concentration of the parent sample and the corresponding duplicate.

Groundwater quality parameters were considered to pass the quality assurance and quality control (QA/QC) reproducibility procedure if the RPD was less than or equal to 20%, indicating a close correlation between the sample-duplicate pair.

The RPD values were not calculated if one or both of the sample-duplicate concentrations were between the MDL and five times the MDL. In these cases, groundwater quality parameters were still considered as having passed the QA/QC reproducibility procedure if the sample-duplicate concentration difference was less than the MDL value.

The RPD calculations are summarized in Table 5a. These results indicate that all the parameters had RPD less than 20% except the following listed in Table G:

Table G: Parameters with RPD greater than 20%

MW29A and Duplicate 1	MW25B and Duplicate 2	MW22B and Duplicate 3	MW32A and Duplicate 4
Dissolved Boron = 30% Dissolved Zinc = 26%	None	None	Dissolved Cesium = 30% Dissolved Copper = 37%

Greater RPD values dissolved copper, dissolved cesium and dissolved zinc may be caused by incomplete filtration. These results will be confirmed in the spring of 2022.

Field Blank and Trip Blank results are summarized in Table 5b. These results indicate all parameters had less than detectable limits except for the following listed in Table H.

Table H: Detection Value Exceedances

Field Blank	Trip Blank
pH = 5.76 DOC = 6.0 Dissolved Aluminum = 0.0014 mg/L Dissolved Barium = 0.0004 mg/L Dissolved Boron = 0.011 mg/L Dissolved Chromium = 0.00108 mg/L Dissolved Manganese = 0.00017 mg/L Dissolved Nickel = 0.0006 mg/L Dissolved Zinc = 0.0184 mg/L	pH = 5.53

Based on the field and trip blank results, cations total concentrations could be affected by atmosphere or chemical preservatives used. Detectable metal concentrations in the field blank are generally at concentrations near to the detection limits for each parameter and are not considered to be indicative of a larger quality issue.

Low pH values are typical of de-ionized and de-natured water used in the field and trip blanks. This is due to the distilled water used in the field blank preparation process readily dissolves carbon dioxide from the air during distillation, sample collection, and sample analysis; because distilled water is poorly buffered, dissolution of carbon dioxide will lower the pH. The laboratory pH being less than the guideline for the field blanks does not indicate quality issues.

The 2021 QAQC results for the parameters listed above were similar to historical results. The precision and accuracy of the laboratory analytical system was considered acceptable in 2021.

5.4 Discussion

Groundwater quality at the background monitoring wells 15MW35A, 15MW35B, and 15MW35-Deep have a high degree of natural mineralization showing elevated concentrations for sodium, sulphate, and TDS, which are greater than the Tier 1 Guidelines. All wells in the monitoring network exhibit evidence of groundwater mineralization (sodium, sulphate, TDS, and dissolved uranium). This is consistent with the chemical quality of shallow groundwater in the area (Stein et al., 2005), and the background wells.

Sulphate and TDS concentrations are greater than Tier 1 Guidelines at many of the monitoring wells on site. Elevated concentrations of TDS are primarily caused by the elevated sulphate concentrations. Sulphate is often naturally occurring in groundwater, and elevated concentrations are not suspected to be caused by on site activities. In 2021, concentrations of sulphate have remained within historical ranges at most of the wells, except for MW20B, and MW32B (Surficial Materials) and MW12A (Upper Sandstone), where concentrations were the highest measured to date. These three wells will be closely monitored in the future.

Chloride concentrations have overall remained stable at the site since monitoring began in 1996. Wells MW8B, MW11, MW18B, MW27B and MW32B show increasing visual trends. Monitoring wells MW8B and MW11 are located in the northwest corner of the site and have exhibited increasing concentrations since 2013 and 2014, respectively. MW27B is located at the south end of the site and exceeded guideline for the first time in 2021 (122 mg/L). Monitoring well MW18B is located near the western border of the site by a dugout and MW32B is located on the eastern side of the site, north of the retention pond. Both shallow wells are close to water bodies, which may lead to more variable results. The chloride concentration in well MW18B was nearly double the highest concentration measured to date in 2020, however it decreased to less than guideline in 2021. Bedrock monitoring wells continue to have the highest chloride concentrations measured onsite, ranging between 1100 – 1480 mg/L in 2021, in line with historical results. MW32B, is located on the north east corner of the retention pond and has the highest chloride concentration measured in non-bedrock wells on site (140 mg/L in 2021).

Since groundwater monitoring and sampling at this facility has been conducted, nitrate concentrations at MW22A, which is located south of Cells 3A and 3B, have always exceeded the current referenced guideline of 3.0 mg-N/L. The elevated nitrate concentrations detected at MW22A may be associated with the land use in the area (i.e., agriculture, livestock, etc.) and could be related to the presence of a feedlot use immediately west of the facility. MW22A is located hydraulically down-gradient of Cells 3A and 3B. The sudden increase in nitrate concentration at MW22A in 2017 is interpreted to be anomalous. All wells monitored in 2017 showed increased nitrate concentrations which have since decreased back to pre-2017 concentrations. All other wells onsite have nitrate concentrations less than the referenced guidelines.

Historically, pH values have been slightly greater or marginally less than the upper guideline value at the facility. It is likely that pH is naturally elevated in the area.

The dissolved iron concentrations at all shallow monitoring wells were less than the referenced guideline of 0.3 mg/L in 2021. 15MW35-Deep and 15MW36-Deep both had concentrations greater than guideline in 2021, which is consistent with historical results. Dissolved manganese has only been analyzed since 2015; however, some visual trends are apparent. Several wells showed guideline exceedances in 2021, however, most are within historical ranges except 15MW35-Deep and 15MW36-Deep, which have increasing concentration trends.

Dissolved uranium is reported as being in exceedance of the Guideline (0.01 mg/L) at monitoring well MW12B in 2021. This well shows an increasing visual trend and will be closely monitored in the future. Dissolved uranium is considered to be naturally occurring in surface waters and groundwater in Alberta within glacial till deposits (CCME 2007).

All PHC and VOC parameters analyzed to date have been less than detection or less than guideline across the site.

Minor detectable concentrations of total phenols were observed in several monitoring wells in 2021. No Tier 1 guideline exists for total phenols. Monitoring wells 15MW35-Deep and 15MW36-Deep in the Lower Bedrock unit had detectable concentrations of total phenols and 15MW36-Deep has had total phenol concentrations approximately 10 times the detection limit since 2018.

6.0 CONCLUSIONS

The 2021 GMP findings are summarized as follows:

- The interpreted groundwater flow directions in surficial materials, clay shale, and deep groundwater are relatively unchanged compared to previous years.
- The natural groundwater type is sodium sulphate and natural mineralization accounts for high concentrations of sodium, sulphate, and TDS concentrations in the groundwater across the facility.
- In 2021, dissolved metal and routine parameters were generally within the historical concentration ranges and there continues to be no detection of VOC parameters analysed and no detection or detection at concentrations below guideline limits for all hydrocarbon parameters analysed.
- Total phenol concentrations greater than laboratory detection limits have been present since 2018.
- Overall, there were no indications of adverse groundwater impacts resulting from facility activities.

7.0 RECOMMENDATIONS

Based on the results from the work conducted in 2021, the following is recommended for Clean Harbors' consideration:

- The 2022 groundwater monitoring and sampling fieldwork should continue to be conducted in late May or early June to minimize the number of frozen wells and maximize groundwater availability for sampling. The parameters that were analyzed in 2021 should be continued to be analyzed in 2022.
- The geodetic elevations of several wells should be surveyed in 2022 to support groundwater contouring.

8.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.



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TABLES

Table 1	2021 Groundwater Analytical Schedule
Table 2	Monitoring Well Details
Table 3a	Groundwater Monitoring Results - Surficial Materials
Table 3b	Groundwater Monitoring Results - Upper Sandstone
Table 3c	Groundwater Monitoring Results – Clay Shale
Table 3d	Groundwater Monitoring Results – Lower Bedrock
Table 4a	Field and Groundwater Analytical Results Summary – Surficial Material Wells
Table 4b	Field and Groundwater Analytical Results Summary – Upper Sandstone Wells
Table 4c	Field and Groundwater Analytical Results Summary –Clay Shale Wells
Table 4d	Field and Groundwater Analytical Results Summary – Lower Bedrock Wells
Table 5a	Groundwater Quality Assurance and Quality Control – Field Duplicates
Table 5b	Groundwater Quality Assurance and Quality Control - Blanks

Table 1: 2021 Groundwater Analytical Schedule

Sample	Laboratory Analytical Parameters
48 Groundwater Monitoring Wells 4 Field Duplicates 1 Trip Blank, 1 Field Blank	pH (field and laboratory)
	Electrical Conductivity (field and laboratory)
	Routine (major ions) - total dissolved solids (TDS), alkalinity, hardness (as CaCO ₃), chloride, calcium, magnesium, sodium, potassium, sulphate, nitrate-N, and nitrite-N
	Dissolved Mercury
	Total Kjeldahl Nitrogen (TKN)
	Ammonia-N
	Dissolved Organic Carbon (DOC)
	Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
	Petroleum Hydrocarbon (PHC) Fractions F1 and F2
	Total Phenols
Volatile Organic Compounds (VOCs) - methylene chloride, vinyl chloride, trichloroethylene (TCE), and tetrachloroethylene (PCE)	

Table 2: Monitoring Well Details

Groundwater Monitoring Zone	Well Identification	Date Installed	Elevations		Measured Stick-up (m)	Measured Well Depth			Screened Interval				Sand Pack Interval		Lithology Screened
			Surface (m AMSL)	Top of Pipe (m AMSL)		(m BTOP)	(mbgl)	(m AMSL)	Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)	Top Screen Elevation (m AMSL)	Bottom Screen Elevation (m AMSL)	Top Depth (mbgl)	Bottom Depth (mbgl)	
Surficial Materials 14 Wells	MW10	19-Feb-1991	687.44	687.96	0.43	3.86	3.43	684.10	1.93	3.43	685.51	684.01	1.63	3.43	clay till / clay shale / sandstone
	MW18B	30-Sep-1996	687.12	687.85	0.74	5.98	5.24	681.88	2.24	5.24	684.88	681.88	2.10	5.24	clay till / clay shale / sandstone
	MW19B	1-Oct-1996	686.65	687.14	0.31	4.23	3.92	682.91	0.92	3.92	685.73	682.73	0.72	3.92	clay shale / sandstone
	MW20B	1-Oct-1996	688.92	689.65	0.70	5.10	4.40	684.55	1.40	4.40	687.52	684.52	1.20	4.40	clay till / clay shale / sandstone
	MW21B	1-Oct-1998	687.54	688.55	0.89	6.09	5.20	682.46	2.20	5.20	685.35	682.35	1.90	5.20	clay till / sandstone / siltstone
	MW22B	1-Oct-1998	687.81	688.70	0.89	6.84	5.95	681.86	2.95	5.95	684.86	681.86	2.95	5.95	clay till / sandstone / clay shale
	MW29B	8-Oct-2014	688.13	688.93	0.77	5.45	4.68	683.48	3.18	4.68	684.96	683.46	2.88	4.68	sand
	MW30B	8-Oct-2014	688.52	689.31	0.82	5.44	4.62	683.87	3.12	4.62	685.41	683.91	2.82	4.62	clay till
	MW31B	8-Oct-2014	686.40	687.17	0.54	3.91	3.37	683.27	1.87	3.37	684.53	683.03	1.57	3.37	clay till / sandstone
	MW32B	8-Oct-2014	686.54	687.23	0.62	4.89	4.27	682.34	2.77	4.27	683.77	682.27	2.47	4.50	clay till / sand
	MW33B	6-Oct-2014	686.94	687.87	0.97	5.51	4.54	682.35	3.04	4.54	683.89	682.39	2.74	4.54	sand / sandstone
	19MW37B	30-Oct-2019	-	-	0.88	5.48	4.20	-	2.70	4.20	-	-	2.40	4.50	clay / sand / sandstone
	19MW38B	30-Oct-2019	-	-	0.95	5.19	4.00	-	3.50	4.00	-	-	3.20	4.00	clay / sand / sandstone
	15MW35C	28-Jul-2015	688.53	689.50	0.95	4.17	3.22	685.32	2.00	3.22	686.53	685.31	1.70	3.22	clay till
Upper Sandstone 14 Wells	MW1C	14-Jun-2011	687.64	688.61	0.92	6.43	5.51	682.18	4.01	5.51	683.63	682.13	3.70	5.51	clay shale/ sandstone
	MW8B	4-Oct-2012	686.82	687.69	0.88	5.40	4.52	682.29	3.02	4.52	683.80	682.30	1.8	4.52	clay / sand
	MW11	19-Feb-1991	687.95	688.37	0.36	6.21	5.85	682.16	4.35	5.85	683.60	682.10	4.05	5.85	clay shale / sandstone
	MW12A	19-Feb-1991	686.62	687.13	0.10	6.15	6.05	680.98	4.55	6.05	682.07	680.57	4.25	6.05	clay till / clay shale / sandstone
	MW23B	1-Oct-1998	686.48	687.38	0.90	4.47	3.57	682.90	0.57	3.57	685.90	682.90	0.37	3.57	sand / sandstone
	MW25B	13-Aug-2004	686.91	687.48	0.41	6.12	5.71	681.36	2.71	5.71	684.20	681.20	2.51	5.71	sandstone / clay shale
	MW26B	13-Aug-2004	687.14	687.63	0.45	5.94	5.49	681.69	2.49	5.49	684.65	681.65	2.19	5.49	clay shale / sandstone / siltstone
	MW27B	1-Oct-2007	686.50	687.15	0.65	6.61	5.96	680.54	2.96	5.96	683.54	680.54	2.66	5.96	sand / siltstone
	MW28B	4-Oct-2012	687.44	687.97	0.51	7.10	6.59	680.87	3.59	6.59	683.85	680.85	3.29	6.59	sand / siltstone
	MW29A	6-Oct-2014	688.06	688.89	0.84	10.22	9.38	678.67	7.88	9.38	680.18	678.68	7.38	9.38	sandstone
	MW30A	8-Oct-2014	688.57	689.37	0.76	8.89	8.13	680.48	6.13	8.13	682.44	680.44	5.83	9.00	sandstone
	MW31A	8-Oct-2014	686.38	687.12	0.61	9.74	9.13	677.39	7.13	9.13	679.25	677.25	6.83	9.13	sandstone
	MW33A	6-Oct-2014	686.92	687.93	0.89	15.67	14.78	672.26	12.78	14.78	674.14	672.14	12.48	14.78	sandstone
	15MW35B	28-Jul-2015	688.47	689.40	0.83	7.98	7.16	681.41	5.50	7.16	682.97	681.31	5.20	7.16	sandstone
Clay Shale 18 Wells	MW1B	30-Sep-1996	687.82	688.70	0.77	10.71	9.94	677.99	8.44	9.94	679.38	677.88	8.00	9.94	clay shale
	MW8A	4-Oct-2012	686.84	687.83	0.92	10.16	9.24	677.67	6.24	9.24	680.60	677.60	6.6	9.24	clay / sand / siltstone
	MW12B	30-Sep-1996	687.27	687.78	0.27	10.41	10.14	677.36	8.64	10.14	678.63	677.13	8.34	10.14	clay shale
	MW18A	1-Oct-1996	687.13	687.77	0.62	10.70	10.08	677.06	8.58	10.08	678.55	677.05	8.15	10.08	clay shale
	MW19A	1-Oct-1996	686.60	687.10	0.17	10.70	10.53	676.39	9.03	10.53	677.56	676.06	8.20	10.53	clay shale
	MW20A	1-Oct-1996	688.89	689.54	0.60	10.60	10.00	678.94	8.50	10.00	680.39	678.89	8.30	10.00	clay shale / sandstone
	MW21A	1-Oct-1998	687.60	688.30	0.61	10.66	10.05	677.64	8.55	10.05	679.05	677.55	8.25	10.05	clay shale / siltstone
	MW22A	1-Oct-1998	687.83	688.66	0.82	10.65	9.83	678.02	8.33	9.83	679.51	678.01	8.03	9.83	clay shale / sandstone / siltstone
	MW23A	1-Oct-1998	686.45	687.16	0.64	10.65	10.01	676.51	8.51	10.01	677.94	676.44	8.01	10.01	clay shale / sandstone / siltstone
	MW25A	13-Aug-2004	686.73	687.54	0.21	10.72	10.51	676.82	9.01	10.51	677.72	676.22	8.51	10.51	clay shale
	MW26A	13-Aug-2004	687.00	687.60	0.56	10.72	10.16	676.88	8.66	10.16	678.34	676.84	8.16	10.16	clay shale
	MW27A	1-Oct-2007	686.65	687.19	0.47	10.93	10.46	676.26	8.96	10.46	677.69	676.19	9.26	10.46	siltstone
	MW28A	4-Oct-2012	687.36	687.96	0.59	11.76	11.17	676.20	9.67	11.17	677.69	676.19	9.37	11.17	siltstone
	MW32A	8-Oct-2014	686.53	687.19	0.61	10.09	9.48	677.10	7.48	9.48	679.05	677.05	7.18	9.48	clay
	19MW37A	Oct, 30 2019	-	-	0.89	13.36	12.00	-	9.00	12.00	-	-	4.00	13.50	clay shale
	19MW38A	Oct, 30 2019	-	-	0.80	14.75	13.40	-	8.90	13.40	-	-	8.60	13.50	clay shale
	15MW35A	28-Jul-2015	688.46	689.32	0.84	14.55	13.71	674.77	11.70	13.71	676.76	674.75	11.50	13.71	clay shale
	15MW36A	28-Jul-2015	687.05	687.95	0.61	15.81	15.20	672.13	12.70	15.20	674.35	671.85	12.40	15.20	clay shale
Lower Bedrock 2 Wells	15MW35-Deep	28-Jul-2015	688.43	689.32	0.91	33.41	32.50	655.91	31.00	32.50	657.43	655.93	29.70	32.50	sandstone
	15MW36-Deep	21-Jul-2015	687.03	687.79	0.43	36.36	35.93	651.42	33.60	35.93	653.43	651.10	33.30	35.93	sandstone

Notes:

Monitoring well network re-surveyed on July 30, 2015
m AMSL - metres above mean sea level
mbgl - metres below ground level
m BTOP - metres below top of pipe

Table 3a: Groundwater Monitoring Results - Surficial Materials

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSL)
	Easting	Northing	Surface (mAMSL)	Top of Pipe (mAMSL)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW9 Decommissioned July 2018	-	-	686.97	687.47	0.42	4.93	3.43	4.93	Apr-91	2.51	2.09	684.96
									Oct-91	2.73	2.31	684.74
									Apr-92	2.26	1.84	685.21
									Oct-92	3.20	2.78	684.27
									Apr-93	3.20	2.78	684.27
									Oct-93	3.12	2.70	684.35
									Apr-94	3.54	3.12	683.93
									Oct-94	2.92	2.50	684.55
									Apr-95	2.46	2.04	685.01
									Oct-95	3.06	2.64	684.41
									Apr-96	2.74	2.32	684.73
									Oct-96	2.73	2.31	684.74
									Apr-97	2.61	2.19	684.86
									Oct-97	2.65	2.23	684.82
									Apr-98	2.84	2.42	684.63
									Oct-98	2.83	2.41	684.64
									Apr-99	2.75	2.33	684.72
									Oct-99	4.00	3.58	683.47
									Apr-00	3.45	3.03	684.02
									Oct-00	2.76	2.34	684.71
									Apr-01	3.55	3.13	683.92
									Oct-01	3.10	2.68	684.37
									Apr-02	3.80	3.38	683.67
									Oct-02	3.24	2.82	684.23
									Apr-03	3.56	3.14	683.91
									Oct-03	2.87	2.45	684.60
									Apr-04	3.28	2.86	684.19
									Oct-04	2.00	1.58	685.47
									Apr-05	2.99	2.57	684.48
									Oct-05	2.64	2.22	684.83
									Apr-06	3.59	3.17	683.88
									Oct-06	2.54	2.12	684.93
									Apr-07	2.47	2.05	685.00
									Oct-07	2.41	1.99	685.06
									May-08	2.41	1.99	685.06
									May-09	2.76	2.34	684.71
Jun-11	2.76	2.34	684.71									
May-12	2.76	2.34	684.71									
Jun-13	1.83	1.41	685.64									
May-14	2.33	1.91	685.14									
May-15	2.12	1.70	685.35									
May-16	1.92	1.50	685.55									
May-17	1.45	1.03	686.02									
Jun-18	2.28	1.86	685.19									
Apr-91	2.56	2.18	685.40									
Oct-91	3.04	2.66	684.92									
Apr-92	Dry	-	-									
Oct-92	Dry	-	-									
Apr-93	Dry	-	-									
Oct-93	Dry	-	-									
Apr-94	Dry	-	-									
Oct-94	2.25	1.87	685.71									
Apr-95	Dry	-	-									
Oct-95	2.30	1.92	685.66									
Apr-96	Dry	-	-									
Oct-96	2.07	1.69	685.89									
Apr-97	1.80	1.42	686.16									
Oct-97	1.90	1.52	686.06									
Apr-98	2.37	1.99	685.59									
Oct-98	2.16	1.78	685.80									
Apr-99	2.05	1.67	685.91									
Oct-99	2.25	1.87	685.71									
Apr-00	Dry	-	-									
Oct-00	2.25	1.87	685.71									
Apr-01	Dry	-	-									
Oct-01	2.33	1.95	685.63									
Apr-02	Dry	-	-									
Oct-02	2.48	2.10	685.48									
Apr-03	Dry	-	-									
Oct-03	2.22	1.84	685.74									
Apr-04	2.58	2.20	685.38									
Oct-04	2.13	1.75	685.82									
Apr-05	2.01	1.63	685.95									
Oct-05	1.76	1.38	686.20									
Apr-06	2.33	1.95	685.63									
Oct-06	1.98	1.60	685.98									
Apr-07	1.63	1.25	686.32									
Oct-07	1.78	1.40	686.18									
May-08	1.78	1.40	686.18									
May-09	2.25	1.87	685.71									
Jun-10	2.29	1.91	685.67									
Jun-11	2.25	1.87	685.71									
May-12	2.25	1.87	685.71									
Jun-13	1.85	1.47	686.11									
May-14	2.20	1.82	685.76									
May-15	1.82	1.44	686.13									
May-16	2.06	1.68	685.89									
May-17	1.31	0.93	686.64									
Jun-18	1.95	1.57	686.01									
Jun-19	1.71	1.33	686.25									
May-20	1.64	1.26	686.31									
Jun-21	1.46	1.03	686.50									
Oct-96	1.91	1.18	685.94									
Apr-97	2.60	1.87	685.25									
Oct-97	2.26	1.53	685.59									
Apr-98	2.80	2.07	685.05									
Oct-98	2.28	1.55	685.57									
Apr-99	2.50	1.77	685.35									
Oct-99	2.55	1.82	685.30									
Apr-00	2.93	2.20	684.92									
Oct-00	2.42	1.69	685.43									
Apr-01	2.96	2.23	684.89									
Oct-01	2.59	1.86	685.26									
Apr-02	3.10	2.37	684.75									
Oct-02	2.90	2.17	684.95									
Apr-03	3.36	2.63	684.49									
Oct-03	2.47	1.74	685.38									
Apr-04	2.85	2.12	685.00									
Oct-04	2.37	1.64	685.48									
Apr-05	2.68	1.95	685.17									
Oct-05	2.30	1.57	685.55									
Apr-06	2.68	1.95	685.17									
Oct-06	2.18	1.45	685.67									
Apr-07	2.55	1.82	685.30									
Oct-07	1.84	1.11	686.01									
May-08	1.84	1.11	686.01									
May-09	2.42	1.69	685.43									
Jun-10	2.46	1.72	685.40									
Jun-11	2.42	1.69	685.43									
May-12	2.42	1.69	685.43									
Jun-13	1.88	1.15	685.97									
May-14	1.83	1.09	686.03									
May-15	1.88	1.14	685.98									
May-16	2.05	1.32	685.80									
May-17	1.24	0.51	686.61									
Jun-18	1.53	0.79	686.33									
Jun-19	1.62	0.88	686.24									
May-20	1.15	0.41	686.71									
2-Jun-21	1.26	0.53	686.59									

Table 3a: Groundwater Monitoring Results - Surficial Materials

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSL)
	Easting	Northing	Surface (mAMSL)	Top of Pipe (mAMSL)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW19B	404792	5906618	686.65	687.14	0.50	4.84	1.84	4.84	Oct-96	0.80	0.30	686.34
									Apr-97	1.80	1.30	685.34
									Oct-97	1.11	0.61	686.03
									Apr-98	1.81	1.31	685.33
									Oct-98	0.80	0.30	686.34
									Apr-99	1.55	1.05	685.59
									Oct-99	1.33	0.83	685.81
									Apr-00	1.96	1.46	685.18
									Oct-00	1.27	0.77	685.87
									Apr-01	Frozen	-	-
									Oct-01	1.42	0.92	685.72
									Apr-02	1.96	1.46	685.18
									Oct-02	1.81	1.31	685.33
									Apr-03	2.22	1.72	684.92
									Oct-03	1.28	0.78	685.86
									Apr-04	1.66	1.16	685.48
									Oct-04	1.01	0.51	686.13
									Apr-05	1.34	0.84	685.80
									Oct-05	1.03	0.53	686.11
									Apr-06	1.45	0.95	685.69
									Oct-06	0.94	0.44	686.20
									Apr-07	1.01	0.51	686.13
									Oct-07	0.80	0.30	686.34
									May-08	0.80	0.30	686.34
									May-09	1.27	0.77	685.87
									Jun-10	1.42	0.93	685.71
									Jun-11	1.27	0.77	685.87
									May-12	1.27	0.77	685.87
					Jun-13	1.14	0.65	685.99				
					May-14	1.08	0.59	686.05				
					May-15	1.11	0.61	686.03				
May-16	1.38	0.89	685.75									
May-17	0.89	0.39	686.25									
Jun-18	1.21	0.87	685.93									
Jun-19	1.24	0.89	685.90									
May-20	0.82	0.47	686.32									
Jun-21	0.86	0.55	686.28									
				0.35					Oct-96	3.86	3.15	685.79
									Apr-97	4.32	3.61	685.33
									Oct-97	3.52	2.81	686.13
									Apr-98	4.14	3.43	685.51
									Oct-98	3.15	2.44	686.50
									Apr-99	4.09	3.38	685.56
									Oct-99	3.69	2.98	685.96
									Apr-00	4.36	3.65	685.29
									Oct-00	3.65	2.94	686.00
									Apr-01	4.39	3.68	685.26
									Oct-01	3.79	3.08	685.86
									Apr-02	4.43	3.72	685.22
									Oct-02	4.10	3.39	685.55
									Apr-03	4.67	3.96	684.98
									Oct-03	3.73	3.02	685.92
									Apr-04	4.18	3.47	685.47
									Oct-04	3.49	2.78	686.16
									Apr-05	3.88	3.17	685.77
									Oct-05	3.40	2.69	686.25
									Apr-06	4.11	3.40	685.54
									Oct-06	3.30	2.59	686.35
									Apr-07	3.48	2.77	686.17
									Oct-07	3.28	2.57	686.37
									May-08	3.28	2.57	686.37
									May-09	3.65	2.94	686.00
									Jun-10	3.99	3.28	685.66
									Jun-11	3.65	2.94	686.00
									May-12	3.65	2.94	686.00
									Jun-13	3.82	3.11	685.84
									May-14	3.66	2.95	685.99
									May-15	3.77	3.06	685.88
									May-16	3.91	3.20	685.74
									May-17	3.38	2.67	686.28
									Jun-18	3.75	3.11	685.91
									Jun-19	3.77	3.13	685.89
									May-20	3.31	2.67	686.34
									Jun-21	3.17	2.47	686.48
									Oct-98	2.08	1.11	686.47
									Apr-99	2.88	1.91	685.67
									Oct-99	2.55	1.58	686.00
									Apr-00	3.24	2.27	685.31
									Oct-00	2.51	1.54	686.04
									Apr-01	3.20	2.23	685.35
									Oct-01	2.67	1.70	685.88
									Apr-02	3.41	2.44	685.14
									Oct-02	3.11	2.14	685.44
									Apr-03	3.58	2.61	684.97
									Oct-03	2.72	1.75	685.83
									Apr-04	3.25	2.28	685.30
									Oct-04	2.49	1.52	686.06
									Apr-05	2.93	1.96	685.62
									Oct-05	2.36	1.39	686.19
									Apr-06	3.06	2.09	685.49
									Oct-06	2.28	1.31	686.27
									Apr-07	2.52	1.55	686.03
									Oct-07	2.19	1.22	686.36
									May-08	2.19	1.22	686.36
									May-09	2.51	1.54	686.04
									Jun-10	2.84	1.87	685.71
									Jun-11	2.51	1.54	686.04
									May-12	2.51	1.54	686.04
									Jun-13	2.93	1.96	685.62
									May-14	3.01	2.04	685.54
									May-15	3.09	2.12	685.46
									May-16	3.28	2.31	685.27
									May-17	2.99	2.02	685.56
									Jun-18	2.94	1.97	685.60
									Jun-19	2.96	1.99	685.59
									May-20	2.47	1.50	686.08
									Jun-21	2.38	1.49	686.17
					0.89							

Table 3a: Groundwater Monitoring Results - Surficial Materials

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSL)
	Easting	Northing	Surface (mAMSL)	Top of Pipe (mAMSL)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW22B	404852.8	5906350.6	687.81	688.70	0.87	5.22	2.22	5.22	Oct-98	2.41	1.54	686.29
									Apr-99	2.99	2.12	685.71
									Oct-99	2.83	1.96	685.87
									Apr-00	3.38	2.51	685.32
									Oct-00	2.74	1.87	685.96
									Apr-01	3.34	2.47	685.36
									Oct-01	2.91	2.04	685.79
									Apr-02	3.60	2.73	685.10
									Oct-02	3.40	2.53	685.30
									Apr-03	3.74	2.87	684.96
									Oct-03	2.93	2.06	685.77
									Apr-04	3.39	2.52	685.31
									Oct-04	2.64	1.77	686.06
									Apr-05	2.99	2.12	685.71
									Oct-05	2.53	1.66	686.17
									Apr-06	3.15	2.28	685.55
									Oct-06	2.47	1.60	686.23
									Apr-07	2.52	1.65	686.18
									Oct-07	2.34	1.47	686.36
									May-08	2.34	1.47	686.36
									May-09	2.74	1.87	685.96
Jun-10	2.58	1.71	686.12									
Jun-11	2.74	1.87	685.96									
May-12	2.74	1.87	685.96									
Jun-13	3.08	2.21	685.62									
May-14	3.14	2.27	685.56									
May-15	3.28	2.41	685.43									
May-16	3.50	2.63	685.20									
May-17	3.23	2.36	685.47									
Jun-18	3.09	2.22	685.62									
Jun-19	3.10	2.23	685.61									
May-20	2.99	2.12	685.72									
May-21	2.46	1.57	686.24									
MW24B Decommissioned July 2018	-	-	688.86	689.63	0.70	5.38	2.38	5.38	Oct-04	3.50	2.81	686.13
									Apr-05	3.76	3.07	685.87
									Oct-05	3.33	2.64	686.30
									Apr-06	3.95	3.26	685.68
									Oct-06	3.16	2.46	686.48
									Apr-07	3.34	2.64	686.30
									Oct-07	2.88	2.18	686.76
									May-08	2.88	2.18	686.76
									May-09	3.42	2.72	686.21
									Jun-10	3.22	2.53	686.41
									Jun-11	2.47	1.77	687.16
									May-12	2.61	1.91	687.02
									Jun-13	2.85	2.16	686.78
									May-14	3.81	3.11	685.82
									May-15	2.74	2.05	686.89
									May-16	2.55	1.86	687.08
									May-17	2.49	1.80	687.14
Jun-18	2.68	2.05	686.96									
May-15	3.97	3.19	684.95									
MW29B	405411.1	5906365.2	688.13	688.93	0.78	4.67	3.17	4.67	May-16	2.83	2.05	686.10
									May-17	2.92	2.14	686.01
									Jun-18	2.23	1.45	686.70
									Jun-19	2.91	2.13	686.02
									May-20	2.71	1.93	686.22
									May-21	3.13	2.36	685.79
MW30B	405485.0	5906376.1	688.52	689.31	0.75	4.70	3.20	4.70	May-15	4.41	3.66	684.90
									May-16	3.51	2.76	685.80
									May-17	3.44	2.69	685.87
									Jun-18	3.68	2.93	685.63
									Jun-19	3.41	2.66	685.90
									May-20	3.27	2.52	686.04
MW31B	405536.5	5906465.0	686.40	687.17	0.73	3.19	1.69	3.19	May-21	3.44	2.62	685.87
									May-15	2.46	1.73	684.71
									May-16	2.23	1.50	684.95
									May-17	2.10	1.37	685.07
									Jun-18	2.12	1.59	685.05
									Jun-19	1.74	1.21	685.43
MW32B	405529.2	5906577.5	686.54	687.23	0.68	4.20	2.70	4.20	May-20	1.41	0.88	685.76
									May-21	1.89	1.35	685.29
									May-15	2.54	1.86	684.68
									May-16	2.33	1.65	684.90
									May-17	2.31	1.63	684.91
									Jun-18	2.37	1.69	684.86
MW33B	405513.05	5906661.242	686.94	687.87	0.90	4.61	3.11	4.61	Jun-19	1.93	1.25	685.30
									May-20	1.59	0.91	685.64
									May-21	2.08	1.46	685.15
									Aug-15	1.65	0.75	686.21
									May-16	1.60	0.70	686.27
									May-17	1.40	0.50	686.47
15MW34B Decommissioned July 2018	405099.2	5906742.3	687.97	688.96	0.99	4.80	3.20	4.80	Jun-18	1.54	0.64	686.33
									May-21	1.57	0.60	686.29
									Aug-15	5.79	4.80	683.17
									May-16	3.07	2.08	685.89
15MW35C	404801.2	5906265.6	688.53	689.50	0.94	3.25	2.00	3.25	May-17	2.73	1.74	686.23
									Jun-18	3.56	2.57	685.40
									Aug-15	3.82	2.88	685.68
									May-16	Dry	-	-
									May-17	Dry	-	-
									Jun-18	4.04	3.10	685.46
19MW37B	1261.99	1003.8	685.98	686.99	0.84	4.691	1.691	4.691	Jun-19	3.95	3.01	685.55
									May-20	Dry	-	-
									Jun-21	3.26	2.31	686.23
19MW38B	1459.7	995.98	687.02	687.96	0.88	4.661	1.661	4.661	Jun-19	1.44	0.60	685.55
									May-20	1.42	0.58	685.57
									Jun-21	1.32	0.44	685.67
					0.94				Jun-19	1.26	0.32	686.71
									May-20	1.97	1.03	685.99
					0.95				Jun-21	1.59	0.64	686.38

Notes:
Monitoring well network re-surveyed on July 30, 2015
mAMSL - metres above mean sea level
mbgl - metres below ground level
mBTOP - metres below top of pipe
- - no information available

Table 3b: Groundwater Monitoring Results - Upper Sandstone

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSL)
	Easting	Northing	Surface (mAMSL)	Top of Pipe (mAMSL)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW1C	404794.2	5906756.1	687.64	688.61	0.94	5.51	4.01	5.51	May-12	3.37	2.43	685.24
									Jun-13	6.20	5.26	682.41
									May-14	2.88	1.94	685.73
									May-15	2.99	2.05	685.62
									May-16	3.46	2.52	685.15
									May-17	2.49	1.55	686.12
									Jun-18	3.15	2.21	685.46
									Jun-19	3.136	2.20	685.47
									May-20	2.39	1.45	686.22
									Jun-21	2.484	1.56	686.13
MW5A Decommissioned July 2018	405028.0	5906686.8	688.28	689.17	0.90	6.74	5.24	6.74	Apr-91	4.00	3.10	685.17
									Oct-91	3.73	2.83	685.44
									Apr-92	4.12	3.22	685.05
									Oct-92	4.13	3.23	685.04
									Apr-93	4.40	3.50	684.77
									Oct-93	4.68	3.78	684.49
									Apr-94	4.92	4.02	684.25
									Oct-94	4.14	3.24	685.03
									Apr-95	4.42	3.52	684.75
									Oct-95	4.25	3.35	684.92
									Apr-96	5.00	4.10	684.17
									Apr-97	3.42	2.52	685.75
									Oct-97	3.20	2.30	685.97
									Apr-98	3.63	2.73	685.54
									36069.00	3.42	2.52	685.75
									Apr-99	3.41	2.51	685.76
									Oct-99	3.56	2.66	685.61
									Apr-00	3.84	2.94	685.33
									Oct-00	3.16	2.26	686.01
									Apr-01	3.59	2.69	685.58
									Oct-01	3.51	2.61	685.66
									Apr-02	4.10	3.20	685.07
									Oct-02	4.03	3.13	685.14
									Apr-03	4.34	3.44	684.83
									Oct-03	3.68	2.78	685.49
									Apr-04	4.31	3.41	684.86
									Oct-04	3.54	2.64	685.63
									Apr-05	3.80	2.90	685.37
									Oct-05	3.29	2.39	685.88
									Apr-06	3.93	3.03	685.24
									Oct-06	4.33	3.43	684.84
									Apr-07	2.86	1.96	686.31
									Oct-07	3.85	2.95	685.32
									May-08	3.85	2.95	685.32
									May-09	3.16	2.26	686.01
									Jun-10	3.78	2.88	685.39
									Jun-11	3.16	2.26	686.01
									May-12	3.16	2.26	686.01
									Jun-13	3.85	2.95	685.32
									May-14	4.06	3.16	685.11
									May-15	2.21	1.31	686.96
									May-16	3.38	2.48	685.79
May-17	3.03	2.13	686.14									
Jun-18	3.61	2.71	685.57									
Jun-13	1.46	0.61	686.23									
May-14	2.30	1.45	685.39									
May-15	1.84	0.99	685.86									
May-16	1.56	0.71	686.13									
May-17	1.43	0.58	686.27									
Jun-18	1.76	0.91	685.93									
Jun-19	1.24	0.39	686.45									
May-20	1.30	0.45	686.39									
Jun-21	1.22	0.34	686.47									
MW11	405514.5	5906740.3	687.95	688.37	0.42	5.83	4.33	5.83	Apr-91	2.75	2.33	685.62
									Oct-91	3.51	3.09	684.86
									Apr-92	3.06	2.64	685.31
									Oct-92	2.96	2.54	685.41
									Apr-93	3.22	2.80	685.15
									Oct-93	2.84	2.42	685.53
									Apr-94	3.01	2.59	685.36
									Oct-94	2.52	2.10	685.85
									Apr-95	3.01	2.59	685.36
									Oct-95	2.57	2.15	685.80
									Apr-96	2.88	2.46	685.49
									Oct-96	3.10	2.68	685.27
									Apr-97	1.84	1.42	686.53
									Oct-97	2.24	1.82	686.13
									Apr-98	2.59	2.18	685.78
									Oct-98	2.42	2.00	685.95
									Apr-99	2.29	1.87	686.08
									Oct-99	2.56	2.14	685.81
									Apr-00	3.00	2.58	685.37
									Oct-00	2.41	1.99	685.96
									Apr-01	3.12	2.70	685.25
									Oct-01	2.60	2.18	685.77
									Apr-02	3.18	2.76	685.19
									Oct-02	2.87	2.45	685.50
									Apr-03	3.12	2.70	685.25
									Oct-03	2.41	1.99	685.96
									Apr-04	3.38	2.96	684.99
									Oct-04	2.24	1.82	686.13
									Apr-05	2.45	2.03	685.92
									Oct-05	2.90	2.48	685.47
									Apr-06	3.00	2.58	685.37
									Oct-06	2.53	2.11	685.84
									Apr-07	1.96	1.54	686.41
									Oct-07	1.99	1.57	686.38
									May-08	1.99	1.57	686.38
									May-09	2.41	1.99	685.96
									Jun-10	2.69	2.27	685.68
									Jun-11	2.41	1.99	685.96
									May-12	2.41	1.99	685.96
									Jun-13	2.35	1.93	686.02
									May-14	2.48	2.07	685.89
									May-15	2.31	1.89	686.06
May-16	2.47	2.05	685.90									
May-17	1.73	1.31	686.64									
Jun-18	2.57	2.25	685.80									
Jun-19	2.26	1.94	686.11									
May-20	1.88	1.56	686.49									
Jun-21	1.77	1.41	686.60									

Table 3b: Groundwater Monitoring Results - Upper Sandstone

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSLS)
	Easting	Northing	Surface (mAMSLS)	Top of Pipe (mAMSLS)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW12A			686.62	687.13	0.39	5.78	4.28	5.78	Apr-91	1.06	0.67	686.07
									Oct-91	1.76	1.37	685.37
									Apr-92	1.52	1.13	685.61
									Oct-92	1.43	1.04	685.70
									Apr-93	1.71	1.32	685.42
									Oct-93	2.18	1.79	684.95
									Apr-94	2.37	1.98	684.76
									Oct-94	1.57	1.18	685.56
									Apr-95	1.79	1.40	685.34
									Oct-95	2.14	1.75	684.99
									Apr-96	2.41	2.02	684.72
									Oct-96	1.56	1.17	685.57
									Apr-97	1.33	0.94	685.80
									Oct-97	0.93	0.54	686.20
									Apr-98	1.34	0.95	685.79
									Oct-98	1.14	0.75	685.99
									Apr-99	1.29	0.90	685.84
									Oct-99	1.26	0.87	685.87
									Apr-00	1.62	1.23	685.51
									Oct-00	1.12	0.73	686.01
									Apr-01	1.59	1.20	685.54
									Oct-01	1.41	1.02	685.72
									Apr-02	1.80	1.41	685.33
									Oct-02	1.88	1.49	685.25
									Apr-03	2.13	1.74	685.00
									Oct-03	1.53	1.14	685.60
									Apr-04	1.96	1.57	685.17
									Oct-04	1.45	1.06	685.68
									Apr-05	1.45	1.06	685.68
									Oct-05	0.98	0.59	686.15
									Apr-06	1.66	1.27	685.47
									Oct-06	1.19	0.80	685.94
									Apr-07	0.93	0.54	686.20
									Oct-07	0.72	0.33	686.41
									May-08	0.72	0.33	686.41
									May-09	1.12	0.73	686.01
					Jun-10				2.06	1.67	685.07	
					Jun-11				1.12	0.73	686.01	
					May-12				1.12	0.73	686.01	
					Jun-13				1.54	1.15	685.59	
May-14	1.69	1.30	685.44									
May-15	1.47	1.08	685.67									
May-16	1.74	1.35	685.40									
May-17	1.20	0.81	685.93									
Jun-18	2.99	2.65	684.14									
Jun-19	2.15	1.81	684.98									
May-20	1.71	1.36	685.43									
Jun-21	1.57	1.47	685.56									
MW14 Decommissioned July 2018			686.52	687.56	0.94	6.14	4.64	6.14	Oct-92	3.20	2.26	684.36
									Apr-93	2.78	1.84	684.78
									Oct-93	3.14	2.20	684.42
									Apr-94	3.37	2.43	684.19
									Oct-94	2.95	2.01	684.61
									Apr-95	3.12	2.18	684.44
									Oct-95	3.24	2.30	684.32
									Apr-96	3.49	2.55	684.07
									Oct-96	2.70	1.76	684.86
									Apr-97	2.45	1.51	685.11
									Oct-97	2.92	1.98	684.64
									Apr-98	2.61	1.68	684.95
									Oct-98	2.87	1.93	684.69
									Apr-99	2.57	1.63	684.99
									Oct-99	3.25	2.31	684.31
									Apr-00	3.20	2.26	684.36
									Oct-00	2.83	1.89	684.73
									Apr-01	3.48	2.54	684.08
									Oct-01	3.25	2.31	684.31
									Apr-02	3.83	2.89	683.73
									Oct-02	3.19	2.25	684.37
									Apr-03	3.29	2.35	684.27
									Oct-03	2.86	1.92	684.70
									Apr-04	2.94	2.00	684.62
									Oct-04	3.10	2.16	684.46
									Apr-05	3.03	2.09	684.53
									Oct-05	3.34	2.40	684.22
									Apr-06	3.60	2.66	683.96
									Oct-06	2.98	2.04	684.58
									Apr-07	2.76	1.82	684.80
									Oct-07	3.19	2.25	684.37
									May-08	3.19	2.25	684.37
									May-09	2.83	1.89	684.73
									Jun-10	2.07	1.13	685.49
									Jun-11	2.83	1.89	684.73
									May-12	2.83	1.89	684.73
									Jun-13	2.28	1.34	685.28
									May-14	2.18	1.25	685.38
									May-15	2.70	1.77	684.86
									May-16	1.63	0.70	685.92
May-17	1.75	0.82	685.81									
Jun-18	2.67	1.73	684.89									
Oct-98	1.21	0.35	686.17									
Oct-99	1.72	0.86	685.66									
Apr-00	2.16	1.30	685.22									
Oct-00	1.60	0.74	685.78									
Apr-01	2.27	1.41	685.11									
Oct-01	1.75	0.89	685.63									
Apr-02	2.45	1.59	684.93									
Oct-02	2.19	1.33	685.19									
Apr-03	2.60	1.74	684.78									
Oct-03	1.79	0.93	685.59									
Apr-04	2.10	1.24	685.28									
Oct-04	1.38	0.52	686.00									
Apr-05	1.76	0.90	685.62									
Oct-05	1.60	0.74	685.78									
Apr-06	3.88	3.02	683.50									
Oct-06	1.46	0.60	685.92									
Apr-07	2.25	1.39	685.13									
Oct-07	1.10	0.24	686.28									
May-08	1.10	0.24	686.28									
May-09	1.60	0.74	685.78									
Jun-10	1.65	0.80	685.72									
Jun-11	1.60	0.74	685.78									
May-12	1.60	0.74	685.78									
Jun-13	1.61	0.75	685.77									
May-14	1.58	0.72	685.80									
May-15	1.66	0.81	685.71									
May-16	1.94	1.09	685.44									
May-17	1.70	0.85	685.67									
Jun-18	1.58	0.72	685.80									
Jun-19	1.64	0.79	685.73									
May-20	1.54	0.69	685.83									
May-21	1.11	0.21	686.27									
MW23B	404898.2	5906361.0	686.48	687.38	0.86	4.50	1.50	4.50	Oct-98	1.21	0.35	686.17
									Oct-99	1.72	0.86	685.66
									Apr-00	2.16	1.30	685.22
					Oct-00				1.60	0.74	685.78	
Apr-01	2.27	1.41	685.11									
Oct-01	1.75	0.89	685.63									
Apr-02	2.45	1.59	684.93									
Oct-02	2.19	1.33	685.19									
Apr-03	2.60	1.74	684.78									
Oct-03	1.79	0.93	685.59									
Apr-04	2.10	1.24	685.28									
Oct-04	1.38	0.52	686.00									
Apr-05	1.76	0.90	685.62									
Oct-05	1.60	0.74	685.78									
Apr-06	3.88	3.02	683.50									
Oct-06	1.46	0.60	685.92									
Apr-07	2.25	1.39	685.13									
Oct-07	1.10	0.24	686.28									
May-08	1.10	0.24	686.28									
May-09	1.60	0.74	685.78									
Jun-10	1.65	0.80	685.72									
Jun-11	1.60	0.74	685.78									
May-12	1.60	0.74	685.78									
Jun-13	1.61	0.75	685.77									
May-14	1.58	0.72	685.80									
May-15	1.66	0.81	685.71									
May-16	1.94	1.09	685.44									
May-17	1.70	0.85	685.67									
Jun-18	1.58	0.72	685.80									
Jun-19	1.64	0.79	685.73									
May-20	1.54	0.69	685.83									
May-21	1.11	0.21	686.27									
					0.90							

Table 3b: Groundwater Monitoring Results - Upper Sandstone

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSLS)
	Easting	Northing	Surface (mAMSLS)	Top of Pipe (mAMSLS)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW25B	404968.9	5906383.6	686.91	687.48	0.59	5.51	2.51	5.51	Oct-04	1.32	0.73	686.16
									Apr-05	1.78	1.19	685.70
									Oct-05	1.27	0.68	686.21
									Apr-06	1.95	1.36	685.53
									Oct-06	1.37	0.78	686.11
									Apr-07	1.17	0.58	686.31
									Oct-07	0.86	0.27	686.62
									May-08	0.86	0.27	686.62
									May-09	1.56	0.97	685.92
									Jun-10	1.53	0.94	685.96
									Jun-11	1.16	0.57	686.32
									May-12	1.17	0.58	686.31
									Jun-13	1.46	0.87	686.03
									May-14	1.36	0.77	686.13
									May-15	1.65	1.06	685.83
									May-16	1.90	1.31	685.58
									May-17	1.68	1.09	685.80
									Jun-18	1.63	1.27	685.85
					Jun-19	1.67	1.31	685.82				
					May-20	1.52	1.16	685.97				
					May-21	1.17	0.76	686.32				
MW26B	405056.1	5906389.5	687.14	687.63	0.49	5.56	2.56	5.56	Oct-04	1.63	1.14	686.00
									Apr-05	2.11	1.62	685.52
									Oct-05	1.63	1.14	686.00
									Apr-06	2.27	1.78	685.36
									Oct-06	1.64	1.16	685.99
									Apr-07	1.54	1.06	686.09
									Oct-07	0.99	0.51	686.64
									May-08	0.99	0.51	686.64
									May-09	1.77	1.28	685.86
									Jun-10	1.74	1.25	685.89
									Jun-11	1.32	0.83	686.31
									May-12	1.27	0.79	686.36
									Jun-13	1.47	0.99	686.16
									May-14	0.67	0.18	686.96
									May-15	1.68	1.20	685.94
									May-16	1.99	1.51	685.64
									May-17	1.64	1.16	685.98
									Jun-18	1.83	1.41	685.80
					Jun-19	1.81	1.39	685.81				
					May-20	2.57	2.15	685.06				
					May-21	1.29	0.84	686.34				
MW27B	405212.0	5906397.2	686.50	687.15	0.63	5.98	2.98	5.98	Oct-07	0.90	0.27	686.25
									May-08	0.90	0.27	686.25
									May-09	1.88	1.25	685.26
									Jun-10	1.62	0.99	685.53
									Jun-11	1.08	0.45	686.07
									May-12	0.36	-0.27	686.79
									Jun-13	2.77	2.14	684.38
									May-14	0.68	0.05	686.47
									May-15	1.00	0.37	686.15
									May-16	1.17	0.54	685.98
									May-17	0.96	0.33	686.19
									Jun-18	1.29	0.66	685.86
									Jun-19	1.10	0.47	686.05
									May-20	0.88	0.25	686.27
									May-21	0.99	0.34	686.16
									Jun-13	2.77	2.25	685.20
									May-14	2.59	2.07	685.38
									May-15	2.39	1.87	685.58
					May-16	2.13	1.61	685.84				
					May-17	1.85	1.33	686.13				
					Jun-18	2.07	1.55	685.91				
Jun-19	1.91	1.40	686.06									
May-20	1.64	1.12	686.33									
May-21	2.04	1.53	685.94									
MW28B	405317.2	5906379.9	687.44	687.97	0.52	6.57	3.57	6.57	May-15	3.96	3.14	684.93
									May-16	2.91	2.09	685.98
									May-17	2.88	2.06	686.01
									Jun-18	2.19	1.32	686.70
									Jun-19	2.83	1.96	686.06
									May-20	2.65	1.78	686.23
MW29A	405409.4	5906365.0	688.06	688.89	0.82	9.42	7.92	9.42	May-21	3.15	2.31	685.74
									May-15	4.51	3.75	684.87
									May-16	3.42	2.66	685.95
									May-17	3.48	2.72	685.90
									Jun-18	2.73	1.97	686.65
									Jun-19	3.41	2.65	685.96
MW30A	405483.7	5906375.1	688.57	689.37	0.76	8.15	6.15	8.15	May-20	3.24	2.48	686.13
									May-21	3.69	2.93	685.68
									May-15	2.05	1.37	685.07
									May-16	2.80	2.11	684.32
									May-17	2.41	1.73	684.71
									Jun-18	2.40	1.92	684.72
MW31A	405537.6	5906464.6	686.38	687.12	0.69	9.07	7.07	9.07	Jun-19	2.40	1.92	684.73
									May-20	2.26	1.78	684.86
									May-21	2.23	1.62	684.89
									May-15	2.41	1.49	685.52
									May-16	2.30	1.39	685.63
									May-17	2.11	1.20	685.82
MW33A	405513.1	5906661.2	686.92	687.93	0.92	13.20	11.20	13.20	Jun-18	2.17	1.25	685.77
									Jun-19	2.11	1.20	685.82
									May-20	2.56	1.65	685.37
									May-21	2.45	1.56	685.49
									Aug-15	6.34	5.53	683.06
									May-16	4.78	3.97	684.62
15MW35B	404801.2	5906265.6	688.47	689.40	0.81	7.17	5.50	7.17	May-17	4.45	3.64	684.95
									Jun-18	4.02	3.21	685.38
									Jun-19	3.92	3.11	685.47
									May-20	4.01	3.20	685.39
									Jun-21	3.27	2.44	686.13
									Jun-19	2.465	1.57	684.48
19MW37A	1260.72	1003.78	686	686.94	0.9	13.419	10.419	13.419	May-20	1.194	0.29	685.75
									Jun-21	1.132	0.24	685.81
									Jun-19	1.338	0.47	686.63
19MW38A	1456.1	995.81	687.09	687.97	0.87	14.773	11.773	14.773	May-20	1.872	1.00	686.10
									Jun-21	1.604	1.60	686.37
									Jun-19	1.338	0.47	686.63

Notes:
Monitoring well network re-surveyed on July 30, 2015
mAMSLS - metres above mean sea level
mbgl - metres below ground level
mBTOP - metres below top of pipe
- - no information available

Table 3c: Groundwater Monitoring Results - Clay Shale

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSL)
	Easting	Northing	Surface (mAMSL)	Top of Pipe (mAMSL)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW1B	404796.9	5906757.0	687.82	688.70	0.87	9.86	8.36	9.86	Oct-96	4.99	4.13	683.71
									Apr-97	3.58	2.72	685.12
									Oct-97	3.60	2.74	685.10
									Apr-98	4.49	3.63	684.21
									Oct-98	3.68	2.82	685.02
									Apr-99	3.96	3.10	684.74
									Oct-99	3.64	2.78	685.06
									Apr-00	4.25	3.39	684.45
									Oct-00	3.68	2.82	685.02
									Apr-01	4.18	3.31	684.53
									Oct-01	3.84	2.98	684.86
									Apr-02	3.93	3.07	684.77
									Oct-02	4.15	3.29	684.55
									Apr-03	4.32	3.46	684.38
									Oct-03	3.81	2.95	684.89
									Apr-04	4.12	3.26	684.58
									Oct-04	3.69	2.83	685.01
									Apr-05	3.92	3.06	684.78
									Oct-05	3.34	2.48	685.36
									Apr-06	3.86	3.00	684.84
									Oct-06	3.69	2.83	685.01
									Apr-07	3.79	2.93	684.91
									Oct-07	3.97	3.11	684.73
									May-08	3.97	3.11	684.73
									May-09	3.68	2.82	685.02
									Jun-10	4.16	3.30	684.54
									Jun-11	3.68	2.82	685.02
									May-12	3.68	2.82	685.02
									Jun-13	3.72	2.86	684.98
									May-14	3.80	2.94	684.90
May-15	3.65	2.78	685.06									
May-16	3.87	3.00	684.83									
May-17	3.53	2.66	685.17									
Jun-18	3.63	2.76	685.07									
Jun-19	4.00	3.13	684.70									
May-20	3.30	2.43	685.40									
Jun-21	3.22	2.45	685.48									
					0.77				Oct-96	10.55	9.72	678.55
MW5B Decommissioned July 2018	-	-	688.25	689.10	0.83	9.69	8.19	9.69	Apr-97	7.96	7.13	681.14
									Oct-97	7.13	6.30	681.97
									Apr-98	6.72	5.89	682.38
									Oct-98	7.05	6.22	682.05
									Apr-99	6.87	6.04	682.23
									Oct-99	7.45	6.62	681.65
									Apr-00	7.17	6.34	681.93
									Oct-00	8.28	7.45	680.82
									Apr-01	7.21	6.38	681.89
									Oct-01	8.07	7.24	681.03
									Apr-02	7.55	6.72	681.55
									Oct-02	8.36	7.53	680.74
									Apr-03	8.16	7.33	680.94
									Oct-03	8.04	7.21	681.06
									Apr-04	8.21	7.38	680.89
									Oct-04	7.71	6.88	681.39
									Apr-05	6.57	5.74	682.53
									Oct-05	6.69	5.86	682.41
									Apr-06	7.05	6.22	682.05
									Oct-06	7.25	6.42	681.85
									Apr-07	8.44	7.61	680.66
									Oct-07	10.50	9.67	678.60
									May-08	10.50	9.67	678.60
									May-09	8.28	7.45	680.82
									Jun-10	1.70	0.87	687.39
									Jun-11	8.28	7.45	680.82
									May-12	8.28	7.45	680.82
									Jun-13	3.23	2.40	685.87
									May-14	4.03	3.20	685.07
									May-15	4.83	4.00	684.27
May-16	5.62	4.79	683.48									
May-17	4.76	3.93	684.34									
Jun-18	4.79	3.91	684.31									
Jun-13	1.43	0.45	686.39									
May-14	2.05	1.07	685.78									
May-15	1.87	0.89	685.96									
May-16	1.76	0.78	686.06									
May-17	1.54	0.56	686.29									
Jun-18	1.92	0.94	685.90									
Jun-19	1.39	0.41	686.44									
May-20	2.94	1.96	684.88									
Jun-21	2.68	1.76	685.14									
					0.88				Oct-96	9.11	8.91	678.67
MW8A	405329.3	5906650.0	686.84	687.83	0.98	10.28	7.28	10.28	Apr-97	2.56	2.36	685.22
									Oct-97	2.14	1.94	685.64
									Apr-98	2.59	2.39	685.19
									Oct-98	2.37	2.17	685.41
									Apr-99	2.64	2.44	685.14
									Oct-99	2.53	2.33	685.25
									Apr-00	2.89	2.69	684.89
									Oct-00	2.65	2.45	685.13
									Apr-01	2.86	2.66	684.92
									Oct-01	2.65	2.45	685.13
					0.92				Apr-02	3.03	2.83	684.75
MW12B	404902.3	5906756.3	687.27	687.78	0.20	10.49	8.99	10.49	Oct-02	3.03	2.83	684.75
									Oct-02	3.03	2.83	684.75
									Apr-03	3.35	3.15	684.43
									Oct-03	2.74	2.54	685.04
									Apr-04	3.11	2.91	684.67
									Oct-04	2.74	2.54	685.04
									Apr-05	2.72	2.52	685.06
									Oct-05	2.25	2.05	685.53
									Apr-06	2.78	2.58	685.00
									Oct-06	2.41	2.21	685.37
									Apr-07	2.75	2.55	685.03
									Oct-07	2.01	1.81	685.77
									May-08	2.01	1.81	685.77
									May-09	2.65	2.45	685.13
									Jun-10	2.65	2.45	685.12
									Jun-11	2.65	2.45	685.13
									May-12	2.65	2.45	685.13
									Jun-13	2.22	2.02	685.56
									May-14	2.38	2.18	685.40
									May-15	2.21	2.01	685.57
									May-16	2.53	2.33	685.24
May-17	1.99	1.79	685.79									
Jun-18	1.88	1.61	685.90									
Jun-19	2.79	2.52	684.99									
May-20	2.41	2.14	685.37									
Jun-21	2.11	1.84	685.66									
					0.27							

Table 3c: Groundwater Monitoring Results - Clay Shale

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSL)
	Easting	Northing	Surface (mAMSL)	Top of Pipe (mAMSL)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW18A	404791.4	5906705.4	687.13	687.77	0.64	10.08	8.58	10.08	Oct-96	4.98	4.34	682.79
									Apr-97	1.68	1.04	686.09
									Oct-97	2.04	1.40	685.73
									Apr-98	2.09	1.45	685.68
									Oct-98	2.90	2.26	684.87
									Apr-99	2.12	1.48	685.65
									Oct-99	2.23	1.59	685.54
									Apr-00	2.44	1.80	685.33
									Oct-00	2.46	1.82	685.31
									Apr-01	2.47	1.83	685.30
									Oct-01	2.71	2.07	685.06
									Apr-02	2.53	1.89	685.24
									Oct-02	2.77	2.13	685.00
									Apr-03	2.78	2.14	684.99
									Oct-03	2.64	2.00	685.13
									Apr-04	2.41	1.77	685.36
									Oct-04	2.31	1.67	685.46
									Apr-05	2.22	1.58	685.55
									Oct-05	2.04	1.40	685.73
									Apr-06	2.13	1.49	685.64
									Oct-06	2.05	1.41	685.72
									Apr-07	1.94	1.30	685.83
									Oct-07	2.02	1.38	685.75
									May-08	2.02	1.38	685.75
									May-09	2.46	1.82	685.31
									Jun-10	2.60	1.96	685.16
									Jun-11	2.46	1.82	685.31
									May-12	2.46	1.82	685.31
									Jun-13	2.15	1.51	685.62
									May-14	2.13	1.49	685.63
									May-15	2.04	1.40	685.73
									May-16	2.20	1.56	685.57
									May-17	1.92	1.28	685.84
Jun-18	2.08	1.44	685.69									
Jun-19	2.23	1.59	685.53									
May-20	1.73	1.09	686.03									
Jun-21	1.71	1.09	686.06									
MW19A	404792.3	5906618.5	686.60	687.10	0.46	10.26	8.76	10.26	Oct-96	2.31	1.85	684.79
									Apr-97	5.40	4.95	681.69
									Oct-97	6.57	6.11	680.53
									Apr-98	4.81	4.35	682.29
									Oct-98	0.77	0.32	686.32
									Apr-99	1.56	1.10	685.54
									Oct-99	1.26	0.81	685.83
									Apr-00	5.87	5.41	681.23
									Oct-00	5.62	5.16	681.48
									Apr-01	Frozen	-	-
									Oct-01	1.36	0.90	685.74
									Apr-02	Frozen	-	-
									Oct-02	1.70	1.24	685.40
									Apr-03	5.51	5.05	681.59
									Oct-03	1.51	1.06	685.58
									Apr-04	1.59	1.13	685.51
									Oct-04	1.08	0.62	686.02
									Apr-05	1.35	0.89	685.75
									Oct-05	1.00	0.54	686.10
									Apr-06	1.52	1.07	685.57
									Oct-06	0.88	0.42	686.22
									Apr-07	1.01	0.56	686.08
									Oct-07	0.86	0.40	686.24
									May-08	0.86	0.40	686.24
									May-09	5.62	5.16	681.48
									Jun-10	1.38	0.93	685.71
									Jun-11	5.62	5.16	681.48
									May-12	5.62	5.16	681.48
									Jun-13	1.19	0.73	685.91
									May-14	1.09	0.64	686.00
									May-15	1.05	0.60	686.04
									May-16	1.34	0.88	685.76
									May-17	0.81	0.35	686.29
Jun-18	0.99	0.73	686.11									
Jun-19	1.131	0.87	685.96									
May-20	0.729	0.47	686.37									
Jun-21	0.756	0.59	686.34									
MW20A	404788.5	5906514.3	688.89	689.54	0.60	10.00	8.50	10.00	Oct-96	9.34	8.74	680.20
									Apr-97	4.32	3.72	685.22
									Oct-97	3.42	2.82	686.12
									Apr-98	4.02	3.42	685.52
									Oct-98	3.40	2.80	686.14
									Apr-99	3.77	3.17	685.77
									Oct-99	3.47	2.87	686.07
									Apr-00	4.27	3.67	685.27
									Oct-00	3.63	3.03	685.91
									Apr-01	4.21	3.61	685.33
									Oct-01	3.67	3.07	685.87
									Apr-02	4.22	3.62	685.32
									Oct-02	4.03	3.43	685.51
									Apr-03	4.51	3.91	685.03
									Oct-03	3.63	3.03	685.91
									Apr-04	4.21	3.61	685.33
									Oct-04	3.42	2.82	686.12
									Apr-05	3.80	3.20	685.74
									Oct-05	3.31	2.71	686.23
									Apr-06	3.92	3.32	685.62
									Oct-06	3.59	2.99	685.95
									Apr-07	3.50	2.90	686.04
									Oct-07	3.03	2.43	686.51
									May-08	3.03	2.43	686.51
									May-09	3.63	3.03	685.91
									Jun-10	4.19	3.59	685.35
									Jun-11	3.63	3.03	685.91
									May-12	3.63	3.03	685.91
									Jun-13	3.87	3.27	685.67
									May-14	3.79	3.19	685.75
									May-15	2.66	2.06	686.87
									May-16	3.99	3.39	685.55
									May-17	3.72	3.12	685.82
Jun-18	3.94	3.34	685.60									
Jun-19	3.715	3.12	685.82									
May-20	3.28	2.68	686.26									
Jun-21	3.441	2.84	686.10									

Table 3c: Groundwater Monitoring Results - Clay Shale

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSL)
	Easting	Northing	Surface (mAMSL)	Top of Pipe (mAMSL)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW21A	404786.1	5906389.7	687.60	688.30	0.69	9.98	8.48	9.98	Oct-98	4.76	4.07	683.54
									Apr-99	4.37	3.68	683.93
									Oct-99	5.30	4.61	683.00
									Apr-00	4.58	3.89	683.72
									Oct-00	5.91	5.22	682.39
									Apr-01	4.93	4.24	683.37
									Oct-01	6.34	5.65	681.96
									Apr-02	5.55	4.86	682.75
									Oct-02	6.90	6.21	681.40
									Apr-03	6.73	6.04	681.57
									Oct-03	7.46	6.77	680.84
									Apr-04	6.82	6.13	681.48
									Oct-04	7.02	6.33	681.28
									Apr-05	5.28	4.59	683.02
									Oct-05	6.46	5.77	681.84
									Apr-06	7.42	6.73	680.88
									Oct-06	6.68	5.99	681.62
									Apr-07	6.20	5.51	682.10
									Oct-07	7.02	6.33	681.28
									May-08	7.02	6.33	681.28
									May-09	5.91	5.22	682.39
Jun-10	4.54	3.85	683.77									
Jun-11	5.91	5.22	682.39									
May-12	5.91	5.22	682.39									
Jun-13	4.62	3.93	683.68									
May-14	5.01	4.32	683.29									
May-15	5.00	4.31	683.31									
May-16	4.21	3.52	684.09									
May-17	4.98	4.29	683.33									
Jun-18	4.05	3.36	684.25									
Jun-19	5.26	4.57	683.05									
May-20	5.02	4.33	683.29									
Jun-21	4.11	3.50	684.19									
MW22A	404852.8	5906350.6	687.83	688.66	0.84	9.82	8.32	9.82	Oct-98	9.69	8.85	678.97
									Apr-99	3.23	2.39	685.43
									Oct-99	3.11	2.27	685.55
									Apr-00	3.64	2.80	685.02
									Oct-00	3.63	2.79	685.03
									Apr-01	3.80	2.96	684.86
									Oct-01	4.09	3.25	684.57
									Apr-02	4.24	3.40	684.42
									Oct-02	5.02	4.18	683.64
									Apr-03	5.11	4.27	683.55
									Oct-03	5.35	4.51	683.31
									Apr-04	5.27	4.43	683.39
									Oct-04	5.00	4.16	683.66
									Apr-05	4.38	3.54	684.28
									Oct-05	4.03	3.19	684.63
									Apr-06	5.05	4.21	683.61
									Oct-06	4.85	4.01	683.81
									Apr-07	5.98	5.14	682.68
									Oct-07	5.58	4.74	683.08
									May-08	5.58	4.74	683.08
									May-09	3.63	2.79	685.03
Jun-10	4.27	3.43	684.40									
Jun-11	3.63	2.79	685.03									
May-12	3.63	2.79	685.03									
Jun-13	4.31	3.47	684.35									
May-14	4.69	3.85	683.97									
May-15	4.76	3.92	683.90									
May-16	5.06	4.22	683.60									
May-17	5.03	4.19	683.63									
Jun-18	4.84	4.00	683.82									
Jun-19	5.22	4.38	683.44									
May-20	5.17	4.33	683.50									
May-21	4.30	3.48	684.37									
MW23A	404898.6	5906361.7	686.45	687.16	0.67	9.99	8.49	9.99	Oct-98	6.13	5.46	681.03
									Apr-99	2.89	2.22	684.27
									Oct-99	3.72	3.05	683.44
									Apr-00	3.19	2.52	683.97
									Oct-00	3.16	2.49	684.00
									Apr-01	3.11	2.44	684.05
									Oct-01	3.63	2.96	683.53
									Apr-02	3.07	2.40	684.09
									Oct-02	3.63	2.96	683.53
									Apr-03	3.06	2.39	684.10
									Oct-03	3.57	2.90	683.59
									Apr-04	2.49	1.82	684.67
									Oct-04	2.58	1.91	684.58
									Apr-05	2.03	1.36	685.13
									Oct-05	2.10	1.43	685.06
									Apr-06	2.47	1.80	684.69
									Oct-06	2.28	1.61	684.88
									Apr-07	2.53	1.86	684.63
									Oct-07	1.99	1.32	685.17
									May-08	1.99	1.32	685.17
									May-09	3.16	2.49	684.00
Jun-10	1.51	0.84	685.65									
Jun-11	3.16	2.49	684.00									
May-12	3.16	2.49	684.00									
Jun-13	1.01	0.34	686.15									
May-14	0.89	0.22	686.28									
May-15	1.01	0.34	686.15									
May-16	1.03	0.36	686.13									
May-17	0.98	0.31	686.18									
Jun-18	1.11	0.44	686.05									
Jun-19	1.19	0.52	685.97									
May-20	1.15	0.48	686.01									
May-21	1.21	0.57	685.95									
MW24A Decommissioned July 2018	-	-	688.88	689.68	0.70	9.80	8.30	9.80	Oct-04	3.69	2.99	685.98
									Apr-05	3.91	3.21	685.76
									Oct-05	3.57	2.87	686.10
									Apr-06	4.01	3.31	685.67
									Oct-06	3.36	2.66	686.31
									Apr-07	3.34	2.64	686.33
									Oct-07	3.01	2.31	686.66
									May-08	3.01	2.31	686.66
									May-09	4.06	3.36	685.61
									Jun-10	3.72	3.02	685.96
									Jun-11	2.97	2.27	686.70
									May-12	3.18	2.48	686.50
									Jun-13	3.50	2.80	686.18
									May-14	3.53	2.83	686.14
									May-15	3.33	2.63	686.34
									May-16	3.59	2.89	686.09
									May-17	3.21	2.51	686.47
									Jun-18	3.57	2.87	686.11

Table 3c: Groundwater Monitoring Results - Clay Shale

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSLS)
	Easting	Northing	Surface (mAMSLS)	Top of Pipe (mAMSLS)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
MW25A	404967.5	5906383.0	686.73	687.54	0.82	9.90	8.40	9.90	Oct-04	3.09	2.27	684.45
									Apr-05	1.94	1.12	685.60
									Oct-05	1.75	0.93	685.79
									Apr-06	1.79	0.97	685.75
									Oct-06	2.02	1.20	685.51
									Apr-07	1.53	0.71	686.00
									Oct-07	1.44	0.62	686.09
									May-08	1.44	0.62	686.09
									May-09	1.45	0.63	686.09
									Jun-10	1.71	0.89	685.83
									Jun-11	1.39	0.57	686.15
									May-12	0.86	0.04	686.68
									Jun-13	1.19	0.37	686.35
									May-14	1.08	0.26	686.46
									May-15	1.15	0.33	686.39
									May-16	1.32	0.50	686.22
									May-17	1.25	0.43	686.29
									Jun-18	1.37	0.78	686.17
					Jun-19				1.44	0.85	686.10	
					May-20				1.14	0.65	686.40	
					May-21				1.42	1.21	686.12	
MW26A	405056.1	5906388.1	687.00	687.60	0.56	10.17	8.67	10.17	Oct-04	3.76	3.21	683.83
									Apr-05	2.96	2.40	684.64
									Oct-05	3.25	2.69	684.35
									Apr-06	3.43	2.87	684.17
									Oct-06	3.62	3.07	683.98
									Apr-07	5.27	4.71	682.33
									Oct-07	3.35	2.80	684.25
									May-08	3.35	2.80	684.25
									May-09	2.03	1.48	685.56
									Jun-10	2.18	1.63	685.41
									Jun-11	1.85	1.29	685.75
									May-12	1.81	1.25	685.79
									Jun-13	1.81	1.26	685.78
									May-14	1.89	1.34	685.70
									May-15	1.83	1.28	685.76
									May-16	2.09	1.53	685.51
									May-17	2.04	1.48	685.56
									Jun-18	2.11	1.62	685.48
					Jun-19				2.27	1.78	685.32	
					May-20				2.03	1.54	685.57	
					May-21				1.75	1.19	685.84	
MW27A	405212.0	5906397.2	686.65	687.19	0.53	10.44	8.94	10.44	Oct-07	2.27	1.74	684.92
									May-08	2.27	1.74	684.92
									May-09	1.64	1.11	685.55
									Jun-10	2.06	1.53	685.13
									Jun-11	1.69	1.16	685.50
									May-12	1.03	0.50	686.16
									Jun-13	1.60	1.07	685.59
									May-14	0.32	-0.21	686.87
									May-15	0.33	-0.20	686.86
									May-16	0.43	-0.10	686.76
									May-17	0.50	-0.03	686.69
									Jun-18	0.57	0.09	686.62
									Jun-19	0.69	0.21	686.50
									May-20	0.42	-0.06	686.77
									May-21	0.37	-0.10	686.82
									Jun-13	2.57	1.98	685.39
									May-14	2.39	1.80	685.57
									May-15	2.18	1.59	685.78
					May-16				2.24	1.65	685.71	
					May-17				2.01	1.42	685.95	
					Jun-18				2.04	1.45	685.92	
Jun-19	2.07	1.48	685.89									
May-20	1.89	1.30	686.07									
May-21	1.98	1.39	685.98									
MW32A	405527.8	5906577.5	686.53	687.19	0.65	9.47	7.47	9.47	May-15	2.62	1.97	684.58
									May-16	2.32	1.67	684.87
									May-17	2.25	1.60	684.95
					Jun-18				2.30	1.65	684.90	
					Jun-19				1.91	1.26	685.28	
15MW34A Decommissioned July 2018	405098.2	5906742.6	687.98	689.02	1.05	11.94	10.20	11.94	May-20	1.53	0.88	685.66
									May-21	2.14	1.53	685.05
									Aug-15	5.42	4.38	683.59
					May-16				3.63	2.59	685.38	
					May-17				3.40	2.35	685.62	
15MW35A	404801.2	5906265.6	688.46	689.32	0.85	13.71	11.70	13.71	Jun-18	3.66	2.72	685.35
									Aug-15	11.68	10.83	677.64
									May-16	7.71	6.86	681.61
									May-17	7.55	6.70	681.77
									Jun-18	7.85	7.00	681.47
15MW36A	405551.7	5906435.9	687.05	687.95	0.85	14.98	12.70	14.98	Jun-19	7.69	6.84	681.62
									May-20	8.50	7.65	680.82
									Jun-21	8.99	8.14	680.33
					Aug-15				4.05	3.20	683.89	
					May-16				3.98	3.13	683.97	
15MW36A	405551.7	5906435.9	687.05	687.95	0.55	14.98	12.70	14.98	May-17	3.16	2.31	684.78
									Jun-18	3.08	2.53	684.87
									Jun-19	2.84	2.29	685.11
					May-20				2.60	2.05	685.34	
					Jun-21				2.57	2.02	685.38	

Notes:
Monitoring well network re-surveyed on July 30, 2015
mAMSLS - metres above mean sea level
mbgl - metres below ground level
mBTOP - metres below top of pipe
- - no information available
negative water level = water level above ground level

Table 3d: Groundwater Monitoring Results - Lower Bedrock

Monitoring Well	UTM Coordinates		Elevations		Measured Stick-up (m)	Well Depth (mbgl)	Screened Interval		Date	Water Depth		Groundwater Elevation (mAMSL)
	Easting	Northing	Surface (mAMSL)	Top of Pipe (mAMSL)			Top Screen Depth (mbgl)	Bottom Screen Depth (mbgl)		mBTOP	mbgl	
15MW35-Deep	404801.4	5906263.8	688.43	689.32	0.85	32.59	31.00	32.59	Aug-15	7.04	6.19	682.28
									May-16	6.88	6.03	682.44
									May-17	6.64	5.79	682.68
									Jun-18	6.51	5.66	682.81
									Jun-19	6.421	5.57	682.90
									May-20	7.54	6.69	681.78
					Jun-21				8.99	8.08	680.33	
15MW36-Deep	405551.7	5906435.9	687.03	687.79	0.74	34.64	33.6	34.64	Aug-15	22.77	22.03	665.02
					0.44				May-16	5.92	5.18	681.87
									May-17	5.78	5.04	682.01
									Jun-18	5.21	4.77	682.57
									Jun-19	4.93	4.49	682.86
									May-20	4.71	4.27	683.07
									Jun-21	4.64	4.21	683.15
	0.43											

Notes:

Monitoring well network re-surveyed on July 30, 2015
 mAMSL - metres above mean sea level
 mbgl - metres below ground level
 mBTOP - metres below top of pipe
 '-' - no information available

Table 4a - Field and Groundwater Analytical Results Summary - Surficial Material Wells

Parameter Group		Field			Routine															Nutrients						
Parameter		pH	Electrical Conductivity	Temperature	pH	Electrical Conductivity	Total Dissolved Solids	Hardness	Alkalinity (total as CaCO ₃)	Bicarbonate	Carbonate	Hydroxide	Calcium	Magnesium	Potassium	Sodium	Chloride	Fluoride	Sulphate	Ionic Balance	Ammonia-N	Nitrate (N)	Nitrite (N)	Nitrate and Nitrite (N)	Total Kjeldahl Nitrogen	
Unit		pH Units	µS/cm	°C	pH Units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}		6.5-8.5	1000	-	6.5-8.5	1000	500	-	-	-	-	-	-	-	-	200	100	1	128-429 ³	-	0.018-190 ⁴	3	0.02-0.20 ⁵	100	-	
Monitoring Well	Date																									
MW10	30-May-2014	8.3	4920	4.2	8.12	4600	3500	-	-	600	<0.50	-	68	35	4.0	990	26	-	2100	-	0.17	0.079	-	-	0.68	
	28-May-2015	8.3	4980	7.5	7.79	4700	3400	520	490	590	<0.50	<0.50	140	44	4.5	910	140	-	1900	0.95	0.23	0.014	<0.010	0.014	0.68	
	8-Jun-2016	8.06	4420	9.8	8.26	4500	3000	280	500	620	<0.50	<0.50	60	31	4.4	840	60	-	1700	0.9	0.16	0.04	0.01	0.05	0.57	
	7-Jun-2017	8.0	4260	10.3	8.11	4100	3000	310	520	630	<0.50	<0.5	71	32	4.2	870	59	-	1600	2.0	0.052	3.0	<0.16	-	0.49	
	26-Jun-2018	7.70	4530	8.5	8.27	4100	3000	300	530	650	<1.0	<1.0	68	32	4.0	910	55	-	1600	1.3	0.06	0.13	<0.010	0.13	0.49	
	12-Jun-2019	7.38	4240	11.2	8.14	4300	3000	280	540	660	<1.0	<1.0	73	24	4.2	940	65	-	1600	1.1	0.3	0.057	<0.010	0.057	0.58	
	29-May-2020	7.67	2950	5.5	8.14	4300	3100	280	540	660	<1.0	<1.0	70	26	3.7	960	74	-	1600	0.51	0.17	0.11	<0.01	0.11	0.61	
4-Jun-2021	7.55	4020	9.3	8.34	3800	3160	280	538	648	<5.0	<5.0	68.1	26.6	3.93	911	68.1	0.57	1760	92.1	0.210	<0.10	<0.050	<0.11	0.72		
MW18B	30-May-2014	7.6	2920	8.9	8.27	2900	2300	-	-	350	<0.50	-	120	33	3.7	510	14	-	1400	-	0.09	0.2	-	-	0.68	
	28-May-2015	8.0	3800	5.9	7.79	3600	2800	670	330	410	<0.50	<0.50	190	47	4.6	670	17	-	1700	1.0	0.14	0.13	0.011	0.14	1.5	
	8-Jun-2016	6.00	4240	8.3	7.96	3400	2600	630	320	390	<0.50	<0.50	180	45	4.5	570	22	-	1500	0.96	0.10	0.089	0.015	0.10	0.32	
	7-Jun-2017	7.4	3160	8.0	8.05	3000	2200	660	620	760	<0.50	<0.5	180	48	4.4	530	29	-	1100	1.8	0.17	0.36	0.037	-	0.87	
	26-Jun-2018	7.4	3500	8.7	7.89	3300	2400	740	650	800	<1.0	<1.0	210	55	4.7	560	44	-	1100	1.9	0.072	0.17	<0.010	0.17	1.1	
	12-Jun-2019	7.25	2840	11.2	7.96	2800	1900	620	530	650	<1.0	<1.0	180	42	4.1	420	53	-	910	0.32	0.25	0.13	<0.010	0.13	0.74	
	4-Jun-2020	7.06	2950	8.7	7.68	2900	2000	720	750	910	<1.0	<1.0	200	54	4.2	460	130	-	720	1.2	0.17	0.15	<0.010	0.15	0.94	
4-Jun-2021	7.21	2640	9.7	8.03	2390	1920	601	571	696	<5.0	<5.0	167	44.7	3.36	399	74.6	0.252	892	91.8	0.164	0.093	<0.020	0.093	0.92		
MW19B	30-May-2014	7.5	8080	8.3	8.33	6000	4700	-	-	1100	5.0	-	29	20	6.7	1500	2.6	-	2600	-	0.76	<0.010	-	-	1.1	
	28-May-2015	8.4	6260	6.5	8.26	5900	4500	150	900	1100	<0.50	<0.50	32	17	7.4	1500	3.1	-	2400	0.98	0.76	<0.010	<0.010	<0.010	1.1	
	8-Jun-2016	8.09	7170	-	8.43	5700	4100	150	860	1000	13	<0.50	31	17	7.6	1300	3.1	-	2200	0.96	0.73	0.015	0.013	0.028	1.1	
	7-Jun-2017	8.2	6430	7.0	8.5	5800	4100	150	910	1100	22	<0.5	29	18	7.5	1400	2.7	-	2000	3.6	0.84	<0.044	0.11	-	1.0	
	26-Jun-2018	8.2	6100	8.0	8.3	5800	4300	150	910	1100	<1.0	<1.0	30	17	7.7	1400	2.8	-	2200	0.54	0.63	0.038	0.012	0.049	1.1	
	12-Jun-2019	8.23	6010	12.3	8.46	5900	3600	130	900	1000	33.0	<1.0	26	17	7.3	930	3.3	-	2100	18	0.63	0.026	0.011	0.036	1.1	
	4-Jun-2020	8.48	6440	7.6	8.3	6300	4800	170	920	1100	4.8	<1.0	33	21	7.8	1600	5	-	2500	2.9	0.81	0.024	0.01	0.034	0.94	
4-Jun-2021	8.44	6040	9.9	8.69	5790	4940	160	910	1020	42.8	<5.0	27.5	22.1	8.50	1630	3.8	0.15	2700	99.9	0.740	<0.10	<0.050	<0.11	0.87		
MW20B	30-May-2014	7.9	5320	7.9	8.02	4900	3800	-	-	950	<0.50	-	130	47	9.4	1000	1.3	-	2200	-	0.058	0.27	-	-	3.0	
	28-May-2015	7.9	5030	5.5	8.04	4700	3600	450	810	990	<0.50	<0.50	120	39	9.0	1000	1.5	-	1900	0.98	<0.050	0.17	<0.010	0.17	3.7	
	8-Jun-2016	7.64	4970	7.3	8.04	4700	3500	430	880	1100	<0.50	<0.50	110	37	9.0	1000	1.4	-	1800	0.96	<0.050	0.14	<0.010	0.14	0.29	
	7-Jun-2017	7.6	5180	6.2	8.17	5000	3700	570	790	960	<0.50	<0.5	140	50	9.8	1100	1.1	-	1900	4.5	0.035	0.86	<0.033	-	0.74	
	26-Jun-2018	7.3	5300	5.0	8.10	4800	3500	480	820	1000	<1.0	<1.0	120	42	9.3	1100	<1.0	-	1800	1.2	<0.015	0.079	<0.010	0.079	0.32	
	12-Jun-2019	7.51	4810	8.5	8.10	4700	3300	440	850	1000	<1.0	<1.0	120	36	8.7	1100	1.2	-	1600	5.6	0.051	0.14	0.011	0.15	0.61	
	4-Jun-2020	7.56	5860	5.6	7.90	5700	4600	770	710	870	<1.0	<1.0	200	65	10	1300	2.2	-	2600	1.6	0.035	0.33	<0.010	0.33	1.0	
3-Jun-2021	7.67	6370	7.9	8.03	5680	6020	1460	619	755	<5.0	<5.0	364	135	15.7	1610	<2.5	0.34	3520	116	<0.050	0.69	<0.050	0.69	0.75		
MW21B	30-May-2014	8.0	2870	6.6	8.21	2700	1800	-	-	1000	<0.50	-	17	5.6	4	610	1.5	-	650	-	<0.050	<0.010	-	-	0.34	
	28-May-2015	8.3	2820	6.9	8.16	2700	1800	61	860	1000	<0.50	<0.50	16	4.9	4.2	630	1.6	-	570	0.99	<0.050	0.11	<0.010	0.11	0.28	
	8-Jun-2016	7.89	2840	6.5	8.25	2600	1700	61	850	1000	<0.50	<0.50	16	5.0	3.9	630	1.1	-	530	1.0	<0.050	0.11	<0.010	0.11	<0.05	
	7-Jun-2017	7.8	2780	6.5	8.39	2600	1800	64	860	1000	9.2	<0.5	17	5.3	4.1	640	1.1	-	570	0.56	0.016	0.19	<0.033	-	0.31	
	26-Jun-2018	-	-	-	8.29	2900	1900	72	870	1100	<1.0	<1.0	19	6.1	4.2	680	1.3	-	650	0.26	<0.015	0.1	<0.010	0.1	0.31	
	17-Jun-2019	7.86	2870	7.3	8.44	2900	1900	74	840	970	26.0	<1.0	20	5.9	4	670	1.7	-	660	0.046	0.034	0.12	<0.010	0.12	0.32	
	5-Jun-2020	7.67	3010	6.1	8.36	2900	1900	83	780	940	9.4	<1.0	22	6.8	4.3	730	2.0	-	720	4.3	<0.015	0.096	<0.010	0.096	0.31	
3-Jun-2021	7.91	2830	7.3	8.54	2700	2120	92.1	822	961	20.6	<5.0	24.3	7.63	5.08	808	<2.5	0.35	776	114	<0.050	0.14	<0.050	0.14	0.27		
MW22B	30-May-2014	7.7	8560	6.4	8.07	8100	6800	-	-	1200	<0.50	-	110	51	8.5	2100	1.3	-	3900	-	<0.050	0.11	-	-	0.36	
	28-May-2015	7.8	8250	8.4	7.86	8200	6600	520	1000	1200	<0.50	<0.50	120	55	10	1900	1.8	-	3900	0.92	<0.050	0.16	<0.010	0.16	0.52	
	8-Jun-2016	7.57	8780	9.7	7.97	8200	6600	510	1000	1300	<0.50	<0.50	110	55	10	2000	1.4	-	3900	0.95	<0.050	<0.010	<0.010	<0.020	0.27	
	7-Jun-2017	7.5	7870	7.8	8.23	8000	6000	490	1000	1200	<0.50	<0.5	110	54	9.8	2000	1.9	-	3300	4.0	0.04	0.38	<0.16	-	0.32	
	26-Jun-2018	7.03	8750	6.7	7.98	8000	6300	480	1000	1200	<1.0	<1.0	110	53	9.4	1900	1.7	-	3600	0.19	<0.015	0.039	<0.010	0.039	0.26	
	17-Jun-2019	7.6	8040	10.3	8.27	8000	6100	480	1000	1200	<1.0	<1.0	110													

Table 4a - Field and Groundwater Analytical Results Summary - Surficial Material Wells

Monitoring Well	Date	Hydrocarbons						Organics			
		Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	
		Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	F1-BTEX (C ₆ -C ₁₀)	F2 (C ₁₀ -C ₁₆)	Total Phenols	Chemical Oxygen Demand	Dissolved Organic Carbon
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit
AB Tier 1 Guideline^{1,2}		0.005	0.024	0.0016	0.02	0.072	2.2	1.1	-	-	-
MW10	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	33	9.6
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	35	11
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	32	9.7
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	24	8
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.002	28	8.6
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	31	17
	29-May-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.1	<0.1	<0.0015	34	9
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	36	10.8
MW18B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	27	7.3
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	64	9.2
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	30	8.2
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	24	11
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.002	49	12
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0032	29	9.9
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	36	15
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0013	43	14.5
MW19B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	28	5
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	17	5.7
	8-Jun-2016	<0.00040	<0.00060	<0.00040	<0.00080	-	<0.10	<0.10	-	17	6.0
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	17	6.3
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.002	34	6.1
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	33	5.3
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	18	6.6
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0021	26	7.5
MW20B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	96	7.2
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	120	6.4
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	15	4.3
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	81	6
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.002	32	6
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	32	5.8
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	27	12
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0015	95	23.7
MW21B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	31	3.8
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	20	4.2
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	20	4.4
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	20	6.1
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.002	27	6.5
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	30	5.9
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	23	6.2
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	29	6.8
MW22B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	15	5.3
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	51	5.7
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	18	4.7
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	20	6.6
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.002	23	5.9
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	44	6.7
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	16	6.1
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	47	5.9

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed

BOLD - Greater than Tier 1 Guideline

Italic - Detection limit greater than Tier 1 guideline

Table 4a - Field and Groundwater Analytical Results Summary - Surficial Material Wells

Parameter Group		Dissolved Metals																
Parameter	Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Uranium	Zinc	
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}	0.007-0.05 ⁶	0.006	0.005	1	1.0	0.00004-0.00037 ³	0.05	0.007	0.3	0.001-0.007 ³	0.05	0.000005	0.007-0.17 ³	0.002	0.0001	0.01	0.03	
Monitoring Well	Date																	
MW10	30-May-2014	-	<0.00060	-	0.016	-	<0.000025	0.0014	0.17	<0.060	0.009	-	<0.0000050	0.0078	-	-	-	0.11
	28-May-2015	<0.0030	<0.00060	0.00049	0.087	0.11	0.000049	<0.0010	0.0079	8.3	<0.00020	1.8	<0.0000050	1.5	0.0003	<0.00010	0.0048	0.0038
	8-Jun-2016	0.0091	<0.00060	0.0006	0.023	0.12	0.000023	0.0021	0.0035	<0.060	<0.00020	0.094	0.0000034	0.059	0.00052	<0.00010	0.0093	0.0065
	7-Jun-2017	<0.0030	<0.00060	0.00042	0.023	0.13	0.000021	0.0018	0.0033	<0.060	<0.00020	0.076	<0.0000020	0.033	0.00053	<0.00010	0.0086	<0.0030
	26-Jun-2018	0.0068	<0.00060	0.00059	0.018	0.11	<0.000020	0.0059	0.002	<0.060	<0.00020	<0.004	0.000005	0.02	0.0006	<0.00010	0.0099	<0.0030
	12-Jun-2019	<0.0030	<0.00060	0.00072	0.01	0.14	<0.000020	<0.0010	0.0015	<0.060	<0.00020	0.088	<0.0000020	0.0095	<0.00020	<0.00010	0.0027	0.0031
	29-May-2020	<0.0030	<0.00060	0.00061	0.013	0.11	<0.000020	0.0014	0.0014	<0.060	<0.00020	0.28	<0.0000019	0.011	0.00041	<0.00010	0.0054	<0.0030
4-Jun-2021	0.0039	<0.00020	0.00068	0.0134	0.121	<0.000010	0.00065	0.00168	<0.020	<0.00010	0.0914	<0.0000050	0.0111	0.00019	<0.000020	0.00514	0.0180	
MW18B	30-May-2014	-	<0.00060	-	0.017	-	<0.000025	<0.0010	0.0012	<0.060	<0.00020	-	<0.0000050	0.0035	-	-	-	<0.0030
	28-May-2015	0.0034	<0.00060	0.0004	0.012	0.071	<0.000020	<0.0010	0.0007	<0.060	<0.00020	0.15	<0.0000050	0.0039	<0.00020	<0.00010	0.0011	<0.0030
	8-Jun-2016	0.11	<0.00060	0.00041	0.014	0.075	<0.000020	<0.0010	0.0013	0.25	0.00037	0.046	0.0000068	0.0044	<0.00020	<0.00010	0.00091	0.0047
	7-Jun-2017	0.0062	<0.00060	0.00037	0.016	0.062	<0.000020	<0.0010	0.00064	<0.060	<0.00020	0.15	<0.0000020	0.004	<0.00020	<0.00010	0.0044	<0.0030
	26-Jun-2018	0.004	<0.00060	0.00037	0.015	0.069	<0.000020	<0.0010	0.0012	<0.060	<0.00020	0.057	0.0000035	0.0037	<0.00020	<0.00010	0.0042	<0.0030
	12-Jun-2019	<0.0030	<0.00060	0.00037	0.016	0.058	<0.000020	<0.0010	0.0016	<0.060	<0.00020	0.085	<0.0000020	0.0035	<0.00020	<0.00010	0.0039	<0.0030
	4-Jun-2020	<0.0030	<0.00060	0.00035	0.015	0.05	<0.000020	<0.0010	0.0038	<0.060	<0.00020	0.11	<0.0000019	0.005	<0.00020	<0.00010	0.0068	<0.0030
4-Jun-2021	0.0026	<0.00020	0.00033	0.0133	0.054	0.000012	<0.000020	0.00208	<0.020	<0.00010	0.0550	<0.0000050	0.0036	0.00012	<0.000020	0.00607	0.0179	
MW19B	30-May-2014	-	<0.0060	-	<0.10	-	<0.000050	<0.010	<0.0020	<0.60	<0.0020	-	<0.0000050	<0.0050	-	-	-	<0.030
	28-May-2015	<0.030	<0.0060	0.0021	0.027	0.47	<0.000020	<0.010	<0.0020	0.36	<0.0020	0.21	<0.0000050	<0.0050	<0.0020	<0.0010	0.0021	<0.030
	8-Jun-2016	<0.0030	<0.00060	0.0025	0.029	0.48	<0.000020	0.0010	0.00023	0.21	<0.00020	0.21	<0.0000020	0.0025	<0.00020	<0.00010	0.00021	<0.0030
	7-Jun-2017	0.0034	<0.00060	0.0017	<0.10	0.52	<0.000020	<0.0010	<0.00020	<0.6	<0.00020	0.19	<0.0000020	<0.00050	<0.00020	<0.00010	0.00024	<0.0030
	26-Jun-2018	<0.003	<0.00060	0.0017	<0.1	0.49	<0.000020	<0.0010	<0.0002	<0.6	<0.00020	0.17	<0.0000020	0.00082	<0.00020	<0.00010	0.00027	<0.0030
	12-Jun-2019	<0.0030	<0.00060	0.0023	0.024	0.53	<0.000020	<0.0010	<0.00020	<0.060	<0.00020	0.088	<0.0000020	<0.00050	<0.00020	<0.00010	0.00025	<0.0030
	4-Jun-2020	0.0036	<0.00060	0.0021	0.036	0.48	<0.000020	<0.0010	0.00032	0.29	<0.00020	0.16	<0.0000019	0.00068	<0.00020	<0.00010	0.00022	<0.0030
4-Jun-2021	<0.0050	<0.00050	0.00261	0.0206	0.498	<0.000025	<0.00050	<0.0010	<0.050	<0.00025	0.0887	<0.0000050	<0.0025	<0.00025	<0.000050	0.000431	<0.0050	
MW20B	30-May-2014	-	<0.00060	-	0.022	-	<0.000025	0.0036	0.002	0.24	0.00036	-	<0.0000050	0.0023	-	-	-	0.0045
	28-May-2015	0.0035	<0.00060	0.00032	0.014	0.33	<0.000020	0.0029	0.0013	<0.060	<0.00020	<0.0040	<0.0000050	0.0011	0.0031	<0.00010	0.0033	<0.0030
	8-Jun-2016	<0.0030	<0.00060	0.00030	<0.10	0.38	<0.000020	0.0035	0.00053	<0.60	<0.00020	<0.040	0.0000026	0.0016	<0.00020	<0.00010	0.0013	<0.0030
	7-Jun-2017	0.0041	<0.00060	0.00032	<0.10	0.35	<0.000020	0.0011	0.00059	<0.60	<0.00020	<0.040	<0.0000020	0.00067	0.013	<0.00010	0.0050	<0.0030
	26-Jun-2018	<0.003	<0.00060	0.00027	0.016	0.34	<0.000020	0.0016	0.00073	<0.060	<0.00020	<0.004	<0.0000020	0.0015	0.00073	<0.00010	0.0034	<0.0030
	12-Jun-2019	0.013	<0.00060	0.0003	0.015	0.38	<0.000020	0.002	0.00093	<0.060	<0.00020	<0.0040	<0.0000020	0.001	<0.00020	<0.00010	0.0017	<0.0030
	4-Jun-2020	<0.0030	<0.00060	0.00030	0.014	0.26	<0.000020	0.0012	0.004	0.1	<0.00020	<0.0040	<0.0000019	0.0010	0.03	<0.00010	0.011	<0.0030
3-Jun-2021	<0.0050	<0.00050	0.00081	0.0181	0.289	<0.000025	0.00148	0.0027	<0.050	<0.00025	<0.00050	<0.0000050	<0.0025	0.0973	<0.000050	0.0596	0.0225	
MW21B	30-May-2014	-	<0.00060	-	<0.010	-	0.000042	<0.0010	0.0014	0.071	<0.00020	-	<0.0000050	0.0015	-	-	-	0.0030
	28-May-2015	0.0042	<0.00060	0.00053	<0.010	0.22	<0.000020	<0.0010	0.0008	<0.060	<0.00020	<0.004	<0.0000050	0.0013	<0.00020	<0.00010	0.0016	<0.0030
	8-Jun-2016	<0.0030	<0.00060	0.00064	<0.010	0.25	<0.000020	<0.0010	0.00066	<0.060	<0.00020	<0.0040	<0.0000020	0.0013	<0.00020	<0.00010	0.0017	<0.0030
	7-Jun-2017	0.0035	<0.00060	0.00064	<0.010	0.23	<0.000020	<0.0010	0.00033	<0.060	0.00034	0.0041	<0.0000020	0.00086	<0.00020	<0.00010	0.0017	<0.0030
	26-Jun-2018	<0.003	<0.00060	0.00066	<0.01	0.23	<0.000020	<0.0010	0.00072	<0.060	<0.00020	<0.004	<0.0000020	0.0012	<0.00020	<0.00010	0.0019	<0.0030
	17-Jun-2019	0.028	<0.00060	0.00057	<0.010	0.22	<0.000020	<0.0010	0.0015	0.084	<0.00020	0.0079	<0.0000020	0.0022	<0.00020	<0.00010	0.0019	<0.0030
	5-Jun-2020	0.003	<0.00060	0.00048	<0.010	0.23	<0.000020	<0.0010	0.00095	<0.060	<0.00020	<0.0040	<0.0000019	0.0022	<0.00020	<0.00010	0.0019	<0.0030
3-Jun-2021	0.0051	<0.00050	0.00081	0.0107	0.267	<0.000025	<0.00050	<0.0010	<0.050	<0.00025	0.00162	<0.0000050	<0.0025	<0.00025	<0.000050	0.00213	0.0248	
MW22B	30-May-2014	-	<0.0060	-	<0.010	-	0.00018	<0.010	<0.0020	0.075	<0.0020	-	<0.0000050	<0.0050	-	-	-	<0.030
	28-May-2015	<0.030	<0.0060	<0.0020	<0.10	0.25	<0.000020	<0.010	<0.0020	<0.60	<0.0020	<0.040	<0.0000050	<0.0050	<0.0020	<0.0010	0.0073	<0.030
	8-Jun-2016	<0.0030	<0.00060	0.00035	<0.10	0.25	<0.000020	0.0015	0.0012	<0.60	<0.00020	<0.040	<0.0000020	0.0020	0.00036	<0.00010	0.0079	<0.0030
	7-Jun-2017	0.0037	<0.00060	0.00027	<0.10	0.25	<0.000020	<0.0010	0.00037	<0.60	<0.00020	<0.040	<0.0000020	0.0013	0.00028	<0.00010	0.0079	<0.0030
	26-Jun-2018	<0.003	<0.00060	0.00024	<0.10	0.24	0.000021	<0.0010	0.00072	<0.60	<0.00020	<0.040	<0.0000020	0.0016	0.00037	<0.00010	0.0072	<0.0030
	17-Jun-2019	0.074	<0.00060	0.00050	<0.10	0.25	<0.000020	0.0011	0.0021	<0.60	0.00024	<0.040	<0.0000020	0.0041	0.00035	<0.00010	0.0071	0.0032
	5-Jun-2020	<0.0030	<0.00060	0.00025	<0.01	0.21	<0.000020	0.0012	0.0017	<0.060	<0.00020	<0.0040	<0.0000019	0.0026	0.00056	<0.00010	0.0099	<0.0030
3-Jun-2021	<0.010	<0.0010	<0.0010	0.0062	0.26	<0.000005	<0.0010	<0.0020	<0.10	<0.00050	<0.0010	<0.0000050	<0.0050	<0.00050	<0.00010	0.00764	0.0210	

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH

"-" No applicable guideline or not analyzed

BOLD - Greater than Tier 1 Guideline

Italic - Detection limit greater than Tier 1 guideline

Table 4a - Field and Groundwater Analytical Results Summary - Surficial Material Wells

Parameter Group		Volatile Organic Compounds (VOCs)																		
Parameter	Unit	Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethene	Methyl t-Butyl Ether (MTBE)	Methylene Chloride	Methyl Methacrylate	Tetrachloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichloroethene	Trihalomethanes	Vinyl chloride	
AB Tier 1 Guideline ^{1,2}		0.002	0.0013	0.08	0.1	0.0007	0.001	0.005	0.014	0.015	0.05	0.47	0.01	0.008	0.015	0.014	0.005	0.1	0.002	
Monitoring Well	Date																			
MW10	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	29-May-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0013	<0.00050	
MW18B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0013	<0.00050	
MW19B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0013	<0.00050	
MW20B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0013	<0.00050	
MW21B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0013	<0.00050	
MW22B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0013	<0.00050	

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- Italic* - Detection limit greater than Tier 1 guideline

Table 4a - Field and Groundwater Analytical Results Summary - Surficial Material Wells

Parameter Group		Field			Routine															Nutrients					
		pH	Electrical Conductivity	Temperature	pH	Electrical Conductivity	Total Dissolved Solids	Hardness	Alkalinity (total as CaCO ₃)	Bicarbonate	Carbonate	Hydroxide	Calcium	Magnesium	Potassium	Sodium	Chloride	Fluoride	Sulphate	Ionic Balance	Ammonia-N	Nitrate (N)	Nitrite (N)	Nitrate and Nitrite (N)	Total Kjeldahl Nitrogen
AB Tier 1 Guideline ^{1,2}		6.5-8.5	1000	-	6.5-8.5	1000	500	-	-	-	-	-	-	-	200	100	1	128-429 ³	-	0.018-190 ⁴	3	0.02-0.20 ⁵	100	-	
Monitoring Well	Date																								
MW29B	28-May-2015	7.4	8670	7.1	7.62	8200	7200	2300	470	570	<0.50	<0.50	520	260	12	1400	5.7	-	4700	1.0	0.72	0.39	0.027	0.42	4.5
	8-Jun-2016	7.21	8800	7.7	7.85	8400	7700	2400	420	520	<0.50	<0.50	560	230	11	1600	5.2	-	5100	1.0	1.1	0.11	0.025	0.13	0.96
	7-Jun-2017	7.2	9230	6.0	7.90	8500	7400	2300	450	550	0<0.5	<0.50	530	240	11	1600	6.0	-	4700	4.6	1.4	<0.22	<0.16	-	1.8
	26-Jun-2018	6.90	8620	9.0	7.76	8600	7800	2400	460	560	<1.0	<1.0	530	260	12	1700	6.3	-	5000	3.5	1.2	0.13	0.032	0.17	1.9
	17-Jun-2019	7.20	8700	9.1	7.88	8900	7600	2200	470	570	<1.0	<1.0	440	260	10	1700	8.2	-	4900	1.7	0.91	<0.010	0.079	0.079	1.5
	4-Jun-2020	7.18	8840	7.8	7.34	8700	7900	2200	470	570	<1.0	<1.0	440	260	11	1900	8.6	-	5000	4.3	0.81	0.53	0.059	0.59	1.1
	2-Jun-2021	7.30	8570	7.9	7.86	7630	8460	2230	471	575	<5.0	<5.0	445	272	11.7	1780	8.4	0.31	5660	95.9	0.512	0.54	<0.10	0.54	1.01
MW30B	28-May-2015	8.1	2830	6.5	8.06	2700	1900	110	550	670	<0.50	<0.50	29	9.1	3.3	680	1.4	-	830	1.1	0.16	1.3	<0.010	1.3	0.49
	8-Jun-2016	8.19	2650	7.4	8.44	2600	1800	100	520	610	<0.50	<0.50	26	9.5	3.2	610	1.5	-	830	1.0	<0.050	0.12	<0.012	0.13	0.40
	7-Jun-2017	7.9	2680	5.6	8.32	2500	1700	97	560	680	<0.50	<0.5	24	8.9	2.9	560	1.8	-	750	0.76	<0.015	1.5	<0.033	-	0.6
	26-Jun-2018	7.28	2500	8.7	8.27	2500	1700	87	580	710	<1.0	<1.0	22	8.0	2.6	610	<1.0	-	720	3.4	<0.015	0.4	<0.010	0.4	0.62
	17-Jun-2019	7.88	2470	8.4	8.26	2500	1600	88	570	700	<1.0	<1.0	22	8.1	2.6	570	1.9	-	690	1.4	0.056	0.45	<0.010	0.45	0.62
	29-May-2020	7.67	2530	5.9	8.22	2500	1600	91	540	660	<1.0	<1.0	23	8.2	2.4	580	2	-	700	2.9	<0.015	0.63	0.017	0.65	0.68
	2-Jun-2021	7.58	2890	7.9	8.38	2230	1730	89.0	579	692	7.2	<5.0	21.2	8.75	2.87	599	<2.5	0.76	747	103	<0.050	0.71	<0.050	0.71	0.41
MW31B	28-May-2015	8.4	2530	8.0	8.29	2400	1600	55	570	690	<0.50	<0.50	15	4.3	3.7	550	1.1	-	670	0.99	0.59	0.046	<0.010	0.046	2.2
	8-Jun-2016	8.33	2500	9.4	8.56	2500	1700	59	520	610	13.0	<0.50	15	5.4	3.6	590	1.4	-	750	1.0	0.13	<0.010	<0.010	<0.020	0.38
	7-Jun-2017	8.1	2660	8.1	8.4	2500	1700	59	530	640	5.2	<0.50	14	5.6	3.3	570	1.4	-	780	1.7	0.034	0.8	<0.033	-	0.51
	26-Jun-2018	7.55	2720	9.5	8.39	2700	1900	61	530	630	7.2	<1.0	15	5.7	3.4	660	<1.0	-	850	2.6	<0.015	0.14	<0.010	0.14	0.4
	17-Jun-2019	8.15	2710	10.3	8.45	2800	1800	68	520	610	12	<1.0	17	6.4	3.5	630	2.0	-	850	1.2	0.02	0.15	<0.010	0.15	0.51
	5-Jun-2020	7.78	2750	7.6	8.29	2700	1900	73	480	580	<1.0	<1.0	18	7	3.6	650	1.6	-	900	2.6	0.015	0.17	<0.010	0.17	0.46
	3-Jun-2021	7.92	2570	9.8	8.60	2300	1900	71.6	523	607	15.4	<5.0	17.3	6.89	3.63	638	<2.5	0.47	916	99.0	<0.050	0.23	<0.050	0.23	0.30
MW32B	28-May-2015	7.7	12,550	7.6	7.73	12,000	10,000	930	1100	1300	<0.50	<0.50	210	100	18	2800	110	-	6300	0.91	1.3	<0.050	<0.050	<0.050	3.5
	8-Jun-2016	7.69	13,260	9.1	7.97	13,000	11,000	1100	1100	1300	<0.50	<0.50	230	120	17	3200	120	-	6800	0.97	1.5	<0.050	<0.050	<0.020	2.6
	7-Jun-2017	7.4	13,010	6.8	7.98	12,000	9800	950	1000	1300	<0.50	<0.50	210	100	15	3000	120	-	5700	1.9	1.5	<0.22	<0.16	-	2.3
	26-Jun-2018	7.48	8330	9.6	7.82	12,000	11,000	1000	1000	1300	<1.0	<1.0	220	110	16	3200	130	-	6400	1.1	1.1	0.14	0.073	0.22	2.0
	12-Jun-2019	7.5	12010	11.7	7.98	12,000	9,700	930	1000	1200	<1.0	<1.0	220	92	<30	2900	130	-	5700	0.83	1.3	<0.10	<0.10	<0.14	2.3
	29-May-2020	7.03	12,220	8.5	7.92	12,000	8700	940	930	1100	<1.0	<1.0	220	96	14	3200	140	-	4500	14	1.5	0.17	0.11	0.28	2.4
	4-Jun-2021	7.07	12,000	7.6	8.10	10,800	12,300	1120	981	1200	<5.0	<5.0	245	123	16.0	3440	146	<0.40	7720	93.4	0.931	0.66	<0.20	0.66	2.69
MW33B	28-May-2015	7.5	5180	6.0	7.89	5000	3700	340	850	1000	<0.50	<0.50	91	26	6.9	1200	21	-	1900	1.0	0.83	<0.010	<0.010	<0.010	5.3
	8-Jun-2016	7.48	5340	6.9	8.15	5400	4000	440	920	1100	<0.50	<0.50	110	38	6.9	1300	20	-	2000	1.0	0.78	<0.050	<0.050	<0.020	2.6
	7-Jun-2017	-	-	-	7.99	5600	4100	490	1000	1200	<0.50	<0.50	130	42	6.1	1200	21	-	2100	0.82	0.6	0.68	0.2	0.21	2.7
	26-Jun-2018	7.88	5650	11.6	7.82	5500	4200	460	1000	1300	<1.0	<1.0	120	39	6.4	1300	22	-	2100	1.3	0.44	0.097	0.056	0.15	2.3
	12-Jun-2019	7.36	5420	13	7.96	5600	4000	490	1000	1200	<1.0	<1.0	130	40	6.6	1300	23	-	1900	2.4	0.58	0.011	0.023	0.034	2.4
	4-Jun-2020	7.35	5850	7.6	7.85	5800	4400	470	1000	1200	<1.0	<1.0	120	40	6.0	1400	23	-	2200	4.1	0.82	0.017	0.015	0.032	1.9
	4-Jun-2021	7.27	5250	8.1	8.17	4850	4350	446	948	1160	<5.0	<5.0	114	39.1	6.38	1300	18.5	0.36	2300	97.4	0.678	0.10	<0.050	<0.11	2.55
19MW37B	15-Nov-2019	7.58	2050	2.2	7.74	1900	1200	350	850	1000	<1.0	<1.0	79	36	11	320	3.6	-	220	1.6	0.64	<0.010	<0.010	<0.014	3.5
	4-Jun-2020	7.25	1921	8.2	7.94	1900	1200	310	820	1000	<1.0	<1.0	73	30	9.3	370	3.3	-	230	2.9	0.69	0.011	<0.010	<0.014	0.99
	4-Jun-2021	7.14	1881	7.5	8.19	1750	1270	222	831	1010	<5.0	<5.0	54.8	20.8	7.65	434	2.49	0.23	250	108	0.818	<0.020	<0.010	<0.022	1.11
19MW38B	15-Nov-2019	7.86	4430	1.8	8.23	4300	2800	160	1400	1700	<1.0	<1.0	32	20	11	980	2.9	-	960	1.8	0.4	<0.010	<0.010	<0.014	6.4
	4-Jun-2020	7.86	4440	5.2	8.27	4300	2900	150	1300	1600	<1.0	<1.0	25	21	9.9	1100	3.4	-	900	6.7	0.26	0.032	0.035	0.067	0.9
	4-Jun-2021	7.70	3650	9.7	8.69	3560	2730	109	1440	1630	58.8	<5.0	17.3	16.1	8.38	951	<2.5	0.68	875	93.3	0.164	0.22	<0.050	0.22	0.59
MW35C	3-Jun-2021	7.82	8160	9.3	8.49	7650	7600	628	830	968	22.1	<5.0	137	69.5	11.2	2190	<5.0	0.46	4690	94.5	<0.050	1.81	<0.10	1.81	0.36

Notes:

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 - ³ Guideline varies with hardness
 - ⁴ Guideline varies with pH and temperature
 - ⁵ Guideline varies with chloride
 - ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
BOLD - Greater than Tier 1 Guideline
Italic - Detection limit greater than Tier 1 guideline

Table 4a - Field and Groundwater Analytical Results Summary - Surficial Material Wells

Parameter Group		Hydrocarbons						Organics			
		Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	F1-BTEX (C6-C10)	F2 (C10-C16)	Total Phenols	Chemical Oxygen Demand	Dissolved Organic Carbon
Parameter		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}		0.005	0.024	0.0016	0.02	0.072	2.2	1.1	-	-	
Monitoring Well	Date										
MW29B	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	150	17
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	41	15
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	45	18
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.002	76	14
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	56	17
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	34	15
	2-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	49	14.5
MW30B	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	110	8.4
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	44	9.1
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	38	10
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.002	55	8
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	32	9.6
	29-May-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	29	8.4
	2-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.001	24	8.4
MW31B	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	0.12	<0.10	-	140	9
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	28	8.2
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	30	8.8
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.002	24	7.7
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	31	10
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	33	7.5
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	24	8.2
MW32B	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	210	18
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	78	15
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	74	17
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0024	85	15
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0027	51	15
	29-May-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	68	13
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0011	81	15.5
MW33B	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	280	45
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	140	44
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	150	49
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0021	120	48
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0035	150	59
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	116	48
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0014	129	45.4
19MW37B	15-Nov-2019	<0.00040	<0.00040	<0.00040	<0.00089	-	<0.10	<0.10	<0.0015	189	7.5
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	19	8.4
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0086	38	9.5
19MW38B	15-Nov-2019	<0.00040	<0.00040	<0.00040	<0.00089	-	<0.10	<0.10	0.0015	696	16
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	31	13
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	45	13.4
MW35C	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0029	29	10.4

Notes:

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- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed

BOLD - Greater than Tier 1 Guideline

Italic - Detection limit greater than Tier 1 guideline

Table 4a - Field and Groundwater Analytical Results Summary - Surficial Material Wells

Parameter Group		Dissolved Metals																
Parameter	Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Uranium	Zinc	
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}	0.007-0.05 ⁶	0.006	0.005	1	1.0	0.00004-0.00037 ³	0.05	0.007	0.3	0.001-0.007 ³	0.05	0.000005	0.007-0.17 ³	0.002	0.0001	0.01	0.03	
Monitoring Well	Date																	
MW29B	28-May-2015	0.0041	0.0017	0.0077	<0.10	<0.20	0.00017	<0.0010	0.0019	<0.60	<0.00020	0.77	<0.0000050	0.048	0.001	<0.00010	0.019	0.014
	8-Jun-2016	0.022	<0.00060	0.00054	0.019	0.20	0.000082	0.0014	0.0019	0.54	<0.00020	0.85	0.0000043	0.0099	<0.00020	<0.00010	0.0042	0.0051
	7-Jun-2017	0.01	<0.00060	0.00031	<0.10	0.21	0.00006	<0.0010	0.00098	<0.60	<0.00020	0.88	<0.0000020	0.0075	<0.00020	<0.00010	0.0061	<0.0030
	26-Jun-2018	0.0049	<0.00060	0.00035	<0.1	<0.2	0.000057	<0.0010	0.0009	0.6	<0.00020	0.96	0.0000036	0.0075	0.0002	<0.00010	0.0049	<0.0030
	17-Jun-2019	<0.0030	<0.00060	<0.00020	<0.10	0.2	0.000058	<0.0010	0.0014	0.60	<0.00020	0.80	<0.0000020	0.0055	<0.00020	<0.00010	0.0042	<0.0030
	4-Jun-2020	<0.0030	<0.00060	0.00037	0.01	0.19	0.000046	<0.0010	0.00055	<0.60	<0.00020	0.81	<0.0000019	0.0053	<0.00020	<0.00010	0.005	<0.0030
2-Jun-2021	0.011	<0.0010	<0.0010	0.0116	0.220	<0.000050	<0.0010	<0.0020	<0.10	<0.00050	0.689	<0.000005	0.00770	<0.00050	<0.00010	0.00634	0.0180	
MW30B	28-May-2015	<0.030	<0.0060	0.0024	0.022	0.11	0.00020	<0.010	0.0035	<0.060	<0.0020	0.68	<0.0000050	0.0053	<0.0020	0.0010	0.0053	<0.030
	8-Jun-2016	0.011	<0.00060	0.0010	0.022	0.14	<0.000020	0.0012	0.0024	<0.060	<0.00020	<0.0040	<0.0000020	0.0023	0.00024	<0.00010	0.0032	0.0064
	7-Jun-2017	0.0039	<0.00060	0.00068	0.024	0.12	<0.000020	<0.0010	0.00083	<0.060	<0.00020	<0.004	<0.0000020	0.001	0.00046	<0.00010	0.0038	<0.0030
	26-Jun-2018	<0.003	<0.00060	0.00068	0.019	0.12	<0.000020	<0.0010	0.00091	<0.060	<0.00020	<0.004	0.0000033	0.00098	0.0006	<0.00010	0.0024	<0.0030
	17-Jun-2019	0.18	<0.00060	0.00084	0.021	0.12	<0.000020	<0.0010	0.0014	0.13	<0.00020	0.0057	<0.0000020	0.0029	0.00058	<0.00010	0.003	<0.0030
	29-May-2020	0.025	<0.00060	0.00096	0.018	0.11	<0.000020	<0.0010	0.00084	<0.30	<0.00020	<0.0040	<0.0000019	0.00071	0.00062	<0.00010	0.0040	<0.0030
2-Jun-2021	0.0032	0.00011	0.00075	0.0209	0.078	0.0000054	0.00014	0.00166	<0.010	<0.000050	0.00015	<0.000005	0.00078	0.00107	<0.000010	0.00428	0.0195	
MW31B	28-May-2015	0.70	0.00095	0.0094	0.024	0.16	<0.000020	<0.0010	0.0022	0.75	0.00048	0.61	<0.0000050	0.0086	0.00064	<0.00010	0.0034	<0.0030
	8-Jun-2016	0.084	<0.00060	0.0017	0.023	0.20	<0.000020	<0.0010	0.0022	0.26	<0.00020	0.041	0.0000027	0.0033	<0.00020	<0.00010	0.00099	0.0078
	7-Jun-2017	0.011	<0.00060	0.0011	0.022	0.17	<0.000020	<0.0010	0.00027	<0.060	<0.00020	0.017	<0.0000020	0.00081	<0.00020	<0.00010	0.0012	<0.0030
	26-Jun-2018	0.0038	<0.00060	0.0011	0.018	0.18	<0.000020	<0.0010	0.00064	<0.060	<0.00020	0.01	0.0000035	0.0008	<0.00020	<0.00010	0.0008	<0.0030
	17-Jun-2019	0.12	<0.00060	0.0011	0.019	0.17	<0.000020	<0.0010	0.0017	0.22	<0.00020	0.015	<0.0000020	0.0011	<0.00020	<0.00010	0.00098	<0.0030
	5-Jun-2020	0.0032	<0.00060	0.00099	0.018	0.18	<0.000020	<0.0010	0.00082	<0.060	<0.00020	<0.0040	<0.0000019	0.00067	<0.00020	<0.00010	0.0011	<0.0030
3-Jun-2021	<0.0050	<0.00050	0.00120	0.0179	0.218	<0.000025	<0.00050	0.0016	<0.050	<0.00025	0.0028	<0.0000050	<0.0025	<0.00025	<0.000050	0.000809	0.0200	
MW32B	28-May-2015	0.0045	0.0016	0.012	<0.10	0.40	0.00011	<0.0010	0.0012	<0.60	<0.00020	0.68	<0.0000050	0.031	0.00079	<0.00010	0.0027	0.0055
	8-Jun-2016	0.0038	<0.00060	0.0016	<0.10	0.48	0.00046	<0.0010	0.0036	<0.60	<0.00020	0.85	<0.0000020	0.013	0.00046	<0.00010	0.00085	0.0040
	7-Jun-2017	0.016	<0.00060	0.00085	<0.10	0.46	0.000083	<0.0010	0.0022	<0.60	<0.00020	0.67	<0.0000020	0.0066	<0.00020	<0.00010	0.00084	<0.0030
	26-Jun-2018	0.27	<0.00060	0.0011	<0.10	0.48	0.00014	<0.0010	0.001	<0.6	<0.00020	0.57	0.0000037	0.0089	0.00028	<0.00010	0.0006	<0.0030
	12-Jun-2019	<0.0030	<0.00060	0.00081	<1.0	0.46	0.000028	<0.0010	0.00023	<0.60	<0.00020	0.52	<0.0000020	0.0037	0.00063	<0.00010	0.00045	<0.0030
	29-May-2020	<0.0030	<0.00060	0.00068	0.014	0.39	<0.000020	<0.0010	0.00029	0.22	<0.00020	0.6	<0.0000019	0.005	<0.00020	<0.00010	0.00049	<0.0030
4-Jun-2021	0.0082	<0.00050	0.00069	0.0147	0.429	0.000034	<0.00050	0.0025	<0.050	<0.00025	0.679	<0.0000050	0.0052	<0.00025	<0.000050	0.000499	0.0212	
MW33B	28-May-2015	0.0056	0.0013	0.0065	0.038	0.23	<0.000020	<0.0010	0.00037	<0.060	<0.00020	0.19	<0.0000050	0.015	0.00064	<0.00010	0.0021	<0.0030
	8-Jun-2016	0.060	<0.00060	0.0013	0.031	0.28	<0.000020	0.0020	0.0027	0.35	0.00024	0.24	0.00023	0.0096	0.00038	<0.00010	0.00016	0.0056
	7-Jun-2017	0.0049	<0.00060	0.0014	<0.10	0.25	0.000044	<0.0010	0.0028	<0.6	<0.00020	0.25	0.0000076	0.011	0.00043	<0.00010	0.00026	<0.0030
	26-Jun-2018	0.073	<0.00060	0.0021	0.025	0.27	0.00002	<0.0010	0.0012	<0.060	<0.00020	0.23	0.0000053	0.01	0.00048	<0.00010	0.00014	<0.0030
	12-Jun-2019	0.19	<0.00060	0.0013	0.028	0.29	0.00002	<0.0010	0.00038	1.6	0.00039	0.22	<0.0000020	0.009	0.0006	<0.00010	<0.00010	<0.0030
	4-Jun-2020	0.1	<0.00060	0.0012	0.022	0.25	<0.000020	<0.0010	0.00041	0.66	0.00022	0.23	<0.0000019	0.0099	0.00046	<0.00010	<0.00010	<0.0030
4-Jun-2021	<0.0050	<0.00050	0.00106	0.0218	0.362	<0.000025	<0.00050	<0.0010	<0.050	<0.00025	0.181	<0.0000050	0.0083	0.00037	<0.000050	0.000076	<0.0050	
19MW37B	15-Nov-2019	<0.0030	<0.00060	0.001	0.027	0.11	<0.000020	<0.0010	0.00021	0.096	0.00026	0.27	<0.0000020	0.0017	<0.00020	<0.00010	0.0012	<0.0030
	4-Jun-2020	<0.0030	<0.00060	0.00051	0.023	0.12	<0.000020	<0.0010	0.0033	<0.060	<0.00020	0.26	<0.0000019	0.0012	<0.00020	<0.00010	0.0019	<0.0030
	4-Jun-2021	<0.0010	<0.0001	0.00060	0.0177	0.160	<0.000005	<0.00010	0.00052	0.011	<0.000050	0.145	<0.0000050	0.00064	0.000109	<0.000010	0.000285	<0.0010
19MW38B	15-Nov-2019	0.04	<0.00060	0.0028	0.028	0.31	<0.000020	<0.0010	0.0014	0.17	<0.00020	0.15	<0.0000020	0.0062	0.00044	<0.00010	0.008	<0.0030
	4-Jun-2020	0.02	<0.00060	0.0017	0.023	0.23	<0.000020	<0.0010	0.0016	<0.060	<0.00020	0.15	<0.0000019	0.0041	0.00021	<0.00010	0.0086	<0.0030
	4-Jun-2021	0.0061	<0.00020	0.00139	0.0196	0.284	<0.000010	<0.00020	0.00276	<0.020	0.00017	0.111	<0.0000050	0.0027	0.00016	<0.000020	0.00413	0.0226
MW35C	3-Jun-2021	<0.010	<0.0010	<0.0010	0.0211	0.17	<0.000050	<0.0010	0.0021	<0.10	<0.00050	<0.0010	<0.0000050	<0.0050	0.010	<0.00010	0.0330	<0.010

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH

"-" No applicable guideline or not analyzed

BOLD - Greater than Tier 1 Guideline

Italic - Detection limit greater than Tier 1 guideline

Table 4a - Field and Groundwater Analytical Results Summary - Surficial Material Wells

Parameter Group		Volatile Organic Compounds (VOCs)																	
Parameter	Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethene	Methyl t-Butyl Ether (MTBE)	Methylene Chloride	Methyl Methacrylate	Tetrachloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichloroethene	Trihalomethanes	Vinyl chloride	
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}	0.002	0.0013	0.08	0.1	0.0007	0.001	0.005	0.014	0.015	0.05	0.47	0.01	0.008	0.015	0.014	0.005	0.1	0.002	
Monitoring Well	Date																		
MW29B	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
2-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW30B	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	29-May-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
2-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW31B	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW32B	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	<0.00050	-	<0.00050
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	29-May-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW33B	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	<0.00050	-	<0.00050
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
19MW37B	15-Nov-2019	-	-	-	-	-	<0.00050	-	-	-	-	<0.00050	-	-	-	<0.00050	-	<0.00050	-
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010
19MW38B	15-Nov-2019	-	-	-	-	-	<0.00050	-	-	-	-	<0.00050	-	-	-	<0.00050	-	<0.00050	-
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010
MW35C	3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- italic* - Detection limit greater than Tier 1 guideline

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Monitoring Well	Date	Field			Routine															Nutrients					
		Parameter			Parameter															Parameter					
		pH	Electrical Conductivity	Temperature	pH	Electrical Conductivity	Total Dissolved Solids	Hardness	Alkalinity (total as CaCO ₃)	Bicarbonate	Carbonate	Hydroxide	Calcium	Magnesium	Potassium	Sodium	Chloride	Fluoride	Sulphate	Ionic Balance	Ammonia-N	Nitrate (N)	Nitrite (N)	Nitrate and Nitrate (N)	Total Kjeldahl Nitrogen
pH Units	µS/cm	°C	pH Units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline^{1,2}		6.5-8.5	1000	-	6.5-8.5	1000	500	-	-	-	-	-	-	-	200	100	1	128-429 ³	-	0.018-190 ⁴	3	0.02-0.20 ⁵	100	-	
MW1C	30-May-2014	8.0	6100	6.7	8.08	5900	4800	-	-	770	<0.50	-	130	33	4.8	1300	1.1	-	3000	-	0.57	0.093	-	-	1.2
	28-May-2015	8.2	6420	6.6	7.98	6100	4800	490	620	750	<0.50	<0.50	140	34	6.6	1400	1.7	-	2900	0.99	0.60	0.080	<0.010	0.080	1.2
	8-Jun-2016	6.43	7540	8.1	8.18	6100	4700	510	580	710	<0.50	<0.50	140	36	6.9	1300	1.4	-	2800	0.96	0.46	0.22	0.018	0.23	0.58
	7-Jun-2017	7.6	7270	9.7	8.23	6100	4600	530	620	760	<0.5	<0.5	150	38	7.1	1400	<1.0	-	2600	3.8	0.7	0.41	0.28	-	1.1
	26-Jun-2018	8.0	6980	6.1	8.1	6100	4700	510	620	760	<1.0	<1.0	140	37	6.7	1400	<1.0	-	2700	0.72	0.56	0.15	<0.010	0.15	1.1
	12-Jun-2019	7.6	5990	9.9	8.14	6100	4400	480	620	760	<1.0	<1.0	140	33	6.4	1300	1.8	-	2500	2.4	0.63	0.19	0.027	0.22	0.94
	5-Jun-2020	7.24	5940	7.0	8.25	5900	4500	480	570	700	<1.0	<1.0	140	34	6.5	1400	2.1	-	2600	2.1	0.39	0.38	0.042	0.42	0.91
	4-Jun-2021	7.36	5590	7.9	8.25	5180	4480	411	561	684	<5.0	<5.0	117	28.8	5.81	1220	<2.5	0.24	2770	89.2	0.416	0.220	<0.050	0.22	1.11
MW8B	30-May-2014	7.6	8960	4.0	8.37	8500	7600	-	-	1100	18	-	110	62	5.4	2300	23	-	4500	-	0.57	0.074	-	-	1.4
	28-May-2015	8.0	9280	6.6	7.95	8700	7100	460	910	1100	<0.50	<0.50	90	56	6.2	2200	26	-	4200	1.0	0.69	0.12	<0.010	0.12	1.6
	8-Jun-2016	7.73	8940	6.8	8.19	8700	6600	460	870	1100	<0.50	<0.50	97	54	6.7	2000	28	-	3900	0.97	0.62	0.10	<0.050	0.10	1.3
	7-Jun-2017	7.8	9250	5.8	8.17	8800	6800	480	940	1100	<0.50	<0.5	97	57	6.7	2100	30	-	3900	0.098	0.38	1.5	<0.16	0.35	1.3
	26-Jun-2018	7.50	8880	7.8	8.16	8400	6700	430	1000	1200	<1.0	<1.0	88	52	6.8	2100	38	-	3800	0.79	0.49	0.17	0.03	0.2	1.4
	12-Jun-2019	7.72	8010	14	8.14	8100	6000	380	1000	1200	<1.0	<1.0	86	41	<30	2000	43	-	3200	2.8	0.59	0.11	<0.10	<0.14	1.4
	29-May-2020	7.62	7730	10.2	8.3	8000	5600	350	1000	1200	<1.0	<1.0	74	40	5.1	2000	62	-	2800	7.8	0.48	0.11	0.034	0.15	1.6
	4-Jun-2021	7.60	7250	14.1	8.41	6810	6060	338	1090	1300	15.2	<5.0	68.6	40.4	5.55	1890	53.4	0.81	3350	95.7	0.403	0.20	<0.050	0.2	1.35
MW11	30-May-2014	7.5	10,020	6.2	8.19	9500	8800	-	-	840	<0.50	-	240	130	7.6	2300	14	-	5600	-	0.14	0.27	-	-	1.7
	28-May-2015	7.8	10,140	6.4	7.79	9500	8200	980	740	900	<0.50	<0.50	210	110	8.4	2200	20	-	5100	0.96	0.17	0.19	<0.010	0.19	1.7
	8-Jun-2016	7.61	9900	8.6	8.03	9600	7800	1100	770	930	<0.50	<0.50	230	120	9.1	2100	32	-	4800	0.97	0.15	0.23	0.015	0.25	0.81
	7-Jun-2017	7.7	9710	7.4	7.88	9100	7500	980	850	1000	<0.50	<0.5	200	120	8.0	2100	37	-	4500	0.26	0.086	0.71	<0.16	-	1.5
	26-Jun-2018	7.5	10,350	7.9	8.01	9800	7800	1100	830	1000	<1.0	<1.0	240	130	8.7	2300	36	-	4600	3.8	0.063	0.33	<0.01	0.33	1.7
	12-Jun-2019	7.28	8,860	9.6	7.99	8500	6500	860	750	910	<1.0	<1.0	190	92	<30	2000	31	-	3700	6.5	0.11	0.26	<0.10	0.26	1.2
	29-May-2020	7.18	9260	9.3	8.05	9400	7000	1100	780	960	<1.0	<1.0	230	120	8.4	2300	53	-	3800	11	0.22	0.074	<0.050	0.075	1.1
	4-Jun-2021	7.74	8740	10.1	8.15	8320	7910	963	813	992	<5.0	<5.0	201	112	7.65	2190	48.3	0.53	4860	96.5	0.237	0.24	<0.050	0.24	1.38
MW12A	30-May-2014	7.8	11,380	8.7	8.25	11,000	10,000	-	-	900	<0.50	-	150	86	10	3000	1.9	-	6700	-	0.26	0.11	-	-	0.89
	28-May-2015	7.6	11,130	5.7	7.75	11,000	8900	580	730	900	<0.50	<0.50	120	64	10	2600	2.2	-	5600	0.96	0.38	0.082	0.05	0.13	1.3
	8-Jun-2016	6.15	15,400	-	8.00	11,000	9600	710	720	880	<0.50	<0.50	150	82	11	2600	1.6	-	6300	0.89	0.21	0.082	0.04	0.12	0.45
	7-Jun-2017	7.5	11,640	7.7	8.02	11,000	9200	770	780	950	<0.50	<0.5	160	90	10	2800	1.3	-	5600	2.1	0.067	0.87	<0.16	0.20	0.7
	26-Jun-2018	7.8	11,280	9.6	8.02	10,000	8200	630	790	960	<1.0	<1.0	130	74	11	2600	1.7	-	4900	3.9	0.11	0.18	0.054	0.23	0.8
	12-Jun-2019	7.57	12,340	8.4	8.02	13,000	9900	840	800	980	<1.0	<1.0	170	100	<30	3100	2.5	-	6100	2.8	0.15	<0.20	<0.20	<0.28	0.73
	4-Jun-2020	7.52	12,980	6.3	7.97	13,000	11,000	860	750	920	<1.0	<1.0	160	110	11	3500	2.2	-	7000	2.9	0.11	0.1	0.035	0.14	0.53
	4-Jun-2021	7.49	11,780	8.1	8.37	10,600	11,200	840	807	963	10.6	<5.0	155	110	11.2	3160	<5.0	0.26	7280	92.1	0.179	<0.20	<0.10	<0.22	0.68
MW23B	30-May-2014	7.5	9800	9.9	8.06	9600	8400	-	-	1100	<0.50	-	170	64	11	2400	2.2	-	5200	-	0.18	0.36	-	-	0.56
	28-May-2015	7.8	9750	9.8	7.76	9700	7900	670	860	1000	<0.50	<0.50	170	62	13	2300	2.6	-	4900	0.94	0.42	0.072	0.015	0.087	0.76
	8-Jun-2016	7.45	10170	10.3	7.89	9900	8000	670	860	1100	<0.50	<0.50	170	63	12	2400	1.9	-	4900	0.98	<0.050	0.32	<0.010	0.32	0.46
	7-Jun-2017	7.3	9700	9.3	8.05	10,000	7900	690	870	1100	<0.50	<0.5	170	66	12	2400	3.7	-	4700	1.3	0.39	0.85	<0.16	-	0.67
	26-Jun-2018	7.7	10,680	8.0	7.95	10,000	8000	710	860	1100	<1.0	<1.0	170	68	12	2400	3.2	-	4800	1.2	0.33	0.068	<0.01	0.068	0.71
	17-Jun-2019	7.41	9,970	9.9	8.09	10,000	7600	650	860	1100	<1.0	<1.0	160	63	11	2300	4.4	-	4600	0.8	0.25	0.21	0.022	0.23	0.63
	5-Jun-2020	7.3	10020	8.3	8.04	9,900	8300	730	800	980	<1.0	<1.0	180	67	12	2500	4.2	-	5000	0.89	0.38	0.24	0.026	0.26	0.54
	3-Jun-2021	7.30	9550	14.9	8.29	8410	8530	772	841	1030	<5.0	<5.0	189	72.8	12.4	2450	<5.0	<0.20	5300	96.2	0.415	<0.20	<0.10	<0.22	0.60
MW25B	30-May-2014	7.4	9910	7.2	8.12	9400	8300	-	-	1100	<0.50	-	190	54	11	2300	1.9	-	5200	-	0.59	0.42	-	-	0.84
	28-May-2015	7.8	10,020	8.2	7.85	9																			

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Monitoring Well	Date	Hydrocarbons						Organics							
		Parameter Group	Parameter	Unit	AB Tier 1 Guideline ^{1,2}	Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	F1-BTEX (C ₆ -C ₁₀)	F2 (C ₁₀ -C ₁₆)	Total Phenols	Chemical Oxygen Demand	Dissolved Organic Carbon
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.005	0.024	0.0016	0.02	0.072	2.2	1.1	-	-	-				
MW1C	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	39	9.6				
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	42	11				
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	51	11				
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.0008	-	<0.10	<0.10	-	28	10				
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.002	30	11				
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	48	12				
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	36	9.9				
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0028	35	12.4				
MW8B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	39	13				
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	48	14				
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	47	15				
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	44	16				
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	0.002	44	15				
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0025	51	17				
	29-May-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	52	17				
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0050	63	19.8				
MW11	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	96	29				
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	100	34				
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	100	36				
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	84	31				
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	0.0024	98	36				
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	86	32				
	29-May-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	91	27				
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	92	36.1				
MW12A	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	41	15				
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	68	16				
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	48	17				
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	40	16				
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	0.002	53	17				
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	44	18				
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	41	15				
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0016	43	17.0				
MW23B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	47	5.8				
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	23	7.4				
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	22	5.5				
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	22	9.5				
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.002	28	6.6				
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	32	7.7				
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	75	7.8				
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	20	7.6				
MW25B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	35	9				
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	29	9.9				
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	30	10				
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.0008	-	<0.10	<0.10	-	27	12				
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.002	27	10				
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	32	11				
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	26	10				
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0017	23	9.3				

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Parameter Group		Dissolved Metals																		
Monitoring Well	Date	Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Uranium	Zinc	
Parameter	Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}		0.007-0.05 ⁶	0.006	0.005	1	1.0	0.00004-0.00037 ³	0.05	0.007	0.3	0.001-0.007 ³	0.05	0.000005	-	0.007-0.17 ³	0.002	0.0001	0.01	0.03	
MW1C	30-May-2014	-	<0.0060	-	<0.10	-	<0.000050	<0.010	<0.0020	<0.60	<0.0020	-	<0.0000050	-	<0.0050	-	-	-	-	<0.030
	28-May-2015	<0.030	<0.0060	<0.0020	0.025	0.24	<0.00020	<0.010	<0.0020	<0.060	<0.0020	0.27	<0.0000050	-	<0.0050	<0.0020	<0.0010	<0.0010	<0.0010	<0.030
	8-Jun-2016	0.0079	<0.00060	0.0011	0.023	0.24	<0.00036	<0.0010	0.00070	<0.060	<0.0020	0.28	<0.0000020	-	0.0021	<0.00020	<0.00010	0.00036	0.0037	<0.030
	7-Jun-2017	0.0069	<0.00061	0.00068	<0.1	0.24	<0.00002	<0.0010	0.00039	<0.60	<0.0002	0.28	<0.000002	-	0.0013	<0.00020	<0.00010	0.00022	<0.003	<0.030
	26-Jun-2018	<0.0030	<0.00062	0.00068	<0.10	0.24	<0.000020	<0.0010	0.00043	<0.60	<0.00020	0.27	<0.0000020	-	0.0016	<0.00020	<0.00010	0.00018	<0.0030	<0.030
	12-Jun-2019	0.0056	<0.00060	0.00077	0.02	0.25	<0.000020	<0.0010	0.0008	<0.060	<0.00020	0.21	<0.0000020	0.00086	0.0012	<0.00020	<0.00010	0.00012	<0.0030	<0.030
	5-Jun-2020	0.012	<0.00060	0.0005	0.015	0.24	<0.000020	<0.0010	0.00040	0.07	<0.00020	0.21	<0.0000019	0.00047	0.0012	<0.00020	<0.00010	0.00013	<0.0030	<0.030
4-Jun-2021	<0.0050	<0.00050	0.00052	0.0144	0.238	<0.000025	<0.00050	<0.0010	<0.050	<0.00025	0.168	<0.0000050	0.00052	<0.0025	<0.00025	<0.00050	0.000099	0.0204	<0.030	
MW8B	30-May-2014	-	<0.00068	-	<0.10	-	<0.000050	<0.010	0.0031	<0.60	<0.0020	-	<0.0000050	-	0.006	-	-	-	-	<0.030
	28-May-2015	<0.030	<0.00069	0.0021	<0.10	0.41	<0.00020	<0.010	<0.0020	<0.60	<0.0020	0.18	<0.0000050	-	<0.0050	<0.0020	<0.0010	0.0022	<0.030	<0.030
	8-Jun-2016	0.0050	<0.00070	0.0015	0.013	0.41	0.00003	<0.0010	0.00034	<0.060	<0.00020	0.18	<0.0000020	-	0.0035	<0.00020	<0.00010	0.0024	<0.030	<0.030
	7-Jun-2017	0.060	<0.00071	0.0013	<0.10	0.40	<0.000020	<0.0010	0.00039	<0.60	<0.00020	0.180	<0.0000020	-	0.0027	<0.00025	<0.00010	0.0022	<0.030	<0.030
	26-Jun-2018	0.0045	<0.00072	0.0012	<0.10	0.41	0.000021	<0.0010	0.001	<0.60	<0.00020	0.15	0.0000041	-	0.0029	<0.00020	<0.00010	0.0018	<0.030	<0.030
	12-Jun-2019	0.0047	<0.00060	0.0014	<1.0	0.48	<0.000020	<0.0010	0.00087	<0.60	<0.00020	0.13	<0.0000020	0.0014	0.0027	<0.00020	<0.00010	0.0022	<0.030	<0.030
	29-May-2020	<0.0030	<0.00060	0.0011	0.01	0.35	<0.000020	<0.0010	0.00063	0.077	<0.00020	0.13	<0.0000019	0.0013	0.0042	<0.00020	<0.00010	0.0025	<0.030	<0.030
4-Jun-2021	0.0102	<0.00050	0.00153	0.0119	0.425	<0.000025	<0.00050	0.0011	<0.050	<0.00025	0.119	<0.0000050	0.00147	0.0045	<0.00025	<0.000050	0.00293	0.0182	<0.030	
MW11	30-May-2014	-	<0.00073	-	<0.10	-	<0.000050	<0.010	0.0024	<0.60	<0.0020	-	<0.0000050	-	0.006	-	-	-	-	<0.030
	28-May-2015	<0.030	<0.00074	<0.0020	<0.010	0.19	<0.00020	<0.010	<0.0020	<0.060	<0.0020	0.015	<0.0000050	-	0.0058	<0.0020	<0.0010	0.024	<0.030	<0.030
	8-Jun-2016	0.0060	<0.00075	0.0011	<0.010	0.20	0.000024	0.0011	0.0025	<0.060	<0.00020	0.0081	0.0000022	-	0.0060	0.0011	<0.00010	0.030	0.0077	<0.030
	7-Jun-2017	<0.0030	<0.00076	0.0011	<0.10	<0.20	0.000029	<0.0010	0.0025	<0.60	<0.00020	<0.040	<0.0000020	-	0.0055	0.00079	<0.00010	0.030	0.0044	<0.030
	26-Jun-2018	0.0055	<0.00077	0.0011	<0.10	0.21	<0.000020	0.0011	0.0026	<0.60	<0.00020	<0.040	<0.0000020	-	0.0056	0.00095	<0.00010	0.030	<0.030	<0.030
	12-Jun-2019	0.012	<0.00060	0.00085	<1.0	0.25	<0.000020	<0.0010	0.0023	<0.60	<0.00020	<0.040	<0.0000020	0.00099	0.0042	0.00044	<0.00010	0.020	0.0046	<0.030
	29-May-2020	<0.0030	<0.00060	0.0011	<0.010	0.2	<0.000020	<0.0010	0.002	<0.060	<0.00020	0.015	<0.0000019	0.00099	0.005	0.00027	<0.00010	0.031	0.0034	<0.030
4-Jun-2021	<0.0050	<0.00050	0.00108	0.0062	0.202	<0.000025	<0.00050	0.0017	<0.050	<0.00025	0.0115	<0.0000050	0.00114	0.0053	0.00053	<0.000050	0.0259	0.0198	<0.030	
MW12A	30-May-2014	-	<0.00078	-	<0.10	-	<0.000050	<0.010	<0.0020	<0.60	<0.0020	-	<0.0000050	-	<0.0050	-	-	-	-	<0.030
	28-May-2015	0.19	<0.012	<0.0040	<0.010	0.44	<0.00040	<0.020	<0.0040	0.75	<0.0040	0.087	<0.0000050	-	<0.010	<0.0040	<0.0020	<0.0020	<0.060	<0.030
	8-Jun-2016	0.0087	<0.00060	0.00097	<0.010	0.42	0.000042	<0.0010	0.0028	<0.060	0.00022	0.055	<0.0000020	-	0.0035	0.00023	<0.00010	0.0021	0.010	<0.030
	7-Jun-2017	<0.0030	<0.00061	0.00078	<0.10	0.46	0.000022	<0.0010	0.00074	<0.60	<0.00020	<0.040	<0.0000020	-	0.007	<0.00020	<0.00010	0.0023	0.0042	<0.030
	26-Jun-2018	<0.0030	<0.00062	0.00054	<0.10	0.44	<0.000020	<0.0010	0.0019	<0.60	<0.00020	<0.040	<0.0000020	-	0.0034	<0.00020	<0.00010	0.0013	0.0050	<0.030
	12-Jun-2019	0.022	<0.00060	0.0007	<1.0	0.47	<0.000020	<0.0010	0.0015	<0.60	<0.00020	0.044	<0.0000020	0.00037	0.0031	0.00026	<0.00010	0.0034	0.0075	<0.030
	4-Jun-2020	<0.0030	<0.00060	0.0007	<0.010	0.37	<0.000020	<0.0010	0.0013	0.16	<0.00020	0.017	<0.0000019	0.00028	0.0033	0.00027	<0.00010	0.0043	0.0064	<0.030
4-Jun-2021	<0.0050	<0.00050	0.00051	0.00754	0.418	<0.000025	<0.00050	0.0022	<0.050	<0.00025	0.019	<0.0000050	0.00033	0.0032	<0.00025	<0.000050	0.00357	0.0214	<0.030	
MW23B	30-May-2014	-	<0.00068	-	<0.10	-	0.00005	<0.010	<0.0020	<0.60	<0.0020	-	<0.0000050	-	<0.0050	-	-	-	-	<0.030
	28-May-2015	<0.030	<0.00069	<0.0020	<0.10	0.35	<0.00020	<0.010	<0.0020	<0.60	<0.0020	0.14	<0.0000050	-	<0.0050	<0.0020	<0.0010	0.0023	<0.030	<0.030
	8-Jun-2016	0.0081	<0.00070	0.00024	<0.10	0.40	0.00028	<0.0010	0.0013	<0.60	<0.00020	0.065	<0.0000020	-	0.0028	<0.00020	<0.00010	0.0020	0.0039	<0.030
	7-Jun-2017	<0.0030	<0.00071	0.0003	<0.10	0.36	0.000047	<0.0010	<0.00020	<0.60	<0.00020	0.12	<0.0000020	-	0.0012	<0.00020	<0.00010	0.0035	<0.030	<0.030
	26-Jun-2018	<0.0030	<0.00072	0.00022	<0.10	0.35	0.000035	<0.0010	0.0003	<0.60	<0.0002	0.12	<0.0000020	-	0.0013	<0.00020	<0.00010	0.0032	<0.030	<0.030
	17-Jun-2019	<0.0030	<0.00060	0.00023	<0.10	0.32	0.000094	<0.0010	0.0008	<0.60	<0.00020	0.11	<0.0000020	0.00031	0.0019	<0.00020	<0.00010	0.0029	<0.030	<0.030
	5-Jun-2020	<0.0030	<0.00060	0.00033	<0.010	0.33	0.000078	<0.0010	0.00021	<0.060	<0.00020	0.14	<0.0000019	0.00038	0.011	<0.00020	<0.00010	0.0025	<0.030	<0.030
3-Jun-2021	<0.010	<0.0010	<0.0010	0.0064	0.35	0.000125	<0.0010	<0.0020	<0.10	<0.00050	0.126	<0.0000050	<0.00050	<0.0050	<0.00050	<0.00010	0.00302	0.0200	<0.030	
MW25B	30-May-2014	-	<0.00073	-	<0.10	-	0.00021	<0.010	<0.0020	<0.60	<0.0020	-	<0.0000050	-	<0.0050	-	-	-	-	<0.030
	28-May-2015	<0.030	<0.00074	<0.0020	<0.10	0.46	<0.00020	<0.010	<0.0020	<0.60	<0.0020	0.17	<0.0000050	-	<0.0050	<0.0020	<0.0010	<0.0010	<0.030	<0.030
	8-Jun-2016	0.0084	<0.00075	0.00055	0.011	0.46	<0.000020	0.0016	0.00081	<0.060	<0.00020	0.18	<0.0000020	-	0.0031	<0.00020	<0.00010	0.00033	<0.030	<0.030
	7-Jun-2017	0.0053	<0.00076	0.00047	<0.10	0.47	<0.00002	<0.0010	0.00041	<0.60	<0.0002	0.21	<0.0000020	-	0.0028	<				

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Monitoring Well	Date	Volatile Organic Compounds (VOCs)																		
		Parameter	Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethene	Methyl t-Butyl Ether (MTBE)	Methylene Chloride	Methyl Methacrylate	Tetrachloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichloroethene	Trihalomethanes	Vinyl chloride
		Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
AB Tier 1 Guideline^{1,2}		0.002	0.0013	0.08	0.1	0.0007	0.001	0.005	0.014	0.015	0.05	0.47	0.01	0.008	0.015	0.014	0.005	0.1	0.002	
MW1C	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW8B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.00050	-	-	-	<0.00050	-	<0.00050	
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	29-May-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW11	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.00050	-	-	-	<0.00050	-	<0.00050	
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	29-May-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW12A	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.00050	-	-	-	<0.00050	-	<0.00050	
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW23B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.00050	-	-	-	<0.00050	-	<0.00050	
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW25B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.00050	-	-	-	<0.00050	-	<0.00050	
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Monitoring Well	Date	Field			Routine															Nutrients					
		Parameter	Unit	AB Tier 1 Guideline ^{1,2}	pH	Electrical Conductivity	Total Dissolved Solids	Hardness	Alkalinity (total as CaCO ₃)	Bicarbonate	Carbonate	Hydroxide	Calcium	Magnesium	Potassium	Sodium	Chloride	Fluoride	Sulphate	Ionic Balance	Ammonia-N	Nitrate (N)	Nitrite (N)	Nitrate and Nitrite (N)	Total Kjeldahl Nitrogen
		pH Units	µS/cm	°C	pH Units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L
MW26B	30-May-2014	7.7	5280	5.8	8.09	6100	4900	-	-	960	<0.50	n/a	73	36	5.0	1400	1.7	-	3000	-	0.52	0.052	-	-	0.89
	28-May-2015	7.5	7450	9.1	7.93	7100	5600	490	830	1000	<0.50	<0.50	100	56	8.3	1600	3.5	-	3300	0.95	0.43	0.23	0.039	0.27	0.86
	8-Jun-2016	7.63	6450	8.9	8.15	7400	5600	500	810	990	<0.50	<0.50	110	58	7.7	1600	3.9	-	3400	0.91	0.43	0.19	0.036	0.23	0.73
	7-Jun-2017	7.4	7810	5.9	8.19	7600	5700	570	860	1000	<0.5	<0.5	120	66	7.5	1800	4.5	-	3200	3.1	0.66	0.42	<0.16	-	0.99
	26-Jun-2018	6.85	6850	6.7	8.12	7400	5800	560	860	1100	<1.0	<1.0	120	67	8.0	1800	5.6	-	3300	3.7	0.49	0.09	0.012	0.1	1.1
	17-Jun-2019	7.52	7786	11.5	8.19	7700	5800	540	830	1000	<1.0	<1.0	110	64	7.5	1800	6	-	3400	0.58	0.6	0.048	0.027	0.074	0.98
	5-Jun-2020	7.08	7650	7.00	8.16	7500	5700	580	790	960	<1.0	<1.0	120	65	7.4	1800	5.6	-	3300	4.0	0.58	0.18	0.10	0.29	0.96
3-Jun-2021	7.27	7250	12.2	8.35	6650	6430	585	809	973	6.6	<5.0	121	68.8	7.87	1800	5.6	0.32	3940	91.7	0.497	0.24	<0.10	0.24	0.98	
MW27B	30-May-2014	7.5	11,560	9.8	8.14	11,000	10,000	-	-	1700	<0.50	-	130	110	9.2	2800	40	-	6100	-	0.51	0.29	-	-	1.5
	28-May-2015	8.1	11,530	9.1	7.97	11,000	9000	740	1400	1700	<0.50	<0.50	130	100	11	2700	35	-	5100	0.99	0.15	1.1	0.01	1.1	1.0
	8-Jun-2016	7.74	11,530	7.8	8.19	11,000	9100	770	1300	1600	<0.50	<0.50	140	100	11	2700	42	-	5300	0.97	0.42	0.91	0.014	0.92	0.55
	7-Jun-2017	7.6	11,410	8.3	8.10	12,000	9400	860	1500	1900	<0.50	<0.5	140	130	11	3100	51	-	5100	4.4	0.67	1.5	0.21	-	1.4
	26-Jun-2018	7.40	12,540	6.9	7.96	12,000	9700	830	1500	1800	<1.0	<1.0	150	110	11	3100	49	-	5400	2.5	0.16	1.0	<0.01	1.0	1.1
	17-Jun-2019	7.60	11,470	11.2	8.22	12,000	9600	820	1500	1800	<1.0	<1.0	140	120	10	3000	74	-	5300	2.1	0.20	<0.010	0.029	0.029	0.99
	4-Jun-2020	7.40	11,570	8.3	8.12	12,000	9900	830	1300	1600	<1.0	<1.0	140	110	10	3200	94	-	5500	4.8	0.17	1.4	0.022	1.5	0.85
2-Jun-2021	7.70	10,660	11.7	8.23	10,400	10,300	845	1430	1750	<5.0	<5.0	142	119	10.3	3080	122	0.62	6010	96.1	0.402	0.99	<0.10	0.99	0.81	
MW28B	30-May-2014	7.4	12,780	6.5	8.08	12,000	11,000	-	-	1100	<0.50	-	230	89	11	3200	37	-	6900	-	1.6	0.075	-	-	2.5
	28-May-2015	7.8	13,020	7.2	7.90	12,000	10,000	940	900	1100	<0.50	<0.50	220	95	13	3000	35	-	6500	0.95	1.2	0.24	0.094	0.34	2.0
	8-Jun-2016	7.58	12,860	7.8	8.14	13,000	10,000	920	840	1000	<0.50	<0.50	210	93	13	2800	33	-	6700	0.91	1.4	0.31	0.038	0.35	2.1
	7-Jun-2017	7.5	12,890	6.2	8.08	12,000	9700	960	870	1100	<0.50	<0.50	220	100	12	3200	30	-	5700	7.3	1.6	<0.22	0.38	-	2.1
	26-Jun-2018	7.30	13,570	7.4	7.86	13,000	11,000	1000	860	1000	<1.0	<1.0	230	110	12	3300	28	-	6500	3.5	1.1	0.39	0.043	0.43	1.7
	17-Jun-2019	7.46	12,490	9.5	8.11	13,000	11,000	1100	840	1000	<1.0	<1.0	240	120	13	3600	27	-	6200	9.8	1.1	<0.010	0.038	0.038	2
	4-Jun-2020	7.45	12,830	7.1	8.1	13,000	11,000	1000	790	960	<1.0	<1.0	240	100	12	3500	27	-	6600	5.3	1.5	0.36	0.026	0.39	1.9
2-Jun-2021	7.58	11,280	8.5	8.10	11,300	12,200	1040	816	995	<5.0	<5.0	235	109	12.0	3360	25.4	0.23	7990	91.2	1.40	0.27	<0.10	0.27	2.56	
MW29A	4-Jun-2015	8.5	4740	6.7	8.28	4900	3600	220	560	680	<0.50	<0.50	72	9.9	7.4	1200	7.3	-	2000	1.0	4.3	0.054	0.084	0.14	1.6
	8-Jun-2016	8.15	3440	7.0	8.41	3400	2400	100	590	710	7.7	<0.50	33	5.1	4.1	810	3.3	-	1200	1.0	1.2	0.063	0.014	0.077	1.3
	7-Jun-2017	8.1	3740	6.5	8.34	3400	2400	100	630	760	3.0	<0.50	32	5.2	4.1	810	3.6	-	1100	2	1.4	0.33	1.1	-	1.6
	26-Jun-2018	7.48	3440	8.4	8.33	3400	2400	95	640	770	4.2	<1.0	30	4.8	3.8	850	3.2	-	1100	3.6	0.9	0.32	0.026	0.35	1.3
	17-Jun-2019	8.06	3760	8.8	8.45	3500	2300	100	630	740	16	<1.0	32	5.1	3.7	810	3.5	-	1100	2.7	1.1	0.18	0.089	0.27	1.7
	4-Jun-2020	7.89	3560	6.8	8.13	3500	2400	120	620	760	<1.0	<1.0	37	7.3	3.9	840	3.6	-	1200	2.8	1.1	0.24	0.08	0.32	1.5
2-Jun-2021	7.61	3260	9.1	8.37	3190	2560	127	624	745	7.9	<5.0	37.4	8.06	4.01	833	2.8	0.40	1300	98.2	1.16	0.26	<0.050	0.26	1.32	
MW30A	4-Jun-2015	8.5	2400	7.5	8.34	2300	1500	48	640	770	3.5	<0.50	16	2.2	2.9	540	5.3	-	510	1.0	0.78	0.013	<0.033	0.023	2.6
	8-Jun-2016	8.29	2320	8.7	8.37	2200	1500	36	650	780	5.3	<0.50	12	1.6	2.4	540	3.0	-	510	1.0	0.42	0.16	0.046	0.21	1.1
	7-Jun-2017	8.2	2020	7.0	8.57	1900	1200	28	660	770	17	<0.5	8.9	1.4	2.2	460	1.3	-	360	0.27	0.46	0.19	0.081	-	0.8
	26-Jun-2018	7.98	1932	8.4	8.44	1900	1200	25	650	770	12	<1.0	7.9	1.3	2.1	450	1.5	-	350	0.61	0.39	0.1	<0.01	0.1	0.75
	17-Jun-2019	8.19	2180	10.1	8.53	2000	1200	26	640	740	23	<1.0	8.3	1.4	2	430	1.3	-	350	2.4	0.40	0.086	0.01	0.096	0.76
	29-May-2020	8.08	1994	6.9	8.4	2000	1200	27	610	730	7.9	<1.0	8.8	1.3	1.8	420	2.2	-	360	2.2	0.40	0.088	0.023	0.11	0.79
2-Jun-2021	7.87	1817	7.1	8.54	1750	1280	24.2	636	744	15.7	<5.0	7.14	1.55	2.30	504	0.71	0.57	380	109	0.411	0.131	0.012	0.143	0.53	
MW31A	4-Jun-2015	8.6	1980	10.5	8.57	1900	1100	32	790	920	22	<0.50	7.8	3.1	3.2	420	12	-	220	0.94	1.1	0.017	0.013	0.03	5.2
	8-Jun-2016	8.53	1720	9.5	8.53	1800	1000	11	800	940	18	<0.50	4.5	<2.0	<3.0	430	6.7	-	120	1.0	1.1	2.0	0.028	2.0	1.0
	7-Jun-2017	-	-	-	8.57	1700	1100	15	880	1000	23	<0.50	4.9 *	0.52 *	1.9 *	470	5.2	-	76	3.2	1.2	14	0.077	3.2	7.4
	26-Jun-2018	8.03	1796	13.8	8.48	1700	1100	15	900	1100	19	<1.0	4.9	0.51	1.6	440	11	-	67	2.0	0.52	1.5	<0.01	1.5	1.9
	17-Jun-2019	8.46	1702	10.5	8.66	1800	1000	10	910	990	57	<1.0	3.5	0.35	1.5	410	8.5	-	58	3.9	0.61	1.9	<0.010	1.	

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Parameter Group	Parameter	Hydrocarbons						Organics			
		Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	F1-BTEX (C ₆ -C ₁₀)	F2 (C ₁₀ -C ₁₆)	Total Phenols	Chemical Oxygen Demand	Dissolved Organic Carbon
Unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}		0.005	0.024	0.0016	0.02	0.072	2.2	1.1	-	-	-
Monitoring Well	Date										
MW26B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	49	7.3
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	24	9.0
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	35	10
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	28	12
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.002	29	9.6
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0015	44	12
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	34	10
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0019	23	10.2
MW27B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	64	13
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	35	13
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	37	15
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	43	18
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	0.0024	43	13
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	37	16
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	33	14
	2-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0054	35	12.6
MW28B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	61	15
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	45	16
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	48	17
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	35	17
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.002	37	14
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	45	15
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	41	14
	2-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0035	39	12.1
MW29A	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	1100	13
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	55	8.3
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	25	9.1
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.0020	22	7.7
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	58	9.1
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	22	8.1
	2-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	26	8.8
	MW30A	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	130
8-Jun-2016		<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	43	9.9
7-Jun-2017		<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	23	7.8
26-Jun-2018		<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.0020	57	7.1
17-Jun-2019		<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	24	8.7
29-May-2020		<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	0.15	<0.0015	22	7.3
2-Jun-2021		<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	28	8.3
MW31A		4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	560
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	380	17
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	300	-
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.0020	140	11
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	270	18
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	89	9.5
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0049	38	10.8

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed

BOLD - Greater than Tier 1 Guideline

Italic - Detection limit greater than Tier 1 guideline

* - laboratory filtered

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Monitoring Well	Date	Dissolved Metals																	
		Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Uranium	Zinc
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		AB Tier 1 Guideline ^{1,2}																	
		0.007-0.05 ⁶	0.006	0.005	1	1.0	0.00004-0.00037 ³	0.05	0.007	0.3	0.001-0.007 ³	0.05	0.000005	-	0.007-0.17 ³	0.002	0.0001	0.01	0.03
MW26B	30-May-2014	-	<0.00078	-	0.010	-	<0.000050	<0.010	<0.0020	<0.060	<0.0020	-	<0.0000050	-	<0.0050	-	-	-	<0.030
	28-May-2015	<0.030	<0.00079	<0.0020	<0.10	0.30	<0.00020	<0.010	<0.0020	<0.60	<0.0020	0.20	<0.0000050	-	<0.0050	<0.0020	<0.0010	0.0010	<0.030
	8-Jun-2016	0.0095	<0.00080	0.00081	0.010	0.32	<0.000020	0.0017	0.0014	<0.060	<0.00020	0.20	0.0000040	-	0.0029	<0.00020	<0.00010	0.0012	0.0084
	7-Jun-2017	0.0072	<0.00081	0.00077	<0.10	0.29	<0.00002	<0.0010	0.00039	<0.60	<0.0002	0.22	<0.0000020	-	0.0013	<0.0002	<0.0001	0.00082	<0.030
	26-Jun-2018	<0.003	<0.00082	0.00056	<0.10	0.3	<0.00002	<0.0010	0.00071	<0.60	<0.0002	0.20	0.0000026	-	0.0019	0.00020	<0.00010	0.00094	<0.030
	17-Jun-2019	<0.0030	<0.00060	0.00052	<0.10	0.31	<0.000020	<0.0010	0.00084	<0.60	<0.00020	0.22	<0.0000020	0.00094	0.0017	<0.00020	<0.00010	0.00095	<0.030
	5-Jun-2020	<0.0030	<0.00060	0.00052	<0.10	0.3	<0.000020	<0.0010	0.00037	<0.60	<0.00020	0.21	<0.0000019	0.00068	0.0012	<0.00020	<0.00010	0.00086	<0.030
3-Jun-2021	<0.010	<0.0010	<0.0010	0.0081	0.31	<0.000050	<0.0010	<0.0020	<0.10	<0.00050	0.184	<0.0000050	0.00095	<0.0050	<0.00010	<0.00010	0.00095	0.0190	
MW27B	30-May-2014	-	<0.012	-	<0.10	-	<0.0001	<0.020	<0.0040	<0.60	<0.0040	-	<0.0000050	-	<0.010	-	-	-	<0.060
	28-May-2015	<0.060	<0.012	<0.0040	<0.10	0.42	<0.00040	<0.020	<0.0040	<0.60	<0.0040	0.052	<0.0000050	-	<0.010	<0.0040	<0.0020	0.0021	<0.060
	8-Jun-2016	0.0056	<0.00060	0.0020	<0.10	0.43	0.00004	0.0011	0.0010	<0.060	<0.00020	0.052	<0.0000020	-	0.0077	0.00039	<0.00010	0.0025	0.0048
	7-Jun-2017	0.01	<0.00060	0.0019	<0.10	0.46	0.000022	<0.0010	<0.00020	<0.60	<0.00020	0.062	<0.0000020	-	0.0051	<0.00020	<0.00010	0.0034	<0.030
	26-Jun-2018	0.0031	<0.00060	0.0018	<0.10	0.45	0.000027	<0.0010	0.00067	<0.60	<0.00020	0.053	0.0000035	-	0.0050	0.00033	<0.00010	0.0021	<0.030
	17-Jun-2019	0.0093	<0.00060	0.0017	<0.10	0.45	0.000026	<0.0010	0.00051	<0.60	<0.00020	0.051	<0.0000020	0.0016	0.0048	<0.00020	<0.00010	0.0024	<0.030
	4-Jun-2020	<0.0030	<0.00060	0.0017	<0.10	0.39	0.000028	<0.0010	0.00041	<0.60	<0.00020	0.056	<0.0000019	0.0016	0.0050	<0.00020	<0.00010	0.0023	<0.030
2-Jun-2021	<0.010	<0.0010	0.0017	0.0091	0.390	<0.000050	<0.0010	<0.0020	<0.10	<0.00050	0.0475	<0.000005	0.00144	<0.0050	<0.00010	<0.00010	0.00209	0.023	
MW28B	30-May-2014	-	<0.012	-	<0.10	-	<0.00010	<0.020	<0.0040	<0.60	<0.0040	-	<0.0000050	-	<0.010	-	-	-	<0.060
	28-May-2015	<0.060	<0.012	<0.0040	<0.10	0.44	<0.00040	<0.020	<0.0040	<0.60	<0.0040	0.27	<0.0000050	-	<0.010	<0.0040	<0.0020	<0.0020	<0.060
	8-Jun-2016	0.011	<0.00060	0.00044	0.010	0.45	0.000034	0.0012	0.0015	<0.060	<0.00020	0.25	<0.0000020	-	0.0049	<0.00020	<0.00010	0.00062	0.0052
	7-Jun-2017	0.0039	<0.00060	0.0004	<0.10	0.44	0.000022	<0.0010	0.00033	<0.60	<0.00020	0.25	<0.0000020	-	0.0038	<0.00020	<0.0001	0.00054	<0.030
	26-Jun-2018	<0.003	<0.00060	0.00038	<0.10	0.44	0.000024	<0.0010	0.00064	<0.60	<0.00020	0.25	0.0000022	-	0.0034	<0.00020	<0.0001	0.00047	<0.030
	17-Jun-2019	<0.0030	<0.00060	0.0003	<0.10	0.52	0.000027	<0.0010	0.0014	<0.60	<0.00020	0.25	<0.0000020	0.00054	0.0032	<0.00020	<0.00010	0.00045	<0.030
	4-Jun-2020	<0.0030	<0.00060	0.00026	0.014	0.39	<0.000020	<0.0010	0.0013	<0.060	<0.00020	0.31	<0.0000019	0.00059	0.0032	<0.00020	<0.00010	0.00056	<0.030
2-Jun-2021	<0.010	<0.0010	<0.0010	0.0092	0.460	<0.000050	<0.0010	<0.0020	<0.10	<0.00050	0.24	<0.000005	0.00060	<0.0050	<0.00050	<0.00010	0.000480	0.0190	
MW29A	4-Jun-2015	0.0048	0.0012	0.0030	0.021	0.50	<0.000020	<0.0010	0.0012	<0.060	<0.00020	0.081	<0.0000050	-	0.0036	<0.00039	<0.00010	0.0093	<0.030
	8-Jun-2016	0.0067	<0.00060	0.0011	0.015	0.75	<0.000020	<0.0010	0.0020	<0.060	<0.00020	0.064	<0.0000020	-	0.0020	0.00022	<0.00010	0.0006	<0.030
	7-Jun-2017	0.0079	0.23	0.00093	0.018	0.74	<0.000020	<0.0010	0.00093	<0.060	<0.00020	0.06	<0.000002	-	0.0014	0.00027	<0.00010	0.00055	<0.030
	26-Jun-2018	0.0042	<0.0006	0.00076	0.014	0.72	<0.000020	<0.0010	0.00098	<0.060	<0.00020	0.051	0.0000028	-	0.0011	0.00023	<0.00010	0.00043	<0.030
	17-Jun-2019	0.012	<0.00060	0.00072	0.014	0.72	<0.000020	<0.0010	0.0031	<0.060	<0.00020	0.05	<0.0000020	0.0015	0.0013	<0.00020	<0.00010	0.00047	0.0032
	4-Jun-2020	0.0057	<0.00060	0.00071	0.014	0.71	<0.000020	<0.0010	0.0049	<0.060	<0.00020	0.059	<0.0000019	0.0018	0.0013	<0.00020	<0.00010	0.00066	<0.030
	2-Jun-2021	0.0086	<0.00050	0.00065	0.0139	0.735	<0.000025	<0.00050	<0.0010	<0.050	<0.00025	0.0571	<0.000005	0.00125	<0.0025	<0.00025	<0.000050	0.000593	0.0200
MW30A	4-Jun-2015	1.0	0.00080	0.0037	0.028	0.43	0.000040	0.0016	0.0056	0.44	0.00077	0.081	<0.0000050	-	0.013	0.0012	<0.00010	0.0063	0.0034
	8-Jun-2016	3.8	<0.00060	0.0030	0.025	0.52	0.000026	0.0045	0.0075	0.63	0.00054	0.059	<0.0000020	-	0.010	0.00064	<0.00010	0.0035	0.0037
	7-Jun-2017	0.011	<0.00060	0.00089	0.015	0.40	<0.000020	<0.0010	0.00034	<0.06	<0.00020	0.018	<0.0000020	-	0.0023	<0.00020	<0.00010	0.00018	<0.030
	26-Jun-2018	0.0059	<0.00060	0.00077	0.013	0.38	<0.000020	<0.0010	0.00057	<0.06	<0.00020	0.016	0.0000025	-	0.00065	<0.00020	<0.00010	0.00017	<0.030
	17-Jun-2019	<0.0030	<0.00060	0.00059	0.011	0.39	<0.000020	<0.0010	0.00065	<0.060	<0.00020	0.015	<0.0000020	0.0008	0.00074	<0.00020	<0.00010	0.00011	<0.030
	29-May-2020	<0.0030	<0.00060	0.00066	0.012	0.37	<0.000020	<0.0010	0.0005	<0.060	<0.00020	0.015	<0.0000019	0.00081	<0.00050	<0.00020	<0.00010	<0.00010	<0.030
	2-Jun-2021	0.0050	<0.0001	0.00080	0.0133	0.236	0.0000089	<0.00010	0.00166	0.061	<0.000050	0.0184	<0.000005	0.000725	0.00066	0.00012	<0.000010	0.000106	0.0196
MW31A	4-Jun-2015	1.5	0.0013	0.0069	0.097	0.58	0.000048	0.0017	0.0093	9.0	0.0021	0.068	0.000008	-	0.020	0.0013	<0.00010	0.0095	0.0051
	8-Jun-2016	0.31	<0.00060	0.00088	<0.10	0.66	<0.000020	<0.0010	0.00093	<0.60	0.00043	<0.040	0.000043	-	0.0026	<0.00020	<0.00010	0.00054	<0.030
	7-Jun-2017	0.55 *	0.00077 *	0.0042 *	0.085 *	0.74 *	0.000025 *	<0.0010 *	0.0046 *	0.18 *	0.00043 *	0.036 *	<0.0000020 *	-	0.012 *	0.00078 *	<0.00010 *	0.0041 *	<0.030 *
	26-Jun-2018	0.097	0.00065	0.0035	0.05	0.76	<0.000020	<0.0010	0.0021	0.074	<0.0002	<0.004	0.0000051	-	0.0033	0.00051	<0.00010	0.0039	<0.030
	17-Jun-2019	0.024	0.00073	0.0051	0.051	0.75	0.000026	<0.0010	0.002	0.06	<0.00020	0.027	-	0.023	0.0056	0.00054	<0.00010	0.0032	<0.030
	5-Jun-2020	0.074	<0.00060	0.0028	0.054	0.8	<0.000020	<0.0010	0.0010	<0.060	<0.00020	0.021	<0.0000019	0.011	0.0031	0.00024	<0.00010	0.0029	<0.030
	3-Jun-2021	0.0703	0.00065	0.00336	0.0678	0.781	0.0000106	<0.0001	0.0027	0.035	0.000082	0.0298	<0.0000050	0.0100	0.0038	0.000309	<0.000010	0.00239	0.0216

Notes:

- ¹ Alberta Environment and Parks (A

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Monitoring Well	Date	Volatile Organic Compounds (VOCs)																		
		Parameter	Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethene	Methyl t-Butyl Ether (MTBE)	Methylene Chloride	Methyl Methacrylate	Tetrachloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichloroethene	Trihalomethanes	Vinyl chloride
		Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
AB Tier 1 Guideline^{1,2}		0.002	0.0013	0.08	0.1	0.0007	0.001	0.005	0.014	0.015	0.05	0.47	0.01	0.008	0.015	0.014	0.005	0.1	0.002	
MW26B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW27B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
2-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW28B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
2-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW29A	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
2-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW30A	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	29-May-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
2-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		
MW31A	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010		

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Monitoring Well	Date	Field			Routine															Nutrients					
		Parameter	Unit	AB Tier 1 Guideline ^{1,2}	pH	Electrical Conductivity	Total Dissolved Solids	Hardness	Alkalinity (total as CaCO ₃)	Bicarbonate	Carbonate	Hydroxide	Calcium	Magnesium	Potassium	Sodium	Chloride	Fluoride	Sulphate	Ionic Balance	Ammonia-N	Nitrate (N)	Nitrite (N)	Nitrate and Nitrite (N)	Total Kjeldahl Nitrogen
		pH	Electrical Conductivity	Temperature	pH Units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L
					6.5-8.5	1000	-	6.5-8.5	1000	500	-	-	-	-	-	200	100	1	128-429 ³	-	0.018-190 ⁴	3	0.02-0.20 ⁵	100	-
MW33A	28-May-2015	8.6	2540	6.9	8.32	3300	2400	130	870	1100	2.6	<0.50	35	10	5.8	930	28	-	860	1.2	1.3	<0.010	<0.010	<0.010	8.0
	8-Jun-2016	8.66	2010	7.0	8.52	2100	1200	24	840	990	16	<0.50	7.4	1.4	2.2	480	27	-	230	0.96	0.89	<0.010	<0.010	<0.020	2.6
	7-Jun-2017	-	-	-	8.52	1800	1100	15	840	990	18	<0.50	4.7	0.7	1.4	390	24	-	130	7.7	0.79	<0.044	<0.033	<0.010	2.4
	26-Jun-2018	8.97	2370	10.9	8.57	1800	1100	19	930	1100	30	<1.0	6.4	0.81	2	460	28	-	75	0.47	0.70	0.021	<0.01	0.021	1.5
	12-Jun-2019	8.54	1859	9.6	8.72	1800	1000	11	890	960	60	<1.0	3.6	0.41	1.5	410	24	-	51	3.2	1.40	<0.010	<0.010	<0.014	9.2
	4-Jun-2020	8.81	1768	8.1	8.45	1800	1100	12	860	1000	15	<1.0	4	0.52	1.5	450	24	-	59	2.5	0.58	<0.010	<0.010	<0.014	1.1
	4-Jun-2021	8.71	1527	8.9	8.76	1410	937	10.9	747	841	34.3	<5.0	3.59	0.48	1.62	413	18.4	1.88	49.7	110	0.412	0.091	<0.010	0.091	2.72
15MW35B	8-Jun-2016	7.83	8080	7.6	8.16	7700	6000	300	650	790	<0.50	<0.50	99	14	7.8	1800	5.2	-	3700	0.95	1.9	0.42	<0.010	0.42	2.7
	7-Jun-2017	7.8	7270	8.0	8.22	7600	5700	300	640	780	<0.50	<0.50	98	14	8.6	1800	6.8	-	3300	2.3	2.0	2.5	≤0.16	-	2.5
	26-Jun-2018	7.05	8530	7.1	8.12	7700	6000	330	680	830	<1.0	<1.0	110	15	8.4	2000	6.3	-	3500	2.8	1.3	0.76	<0.01	0.76	2.0
	17-Jun-2019	7.7	7970	9.9	8.27	7800	6100	360	680	820	<1.0	<1.0	120	16	9.1	2100	6.3	-	3400	8	1.2	1.6	0.019	1.6	1.7
	5-Jun-2020	7.7	7410	7.5	8.21	7800	6100	340	640	780	<1.0	<1.0	110	15	7.8	2000	6.6	-	3600	2.7	1.1	1.5	0.026	1.5	1.5
	2-Jun-2021	7.56	7250	11.4	8.20	7010	6520	327	726	886	<5.0	<5.0	107	14.5	8.06	1970	5.70	0.21	3970	95.0	1.48	1.06	<0.10	1.06	1.47
19MW37A	15-Nov-2019	8.10	3240	1.0	8.06	3000	2100	130	870	1100	<1.0	<1.0	32	12	5.5	770	8.0	-	730	5.5	0.69	0.029	<0.010	0.029	1.3
	4-Jun-2020	8.14	3900	6.5	8.38	3800	2600	100	710	850	8.2	<1.0	26	9.1	4.9	960	6.3	-	1200	5.4	1.3	<0.010	<0.010	<0.014	1.5
	4-Jun-2021	8.21	3630	9.0	8.66	3520	2690	61.8	766	873	30.4	<5.0	16.6	4.95	3.25	840	5.1	0.80	1360	86.6	1.37	<0.10	<0.050	<0.11	1.45
19MW38A	15-Nov-2019	7.99	4450	2.0	8.42	4000	2800	130	1200	1400	25	<1.0	31	13	9.9	1000	8.8	-	980	2.8	1.8	<0.010	<0.010	<0.014	46
	4-Jun-2020	8.34	2680	5.1	8.5	2600	1700	42	930	1100	21	<1.0	12	3	3.6	700	13	-	420	6.4	0.95	<0.010	0.012	<0.014	1.7
	4-Jun-2021	8.51	2230	7.5	8.77	2170	1470	23.1	986	1110	46.2	<5.0	6.88	1.43	2.19	542	12.6	1.3	314	90.5	0.869	0.085	<0.010	0.085	1.72

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- Italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Parameter Group	Hydrocarbons							Organics			
	Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	F1-BTEX (C ₆ -C ₁₀)	F2 (C ₁₀ -C ₁₆)	Total Phenols	Chemical Oxygen Demand	Dissolved Organic Carbon	
Parameter											
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}	0.005	0.024	0.0016	0.02	0.072	2.2	1.1	-	-	-	
Monitoring Well	Date										
MW33A	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	460	39
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	140	33
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	130	25
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.0020	110	26
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0051	730	23
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0051	67	27
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0022	146	24.0
15MW35B	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	37	8.2
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	66	12
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.0005	<0.10	<0.10	<0.0020	33	10
	17-Jun-2019	<0.00040	0.0004	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0038	37	10
	5-Jun-2020	<0.00040	0.0004	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	28	8.9
	2-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0037	28	8.3
19MW37A	15-Nov-2019	<0.00040	<0.00040	<0.00040	<0.00089	-	<0.10	<0.10	0.0025	62	10
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	41	11
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0127	39	10.9
19MW38A	15-Nov-2019	<0.00040	<0.00040	<0.00040	<0.00089	-	<0.10	<0.10	0.0037	3540	16
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	45	16
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0025	80	18.6

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed

BOLD - Greater than Tier 1 Guideline

italic - Detection limit greater than Tier 1 guideline

* - laboratory filtered

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Parameter Group	Dissolved Metals																		
	Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Uranium	Zinc	
Parameter	Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Uranium	Zinc	
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}	0.007-0.05 ⁶	0.006	0.005	1	1.0	0.00004-0.00037 ³	0.05	0.007	0.3	0.001-0.007 ³	0.05	0.000005	-	0.007-0.17 ³	0.002	0.0001	0.01	0.03	
Monitoring Well	Date																		
MW33A	28-May-2015	0.0044	0.00076	0.0089	0.070	0.50	<0.000020	<0.0010	0.0017	<0.060	<0.00020	0.13	<0.0000050	-	0.016	0.00058	<0.00010	0.0096	<0.0030
	8-Jun-2016	0.66	<0.00060	0.0042	0.080	0.71	<0.000020	<0.0010	0.028	0.60	0.00094	0.058	<i><0.0000060</i>	-	0.0083	<0.00020	<0.00010	0.0035	<0.0030
	7-Jun-2017	0.005	<0.00060	0.0018	0.053	0.68	<0.000020	<0.0010	<0.00020	<0.060	<0.00020	0.027	<0.0000020	-	0.0022	<0.00020	<0.0001	0.0012	<0.0030
	26-Jun-2018	0.22	<0.00060	0.0056	0.11	0.82	<0.000020	<0.0010	0.0012	1.2	0.00073	0.081	0.000016	-	0.009	0.00028	<0.00010	0.0013	0.0040
	12-Jun-2019	0.081	<0.00060	0.0011	0.059	0.87	<0.000020	<0.0010	0.00087	0.34	<0.00020	0.037	<0.0000020	0.021	0.00074	<0.00020	<0.00010	0.00054	<0.0030
	4-Jun-2020	0.0083	<0.00060	0.00088	0.024	0.75	<0.000020	<0.0010	0.0019	<0.060	<0.00020	0.069	<0.0000019	0.0026	0.0027	<0.00020	<0.00010	0.00096	<0.0030
4-Jun-2021	0.0332	0.00030	0.00276	0.0862	0.636	0.0000051	<0.00010	0.00053	0.028	0.000085	0.0249	<0.0000050	0.0205	0.00234	0.000142	<0.000010	0.000829	0.0197	
15MW35B	8-Jun-2016	0.012	0.00069	0.0019	<0.10	0.70	<0.000020	<0.0010	0.0018	<i><0.60</i>	<0.00020	0.066	<0.0000020	-	0.0041	0.00082	<0.00010	0.0023	<0.0030
	7-Jun-2017	0.0035	<0.00060	0.0014	<0.10	0.71	0.000022	<0.0010	0.0032	<i><0.60</i>	<0.00020	0.074	<0.0000020	-	0.0036	0.00053	<0.00010	0.0015	<0.0030
	26-Jun-2018	0.0047	<0.00060	0.0011	<0.10	0.82	<0.000020	<0.0010	0.0016	<i><0.60</i>	<0.00020	0.049	0.0000027	-	0.0028	0.00034	<0.00010	0.0010	<0.0030
	17-Jun-2019	0.0032	<0.00060	0.0011	<0.10	0.84	0.000065	<0.0010	0.0026	<i><0.60</i>	<0.00020	0.049	<0.0000020	0.0031	0.0033	0.00049	<0.00010	0.0010	<0.0030
	5-Jun-2020	0.0032	<0.00060	0.0011	<0.10	0.84	0.000065	<0.0010	0.0026	<i><0.60</i>	<0.00020	0.049	<0.0000020	0.0031	0.0033	0.00049	<0.00010	0.0010	<0.0030
	2-Jun-2021	0.0063	<0.00050	0.00080	0.0232	0.709	<0.000025	<0.00050	0.0018	<0.050	<0.00025	0.0641	<0.0000050	0.00211	<0.0025	<0.00025	<0.000050	0.000780	0.0196
19MW37A	15-Nov-2019	0.90	<0.00060	0.0019	0.018	0.60	0.000051	0.0011	0.0029	3.8	0.0042	0.43	<0.0000020	0.00061	0.0061	<0.00020	<0.00010	0.0033	0.014
	4-Jun-2020	0.01	<0.00060	0.0006	<0.010	0.69	<0.000020	<0.0010	0.0005	<0.060	<0.00020	0.28	<0.0000019	0.0013	0.0017	<0.0002	<0.0001	0.0055	0.0033
	4-Jun-2021	0.0027	<0.00020	0.00046	0.00713	0.652	<0.000010	<0.00020	0.00133	<0.020	<0.00010	0.221	<0.0000050	0.00115	0.0012	<0.00010	<0.000020	0.0030	0.0166
19MW38A	15-Nov-2019	0.11	0.00075	0.0049	0.022	0.52	<0.000020	<0.0010	0.00058	0.15	<0.00020	0.12	<0.0000020	0.015	0.0055	0.00052	<0.00010	0.0094	<0.0030
	4-Jun-2020	0.02	<0.00060	0.0049	0.017	0.76	<0.000020	<0.0010	0.0016	<0.060	<0.00020	0.032	<0.0000019	0.0097	0.005	0.0004	<0.00010	0.0035	<0.0030
	4-Jun-2021	0.0509	<0.00020	0.00226	0.0148	0.687	<0.000010	<0.00020	0.00199	0.032	<0.00010	0.019	<0.0000050	0.00576	0.0019	0.00026	<0.000020	0.00156	0.0039

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
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- ³ Guideline varies with hardness
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- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- Italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4b - Field and Groundwater Analytical Results Summary - Upper Sandstone Wells

Monitoring Well	Date	Volatile Organic Compounds (VOCs)																		
		Parameter	Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethene	Methyl t-Butyl Ether (MTBE)	Methylene Chloride	Methyl Methacrylate	Tetrachloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichloroethene	Trihalomethanes	Vinyl chloride
		Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
AB Tier 1 Guideline^{1,2}		0.002	0.0013	0.08	0.1	0.0007	0.001	0.005	0.014	0.015	0.05	0.47	0.01	0.008	0.015	0.014	0.005	0.1	0.002	
MW33A	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
15MW35B	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	<0.00050	-	<0.00050	
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	2-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
19MW37A	15-Nov-2019	-	-	-	-	-	-	<0.00050	-	-	-	-	<0.00050	-	-	-	<0.00050	-	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
19MW38A	15-Nov-2019	-	-	-	-	-	-	<0.00050	-	-	-	-	<0.00050	-	-	-	<0.00050	-	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Monitoring Well	Date	Field			Routine																Nutrients				
		Parameter	Unit	AB Tier 1 Guideline ^{1,2}	pH	Electrical Conductivity	Total Dissolved Solids	Hardness	Alkalinity (total as CaCO ₃)	Bicarbonate	Carbonate	Hydroxide	Calcium	Magnesium	Potassium	Sodium	Chloride	Fluoride	Sulphate	Ionic Balance	Ammonia-N	Nitrate (N)	Nitrite (N)	Nitrate and Nitrite (N)	Total Kjeldahl Nitrogen
		pH Units	µS/cm	°C	pH Units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		6.5-8.5	1000	-	6.5-8.5	1000	500	-	-	-	-	-	-	-	200	100	1	128-429 ³	-	0.018-190 ⁴	3	0.02-0.20 ⁵	100	-	
MW1B	6-Jun-2014	9.9	2950	7.5	8.05	2800	2000	-	-	1100	<0.50	-	Jun-20	1.7	2.5	740	5.1	-	680	-	<0.050	3.7	-	-	2.2*
	28-May-2015	8.4	3050	8.3	8.24	2900	2000	37	880	1100	<0.50	<0.50	12	1.6	2.4	740	6.1	-	680	1.0	0.26	0.89	0.016	0.91	1.6
	8-Jun-2016	6.33	3670	-	8.44	2700	1800	30	900	1100	13	<0.50	10	1.3	2.1	680	6.1	-	540	1.0	0.36	1.1	0.019	1.1	0.96
	7-Jun-2017	-	-	-	8.54	2900	1800	35	890	1000	21	<0.50	12	1.6	2.2	670	6.2	-	610	1.9	-	13	<0.033	2.8	-
	26-Jun-2018	-	-	-	8.29	2500	1600	27	940	1100	<1.0	<1.0	9.1	1.1	2.2	620	9.6	-	390	0.52	0.2	3.3	0.037	3.3	3.2
	12-Jun-2019	8.1	2360	10.3	8.54	2300	1500	23	960	1100	43	<1.0	7.9	0.91	2	570	5.9	-	300	0.31	0.30	0.79	0.069	0.86	4
	5-Jun-2020	7.91	2480	8.4	8.43	2500	1600	30	870	1000	16	<1.0	10	1.3	2.2	630	6.2	-	430	3.2	0.30	0.8	0.025	0.82	2.9
4-Jun-2021	8.06	2110	10.7	8.65	2210	1520	22.5	943	1080	32.3	<5.0	7.48	0.94	1.94	558	5.2	1.07	383	91.9	0.322	0.278	0.043	0.32	1.10	
MW8A	30-May-2014	8.5	2560	5.4	8.67	2400	1600	-	-	1300	49	-	7.7	1.7	2.2	610	8.0	-	300	-	0.89	<0.010	-	-	1.5
	28-May-2015	8.5	2910	6.0	8.32	2700	1800	25	1100	1300	3.0	<0.50	7.6	1.5	2.1	670	7.6	-	450	0.97	0.96	<0.010	0.012	0.012	1.6
	8-Jun-2016	8.51	2510	8.7	8.49	2400	1500	25	1000	1200	25	<0.50	7.8	1.3	2.3	600	7.4	-	290	1.0	0.81	<0.010	<0.010	<0.020	1.1
	7-Jun-2017	8.5	2670	8.4	8.49	2500	1700	26	1100	1300	21	<0.50	8.3	1.3	2.4	630	7.1	-	360	2.2	0.63	<0.044	<0.033	<0.010	1.3
	26-Jun-2018	7.84	2630	6.9	8.48	2400	1600	22	1100	1300	27	<1.0	7.1	1.0	2.0	650	7.3	-	270	1.4	0.72	<0.020	<0.010	<0.020	1.4
	12-Jun-2019	8.15	2820	12.2	8.44	2800	1900	31	1100	1300	34	<1.0	10	1.4	2.3	680	7.5	-	550	5.1	0.76	0.029	0.027	0.056	1.3
	29-May-2020	8.21	2480	9.5	8.48	2400	1500	22	1000	1200	24	<1.0	7.3	0.93	1.7	630	7.7	-	230	3.9	0.83	0.044	0.016	0.06	1.5
4-Jun-2021	8.47	2240	10.9	8.79	2190	1500	20.8	1120	1260	54.5	<5.0	6.72	0.97	1.85	570	6.09	1.17	246	91.0	0.726	0.022	<0.010	0.022	1.28	
MW12B	30-May-2014	7.3	11,870	6.9	8.17	11,000	11,000	-	-	870	<0.50	-	380	78	11	3400	6.2	-	6800	-	2.1	0.2	-	-	3.3
	28-May-2015	7.7	11,500	7.5	7.71	11,000	9700	890	700	850	<0.50	<0.50	260	60	10	2800	5.6	-	6100	0.98	2.2	0.12	0.038	0.16	3.4
	8-Jun-2016	6.28	13,830	-	8.00	11,000	8900	900	670	820	<0.50	<0.50	270	54	11	2500	6.0	-	5600	0.99	2.1	0.19	0.053	0.25	2.8
	7-Jun-2017	7.4	11,500	6.3	7.87	11,000	8600	950	710	860	<0.50	<0.50	280	63	9.3	2600	4.6	-	5300	3.2	1.7	<0.22	<0.16	<0.050	2.8
	26-Jun-2018	8.2	11,720	5.8	8.01	11,000	8200	780	670	820	<1.0	<1.0	230	47	9.3	2500	4.7	-	4900	4.5	1.1	0.64	0.012	0.65	2.1
	12-Jun-2019	7.32	12,410	8.3	7.96	13,000	10000	1200	800	970	<1.0	<1.0	360	69	<30	2900	7.9	-	6100	2.5	2.3	0.71	<0.20	0.71	3.3
	4-Jun-2020	7.36	10,710	5.6	7.93	11,000	8,500	830	660	810	<1.0	<1.0	240	59	8.5	2700	4.6	-	5100	5.7	1.8	0.19	0.028	0.22	1.9
4-Jun-2021	7.75	10,130	11.3	8.16	8890	9060	625	649	792	<5.0	<5.0	201	30.0	8.83	2610	<5.0	0.24	5810	94.2	1.94	1.78	0.86	2.64	7.11	
MW18A	30-May-2014	8.4	15,820	6.4	8.61	1500	920	-	-	970	38	-	3	<2.0	<3.0	390	7.3	-	2.4	-	0.62	<0.010	-	-	1.1
	28-May-2015	8.8	1640	6.6	8.39	1500	880	8.1	840	1000	8.9	<0.50	2.7	0.30	1.3	360	7.2	-	1.4	0.95	0.64	<0.010	<0.010	<0.010	0.98
	8-Jun-2016	6.75	1920	8.3	8.44	1500	870	8.9	800	950	9.5	<0.50	3.0	0.34	1.5	380	7.4	-	6.9	1.0	0.66	0.011	<0.010	<0.020	0.90
	7-Jun-2017	8.5	1520	8.7	8.50	1500	910	8.4	850	1000	17	<0.50	2.9	0.31	1.4	380	7.3	-	2.1	0.86	0.72	<0.044	<0.033	-	0.94
	26-Jun-2018	8.2	1719	6.1	8.45	1500	910	8.3	850	1000	14	<1.0	2.8	0.30	1.4	380	7.5	-	<1.0	1.1	0.59	<0.020	<0.010	<0.020	0.92
	12-Jun-2019	8.53	1592	9.4	8.49	1500	880	8.3	840	990	19	<1.0	2.9	0.25	1.4	360	7.3	-	1.6	3.1	0.60	<0.010	<0.010	<0.014	0.92
	4-Jun-2020	8.53	1547	6.3	8.4.0	1500	870	8.9	780	930	9.6	<1.0	3	0.37	1.4	390	7.6	-	<1.0	4.2	0.63	<0.010	<0.010	<0.014	1.0
4-Jun-2021	8.60	1398	7.8	8.70	1380	957	9.0	869	994	32.5	<5.0	3.00	0.36	1.44	423	6.38	1.79	<0.30	106	0.633	<0.020	<0.010	<0.022	0.90	
MW19A	30-May-2014	8.2	6350	8.7	8.09	7900	6700	-	-	1200	<0.50	-	90	42	8.9	2200	8.8	-	3700	-	0.98	0.15	-	-	1.4
	28-May-2015	7.7	7870	6.3	7.99	7500	6000	310	950	1200	<0.50	<0.50	62	37	9.4	1900	8.9	-	3400	0.96	0.43	0.023	0.015	0.038	0.80
	8-Jun-2016	7.97	8510	-	8.25	6900	5200	270	880	1100	<0.50	<0.50	55	32	8.9	1500	6.7	-	3000	0.91	0.49	<0.050	<0.050	<0.020	0.96
	7-Jun-2017	7.6	6000	7.7	8.31	6900	5200	270	970	1200	<0.50	<0.50	57	32	8.6	1700	7.4	-	2800	2.2	0.76	0.16	0.28	-	1.1
	26-Jun-2018	8.1	7390	12.0	8.22	7000	5300	250	980	1200	<1.0	<1.0	63	21	7.4	1700	8.2	-	2900	0.51	1.2	0.022	<0.010	0.022	1.5
	12-Jun-2019	7.92	7270	11.1	8.24	7500	5200	250	980	1200	<1.0	<1.0	64	23	<30	1700	9.4	-	2800	0.96	0.87	<0.10	0.11	<0.14	1.2
	4-Jun-2020	7.91	6680	8.0	7.97	6600	5000	220	920	1100	<1.0	<1.0	56	19	6.5	1700	15	-	2600	3.9	1.2	0.011	<0.010	<0.014	1.8
4-Jun-2021	7.53	6680	11.1	8.41	6810	5960	303	1020	1210	16.4	<5.0	67.6	32.5	9.29	1970	10.6	0.39	3250	104	0.935	0.690	<0.10	0.69	1.58	
MW20A	30-May-2014	8.0	3500	7.8	8.05	3300	2300	-	-	1300	<0.50	-	19	2.7	3.3	800	6.9	-	800	-	0.33	1.8	-	-	1
	28-May-2015	8.2	3310	7.9	8.03	3100	2100	54	1000	1200	<0.50	<0.50	18	2.4	3.5	750	8.3	-	680	0.96	0.23	6.6	0.061	6.7	0.93
	8-Jun-2016	8.6	3570	8.1	8.15	3300	2200	58	1100	1300	<0.50	<0.50	19	2.5	3.3	830	7.0	-	740	1.0	0.53	3.1	0.041	3.1	1.2
	7-Jun-2017	7.8	3000	6.9	8.34	3200	2100	54	1000	1200	5.5	<0.50	18	2.4	2.9	780	7.9	-	660	0.38	0.30	21	0.28	4.9	1.0
	26-Jun-2018	7.8	3120	6.5	8.08	3400	2300	64	1000	1300	<1.0	<1.0	21	2.8	3.4	850	8.1	-	820	0.042	0.28	2.8	0.036	2.8	1.0
	12-Jun-2019	7.6	2610	9.8	8.28	3400	2200	65	1000	1300	<1.0	<1.0	21	2.7	3.4	820	7.1	-	740	0.7	0.17	3	0.057	3.1	1.0</

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Monitoring Well	Date	Hydrocarbons						Organics			
		Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	
		Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	F1-BTEX (C ₆ -C ₁₀)	F2 (C ₁₀ -C ₁₆)	Total Phenols	Chemical Oxygen Demand	Dissolved Organic Carbon
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		AB Tier 1 Guideline ^{1,2}									
		0.005	0.024	0.0016	0.02	0.072	2.2	1.1	-	-	-
MW1B	6-Jun-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	98	9.9
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	120	10
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	47	8.8
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.27	-	-	11
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	130	9.3
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	250	8.5
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	135	12
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	42	8.6
MW8A	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	68	9
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	71	10
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	36	11
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	40	12
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	51	12
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	46	14
	29-May-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	34	12
	4-Jun-2021	0.00092	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	51	13.3
MW12B	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	71	21
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	61	22
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	71	24
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	52	21
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	53	19
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	80	35
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	52	21
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	237	22.2
MW18A	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	29	5.2
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	28	6.9
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	27	6.9
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	26	7.2
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	35	7.4
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	37	9.7
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	26	6.6
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	31	10.6
MW19A	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	20	6
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	25	7.5
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	19	7.1
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	27	7.1
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	23	8.0
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	23	8.3
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	20	8.6
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0025	32	10.0
MW20A	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	66	4.4
	28-May-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	28	5.7
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	19	4.3
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	35	6.4
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	26	5.4
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	38	6.9
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	<10	5.3
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	10	6.4

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed

BOLD - Greater than Tier 1 Guideline

italic - Detection limit greater than Tier 1 Guideline

* - laboratory filtered

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Parameter Group		Dissolved Metals																	
Parameter		Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Uranium	Zinc	
Unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}		0.007-0.05 ⁶	0.006	0.005	1	1.0	0.0004-0.00037 ³	0.05	0.007	0.3	0.001-0.007 ³	0.05	0.000005	0.007-0.17 ³	0.002	0.0001	0.01	0.03	
Monitoring Well	Date																		
MW1B	6-Jun-2014	-	<0.00060	-	0.039	-	<0.000025	0.0034	0.0057	0.64	0.00056	-	0.00003	0.0068	-	-	-	0.0034	
	28-May-2015	0.0044	<0.00060	0.0012	0.017	0.63	0.000029	<0.0010	0.0020	<0.060	<0.00020	0.10	<0.0000050	0.0038	<0.00020	<0.00010	0.0019	<0.0030	
	8-Jun-2016	0.061	<0.00060	0.0015	0.021	0.62	0.000029	<0.0010	0.0035	<0.060	<0.00020	0.057	<0.0000020	0.0060	0.00058	<0.00010	0.0022	<0.0030	
	7-Jun-2017	0.059	<0.00060	0.00098	0.024	0.64	0.000022	<0.0010	0.0018	<0.060	<0.00020	0.095	<0.0000020	0.0056	0.00035	<0.00010	0.0020	<0.0030	
	26-Jun-2018	0.003	<0.00060	0.0012	0.03	0.72	<0.00002	<0.0010	0.0021	<0.06	<0.00020	0.027	<0.0000021	0.0044	0.00023	<0.00010	0.0018	<0.0030	
	12-Jun-2019	0.034	<0.00060	0.00092	0.036	0.73	<0.000020	<0.0010	0.00075	<0.060	<0.00020	0.075	<0.0000020	0.0037	0.00021	<0.00010	0.0016	<0.0030	
	5-Jun-2020	0.25	<0.00060	0.0013	0.049	0.72	0.000027	<0.0010	0.0065	0.62	0.00063	0.10	0.000132	0.0048	<0.00020	<0.00010	0.0015	<0.0030	
4-Jun-2021	0.0366	<0.00020	0.00099	0.0356	0.588	0.000021	<0.00020	0.00234	0.025	<0.00010	0.0462	<0.0000050	0.0038	<0.00010	<0.00020	0.00124	0.0209		
MW8A	30-May-2014	-	<0.00060	-	0.041	-	<0.000025	<0.0010	0.00047	0.31	<0.00020	-	<0.0000050	0.0023	-	-	-	0.007	
	28-May-2015	0.0043	<0.00060	0.0014	0.025	0.68	<0.000020	<0.0010	0.00064	<0.060	<0.00020	0.017	<0.0000050	0.0020	<0.00020	<0.00010	0.00071	<0.0030	
	8-Jun-2016	0.0093	<0.00060	0.0021	0.045	0.72	<0.000020	<0.0010	0.00042	<0.060	<0.00020	0.015	<0.0000020	0.0023	<0.00020	<0.00010	0.00092	<0.0030	
	7-Jun-2017	0.0088	<0.00060	0.0019	0.049	0.77	<0.000020	<0.0010	<0.00020	<0.060	<0.00020	0.025	<0.0000020	0.0011	<0.00020	<0.00010	0.00074	<0.0030	
	26-Jun-2018	0.0079	<0.00060	0.0027	0.044	0.73	<0.00002	<0.0010	0.00055	<0.06	<0.00020	0.042	0.0000025	0.0012	<0.00020	<0.00010	0.00056	<0.0030	
	12-Jun-2019	0.0050	<0.00060	0.0032	0.05	0.76	<0.000020	<0.0010	0.00097	<0.060	<0.00020	0.10	<0.0000020	0.001	<0.00020	<0.00010	0.00055	<0.0030	
	29-May-2020	0.0041	<0.00060	0.0039	0.040	0.67	<0.000020	<0.0010	0.00058	<0.060	<0.00020	0.08	<0.0000019	0.0008	<0.00020	<0.00010	0.00050	<0.0030	
4-Jun-2021	0.017	<0.00020	0.00435	0.0455	0.635	<0.000010	<0.00020	0.00056	<0.020	<0.00010	0.0852	<0.0000050	<0.00010	<0.00010	<0.00020	0.000451	0.0164		
MW12B	30-May-2014	-	<0.00060	-	<0.10	-	<0.000050	<0.010	<0.0020	<0.60	<0.0020	-	<0.0000050	<0.0050	-	-	-	<0.030	
	28-May-2015	<0.060	<0.012	<0.0040	<0.10	0.56	<0.00040	<0.020	<0.0040	<0.60	<0.0040	0.43	<0.0000050	<0.010	<0.0040	<0.020	0.019	<0.060	
	8-Jun-2016	<0.0030	<0.00060	0.00088	<0.010	0.57	0.000027	<0.0010	0.0023	0.13	<0.00021	0.36	<0.0000020	0.0030	0.00029	<0.00010	0.021	0.0061	
	7-Jun-2017	0.0037	<0.00060	0.00067	<0.10	0.55	<0.000020	<0.0010	0.0015	<0.6	<0.00020	0.42	<0.0000020	0.0012	<0.00020	<0.00010	0.025	<0.0030	
	26-Jun-2018	<0.003	<0.00060	0.00066	<0.10	0.59	<0.00002	<0.0010	0.0027	<0.60	<0.00020	0.3	<0.000002	0.0022	0.00022	<0.00010	0.018	<0.0030	
	12-Jun-2019	<0.0030	<0.00060	0.00086	<1.0	0.6	<0.000020	<0.0010	0.0041	<0.60	<0.00020	0.39	<0.0000020	0.0032	0.00037	<0.00010	0.048	0.0033	
	4-Jun-2020	<0.0030	<0.00060	0.00075	<0.010	0.45	<0.000020	<0.0010	0.0018	0.081	<0.00020	0.31	<0.0000019	0.0012	0.00024	<0.00010	0.05	<0.0030	
4-Jun-2021	0.216	<0.00050	0.00068	0.0200	0.623	<0.000025	<0.00050	0.0024	0.196	<0.00025	0.146	<0.0000050	0.0059	<0.00025	<0.000050	0.0186	0.0190		
MW18A	30-May-2014	-	<0.00060	-	<0.10	-	<0.000025	<0.0010	0.00057	<0.60	<0.0033	-	<0.0000050	0.0044	-	-	-	0.0033	
	28-May-2015	0.0046	<0.00060	0.0010	0.089	0.78	<0.000020	<0.0010	0.00025	<0.060	<0.00020	0.045	<0.0000050	0.0039	<0.00020	<0.00010	0.00026	<0.0030	
	8-Jun-2016	0.029	<0.00060	0.00092	0.091	0.81	<0.000020	<0.0010	0.00023	0.11	<0.00020	0.059	<0.0000020	0.0035	<0.00020	<0.00010	0.00013	<0.0030	
	7-Jun-2017	0.0045	<0.00060	0.001	0.1	0.83	<0.000020	<0.0010	0.00038	<0.060	<0.00020	0.040	<0.0000020	0.0024	<0.00020	<0.00010	0.00026	<0.0030	
	26-Jun-2018	0.0074	<0.00060	0.0013	0.1	0.83	<0.00002	<0.0010	<0.00020	<0.06	<0.00020	0.049	<0.000002	0.0025	<0.00020	<0.00010	0.00029	<0.0030	
	12-Jun-2019	<0.0030	<0.00060	0.001	0.1	0.85	<0.000020	<0.0010	0.00066	<0.060	<0.00020	0.034	<0.0000020	0.0021	<0.00020	<0.00010	0.0003	<0.0030	
	4-Jun-2020	<0.0030	<0.00060	0.0013	0.08	0.81	<0.000020	<0.0010	0.0039	<0.060	<0.00020	0.049	<0.0000019	0.0022	<0.00020	<0.00010	0.0001	<0.0030	
4-Jun-2021	0.0030	<0.00010	0.00137	0.0987	0.779	<0.0000050	<0.00010	<0.00020	0.027	<0.000050	0.0368	<0.0000050	0.00113	<0.000050	<0.00010	0.000194	0.0190		
MW19A	30-May-2014	-	<0.00060	-	<0.10	-	0.000055	<0.010	<0.0020	<0.60	<0.0020	-	<0.0000050	<0.0050	-	-	-	<0.030	
	28-May-2015	<0.030	<0.00060	<0.0020	<0.010	0.40	<0.00020	<0.010	<0.0020	<0.060	<0.0020	0.39	<0.0000050	<0.0050	<0.0020	<0.010	0.005	<0.030	
	8-Jun-2016	0.0072	<0.00060	0.00065	<0.010	0.41	0.000039	<0.0010	0.0014	<0.060	<0.00020	0.36	<0.0000020	0.0028	<0.00020	<0.00010	0.006	0.0082	
	7-Jun-2017	<0.0030	<0.00060	0.00054	<0.10	0.43	<0.000020	<0.0010	0.00041	<0.60	<0.00020	0.40	<0.0000020	0.0017	<0.00020	<0.00010	0.006	<0.0030	
	26-Jun-2018	<0.003	<0.00060	0.00056	<0.10	0.47	<0.00002	<0.0010	0.00022	<0.6	<0.00020	0.71	<0.000002	0.0029	<0.00020	<0.00010	0.006	<0.0030	
	12-Jun-2019	<0.0030	<0.00060	0.00056	<1.0	0.45	<0.000020	<0.0010	0.00078	<0.60	<0.00020	0.4	<0.0000020	0.0015	<0.00020	<0.00010	0.007	<0.0030	
	4-Jun-2020	<0.0030	<0.00060	0.00091	0.026	0.41	<0.000020	<0.0010	0.0011	0.12	<0.00020	0.53	<0.0000019	0.0037	<0.00020	<0.00010	0.0075	<0.0030	
4-Jun-2021	0.0020	0.00057	0.00082	0.0167	0.411	<0.0000050	<0.00010	<0.00020	<0.010	<0.000050	0.299	<0.0000050	0.00276	0.00098	<0.00010	0.00818	0.0181		
MW20A	30-May-2014	-	<0.00060	-	0.025	-	<0.000025	0.0019	0.0036	0.44	0.0003	-	<0.0000050	0.0031	-	-	-	0.0036	
	28-May-2015	0.0052	<0.00060	0.00037	0.015	0.80	<0.000020	<0.0010	0.00075	<0.060	<0.00020	0.026	<0.0000050	0.0015	<0.00020	<0.00010	0.0015	<0.0030	
	8-Jun-2016	0.0040	<0.00060	0.00051	0.018	0.92	<0.000020	<0.0010	0.00038	<0.060	<0.00020	0.026	<0.0000020	0.0011	0.0014	<0.00010	0.0016	<0.0030	
	7-Jun-2017	0.0078	<0.00060	0.00040	0.027	0.79	<0.000020	<0.0010	0.00031	<0.060	<0.00020	0.031	<0.0000020	0.0014	<0.00020	<0.00010	0.0015	<0.0030	
	26-Jun-2018	0.0040	<0.00060	0.00040	0.022	0.88	<0.00002	<0.0010	0.00088	<0.06	<0.00020	0.016	0.000002	0.0012	<0.00020	<0.00010	0.0015	<0.0030	
	12-Jun-2019	0.020	<0.00060	0.00042	0.023	0.88	<0.000020	<0.0010	0.00076	<0.060	<0.00020	0.011	<0.0000020	0.001	<0.00020	<0.00010	0.0016	<0.0030	
	4-Jun-2020	<0.0030	<0.00060	0.00033	0.020	0.69	<0.000020	<0.0010	0.00030	<0.060	<0.00020	0.089	<0.0000019	0.0010	<0.00020	<0.00010	0.0017	<0.0030	
3-Jun-2021	<0.0050	<0.00050	<0.00050	0.0284	0.87	<0.000025	<0.00050	0.0014	<0.050	<0.00025	0.0185	<0.0000050	<0.0025	<0.00025	<0.000050	0.00189	0.0279		

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- italic* - Detection limit greater than Tier 1 Guideline
- * - laboratory filtered

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Parameter Group		Volatile Organic Compounds (VOCs)																		
Parameter	Unit	Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethene	Methyl t-Butyl Ether (MTBE)	Methylene Chloride	Methyl Methacrylate	Tetrachloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichloroethene	Trihalomethanes	Vinyl chloride	
AB Tier 1 Guideline ^{1,2}		0.002	0.0013	0.08	0.1	0.0007	0.001	0.005	0.014	0.015	0.05	0.47	0.01	0.008	0.015	0.014	0.005	0.1	0.002	
Monitoring Well	Date																			
MW1B	6-Jun-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW8A	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	29-May-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW12B	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW18A	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW19A	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW20A	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28-May-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute)
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Monitoring Well	Date	Field			Routine																Nutrients				
		Parameter Group		Temperature	Parameter		Total Dissolved Solids	Hardness	Alkalinity (total as CaCO ₃)	Bicarbonate	Carbonate	Hydroxide	Calcium	Magnesium	Potassium	Sodium	Chloride	Fluoride	Sulphate	Ionic Balance	Ammonia-N	Nitrate (N)	Nitrite (N)	Nitrate and Nitrite (N)	Total Kjeldahl Nitrogen
		pH	Electrical Conductivity		pH	Electrical Conductivity																			
Unit	Unit	pH Units	µS/cm	°C	pH Units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}		6.5-8.5	1000	-	6.5-8.5	1000	500	-	-	-	-	-	-	-	200	100	1	128-429 ³	-	0.018-190 ⁴	3	0.02-0.20 ⁵	100	-	
MW21A	6-Jun-2014	9.9	2120	8.3	8.18	2000	1200	-	-	1300	<0.50	-	4.4	0.47	1.8	470	9.3	-	90	-	0.068	2.3	-	-	1.4
	4-Jun-2015	8.3	2110	8.4	8.19	2000	1200	13	1100	1300	<0.50	<0.50	4.4	0.44	1.9	490	9.4	-	72	0.92	0.12	1.2	0.012	1.2	1.7
	8-Jun-2016	7.88	2140	7.9	8.29	2000	1200	14	1100	1300	<0.50	<0.50	4.7	0.45	1.7	490	8.7	-	71	0.93	0.12	1.3	0.023	1.3	0.81
	7-Jun-2017	7.9	2030	7.5	8.41	2000	1200	12	1100	1300	11	<0.50	4.3	0.40	1.5	480	11	-	65	4.4	0.071	4.1	0.064	0.96	0.96
	26-Jun-2018	7.9	2240	7.8	8.35	2000	1300	12	1100	1300	8	<1.0	4.3	0.40	1.7	530	11	-	63	0.25	0.039	0.62	<0.010	0.62	0.92
	17-Jun-2019	7.93	2140	13.6	8.51	2100	1200	12	1100	1200	47	<1.0	4.3	0.42	1.6	470	11	-	66	5.0	0.097	0.98	<0.010	0.98	0.73
	5-Jun-2020	7.88	1994	7.7	8.41	2000	1200	13	1000	1200	11	<1.0	4.6	0.47	1.7	540	10	-	68	4.1	0.063	1.4	<0.010	1.4	0.47
3-Jun-2021	7.73	1857	9.9	8.63	1790	1330	15.6	1110	1290	33.8	<5.0	5.24	0.6	2.14	605	8.2	0.76	39.1	114	0.389	0.36	<0.050	0.36	2.58	
MW22A	6-Jun-2014	9.9	5640	7.4	7.83	5300	4100	-	-	940	<0.50	-	36	3.7	4.1	1300	11	-	2200	-	<0.050	16	-	-	1.2
	4-Jun-2015	-	-	-	8.08	5300	3800	100	790	960	<0.50	<0.50	36	3.6	4.7	1200	12	-	2000	0.93	0.11	16	0.011	16	0.99
	8-Jun-2016	7.76	5600	10.0	8.09	5300	3800	100	790	960	<0.50	<0.50	35	3.4	4.1	1200	11	-	2000	0.93	<0.050	17	<0.010	17	0.070
	7-Jun-2017	7.6	5290	9	8.33	5200	3800	110	780	950	2.4	<0.50	36	3.6	4.6	1300	13	-	1900	1.2	0.15	70	<0.033	-	1
	26-Jun-2018	7.74	5710	7.2	8.08	5300	3800	100	770	940	<1.0	<1.0	36	3.3	4.3	1300	13	-	1900	1.1	0.049	14	<0.010	14	0.88
	17-Jun-2019	7.82	5532	10	8.33	5300	3700	100	770	920	8.9	<1.0	35	4	4.2	1300	12	-	1800	2.2	0.074	18	0.019	18	0.9
	5-Jun-2020	7.51	5360	9.1	8.24	5300	3800	120	730	890	<1.0	<1.0	40	4.0	4.4	1300	13	-	1900	3.5	0.24	17	0.033	17	0.63
3-Jun-2021	7.85	4840	11.5	8.45	4380	3880	106	778	921	14.0	<5.0	36.3	3.84	4.3	1300	10.7	0.31	2000	101	0.084	12.9	<0.050	12.9	1.4	
MW23A	30-May-2014	8.5	2250	7.9	8.48	2200	1400	-	-	1300	28	-	5.4	0.63	1.8	570	17	-	110	-	0.60	<0.010	-	-	1.5
	4-Jun-2015	8.8	2240	8.9	8.44	2100	1300	12	1100	1300	17	<0.50	4.1	0.48	2.2	500	20	-	90	0.90	0.76	<0.010	<0.010	<0.010	1.4
	8-Jun-2016	8.65	2240	8.6	8.53	2100	1300	12	1100	1300	26	<0.50	4.1	0.49	2.0	560	18	-	85	1.0	0.76	<0.010	<0.010	<0.020	1.5
	7-Jun-2017	8.8	2310	8.5	8.75	2100	1300	13	1100	1300	54	<0.50	4.4	0.47	2.0	570	21	-	77	0.52	0.93	<0.044	<0.033	-	1.6
	26-Jun-2018	8.6	2380	6.8	8.51	2200	1300	12	1100	1300	31	<1.0	4.1	0.49	2.0	560	20	-	88	0.13	0.79	<0.020	<0.010	<0.020	1.5
	17-Jun-2019	8.1	2410	11.6	8.70	2200	1300	12	1100	1200	85	<1.0	4	0.54	1.8	560	19	-	85	0.59	0.79	<0.010	<0.010	<0.014	1.3
	5-Jun-2020	8.74	2170	7.8	8.63	2200	1400	10	1000	1200	42	<1.0	3.2	0.54	1.9	590	19	-	120	5.3	0.84	<0.010	<0.010	<0.014	0.83
3-Jun-2021	9.01	2020	9.9	8.95	1860	1360	8.7	1120	1220	74.4	<5.0	2.67	0.50	1.85	562	16.7	1.13	102	98.4	0.829	0.10	<0.050	<0.11	1.38	
MW25A	6-Jun-2014	10	2220	7.1	8.28	2000	1200	-	-	1400	<0.50	-	4.7	0.49	1.9	480	8	-	14	-	0.42	0.97	-	-	1.1
	4-Jun-2015	8.6	2190	8.3	8.39	2100	1200	13	1200	1400	11	<0.50	4.6	0.44	2.3	490	9.2	-	13	0.91	0.41	0.85	0.21	1.1	1.1
	8-Jun-2016	8.39	2130	9.4	8.45	2100	1300	15	1200	1400	19	<0.50	5.1	0.47	1.8	540	8.4	-	4.3	1.0	0.62	0.18	0.029	0.21	1.2
	7-Jun-2017	8.4	2050	8.2	8.55	2000	1200	13	1200	1400	28	<0.50	4.5	0.42	1.7	490	8.9	-	3.1	4.6	0.55	2	0.27	0.53	1.2
	26-Jun-2018	8.5	2320	6.5	8.51	2100	1300	14	1200	1400	30	<1.0	4.7	0.45	1.8	550	9.4	-	<1.0	0.22	0.76	<0.020	<0.010	<0.020	1.2
	17-Jun-2019	8.17	2120	10.8	8.58	2100	1300	13	1200	1300	68	<1.0	4.6	0.45	1.7	540	8.7	-	<1.0	0.54	0.71	<0.010	0.081	0.081	1
	5-Jun-2020	8.32	2080	8.6	8.51	2100	1300	14	1100	1300	28	<1.0	4.9	0.49	2	570	9.3	-	2.2	5.1	0.66	0.52	0.10	0.62	1.2
3-Jun-2021	8.49	1920	10.4	8.77	1760	1400	17.1	1230	1390	52.7	<5.0	5.83	0.61	2.15	641	7.8	0.925	1.49	114	0.786	0.123	0.011	0.134	0.91	
MW26A	6-Jun-2014	9.9	2910	6.7	8.45	2700	1800	-	-	1000	15	-	9.5	1.4	2.4	680	5.9	-	610	-	<0.050	1.6	-	-	0.78
	4-Jun-2015	-	-	-	8.38	2700	1700	28	900	1100	8.6	<0.50	9.1	1.2	2.7	650	5.3	-	520	1.0	<0.050	0.94	<0.010	0.94	1.7
	8-Jun-2016	-	-	-	8.53	2600	1700	26	910	1100	23	<0.50	8.7	1.1	2.5	640	5.0	-	490	1.0	<0.050	1.0	0.075	1.1	1.2
	7-Jun-2017	-	-	-	8.56	2600	1700	26	900	1100	23	<0.50	8.5*	1.2*	2.4*	670*	5.4	-	510	1	<0.015	5.7	<0.033	1.3	0.77
	26-Jun-2018	8.6	2960	7.0	8.51	2700	1700	29	910	1100	24	<1.0	9.5	1.2	2.4	640	5.9	-	510	0.78	<0.015	0.92	<0.010	0.92	1.8
	17-Jun-2019	8.43	2850	18.7	-	-	-	-	-	-	-	-	8.2	1	2.3	650	-	-	-	-	0.021	-	-	-	0.75
	5-Jun-2020	-	-	-	8.51	2600	1700	27	850	990	24	<1.0	9.2	1.1	2.3	670	6	-	510	3.2	0.028	1.5	<0.010	1.5	1.6
3-Jun-2021	-	-	Insufficient volume	8.72	2290	1910	34.9	909	1030	38.0	<5.0	11.6	1.44	3.02	811	4.6	0.77	527	123	<0.050	1.63	<0.050	1.63	0.36	
MW27A	30-May-2014	8.3	2890	7.0	8.52	2800	2000	-	-	920	27	-	9.0	1.2	2.1	730	6.2	-	770	-	0.97	0.11	-	-	1.2
	4-Jun-2015	8.9	2880	10.3	8.38	2900	1900	26	780	930	7.5	<0.50	8.5	1.1	2.5	690	5.2	-	730	0.99	0.63	0.046	0.17	0.22	1.2
	8-Jun-2016	8.62	2860	6.2	8.57	2800	1800	25	730	850	21	<0.50	8.5	1.0	2.2	620	5.0	-	710	0.94	0.86	0.21	0.071	0.28	0.76
	7-Jun-2017	8.5	2810	8.2	8.60	2900	1900	26	800	920	26	<0.50	8.7	1	2.3	700	6.9	-	720	0.027	0.86	0.47	0.28	-	1.2
	26-Jun-2018	7.96	3120	6.5	8.41	2800	1900	25	790	950	11	<1.0	8.4	1	2.2	740	5.1	-	700	3.6	0.61	0.26	<0.010	0.26	1.1
	17-Jun-2019	8.48	3050	11.8	8.59	2900	1900	25	790	860	49	<1.0	8.4	0.97	2.1	700	5.5	-	660	1.8	0.66	0.33	0.029	0.36	0.85
	4-Jun-2020	8.4	2930	6.2	8.47	2800	1900	26	790	930</															

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Monitoring Well	Date	Hydrocarbons						Organics			
		Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	Parameter	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	
		Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	F1-BTEX (C ₆ -C ₁₀)	F2 (C ₁₀ -C ₁₆)	Total Phenols	Chemical Oxygen Demand	Dissolved Organic Carbon
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
		AB Tier 1 Guideline ^{1,2}									
		0.005	0.024	0.0016	0.02	0.072	2.2	1.1	-	-	-
MW21A	6-Jun-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	96	7
	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	74	8.4
	8-Jun-2016	<0.00040	0.00074	<0.00040	<0.00080	-	<0.10	<0.10	-	28	7.1
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	43	9.2
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0023	49	9.1
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	39	10
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	32	8.5
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	74	8.9
MW22A	6-Jun-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	92	5.1
	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	49	7.0
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	21	5.4
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	36	6.7
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.002	67	6.8
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	43	6.4
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	33	6.1
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	47	6.3
MW23A	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	81	16
	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	55	16
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	55	16
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	57	21
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0021	67	17
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	59	19
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	73	14
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	45	14.9
MW25A	6-Jun-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	32	7.9
	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	35	8.1
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	29	7.9
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	25	9.6
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0023	29	8.7
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	32	10
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	0.0023	23	8.8
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	22	8.8
MW26A	6-Jun-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	29	7.8
	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.26	-	-	9.3
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	51	10
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	26	-
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.002	120	9.4
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	39	-
	5-Jun-2020	-	-	-	-	-	-	-	<0.0015	66	8.9
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0039	25	11.5
MW27A	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	43	11
	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	34	11
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	39	11
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	30	14
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	32	11
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	40	13
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	31	12
	2-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0059	34	11.1

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed

BOLD - Greater than Tier 1 Guideline

italic - Detection limit greater than Tier 1 Guideline

* - laboratory filtered

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Parameter Group		Dissolved Metals																	
Parameter		Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Uranium	Zinc	
Unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}		0.007-0.05 ⁶	0.006	0.005	1	1.0	0.0004-0.00037 ³	0.05	0.007	0.3	0.001-0.007 ³	0.05	0.000005	0.007-0.17 ³	0.002	0.0001	0.01	0.03	
Monitoring Well	Date																		
MW21A	6-Jun-2014	-	<0.00060	-	0.073	-	0.000034	0.0014	0.0015	0.22	0.00024	-	0.0000058	0.0027	-	-	-	<0.0030	
	4-Jun-2015	0.0058	<0.00060	0.00093	0.062	0.83	0.000067	<0.0010	0.0012	<0.060	<0.00020	<0.0040	<0.0000050	0.0029	0.00022	<0.00010	0.0034	<0.0030	
	8-Jun-2016	0.0047	<0.00060	0.0010	0.073	0.93	0.000079	<0.0010	0.0025	<0.060	<0.00020	<0.0040	<0.0000020	0.0031	<0.00020	<0.00010	0.0033	<0.0030	
	7-Jun-2017	0.0043	<0.00060	0.0011	0.096	0.82	0.000099	<0.0010	0.0016	<0.060	<0.00020	0.0047	<0.0000020	0.0028	0.00020	<0.00010	0.0036	<0.0030	
	26-Jun-2018	<0.003	<0.00060	0.0012	0.081	0.90	0.00012	<0.0010	0.0021	<0.06	<0.00020	0.0048	-	0.0031	0.00025	<0.00010	0.0035	<0.0030	
	17-Jun-2019	0.058	0.00065	0.0011	0.09	0.85	0.00014	<0.0010	0.005	0.13	0.00041	0.014	<0.0000020	0.0027	<0.00020	<0.00010	0.0033	0.01	
	5-Jun-2020	0.0038	<0.00060	0.00078	0.070	0.89	0.00027	<0.0010	0.0020	<0.060	<0.00020	0.0073	<0.0000019	0.0027	0.00023	<0.00010	0.0036	<0.0030	
3-Jun-2021	0.0289	<0.00050	0.00273	0.117	0.935	0.000209	<0.00050	0.0033	<0.050	<0.00025	0.228	<0.0000050	0.0047	<0.00025	<0.000050	0.00440	0.0289		
MW22A	6-Jun-2014	-	<0.00060	-	0.014	-	0.000059	<0.0010	0.00084	0.065	<0.00020	-	<0.0000050	0.0024	-	-	-	<0.0030	
	4-Jun-2015	<0.030	<0.00060	<0.0020	<0.010	0.82	<0.00020	<0.010	<0.0020	<0.060	<0.0020	0.018	<0.0000050	<0.0050	<0.0020	<0.0010	0.004	<0.030	
	8-Jun-2016	0.0047	<0.00060	0.00033	<0.10	0.85	0.000026	<0.0010	0.0024	<0.60	<0.00020	<0.040	<0.0000020	0.0051	<0.00020	<0.00010	0.0042	0.0033	
	7-Jun-2017	0.0058	<0.00060	0.0003	<0.10	0.9	0.000058	<0.0010	0.002	<0.60	<0.00020	<0.040	<0.0000020	0.0023	<0.00020	<0.00010	0.0041	<0.0030	
	26-Jun-2018	<0.003	<0.00060	0.00028	<0.10	0.84	0.000047	<0.0010	0.0012	<0.6	<0.00020	<0.04	-	0.0022	<0.00020	<0.00010	0.0041	<0.0030	
	17-Jun-2019	0.004	<0.00060	<0.00020	<0.10	0.88	0.00017	0.0014	0.002	<0.60	<0.00020	<0.040	<0.0000020	0.0034	<0.00020	<0.00010	0.0041	<0.0030	
	5-Jun-2020	<0.0030	<0.00060	0.00029	<0.010	0.86	0.00034	<0.0010	0.0009	<0.060	<0.00020	0.035	<0.0000019	0.0032	0.00026	<0.00010	0.0044	0.0032	
3-Jun-2021	0.0087	<0.00050	<0.00050	0.00976	0.815	0.000193	0.00055	0.0022	<0.050	<0.00025	0.00599	<0.0000050	0.0026	<0.00025	<0.000050	0.00394	0.0197		
MW23A	30-May-2014	-	0.00082	-	0.040	-	0.000075	<0.0010	0.0028	0.38	0.00088	-	<0.0000050	0.0097	-	-	-	0.0031	
	4-Jun-2015	0.0043	<0.00060	0.0065	0.038	0.77	<0.000020	<0.0010	0.00042	<0.060	<0.00020	0.0071	<0.0000050	0.0032	<0.00020	<0.00010	0.0032	<0.0030	
	8-Jun-2016	0.0049	<0.00060	0.0058	0.050	0.88	<0.000020	<0.0010	0.00049	<0.060	<0.00020	0.0079	<0.0000020	0.0031	<0.00020	<0.00010	0.0027	<0.0030	
	7-Jun-2017	0.010	0.0013	0.009	0.063	0.85	<0.000020	<0.0010	<0.00020	<0.060	<0.00020	0.0064	<0.0000020	0.0095	<0.00020	<0.00010	0.0049	<0.0030	
	26-Jun-2018	<0.003	<0.00060	0.0056	0.058	0.87	0.000026	<0.0010	0.00029	<0.06	<0.00020	0.0084	<0.0000020	0.0022	<0.00020	<0.00010	0.0024	<0.0030	
	17-Jun-2019	0.016	<0.00060	0.0057	0.061	0.82	<0.000020	<0.0010	0.0006	<0.060	<0.00020	0.008	<0.0000020	0.0032	<0.00020	<0.00010	0.0017	<0.0030	
	5-Jun-2020	0.0054	<0.00060	0.0064	0.055	0.86	<0.000020	<0.0010	0.00038	<0.06	<0.00020	0.005	<0.0000019	0.0016	0.0031	<0.00010	0.0018	<0.0030	
3-Jun-2021	0.0247	<0.00050	0.0047	0.0495	0.801	<0.000025	<0.00050	<0.0010	<0.050	<0.00025	0.00219	<0.0000050	<0.0025	0.00058	<0.000050	0.00138	0.0202		
MW25A	6-Jun-2014	-	0.00078	-	0.081	-	<0.000025	<0.0010	0.0009	<0.060	<0.00020	-	<0.0000050	0.0025	-	-	-	<0.0030	
	4-Jun-2015	0.0051	0.0011	0.0021	0.081	0.81	0.000022	<0.0010	0.0009	<0.060	<0.00020	0.051	<0.0000050	0.0032	0.00041	<0.00010	0.0015	<0.0030	
	8-Jun-2016	0.0046	<0.00060	0.0019	0.088	0.94	<0.000020	<0.0010	0.00045	<0.060	<0.00020	0.10	<0.0000020	0.0023	<0.00020	<0.00010	0.00074	<0.0030	
	7-Jun-2017	0.0043	0.00064	0.0023	0.100	0.83	<0.000020	<0.0010	<0.00020	<0.060	<0.00020	0.07	<0.0000020	0.0022	<0.00020	<0.00010	0.0012	<0.0030	
	26-Jun-2018	0.0034	<0.00060	0.0024	0.083	0.89	<0.00002	<0.0010	<0.00020	0.069	<0.00020	0.13	<0.000002	0.0015	<0.00020	<0.00010	0.00036	<0.0030	
	17-Jun-2019	0.012	<0.00060	0.0023	0.098	0.85	<0.000020	<0.0010	0.002	<0.060	0.0002	0.063	<0.0000020	0.0021	<0.00020	<0.00010	0.001	<0.0030	
	5-Jun-2020	<0.0030	0.00076	0.002	0.099	0.89	<0.000020	<0.0010	0.0055	<0.060	<0.00020	0.051	<0.0000019	0.0023	<0.00020	<0.00010	0.0018	0.0033	
3-Jun-2021	<0.0050	<0.00050	0.00288	0.100	0.97	<0.000025	<0.00050	0.0011	<0.050	<0.00025	0.112	<0.0000050	<0.0025	<0.00025	<0.000050	0.000452	<0.0050		
MW26A	6-Jun-2014	-	<0.00060	-	0.045	-	0.000034	0.0012	0.0018	0.15	0.0012	-	<0.0000050	0.0024	-	-	-	0.013	
	4-Jun-2015	0.0049	<0.00060	0.0021	0.033	0.74	<0.000020	<0.0010	0.0015	<0.060	<0.00020	0.0098	<0.0000050	0.0017	<0.00020	<0.00010	0.00063	<0.0030	
	8-Jun-2016	0.15	<0.00060	0.0024	0.047	0.85	<0.000020	<0.0010	0.0058	0.084	0.00083	<0.0040	<0.0000020	0.0039	<0.00020	<0.00010	0.00065	<0.0030	
	7-Jun-2017	0.0099 *	<0.00060 *	0.0023 *	0.054 *	0.81 *	<0.000020 *	<0.0010 *	0.004 *	<0.060 *	<0.060 *	<0.0040 *	-	8.5 *	0.0019 *	-	0.00063 *	0.0032 *	
	26-Jun-2018	0.0038	<0.00060	0.0021	0.053	0.80	<0.00002	<0.0010	0.0034	<0.06	<0.00020	0.005	0.000003	0.0020	<0.00020	<0.00010	0.00069	<0.0030	
	17-Jun-2019	0.0073	<0.00060	0.002	0.048	0.80	<0.000020	<0.0010	0.0043	<0.060	<0.00020	0.0077	-	0.0016	<0.00020	<0.00010	0.00059	<0.0030	
	5-Jun-2020	0.0084	<0.00060	0.0018	0.054	0.83	<0.000020	<0.0010	0.0038	<0.060	<0.00020	<0.0040	<0.0000019	0.00073	<0.00020	<0.00010	0.00062	<0.0030	
3-Jun-2021	0.0147	<0.00050	0.00264	0.0808	0.953	0.000039	<0.00050	0.0055	<0.050	<0.00025	0.00997	<0.0000050	0.0026	<0.00025	<0.000050	0.000662	0.0284		
MW27A	30-May-2014	-	<0.00060	-	0.025	-	<0.000025	0.0031	0.0019	0.46	0.00077	-	<0.0000050	0.003	-	-	-	0.0049	
	4-Jun-2015	0.0043	<0.00060	0.0024	0.011	0.77	<0.000020	<0.0010	0.00053	<0.060	<0.00020	0.013	<0.0000050	0.0012	<0.00020	<0.00010	0.00055	<0.0030	
	8-Jun-2016	0.073	<0.00060	0.0028	0.014	0.75	<0.000020	<0.0010	0.00098	<0.060	<0.00020	0.011	0.0000021	0.0033	<0.00020	<0.00010	0.00065	<0.0030	
	7-Jun-2017	0.029	<0.00060	0.0030	0.016	0.83	<0.000020	<0.0010	0.0003	<0.060	<0.00020	0.012	<0.0000020	0.0014	<0.00020	<0.00010	0.00057	<0.0030	
	26-Jun-2018	0.006	<0.00060	0.0027	0.014	0.82	<0.00002	<0.0010	0.00047	<0.06	<0.00020	0.011	0.0000023	0.00073	<0.00020	<0.00010	0.00055	<0.0030	
	17-Jun-2019	0.0036	<0.00060	0.0023	0.013	0.81	<0.000020	<0.0010	0.00024	<0.060	<0.00020	0.011	<0.0000020	<0.00050	<0.00020	<0.00010	0.00054	<0.0030	
	4-Jun-2020	0.022	<0.00060	0.0025	0.014	0.79	<0.000020	<0.0010	0.00059	<0.060	<0.00020	0.012	<0.0000019	0.00054	<0.00020	<0.00010	0.00058	<0.0030	
2-Jun-2021	0.0211	<0.0001	0.00277	0.015	0.451	<0.000005	<0.00010	0.00104	0.014	<0.000050	0.0120	<0.000005	0.00056	0.000076	<0.000010	0.000444	0.0191		

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- italic* - Detection limit greater than Tier 1 Guideline
- * - laboratory filtered

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Parameter Group		Volatile Organic Compounds (VOCs)																		
Parameter	Unit	Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethene	Methyl t-Butyl Ether (MTBE)	Methylene Chloride	Methyl Methacrylate	Tetrachloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichloroethene	Trihalomethanes	Vinyl chloride	
AB Tier 1 Guideline ^{1,2}		0.002	0.0013	0.08	0.1	0.0007	0.001	0.005	0.014	0.015	0.05	0.47	0.01	0.008	0.015	0.014	0.005	0.1	0.002	
Monitoring Well	Date																			
MW21A	6-Jun-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW22A	6-Jun-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW23A	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW25A	6-Jun-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW26A	6-Jun-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW27A	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	
	2-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute)
- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Monitoring Well	Date	Field			Routine																Nutrients				
		Parameter	Unit	AB Tier 1 Guideline ^{1,2}	pH	Electrical Conductivity	Total Dissolved Solids	Hardness	Alkalinity (total as CaCO ₃)	Bicarbonate	Carbonate	Hydroxide	Calcium	Magnesium	Potassium	Sodium	Chloride	Fluoride	Sulphate	Ionic Balance	Ammonia-N	Nitrate (N)	Nitrite (N)	Nitrate and Nitrite (N)	Total Kjeldahl Nitrogen
		pH	µS/cm	°C	pH Units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
					6.5-8.5	1000	-	6.5-8.5	1000	500	-	-	-	-	-	200	100	1	128-429 ³	-	0.018-190 ⁴	3	0.02-0.20 ⁵	100	-
MW28A	30-May-2014	8.4	3630	6.2	8.46	3400	2500	-	-	830	19	-	13	1.4	2.5	850	5.3	-	1200	-	1.3	0.027	-	-	1.6
	4-Jun-2015	8.4	3590	8.5	8.34	3400	2400	38	710	850	3.4	<0.50	13	1.3	3.1	870	5.0	-	1100	1.1	1.1	<0.010	0.012	0.012	1.6
	8-Jun-2016	8.51	3380	7.7	8.54	3300	2200	35	660	780	16	<0.50	12	1.1	2.6	800	5.2	-	1000	1.0	1.2	0.066	0.030	0.096	1.7
	7-Jun-2017	8.5	3490	6.7	8.47	3300	2300	36	720	850	13	<0.50	13	1.2	2.7	810	5.0	-	1000	0.99	1.4	0.044	<0.033	-	1.6
	26-Jun-2018	7.94	3380	8.6	8.43	3300	2300	35	720	850	15	<1.0	12	1.2	2.5	860	4.7	-	1000	3.6	1.1	0.047	0.037	0.084	1.5
	17-Jun-2019	8.47	3620	11.2	8.57	3400	2200	36	710	800	34	<1.0	12	1.1	2.5	810	5.2	-	960	2.4	1.3	0.041	0.046	0.087	1.7
	4-Jun-2020	8.27	3390	8.9	8.38	3300	2500	38	660	790	6.4	<1.0	13	1.3	2.6	850	4.8	-	1200	0.65	1.2	0.13	0.017	0.15	1.3
	2-Jun-2021	7.95	3130	8.9	8.57	2980	2340	37.0	695	807	20.3	<5.0	12.8	1.23	2.62	813	3.7	0.67	1090	98.7	1.24	<0.10	<0.050	<0.11	1.31
MW32A	4-Jun-2015	8.2	8660	7.6	8.16	8200	6700	370	790	960	<0.50	<0.50	120	15	11	2000	8.9	-	4100	0.92	3.5	<0.010	0.013	0.013	6.8
	8-Jun-2016	7.79	7910	8.2	8.25	8100	6500	360	800	980	<0.50	<0.50	120	15	8.4	2000	3.1	-	3900	1.0	2.9	<0.050	<0.050	<0.020	3.2
	7-Jun-2017	7.6	8490	7.3	8.12	8000	6100	350	850	1000	<0.50	<0.50	120	15	7.7	2000	3.2	-	3400	4.4	3.2	<0.22	0.71	-	3.2
	26-Jun-2018	7.51	13,260	11.7	8.00	8100	6300	360	840	1000	<1.0	<1.0	120	16	8.0	2100	2.8	-	3500	4.5	2.8	0.058	0.017	0.075	3.2
	12-Jun-2019	7.65	8,100	11.5	8.04	8200	5900	300	820	1000	<1.0	<1.0	120	<20	<30	1900	3.7	-	3300	2.8	2.9	<0.20	<0.20	<0.28	3.2
	29-May-2020	7.74	8100	8.1	8.12	8000	5800	320	670	810	<1.0	<1.0	110	12	6.5	2000	4.1	-	3200	7.6	3.0	0.11	0.26	0.37	3.1
	4-Jun-2021	7.86	7480	8.6	8.49	6950	6420	304	678	792	17.2	<5.0	102	11.9	6.89	1900	3.7	0.31	3990	92	2.43	0.34	<0.050	0.34	2.86
15MW35A	8-Jun-2016	-	-	-	8.60	1500	930	11	780	900	26	<0.50	3.8	0.36	2.2	370	36	-	41	0.95	0.83	<0.010	<0.010	<0.020	12
	7-Jun-2017	-	-	-	8.61	1600	950	10	830	960	23	<0.50	3.6	0.34	3.1	390	36	-	21	2.4	-	<0.044	<0.033	<0.010	-
	26-Jun-2018	-	-	-	8.44	1600	990	10	860	1000	16	<1.0	3.6	0.32	2.2	410	40	-	17	1.2	0.33	<0.020	<0.010	<0.020	7
	17-Jun-2019	8.6	1992	12.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.68	-	-	-	3.7
	5-Jun-2020	-	-	-	8.47	1700	1000	9.7	820	960	18	<1.0	3.4	0.3	1.9	450	40	-	16	5.6	0.37	<0.010	<0.010	<0.014	3.4
	3-Jun-2021	Insufficient volume			8.64	1510	1010	9.1	886	1020	27.6	<5.0	3.15	0.31	2.36	417	38.7	1.49	11.8	96.6	0.437	<0.020	<0.010	<0.022	3.97
15MW36A	8-Jun-2016	8.87	1590	9.1	8.66	1600	900	12	830	970	25	<0.50	3.9	0.41	1.4	390	7.4	-	<1.0	1.0	0.60	<0.010	<0.010	<0.020	1.3
	7-Jun-2017	8.8	1630	6.5	8.52	1600	930	9.5	880	1000	18	<0.50	3.3	0.32	1.3	380	7.1	-	2.9	2.7	0.52	<0.044	<0.033	<0.010	1.2
	26-Jun-2018	8.57	1609	9.2	8.52	1600	960	9.3	900	1000	24	<1.0	3.2	0.33	1.4	410	7.1	-	<1.0	0.69	0.63	<0.020	<0.010	<0.020	1.0
	12-Jun-2019	8.73	1680	9.9	8.71	1600	930	9	890	960	58	<1.0	3.2	0.23	1.5	380	8.9	-	1.8	3	0.69	0.018	<0.010	0.018	1.0
	5-Jun-2020	8.6	1574	7.8	8.55	1600	960	11	840	980	26	<1.0	3.6	0.42	1.4	440	8.2	-	<1.0	6.2	0.6	<0.010	<0.010	<0.014	1.4
	3-Jun-2021	8.81	1497	8.1	8.78	1410	972	8.9	913	1030	40.0	<5.0	2.97	0.36	1.42	411	6.42	1.61	0.49	98.1	0.622	0.06	<0.010	0.06	0.96

Notes:

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- ³ Guideline varies with hardness
- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH
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- Italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Parameter Group	Parameter	Hydrocarbons						Organics			
		Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	F1-BTEX (C ₆ -C ₁₀)	F2 (C ₁₀ -C ₁₆)	Total Phenols	Chemical Oxygen Demand	Dissolved Organic Carbon
Unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}		0.005	0.024	0.0016	0.02	0.072	2.2	1.1	-	-	-
Monitoring Well	Date										
MW28A	30-May-2014	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	42	9.6
	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	39	8.5
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	31	10
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	28	12
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	31	9.0
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	39	11.0
	4-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	18	9.1
	2-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.003	28	10.7
MW32A	4-Jun-2015	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	410	12
	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	26	7.9
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	19	7.2
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	39	7.6
	12-Jun-2019	<0.00040	0.0011	0.00043	0.0026	<0.00050	<0.10	<0.10	<0.0015	39	7.8
	29-May-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	0.28	<0.0015	26	8.9
	4-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0015	34	10.7
15MW35A	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.27	-	1100	15
	7-Jun-2017	0.00049	<0.00040	<0.00040	<0.00080	-	<0.10	<0.27	-	-	-
	26-Jun-2018	0.0030	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	-	0.0026	310	-
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0035	140	-
	5-Jun-2020	-	-	-	-	-	-	-	<0.0015	-	18
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	118	18.6
15MW36A	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	55	13
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	42	14
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0020	44	13
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	57	10
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	47	13
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	<0.0010	42	12.8

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- ³ Guideline varies with hardness
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- ⁵ Guideline varies with chloride
- ⁶ Guideline varies with pH

"-" No applicable guideline or not analyzed

BOLD - Greater than Tier 1 Guideline

Italic - Detection limit greater than Tier 1 Guideline

* - laboratory filtered

Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Parameter Group		Dissolved Metals																
Parameter		Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Uranium	Zinc
Unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
AB Tier 1 Guideline ^{1,2}		0.007-0.05 ⁶	0.006	0.005	1	1.0	0.0004-0.00037 ³	0.05	0.007	0.3	0.001-0.007 ³	0.05	0.000005	0.007-0.17 ³	0.002	0.0001	0.01	0.03
Monitoring Well	Date																	
MW28A	30-May-2014	-	<0.00060	-	0.015	-	<0.000025	<0.0010	0.0021	0.29	0.00022	-	<0.0000050	0.0024	-	-	-	0.0039
	4-Jun-2015	0.0046	<0.00060	0.0010	<0.010	0.74	<0.000020	<0.0010	0.00044	<0.060	<0.00020	0.029	<0.0000050	0.0014	<0.00020	<0.00010	0.00056	<0.0030
	8-Jun-2016	0.012	<0.00060	0.00084	<0.010	0.77	<0.000020	<0.0010	0.00085	<0.060	<0.00020	<0.0040	<0.0000020	0.0018	<0.00020	<0.00010	0.00031	<0.0030
	7-Jun-2017	0.005	<0.00060	0.00053	<0.010	0.82	<0.000020	<0.0010	<0.00020	<0.060	<0.00020	0.019	<0.0000020	0.00082	<0.00020	<0.00010	0.00025	<0.0030
	26-Jun-2018	<0.003	<0.00060	0.00085	<0.010	0.80	<0.000020	<0.0010	0.00041	<0.06	<0.00020	0.023	<0.000002	0.00079	<0.00020	<0.00010	0.00051	<0.0030
	17-Jun-2019	0.013	<0.00060	0.00064	0.011	0.80	<0.000020	<0.0010	0.00098	<0.060	-	-	-	-	-	-	-	-
	4-Jun-2020	0.014	<0.00060	0.00073	<0.010	0.78	<0.000020	<0.0010	0.0005	<0.060	<0.00020	0.027	<0.0000019	-	<0.00020	<0.00010	0.00039	<0.003
2-Jun-2021	0.0051	<0.00020	0.00076	0.00868	0.710	<0.000010	<0.00020	0.00051	<0.020	<0.00010	0.0231	<0.000005	<0.0010	<0.00010	<0.00020	0.000388	0.0180	
MW32A	4-Jun-2015	<0.030	<0.0060	0.0041	<0.10	0.85	<0.00020	<0.010	<0.0020	<0.60	<0.0020	0.15	<0.0000050	0.011	<0.0020	<0.0010	0.0080	<0.030
	8-Jun-2016	0.029	<0.00060	0.00051	0.015	1.2	<0.000020	0.0015	0.0031	0.12	<0.00020	0.12	0.0000023	0.0032	<0.00020	<0.00010	0.00016	0.015
	7-Jun-2017	0.008	<0.00060	0.00037	<0.10	1.2	0.000021	<0.0010	0.00073	<0.60	<0.00020	0.14	<0.0000020	0.0016	<0.00020	<0.00010	0.00014	<0.0030
	26-Jun-2018	0.008	<0.00060	0.00035	<0.10	1.2	0.000021	<0.0010	0.0082	<0.6	<0.00020	0.12	0.0000032	0.0026	<0.00020	<0.00010	0.00013	0.0091
	12-Jun-2019	<0.0030	<0.00060	0.00039	<1.0	1.1	<0.000020	<0.0010	0.0016	<0.60	<0.00020	0.11	<0.0000020	0.0011	0.00025	<0.00010	0.00011	<0.0030
	29-May-2020	<0.0030	<0.00060	0.00061	0.021	0.94	0.000027	<0.0010	0.0012	<0.060	<0.00020	0.16	<0.0000019	0.0018	<0.00020	<0.00010	0.00042	<0.0030
	4-Jun-2021	0.0051	<0.00050	0.00050	0.0139	0.916	<0.000025	<0.00050	0.0011	<0.050	<0.00025	0.151	<0.0000050	<0.0025	<0.00025	<0.000050	0.00030	0.0182
15MW35A	8-Jun-2016	0.092	<0.00060	0.0035	0.080	0.75	<0.000020	<0.0010	0.0011	0.11	<0.00020	0.012	<0.0000020	0.0053	<0.00020	<0.00010	0.0013	0.0035
	7-Jun-2017	0.055	<0.00060	0.0023	0.130	0.74	<0.000020	<0.0010	0.00065	<0.060	<0.00020	0.013	<0.0000020	0.0034	<0.00020	<0.00010	0.00095	<0.0030
	26-Jun-2018	0.12	<0.00060	0.0015	0.084	0.79	<0.00002	<0.0010	0.0022	0.28	<0.00020	0.028	-	0.0016	<0.00020	<0.00010	0.00073	<0.0030
	17-Jun-2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5-Jun-2020	0.0076	<0.00060	0.0011	0.078	0.82	<0.000020	<0.0010	0.0025	0.069	<0.00020	0.017	<0.0000019	0.0017	0.00026	<0.00010	0.00076	<0.0030
3-Jun-2021	0.0049	0.00046	0.00163	0.0732	0.762	0.0000056	0.00014	0.00478	0.058	0.000145	0.0198	<0.0000050	0.00212	0.00010	<0.000010	0.000734	0.0079	
15MW36A	8-Jun-2016	0.015	<0.00060	0.0012	0.031	0.82	<0.000020	<0.0010	0.0026	<0.060	<0.00020	0.022	0.000017	0.0019	0.00023	<0.00010	0.00037	0.0033
	7-Jun-2017	0.0093	<0.00060	0.00075	0.034	0.79	<0.000020	<0.0010	<0.00020	<0.060	<0.00020	0.032	<0.0000020	0.00085	<0.00020	<0.00010	0.00026	<0.0030
	26-Jun-2018	0.0071	<0.00060	0.001	0.033	0.84	<0.00002	<0.0010	0.00041	<0.06	<0.00020	0.039	0.0000026	0.0012	<0.00020	<0.00010	0.00058	<0.0030
	12-Jun-2019	0.047	<0.00060	0.00069	0.046	0.87	<0.000020	<0.0010	0.00099	0.076	<0.00020	0.033	<0.0000020	0.00067	<0.00020	<0.00010	0.00018	<0.0030
	5-Jun-2020	0.0043	<0.00060	0.00095	0.044	0.81	<0.000020	<0.0010	<0.00020	0.10	<0.00020	0.23	<0.0000019	0.0022	<0.00020	<0.00010	0.0011	<0.0030
	3-Jun-2021	0.0066	<0.00010	0.00085	0.058	0.771	0.0000075	<0.00010	0.00172	0.019	0.000066	0.190	<0.0000050	0.0008	0.000058	<0.000010	0.000233	0.0211

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Table 4c - Field and Groundwater Analytical Results Summary - Clay Shale Wells

Parameter Group		Volatile Organic Compounds (VOCs)																		
Parameter	Unit	Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethene	Methyl t-Butyl Ether (MTBE)	Methylene Chloride	Methyl Methacrylate	Tetrachloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichloroethene	Trihalomethanes	Vinyl chloride	
AB Tier 1 Guideline ^{1,2}		0.002	0.0013	0.08	0.1	0.0007	0.001	0.005	0.014	0.015	0.05	0.47	0.01	0.008	0.015	0.014	0.005	0.1	0.002	
Monitoring Well	Date																			
MW28A	30-May-2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	4-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
2-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
MW32A	4-Jun-2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	<0.00050	-	<0.00050
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	29-May-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
4-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
15MW35A	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	<0.00050	-	<0.00050
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	5-Jun-2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	
15MW36A	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	<0.00050	-	-	<0.00050	-	<0.00050
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050
3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	<0.0010	

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
- ² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute)
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- ⁶ Guideline varies with pH
- "-" No applicable guideline or not analyzed
- BOLD** - Greater than Tier 1 Guideline
- Italic* - Detection limit greater than Tier 1 guideline
- * - laboratory filtered

Table 4d - Field and Groundwater Analytical Results Summary - Lower Bedrock Wells

Monitoring Well	Date	Field			Routine															Nutrients					
		Parameter	Unit	AB Tier 1 Guideline ^{1,2}	pH	Electrical Conductivity	Total Dissolved Solids	Hardness	Alkalinity (total as CaCO ₃)	Bicarbonate	Carbonate	Hydroxide	Calcium	Magnesium	Potassium	Sodium	Chloride	Fluoride	Sulphate	Ionic Balance	Ammonia-N	Nitrate (N)	Nitrite (N)	Nitrate and Nitrite (N)	Total Kjeldahl Nitrogen
		pH Units	µS/cm	°C	pH Units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L
		6.5-8.5	1000	-	6.5-8.5	1000	500	-	-	-	-	-	-	-	200	100	1	128-429 ³	-	0.018-190 ⁴	3	0.02-0.20 ⁵	100	-	
15MW35-Deep	8-Jun-2016	8.22	4900	8.9	8.19	4700	2400	53	460	560	<0.50	<0.50	18	2.1	3.3	970	1100	-	25	1.0	1.1	0.25	<0.010	0.25	2.2
	7-Jun-2017	8.10	3920	10.0	8.13	5300	2800	58	410	500	<0.50	<0.50	20	2.1	3.8	1100	1400	-	13	2.3	1.2	<0.22	<0.16	<0.050	2.5
	26-Jun-2018	7.66	-	13.2	8.14	5100	2800	59	450	540	<1.0	<1.0	20	2.0	3.7	1100	1400	-	25	1.7	1.0	<0.02	<0.010	<0.020	2.2
	17-Jun-2019	7.9	5390	10.4	8.29	5300	3000	60	430	530	<1.0	<1.0	21	2.0	3.6	1300	1400	-	27	9.5	1.1	<0.010	<0.010	<0.014	1.8
	5-Jun-2020	7.64	5270	9.8	8.11	5600	3000	69	360	440	<1.0	<1.0	24	2.4	3.9	1200	1500	-	23	2.7	1.5	<0.010	<0.010	<0.014	2.0
	3-Jun-2021	7.79	5080	15.7	8.46	4760	3090	69.4	430	505	9.5	<5.0	23.7	2.49	4.35	1290	1480	0.56	31.8	113	1.13	<0.10	<0.050	<0.11	1.60
15MW36-Deep	8-Jun-2016	8.52	3830	7.7	8.51	3600	2000	52	550	650	13	<0.50	17	2.4	5.4	800	770	-	46	1.1	0.92	0.018	0.043	0.061	1.9
	7-Jun-2017	8.0	4840	10.3	8.33	4800	2600	53	770	940	3.1	<0.50	18	2.1	3.9	1100	1100	-	11	2.3	1.3	<0.044	<0.033	<0.010	2.6
	26-Jun-2018	7.38	4900	10.9	8.19	4700	2600	53	780	960	<1.0	<1.0	18	2.0	3.7	1100	1000	-	10	2.6	1.3	<0.02	<0.010	<0.020	2.8
	12-Jun-2019	8.05	5280	12.3	8.39	4800	2500	52	770	900	16.0	<1.0	18	1.9	3.7	1100	980	-	11	4.7	1.3	<0.010	<0.010	<0.014	2.1
	5-Jun-2020	7.78	4760	11.4	8.32	4800	2700	57	750	910	3.8	<1.0	19	2.1	3.6	1100	1100	-	12	3.0	1.3	<0.010	<0.010	<0.014	1.9
	3-Jun-2021	7.90	4430	12.6	8.63	4110	2930	64.6	799	918	28.2	<5.0	21.6	2.60	4.61	1310	1100	0.38	11.2	124	1.05	<0.10	<0.050	<0.11	1.90

Notes:

- ¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
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- ⁴ Guideline varies with pH and temperature
- ⁵ Guideline varies with chloride
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Italic - Detection limit greater than Tier 1 guideline

Table 4d - Field and Groundwater Analytical Results Summary - Lower Bedrock Wells

Parameter Group	Hydrocarbons							Organics			
	Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	F1-BTEX (C ₆ -C ₁₀)	F2 (C ₁₀ -C ₁₆)	Total Phenols	Chemical Oxygen Demand	Dissolved Organic Carbon	
Parameter											
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}	0.005	0.024	0.0016	0.02	0.072	2.2	1.1	-	-	-	
Monitoring Well	Date										
15MW35-Deep	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	110	18
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	130	-
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.0033	100	19
	17-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.015	110	19
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	<0.0015	144	29
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0014	88	19.4
15MW36-Deep	8-Jun-2016	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	99	12
	7-Jun-2017	<0.00040	<0.00040	<0.00040	<0.00080	-	<0.10	<0.10	-	140	-
	26-Jun-2018	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.010	130	35
	12-Jun-2019	<0.00040	<0.00040	<0.00040	<0.00089	<0.00050	<0.10	<0.10	0.010	140	33
	5-Jun-2020	<0.00040	<0.00040	<0.00040	<0.00080	<0.00050	<0.10	<0.10	<0.0015	144	33
	3-Jun-2021	<0.00050	<0.00050	<0.00050	<0.00071	<0.00050	<0.10	<0.10	0.0050	121	31.4

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Alberta Environment and Parks (AEP). Environmental Quality Guidelines for Alberta Surface Waters. March 2018. Table 1 Surface water quality guidelines for the protection of freshwater aquatic life (PAL). Most conservative values applied (chronic or acute).

³ Guideline varies with hardness

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with chloride

⁶ Guideline varies with pH

"-" No applicable guideline or not analyzed

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Italic - Detection limit greater than Tier 1 guideline

Table 4d - Field and Groundwater Analytical Results Summary - Lower Bedrock Wells

Parameter Group		Dissolved Metals																
Parameter	Aluminum	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Uranium	Zinc	
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}	0.007-0.05 ⁶	0.006	0.005	1	1.0	0.00004-0.00037 ³	0.05	0.007	0.3	0.001-0.007 ³	0.05	0.000005	0.007-0.17 ³	0.002	0.0001	0.01	0.03	
Monitoring Well	Date																	
15MW35-Deep	8-Jun-2016	0.017	<0.00060	0.0018	0.27	0.69	0.000040	<0.0010	0.00094	<0.060	<0.00020	0.048	0.0000020	0.0038	0.00020	<0.00010	0.0023	<0.0030
	7-Jun-2017	0.0031	<0.00060	0.00081	0.41	0.75	<0.000020	<0.0010	0.00048	<0.060	<0.00020	0.053	<0.0000020	0.0013	<0.00020	<0.00010	0.00064	0.16
	26-Jun-2018	0.0034	<0.00060	0.00089	0.38	0.81	<0.000020	<0.0010	0.00079	<0.060	<0.00020	0.061	<0.0000020	0.0017	0.0003	<0.00010	0.00075	0.48
	17-Jun-2019	0.0044	<0.00060	0.00092	0.39	0.75	0.00004	<0.0010	0.00034	<0.060	<0.00020	0.082	<0.0000020	0.0017	<0.00020	<0.00010	0.00078	0.03
	5-Jun-2020	0.0054	<0.00060	0.00087	0.42	0.78	<0.000020	<0.0010	<0.00020	<0.060	<0.00020	0.12	<0.0000019	0.0018	<0.00020	<0.00010	0.00081	<0.0030
	3-Jun-2021	0.0060	<0.00050	0.00082	0.469	0.823	<0.000025	<0.00050	<0.0010	<0.050	<0.00025	0.106	<0.0000050	<0.0025	<0.00025	<0.000050	0.00107	0.0223
15MW36-Deep	8-Jun-2016	0.19	0.0030	0.0088	0.23	0.71	0.000070	<0.0010	0.011	0.41	0.00094	0.030	0.00019	0.0086	0.00096	<0.00010	0.0066	0.0068
	7-Jun-2017	0.0069	<0.00060	0.0024	0.32	0.97	<0.000020	<0.0010	0.0006	<0.060	<0.00020	0.071	<0.0000020	0.0046	0.00030	<0.00010	0.0016	0.10
	26-Jun-2018	0.0039	<0.00060	0.0025	0.32	1.00	<0.000020	<0.0010	0.00085	<0.060	<0.00020	0.072	<0.0000020	0.0050	0.00064	<0.00010	0.0016	0.11
	12-Jun-2019	0.0059	<0.00060	0.002	0.34	1.00	<0.000020	<0.0010	0.00029	<0.060	<0.00020	0.13	<0.0000020	0.0046	<0.00020	<0.00010	0.0015	0.01
	5-Jun-2020	0.0034	<0.00060	0.0019	0.37	1.0	<0.000020	<0.0010	<0.00020	0.23	<0.00020	0.58	<0.0000019	0.0052	<0.00020	<0.00010	0.0016	<0.0030
	3-Jun-2021	0.0096	<0.00050	0.00158	0.481	1.15	<0.000025	<0.00050	0.0016	0.126	<0.00025	0.466	<0.0000050	0.0036	0.00034	<0.000050	0.00209	0.0054

Notes:

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Table 4d - Field and Groundwater Analytical Results Summary - Lower Bedrock Wells

Parameter Group		Volatile Organic Compounds (VOCs)																		
		Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethene	Methyl t-Butyl Ether (MTBE)	Methylene Chloride	Methyl Methacrylate	Tetrachloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichloroethene	Trihalomethanes	Vinyl chloride	
Parameter	Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
AB Tier 1 Guideline ^{1,2}		0.002	0.0013	0.08	0.1	0.0007	0.001	0.005	0.014	0.015	0.05	0.47	0.01	0.008	0.015	0.014	0.005	0.1	0.002	
Monitoring Well	Date																			
15MW35-Deep	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	<0.00050
	3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	-	<0.0010	-	<0.0010	<0.0010
15MW36-Deep	8-Jun-2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7-Jun-2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26-Jun-2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12-Jun-2019	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	<0.00050
	5-Jun-2020	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0020	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0013	<0.00050	<0.00050
	3-Jun-2021	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	-	<0.0010	<0.0010	-	<0.0010	-	<0.0010	<0.0010

Notes:

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Table 5a: Quality Assurance / Quality Control - Field Duplicates

Parameter	Unit	RDL	QAQC Type		DUPLICATES											
			Field ID		25B		DUP-2		22B		DUP-3		MW32A		DUP-4	
			Sample Date		3-Jun-2021	3-Jun-2021	3-Jun-2021	3-Jun-2021	3-Jun-2021	3-Jun-2021	4-Jun-2021	4-Jun-2021				
			Laboratory Report Number		L2596515	L2596515	L2596515	L2596515	L2596515	L2596515	L2597121	L2597121				
Laboratory Sample ID		L2595874-2	L2595874-10	L2596515-8	L2596515-20	L2596515-4	L2596515-21	L2597121-1	L2597121-23							
				RPD (%)				RPD (%)							RPD (%)	
Routine																
pH	pH Units	0.1	8.37	8.40	0.4	8.18	8.19	0.1	8.26	8.22	0.5	8.49	8.38	1		
Electrical Conductivity (EC)	µS/cm	2	3190	3220	1	7720	8090	5	6660	6840	3	6950	7120	2		
Total Dissolved Solids (TDS)	mg/L	1	2560	2440	5	8150	7850	4	6680	6650	0.5	6420	6690	4		
Hardness as CaCO ₃	mg/L	1	127	108	16	718	693	4	487	487	0	304	313	3		
Alkalinity (total as CaCO ₃)	mg/L	2	624	623	0.2	795	806	1	990	996	1	678	653	4		
Bicarbonate	mg/L	5	745	741	1	970	983	1	1210	1210	0	792	779	2		
Carbonate	mg/L	5	7.9	9.4	17	<5.0	<5.0	-	<5.0	<5.0	-	17.2	8.4	-		
Hydroxide	mg/L	5	<5.0	<5.0	-	<5.0	<5.0	-	<5.0	<5.0	-	<5.0	<5.0	-		
Calcium	mg/L	0.5	37.4	32.4	14	198	191	4	107	106	1	102	105	3		
Magnesium	mg/L	0.1	8.06	6.63	19	54.2	52.5	3	53.4	54.0	1	11.9	12.3	3		
Potassium	mg/L	0.5	4.01	3.46	15	11.7	11.6	1	9.45	9.58	1	6.89	7.42	7		
Sodium	mg/L	1	833	705	17	2340	2280	3	1920	1930	1	1900	2030	7		
Chloride	mg/L	0.5	2.8	2.8	0	<5.0	<5.0	-	<5.0	<5.0	-	3.7	3.7	0		
Fluoride	mg/L	0.02	0.40	0.40	0	<0.20	<0.20	-	0.30	0.30	0	0.31	0.29	7		
Sulphate	mg/L	0.3	1300	1310	1	5060	4830	5	4000	3950	1	3990	4140	4		
Nutrients																
Ammonia as N	mg/L	0.05	1.16	1.20	3	0.122	0.120	-	0.055	0.167	-	2.43	2.46	1		
Nitrate (as NO ₃ -N)	mg/L	0.02	0.26	0.24	8	0.93	0.88	-	<0.20	<0.20	-	0.34	0.34	0		
Nitrite (as NO ₂ -N)	mg/L	0.01	<0.050	<0.050	-	<0.10	<0.10	-	<0.10	<0.10	-	<0.050	<0.050	-		
Nitrate and Nitrite (as N)	mg/L	0.02	0.26	0.24	8	0.93	0.88	-	<0.22	<0.22	-	0.34	0.34	0		
Total Kjeldahl Nitrogen (TKN)	mg/L	0.2	1.32	1.37	4	0.37	0.42	-	0.32	0.45	-	2.86	2.9	1		
Demand Parameters																
Chemical Oxygen Demand (COD)	mg/L	10	-	-	-	23	22	-	47	42	-	34	33	-		
Carbon																
Dissolved Organic Carbon (DOC)	mg/L	1	8.8	8.2	7	9.3	9.5	2	5.9	5.7	3	10.7	10.9	2		
Dissolved Metals																
Aluminum	mg/L	0.001	0.0086	0.0076	12	<0.010	<0.010	-	<0.010	<0.010	-	0.0051	<0.0050	-		
Antimony	mg/L	0.0001	<0.00050	<0.00020	-	<0.0010	<0.0010	-	<0.0010	<0.0010	-	<0.00050	<0.00050	-		
Arsenic	mg/L	0.0001	0.00065	0.00053	20	<0.0010	<0.0010	-	<0.0010	<0.0010	-	0.0005	0.0005	0		
Barium	mg/L	0.0001	0.0139	0.0122	13	0.011	0.0105	5	0.0062	0.0065	5	0.0139	0.0141	1		
Beryllium	mg/L	0.0001	<0.00050	<0.00020	-	<0.0010	<0.0010	-	<0.0010	<0.0010	-	<0.00050	<0.00050	-		
Bismuth	mg/L	0.00005	<0.00025	<0.00010	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00025	<0.00025	-		
Boron	mg/L	0.01	0.735	0.544	30	0.48	0.44	9	0.26	0.25	4	0.916	0.935	2		
Cadmium	mg/L	0.000005	<0.000025	<0.000010	-	<0.000050	<0.000050	-	<0.000050	0.000061	-	<0.000025	<0.000025	-		
Cesium	mg/L	0.00001	<0.000050	0.000037	-	<0.00010	<0.00010	-	<0.00010	<0.00010	-	0.000108	0.000146	30		
Chromium	mg/L	0.0001	<0.00050	<0.00020	-	<0.0010	<0.0010	-	<0.0010	<0.0010	-	<0.00050	<0.00050	-		
Cobalt	mg/L	0.0001	<0.00050	0.00025	-	<0.0010	<0.0010	-	<0.0010	<0.0010	-	<0.00050	<0.00050	-		
Copper	mg/L	0.0002	<0.0010	0.00071	-	<0.0020	<0.0020	-	<0.0020	0.0022	-	0.0011	0.0016	37		
Iron	mg/L	0.01	<0.050	<0.020	-	<0.10	<0.10	-	<0.10	<0.10	-	<0.050	<0.050	-		
Lead	mg/L	0.00005	<0.00025	<0.00010	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00025	<0.00025	-		
Lithium	mg/L	0.001	0.231	0.203	13	0.739	0.717	3	0.727	0.727	2	0.403	0.408	1		
Manganese	mg/L	0.0001	0.0571	0.0482	17	0.184	0.175	5	<0.0010	<0.0010	-	0.151	0.156	3		
Mercury	mg/L	0.000005	<0.000050	<0.000050	-	<0.000050	<0.000050	-	<0.000050	<0.000050	-	<0.000050	<0.000050	-		
Molybdenum	mg/L	0.00005	0.00125	0.00114	9	0.00064	0.00071	10	0.00087	0.00079	10	0.00112	0.00123	9		
Nickel	mg/L	0.0005	<0.0025	<0.0010	-	<0.0050	<0.0050	-	<0.0050	<0.0050	-	<0.0025	<0.0025	-		
Phosphorus	mg/L	0.05	<0.25	<0.10	-	<0.50	<0.50	-	<0.50	<0.50	-	<0.25	<0.25	-		
Rubidium	mg/L	0.0002	0.0066	0.00604	9	0.0140	0.0136	3	0.0120	0.0128	6	0.0125	0.0122	2		
Selenium	mg/L	0.00005	<0.00025	<0.00010	-	<0.00050	<0.00050	-	<0.00050	0.00052	-	<0.00025	<0.00025	-		
Silicon	mg/L	0.05	3.65	3.34	9	4.79	4.61	4	5.04	5.16	2	4.17	4.47	7		
Silver	mg/L	0.00001	<0.000050	<0.000020	-	<0.00010	<0.00010	-	<0.00010	<0.00010	-	<0.000050	<0.000050	-		
Strontium	mg/L	0.0002	0.741	0.629	16	4.21	4.26	1	2.31	2.40	4	2.41	2.34	3		
Sulphur	mg/L	0.5	438	391	11	1770	1730	2	1320	1320	0	1320	1420	7		
Tellurium	mg/L	0.0002	<0.0010	<0.00040	-	<0.0020	<0.0020	-	<0.0020	<0.0020	-	<0.0010	<0.0010	-		
Thallium	mg/L	0.00001	<0.000050	<0.000020	-	<0.00010	<0.00010	-	<0.00010	<0.00010	-	<0.000050	<0.000050	-		
Thorium	mg/L	0.0001	<0.00050	<0.00020	-	<0.0010	<0.0010	-	<0.0010	<0.0010	-	<0.00050	<0.00050	-		
Tin	mg/L	0.0001	<0.00050	<0.00020	-	<0.0010	<0.0010	-	<0.0010	<0.0010	-	<0.00050	<0.00050	-		
Titanium	mg/L	0.0003	<0.0015	<0.00060	-	<0.003	<0.0030	-	<0.0030	<0.0030	-	<0.0015	<0.0015	-		
Tungsten	mg/L	0.0001	<0.00050	<0.00020	-	<0.0010	<0.0010	-	<0.0010	<0.0010	-	<0.00050	<0.00050	-		
Uranium	mg/L	0.00001	0.000593	0.000516	14	0.00024	0.00021	13	0.00764	0.00787	3	0.000300	0.000312	4		
Vanadium	mg/L	0.0005	<0.0025	<0.0010	-	<0.0050	<0.0050	-	<0.0050	<0.0050	-	<0.0025	<0.0025	-		
Zinc	mg/L	0.001	0.0200	0.0154	26	0.0200	0.0220	10	0.0210	0.0210	0	0.0182	<0.0050	-		
Zirconium	mg/L	0.0002	<0.0010	<0.00040	-	<0.0020	<0.0020	-	<0.0020	<0.0020	-	<0.0010	0.0024	-		
Hydrocarbons																
Benzene	mg/L	0.0005	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-		
Toluene	mg/L	0.0005	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-		
Ethylbenzene	mg/L	0.0005	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-		
Xylene (o)	mg/L	0.0005	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-		
Xylenes (m & p)	mg/L	0.0005	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-	<0.00050	<0.00050	-		
Xylenes Total	mg/L	0.00071	<0.00071	<0.00071	-	<0.00071	<0.00071	-	<0.00071	<0.00071	-	<0.00071	<0.00071	-		
F1 (C ₉ -C ₁₀)	mg/L	0.1	<0.10	<0.10	-	<0.10	<0.10	-	<0.10	<0.10	-	<0.10	<0.10	-		
F1 (C ₉ -C ₁₀) - BTEX	mg/L	0.1	<0.10	<0.10	-	<0.10	<0.10	-	<0.10	<0.10	-	<0.10	<0.10	-		
F2 (C ₁₀ -C ₁₆)	mg/L	0.1	<0.10	<0.10	-	<0.10	<0.10	-	<0.10	<0.10	-	<0.10	<0.10	-		
Phenols																
Phenols	mg/L	0.001	<0.0010	<0.0010	-	0.0017	0.0017	-	<0.0010	<0.0010	-	0.0015	0.0014	-		

Notes:

RDL - Reportable detection limit

Table 5b: Quality Assurance / Quality Control - Blanks

			QAQC Type		
			BLANKS		
			Field ID	FIELD BLANK	TRIP BLANK
			Sample Date	4-Jun-2021	4-Jun-2021
			Laboratory Report Number	L2597121	L2597121
Laboratory Sample ID	L2597121-13	L2597121-22			
Parameter	Unit	RDL			
Routine					
pH	pH Units	0.1	5.76	5.53	
Electrical Conductivity (EC)	µS/cm	2	<2.0	<2.0	
Total Dissolved Solids (TDS)	mg/L	1	<1.0	<1.0	
Hardness as CaCO ₃	mg/L	1	<1.0	<1.0	
Alkalinity (total as CaCO ₃)	mg/L	2	<2.0	<2.0	
Bicarbonate	mg/L	5	<5.0	<5.0	
Carbonate	mg/L	5	<5.0	<5.0	
Hydroxide	mg/L	5	<5.0	<5.0	
Calcium	mg/L	0.5	<0.50	<0.50	
Magnesium	mg/L	0.1	<0.10	<0.10	
Potassium	mg/L	0.5	<0.50	<0.50	
Sodium	mg/L	1	<1.0	<1.0	
Chloride	mg/L	0.5	<0.50	<0.50	
Fluoride	mg/L	0.02	<0.020	<0.020	
Sulphate	mg/L	0.3	<0.30	<0.30	
Nutrients					
Ammonia as N	mg/L	0.05	<0.050	<0.050	
Nitrate (as NO ₃ -N)	mg/L	0.02	<0.020	<0.020	
Nitrite (as NO ₂ -N)	mg/L	0.01	<0.010	<0.010	
Nitrate and Nitrite (as N)	mg/L	0.02	<0.022	<0.022	
Total Kjeldahl Nitrogen (TKN)	mg/L	0.2	<0.20	<0.20	
Demand Parameters					
Chemical Oxygen Demand (COD)	mg/L	10	<10	<10	
Carbon					
Dissolved Organic Carbon (DOC)	mg/L	1	6.0	<1.0	
Dissolved Metals					
Aluminum	mg/L	0.001	0.0014	<0.0010	
Antimony	mg/L	0.0001	<0.00010	<0.00010	
Arsenic	mg/L	0.0001	<0.00010	<0.00010	
Barium	mg/L	0.0001	0.0004	<0.00010	
Beryllium	mg/L	0.0001	<0.00010	<0.00010	
Bismuth	mg/L	0.00005	<0.000050	<0.000050	
Boron	mg/L	0.01	0.011	<0.010	
Cadmium	mg/L	0.000005	<0.0000050	<0.0000050	
Cesium	mg/L	0.00001	<0.000010	<0.000010	
Chromium	mg/L	0.0001	0.00108	<0.00010	
Cobalt	mg/L	0.0001	<0.00010	<0.00010	
Copper	mg/L	0.0002	<0.00020	<0.00020	
Iron	mg/L	0.01	<0.010	<0.010	
Lead	mg/L	0.00005	<0.000050	<0.000050	
Lithium	mg/L	0.001	<0.0010	<0.0010	
Manganese	mg/L	0.0001	0.00017	<0.00010	
Mercury	mg/L	0.000005	<0.0000050	<0.0000050	
Molybdenum	mg/L	0.00005	<0.000050	<0.000050	
Nickel	mg/L	0.0005	0.0006	<0.00050	
Phosphorus	mg/L	0.05	<0.050	<0.050	
Rubidium	mg/L	0.0002	<0.00020	<0.00020	
Selenium	mg/L	0.00005	<0.000050	<0.000050	
Silicon	mg/L	0.05	<0.050	<0.050	
Silver	mg/L	0.00001	<0.000010	<0.000010	
Strontium	mg/L	0.0002	<0.00020	<0.00020	
Sulphur	mg/L	0.5	<0.50	<0.50	
Tellurium	mg/L	0.0002	<0.00020	<0.00020	
Thallium	mg/L	0.00001	<0.000010	<0.000010	
Thorium	mg/L	0.0001	<0.00010	<0.00010	
Tin	mg/L	0.0001	<0.00010	<0.00010	
Titanium	mg/L	0.0003	<0.00030	<0.00030	
Tungsten	mg/L	0.0001	<0.00010	<0.00010	
Uranium	mg/L	0.00001	<0.000010	<0.000010	
Vanadium	mg/L	0.0005	<0.00050	<0.00050	
Zinc	mg/L	0.001	0.0184	<0.0010	
Zirconium	mg/L	0.0002	<0.00020	<0.00020	
Hydrocarbons					
Benzene	mg/L	0.0005	<0.00050	<0.00050	
Toluene	mg/L	0.0005	<0.00050	<0.00050	
Ethylbenzene	mg/L	0.0005	<0.00050	<0.00050	
Xylene (o)	mg/L	0.0005	<0.00050	<0.00050	
Xylenes (m & p)	mg/L	0.0005	<0.00050	<0.00050	
Xylenes Total	mg/L	0.00071	<0.00071	<0.00071	
F1 (C ₆ -C ₁₀)	mg/L	0.1	<0.10	<0.10	
F1 (C ₆ -C ₁₀) - BTEX	mg/L	0.1	<0.10	<0.10	
F2 (C ₁₀ -C ₁₆)	mg/L	0.1	<0.10	<0.10	
Phenols					
Phenols	mg/L	0.001	<0.0010	<0.0010	

Notes:
 RDL - Reportable detection limit
 N/A - Not applicable
BOLD - Detect value

Table 5b: Quality Assurance / Quality Control - Blanks

			QAQC Type	
			Field ID	
			Sample Date	
			Laboratory Report Number	
			Laboratory Sample ID	
			BLANKS	
			FIELD BLANK	TRIP BLANK
			4-Jun-2021	4-Jun-2021
			L2597121	L2597121
			L2597121-13	L2597121-22
Parameter	Unit	RDL		
Volatile Organic Compounds (VOCs)				
Benzene	mg/L	0.0005	<0.00050	<0.00050
Bromobenzene	mg/L	0.001	<0.0010	<0.0010
Bromochloromethane	mg/L	0.001	<0.0010	<0.0010
Bromodichloromethane	mg/L	0.001	<0.0010	<0.0010
Bromoform	mg/L	0.001	<0.0010	<0.0010
Bromomethane	mg/L	0.01	<0.010	<0.010
n-Butylbenzene	mg/L	0.001	<0.0010	<0.0010
sec-Butylbenzene	mg/L	0.001	<0.0010	<0.0010
tert-Butylbenzene	mg/L	0.001	<0.0010	<0.0010
Carbon tetrachloride	mg/L	0.0005	<0.00050	<0.00050
Chlorobenzene	mg/L	0.001	<0.0010	<0.0010
Chloroethane	mg/L	0.01	<0.010	<0.010
Chloroform	mg/L	0.001	<0.0010	<0.0010
Chloromethane	mg/L	0.01	<0.010	<0.010
2-Chlorotoluene	mg/L	0.001	<0.0010	<0.0010
4-Chlorotoluene	mg/L	0.001	<0.0010	<0.0010
Dibromochloromethane	mg/L	0.001	<0.0010	<0.0010
1,2-Dibromo-3-chloropropane	mg/L	0.001	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	0.001	<0.0010	<0.0010
Dibromomethane	mg/L	0.001	<0.0010	<0.0010
1,2-Dichlorobenzene	mg/L	0.0005	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	0.001	<0.0010	<0.0010
1,4-Dichlorobenzene	mg/L	0.001	<0.0010	<0.0010
1,1-Dichloroethane	mg/L	0.001	<0.0010	<0.0010
1,2-Dichloroethane	mg/L	0.001	<0.0010	<0.0010
1,1-Dichloroethene	mg/L	0.001	<0.0010	<0.0010
1,2-Dichloroethene (cis)	mg/L	0.001	<0.0010	<0.0010
1,2-Dichloroethene (trans)	mg/L	0.001	<0.0010	<0.0010
Dichlorodifluoromethane	mg/L	0.001	<0.0010	<0.0010
1,2-Dichloropropane	mg/L	0.001	<0.0010	<0.0010
1,3-Dichloropropane	mg/L	0.001	<0.0010	<0.0010
2,2-Dichloropropane	mg/L	0.001	<0.0010	<0.0010
1,1-Dichloropropene	mg/L	0.001	<0.0010	<0.0010
1,3-Dichloropropene [cis]	mg/L	0.001	<0.0010	<0.0010
1,3-Dichloropropene [trans]	mg/L	0.001	<0.0010	<0.0010
Ethylbenzene	mg/L	0.0005	<0.00050	<0.00050
Hexachlorobutadiene	mg/L	0.001	<0.0010	<0.0010
p-Isopropyltoluene	mg/L	0.001	<0.0010	<0.0010
Methyl t-Butyl Ether (MTBE)	mg/L	0.0005	<0.00050	<0.00050
Methylene Chloride	mg/L	0.001	<0.0010	<0.0010
iso-Propylbenzene (cumene)	mg/L	0.001	<0.0010	<0.0010
n-Propylbenzene	mg/L	0.001	<0.0010	<0.0010
Styrene	mg/L	0.0005	<0.00050	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	0.001	<0.0010	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	0.002	<0.0020	<0.0020
Tetrachloroethene	mg/L	0.001	<0.0010	<0.0010
Toluene	mg/L	0.0005	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.001	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.001	<0.0010	<0.0010
1,1,1-Trichloroethane	mg/L	0.001	<0.0010	<0.0010
1,1,2-Trichloroethane	mg/L	0.001	<0.0010	<0.0010
Trichloroethene	mg/L	0.001	<0.0010	<0.0010
Trichlorofluoromethane	mg/L	0.001	<0.0010	<0.0010
1,2,3-Trichloropropane	mg/L	0.002	<0.0020	<0.0020
1,2,4-Trimethylbenzene	mg/L	0.001	<0.0010	<0.0010
1,3,5-Trimethylbenzene	mg/L	0.001	<0.0010	<0.0010
Vinyl chloride	mg/L	0.001	<0.0010	<0.0010
Xylene (o)	mg/L	0.0005	<0.00050	<0.00050
Xylenes (m & p)	mg/L	0.0005	<0.00050	<0.00050

Notes:

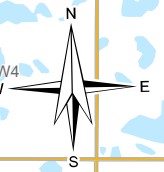
RDL - Reportable detection limit

N/A - Not applicable

BOLD - Detect value

FIGURES

Figure 1	Site Location Plan
Figure 2	Site Plan Showing Site and Proposed Expansion Boundaries
Figure 3	Monitoring Well Location Plan and Surface Water Drainage
Figure 4a	Cross-Section Location
Figure 4b	Cross-Section A-A'
Figure 4c	Cross-Section B-B'
Figure 4d	Cross-Section C-C'
Figure 4e	Cross-Section D-D'
Figure 5a	Surficial Materials West - Hydrograph
Figure 5b	Surficial Materials East - Hydrograph
Figure 5c	Upper Sandstone West - Hydrograph
Figure 5d	Upper Sandstone East - Hydrograph
Figure 5e	Clay Shale West - Hydrograph
Figure 5f	Clay Shale East - Hydrograph
Figure 5g	Lower Bedrock - Hydrograph
Figure 6a	Groundwater Elevation Contours Surficial Materials - May 27, 2021
Figure 6b	Groundwater Elevation Contours Upper Sandstone - May 27, 2021
Figure 6c	Groundwater Elevation Contours Clay Shale - May 27, 2021



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LEGEND

- Site Location
- Main Road
- Local Road
- Resource/Recreational Road
- Railway
- Building
- Park
- Residential Area
- Contour (10 m)
- Watercourse
- Waterbody
- Wooded Area

NOTES
Base data source: CanVec 1:50,000.

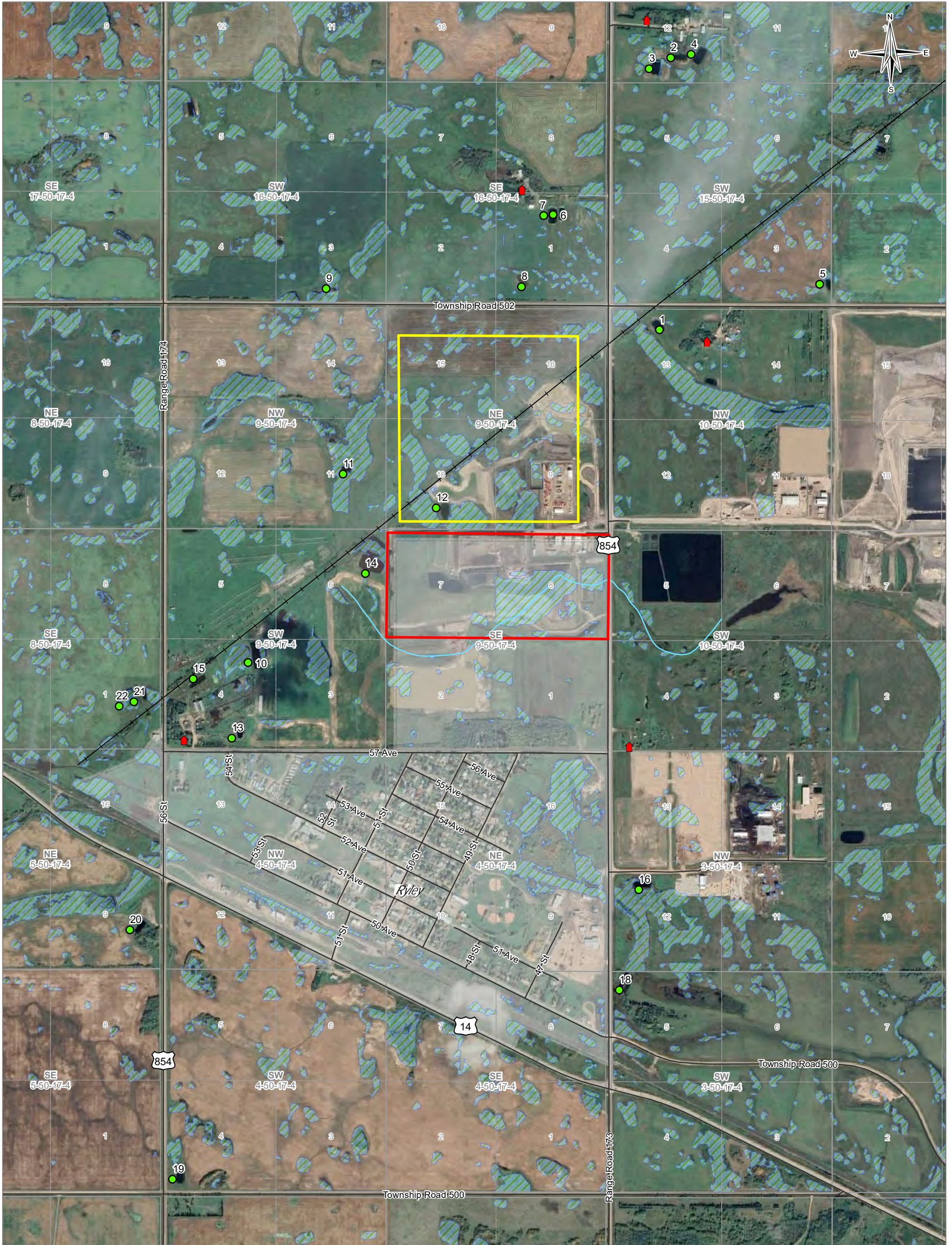
STATUS
ISSUED FOR USE

2021 GROUNDWATER MONITORING PROGRAM RYLEY, ALBERTA

Site Location Plan

PROJECTION UTM Zone 12		DATUM NAD83		CLIENT 	
Scale: 1:50,000					
FILE NO. SWOP04401-01_Figure01_SiteLocation.mxd					
OFFICE Tl-EDM		DWN MRV	CKD SL	APVD MS	REV 0
DATE January 10, 2022		PROJECT NO. SWM.SWOP04401-01			
					Figure 1





LEGEND

- ▲ Rural Residence
- Water Sample Location
- Site Outline
- Proposed Expansion Boundary
- Road
- Historical Railway Bed (Approximate Centreline)
- ~ Bible Creek (Approximate Centreline)
- Potential Wetland
- Town Boundary

NOTES
 Base data source: CanVec 1:50,000 & ESRD
 Imagery provided by Google Earth; Maxar (2019)

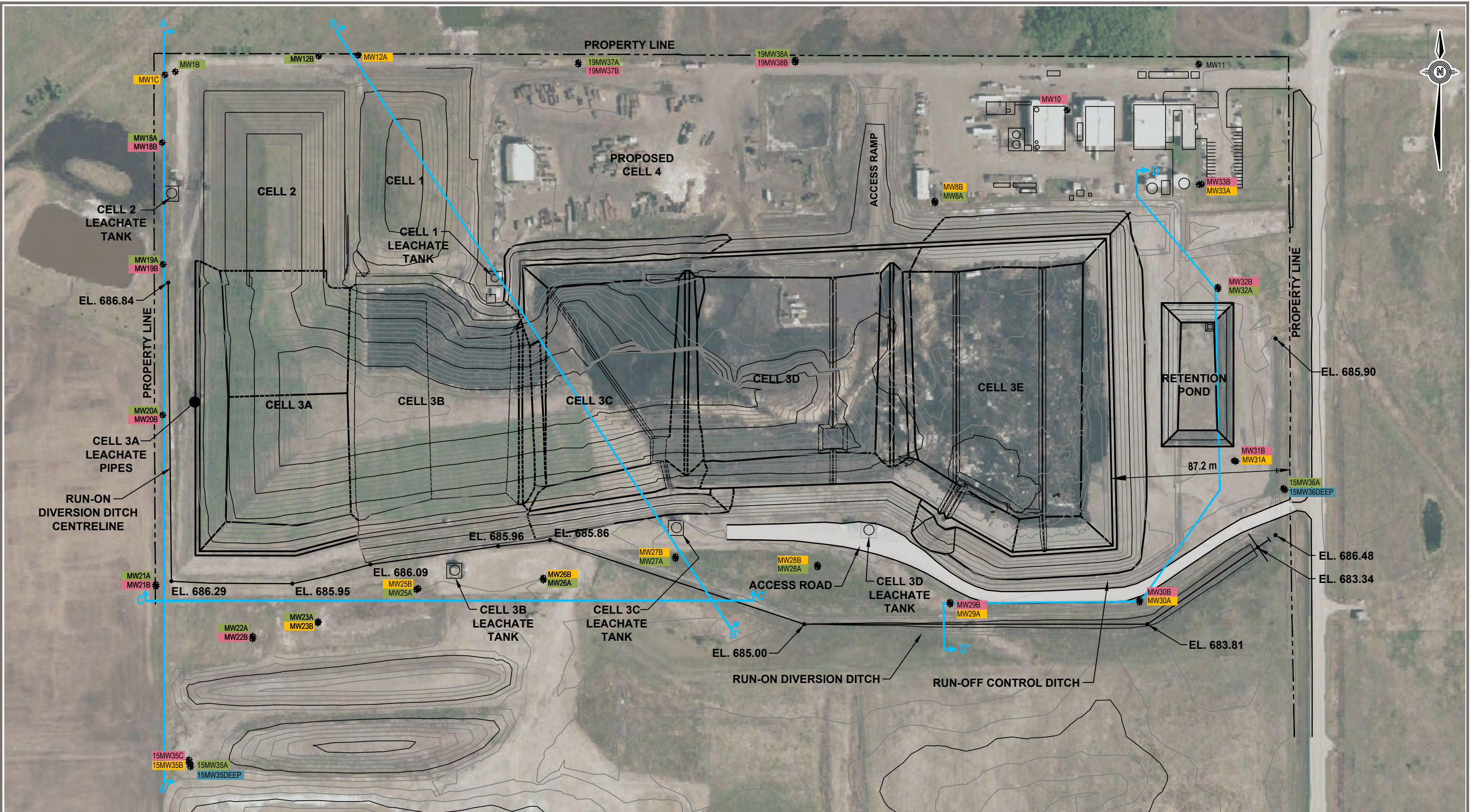
2021 GROUNDWATER MONITORING PROGRAM RYLEY, ALBERTA

Site Plan Showing Site and Proposed Expansion Boundaries

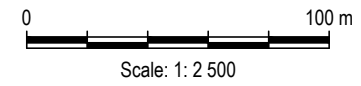
PROJECTION UTM Zone 12	DATUM NAD83	CLIENT
Scale: 1:13,500 		
FILE NO. SWOP04401-01_Figure02_ProposedExpansion.mxd		
OFFICE Tl-EDM	DWN MRV	CKD SL
DATE January 10, 2022	APVD MS	REV 0
PROJECT NO. SWM.SWOP04401-01		Figure 2

STATUS
ISSUED FOR USE

Q:\Edmonton\Drafting\00_MASTER PROJECT BASE PLANS\Clean Harbors Ryley\PROJECT\SWM\SWOP04401-01_Groundwater Monitoring 2021\Acad\SWM\SWOP04401-01_Figure04a_CSLOC.dwg [FIGURE 4A] January 07, 2022 - 12:09:53 pm (BY: VERBURG, MEGAN)



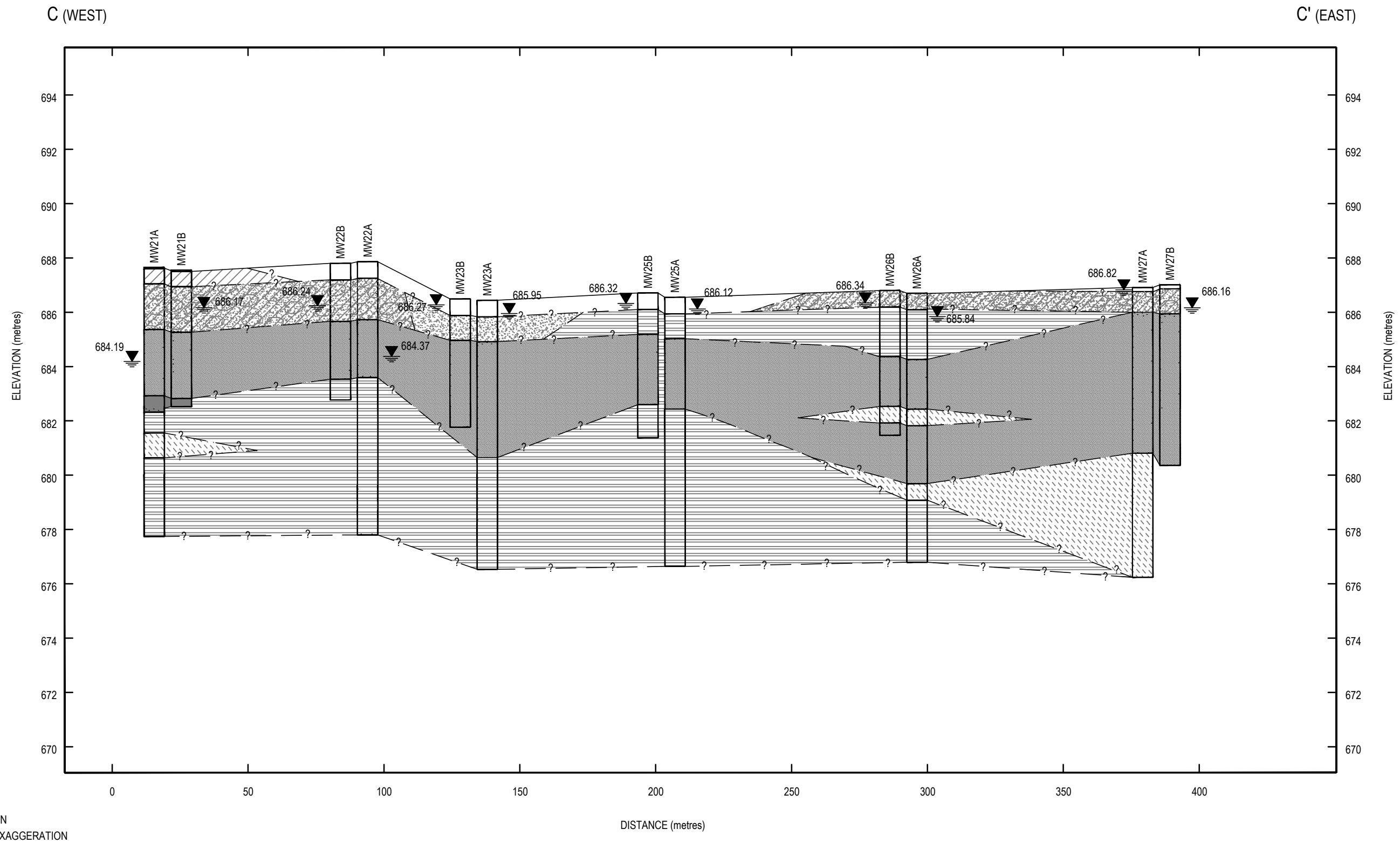
- LEGEND:**
- ✦ - MONITORING WELL LOCATION
 - - TOPOGRAPHIC CONTOURS
 - SURFICIAL MATERIALS
 - UPPER SANDSTONE
 - CLAY SHALE
 - LOWER BEDROCK
 - ↕ - CROSS-SECTION LOCATION



CLIENT		2021 GROUNDWATER MONITORING PROGRAM RYLEY, ALBERTA		
		Cross-Section Location		
PROJECT NO. SWM.SWOP04401-01	DWN MM/DBD	CKD MS	REV 0	Figure 4a
OFFICE Tt-EDM	DATE January 7, 2022			



Q:\Edmonton\Drafting\00_MASTER PROJECT BASE PLANS\Clean Harbors Ryley\PROJECT\SWM\SWOP04401-01_Groundwater Monitoring 2021\Acad\SWM\SWOP04401-01_Figure4d_CrossSections.dwg [FIGURE 4D] January 10, 2022 - 11:07:41 am (BY: VERBURG, MEGAN)



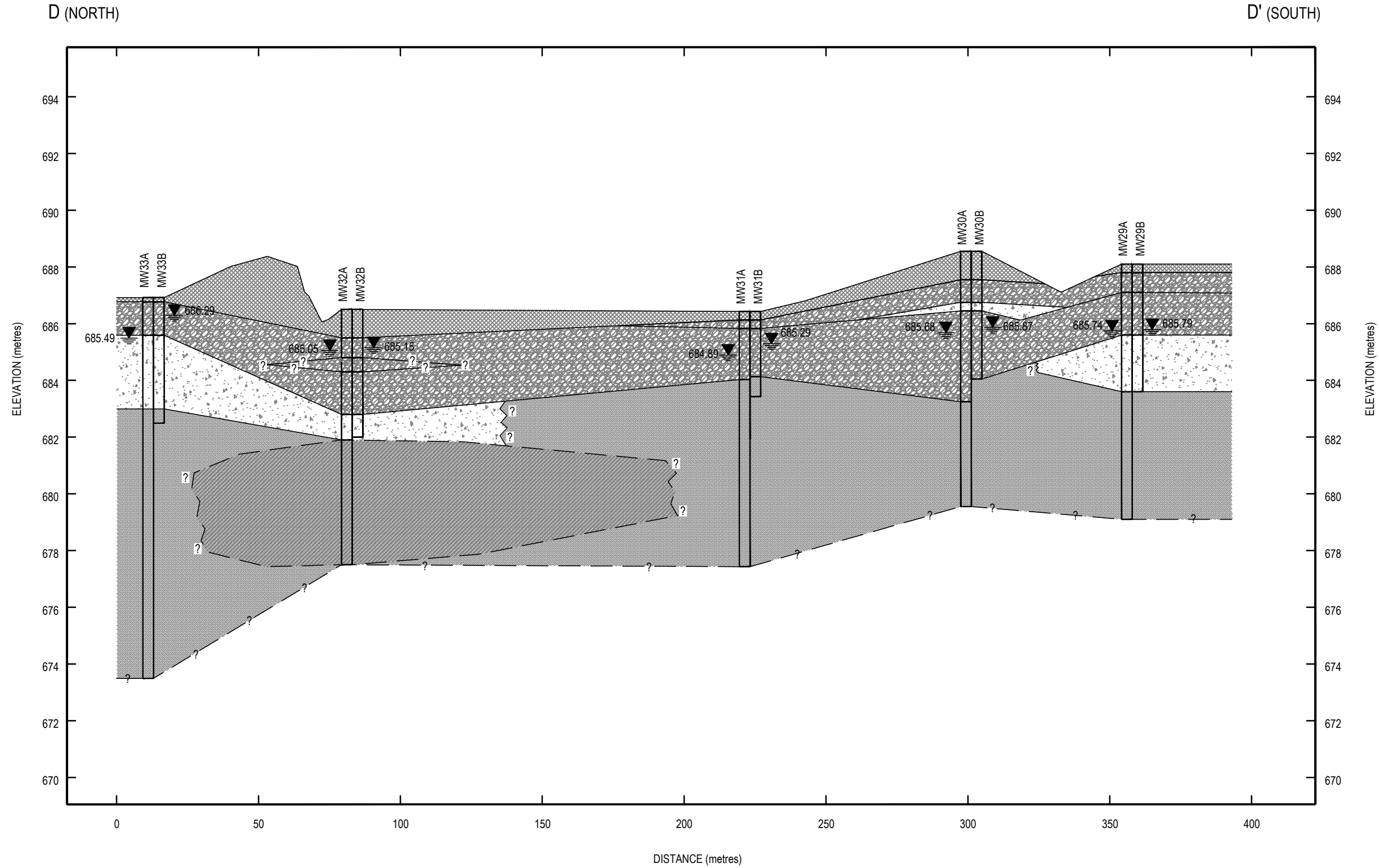
SCALE AS SHOWN
10 X VERTICAL EXAGGERATION

- LEGEND:
- TOPSOIL
 - CLAY
 - SILT
 - SAND
 - GRAVEL
 - TILL
 - SHALE
 - SANDSTONE
 - SILTSTONE
 - SAND AND SHALE STONE
 - FILL
 - GROUNDWATER ELEVATIONS IN METRES ABOVE SEA LEVEL (MASL) (COLLECTED IN MAY/JUNE 2021)
 - INFERRED

CLIENT		2021 GROUNDWATER MONITORING PROGRAM RYLEY, ALBERTA		
		Cross-Section C-C'		
PROJECT NO. SWM.SWOP04401-01	DWN MM/DBD	CKD MS	REV 0	Figure 4d
OFFICE Tt-EDM		DATE January 7, 2022		



Q:\Edmonton\Drafting\00_MASTER PROJECT BASE PLANS\Clean Harbors Ryley\PROJECT\SWM\SWOP04401-01_Groundwater Monitoring 2021\Acad\SWM\SWOP04401-01_Figure04e_CrossSections.dwg [FIGURE 4E] January 10, 2022 - 12:17:11 pm (BY: VERBURG, MEGAN)

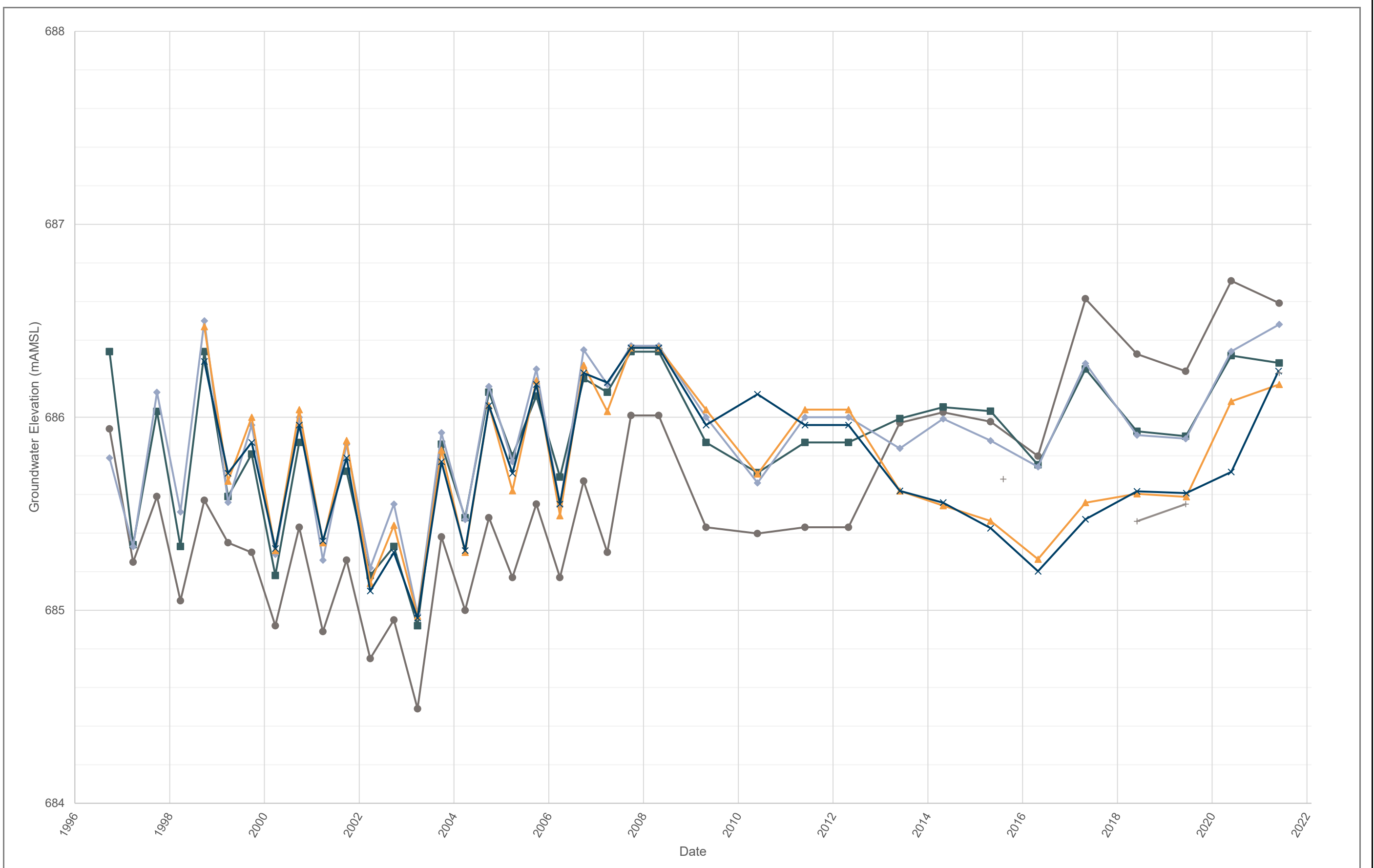


SCALE AS SHOWN
10 X VERTICAL EXAGGERATION

LEGEND:

- FILL
- SAND
- CLAY
- SANDSTONE
- TILL
- GROUNDWATER ELEVATIONS IN METRES ABOVE SEA LEVEL (MASL) (COLLECTED IN MAY/JUNE 2021)
- INFERRED

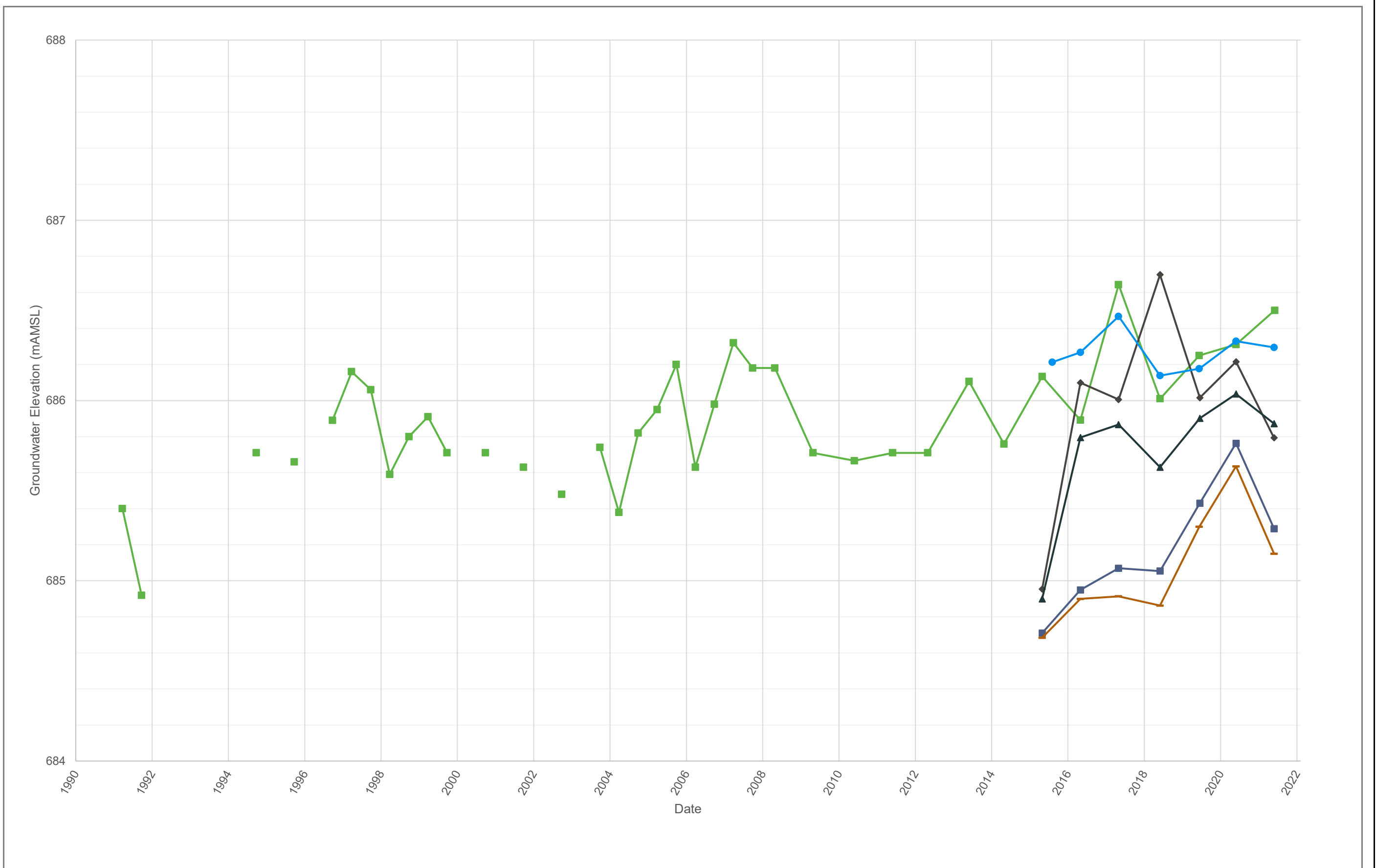
		2021 GROUNDWATER MONITORING PROGRAM RYLEY, ALBERTA		
		Cross-Section D-D'		
PROJECT NO.	DWN	CKD	REV	Figure 4e
SWM.SWOP04401-01	MM/DBD	MS	0	
OFFICE	DATE			
Tt-EDM	January 7, 2022			



LEGEND

- MW18B
- MW19B
- ◆ MW20B
- ▲ MW21B
- ✕ MW22B
- ⊕ 15MW35C

 	2021 GROUNDWATER MONITORING PROGRAM RILEY, AB					Figure 5a
	Surficial Materials West - Hydrograph					
PROJECT NO. SWM.SWOP04401-01	DWN CF	CKD MC	APVD AS	REV 001		
OFFICE Tt - EBA - CAL	DATE March, 2022		STATUS Issued for Review			



LEGEND

- MW10
- ◆ MW29B
- ▲ MW30B
- MW31B
- ▲ MW32B
- MW33B

CLIENT



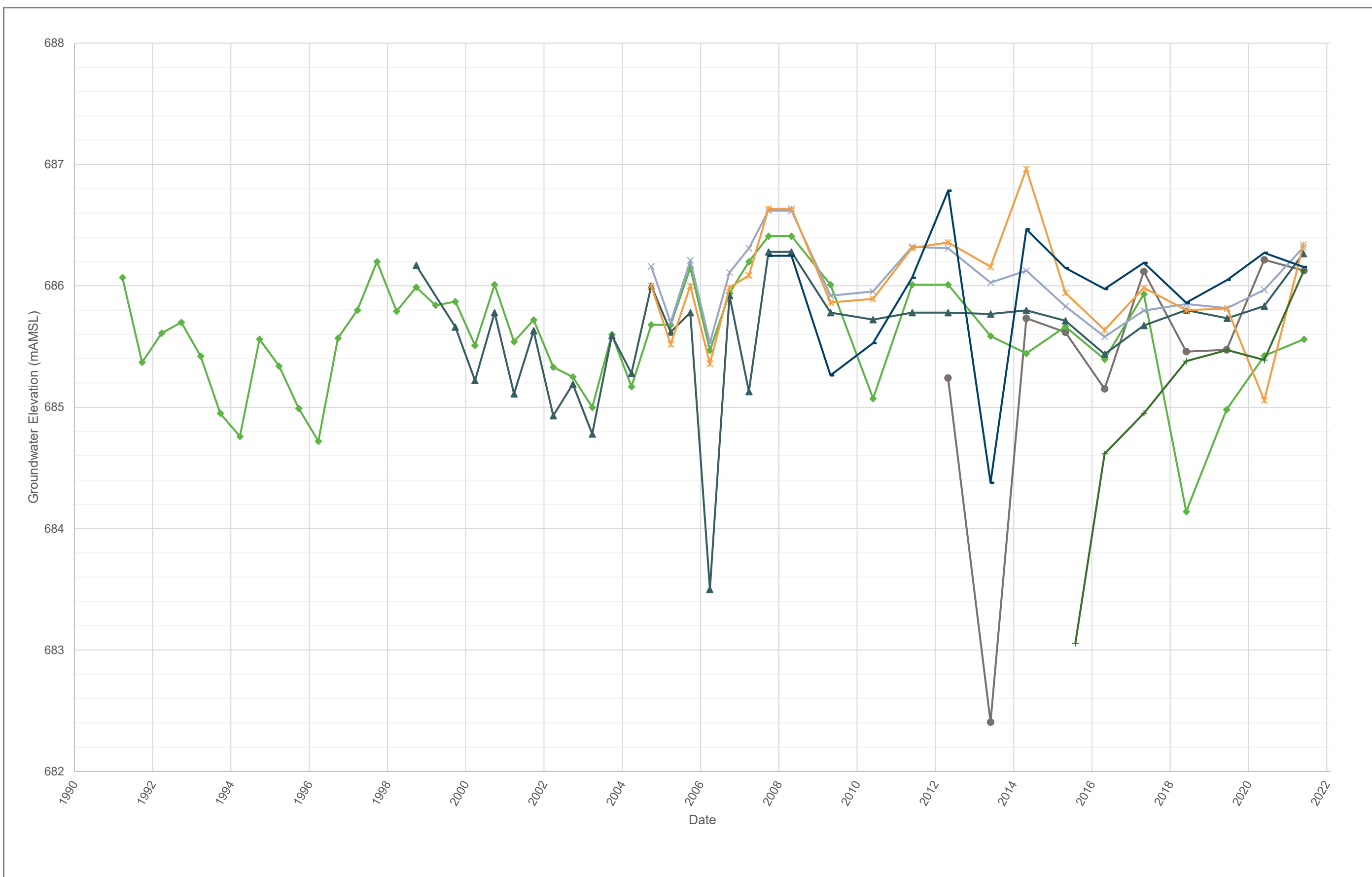
**2021 GROUNDWATER MONITORING PROGRAM
RILEY, AB**

Surficial Materials East - Hydrograph



PROJECT NO. SWM.SWOP04401-01	DWN CF	CKD MC	APVD AS	REV 001
OFFICE Tt - EBA - CAL	DATE March, 2022	STATUS Issued for Use		

Figure 5b



LEGEND

- MW1C
- ◆ MW12A
- ▲ MW23B
- ✕ MW25B
- ✱ MW26B
- MW27B
- ◆ 15MW35B

CLIENT



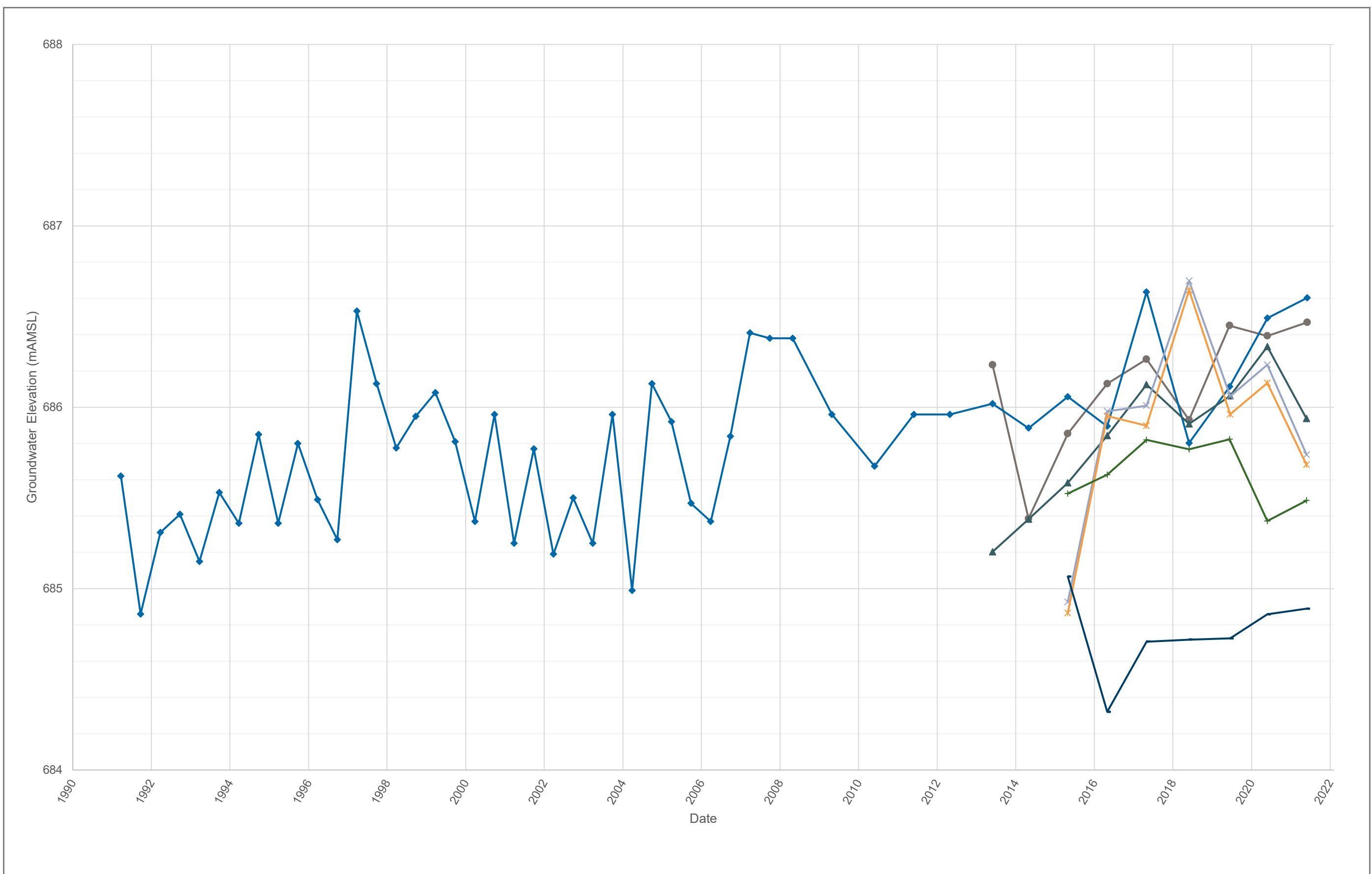
**2021 GROUNDWATER MONITORING PROGRAM
RILEY, AB**

Upper Sandstone West - Hydrograph



PROJECT NO. SWM.SWOP04401-01	DWN CF	CKD MC	APVD AS	REV 001
OFFICE Tt - EBA - CAL	DATE March, 2022	STATUS Issued for Use		

Figure 5c



LEGEND

- MW8B
- ◆ MW11
- ▲ MW28B
- ✕ MW29A
- ✕ MW30A
- MW31A
- MW33A

CLIENT



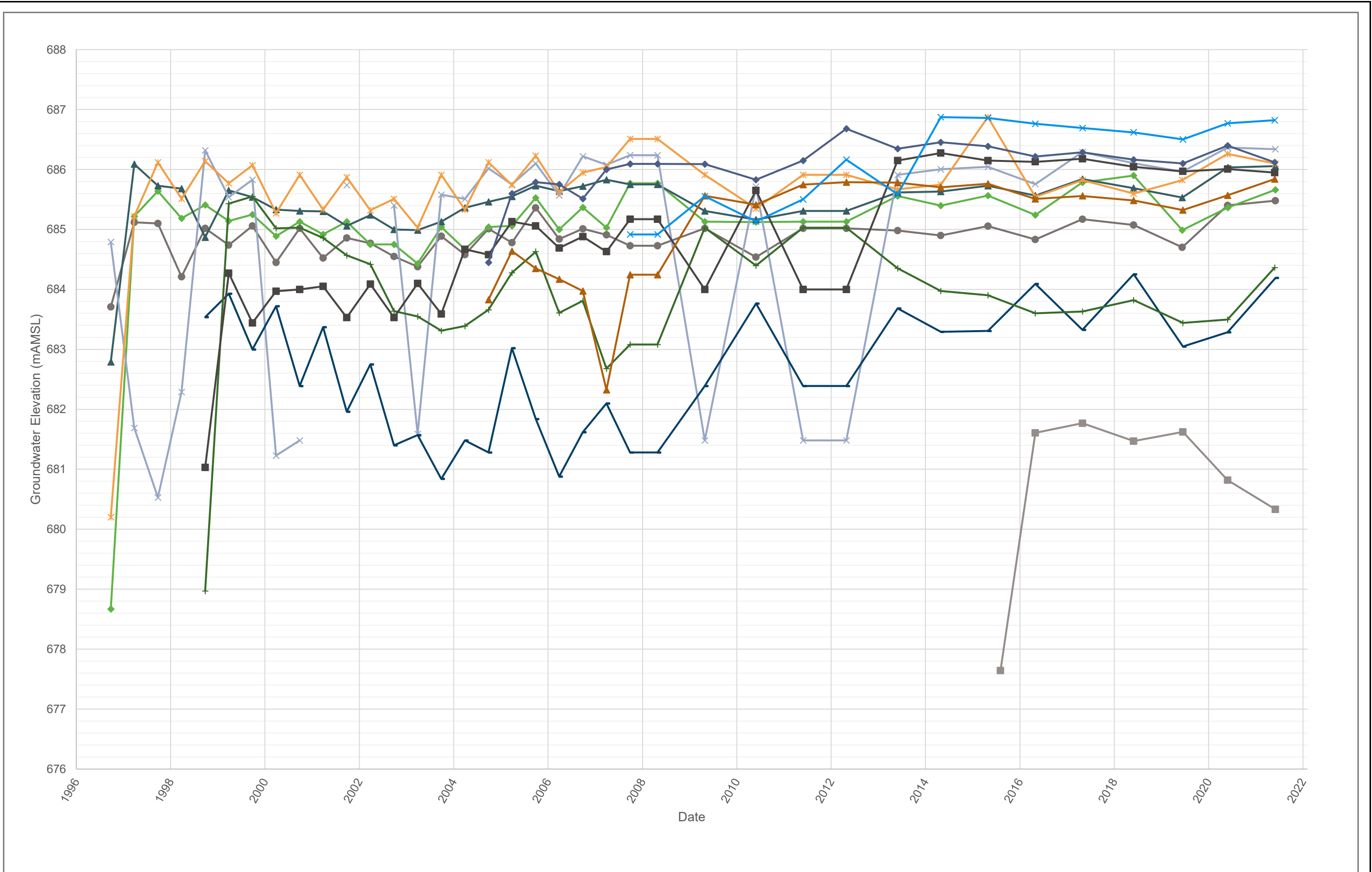
**2021 GROUNDWATER MONITORING PROGRAM
RILEY, AB**

Upper Sandstone East - Hydrograph



PROJECT NO. SWM.SWOP04401-01	DWN CF	CKD MC	APVD AS	REV 001
OFFICE Tt - EBA - CAL	DATE March, 2022	STATUS Issued for Use		

Figure 5d



LEGEND

- MW1B
- ◆ MW12B
- ▲ MW18A
- ✕ MW19A
- ✱ MW20A
- MW21A
- ◆ MW22A
- MW23A
- ◆ MW25A
- ▲ MW26A
- ✕ MW27A
- 15MW35A

CLIENT

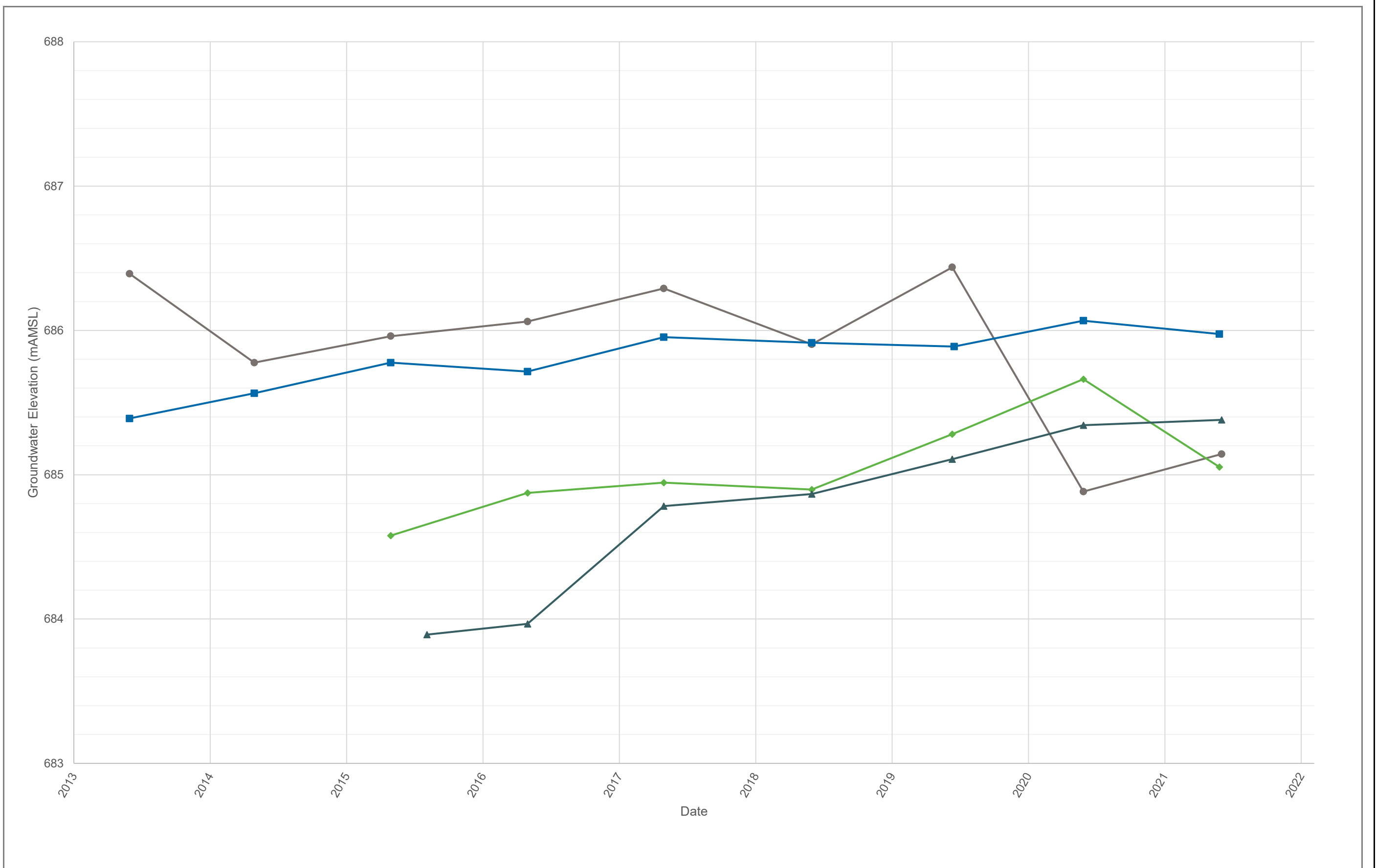



**2021 GROUNDWATER MONITORING PROGRAM
RILEY, AB**

Clay Shale West - Hydrograph

PROJECT NO. SWM.SWOP04401-01	DWN CF	CKD MC	APVD AS	REV 001
OFFICE Tt - EBA - CAL	DATE March, 2022	STATUS Issued for Use		

Figure 5e



LEGEND

- MW8A
- MW28A
- ◆ MW32A
- ▲ 15MW36A

CLIENT

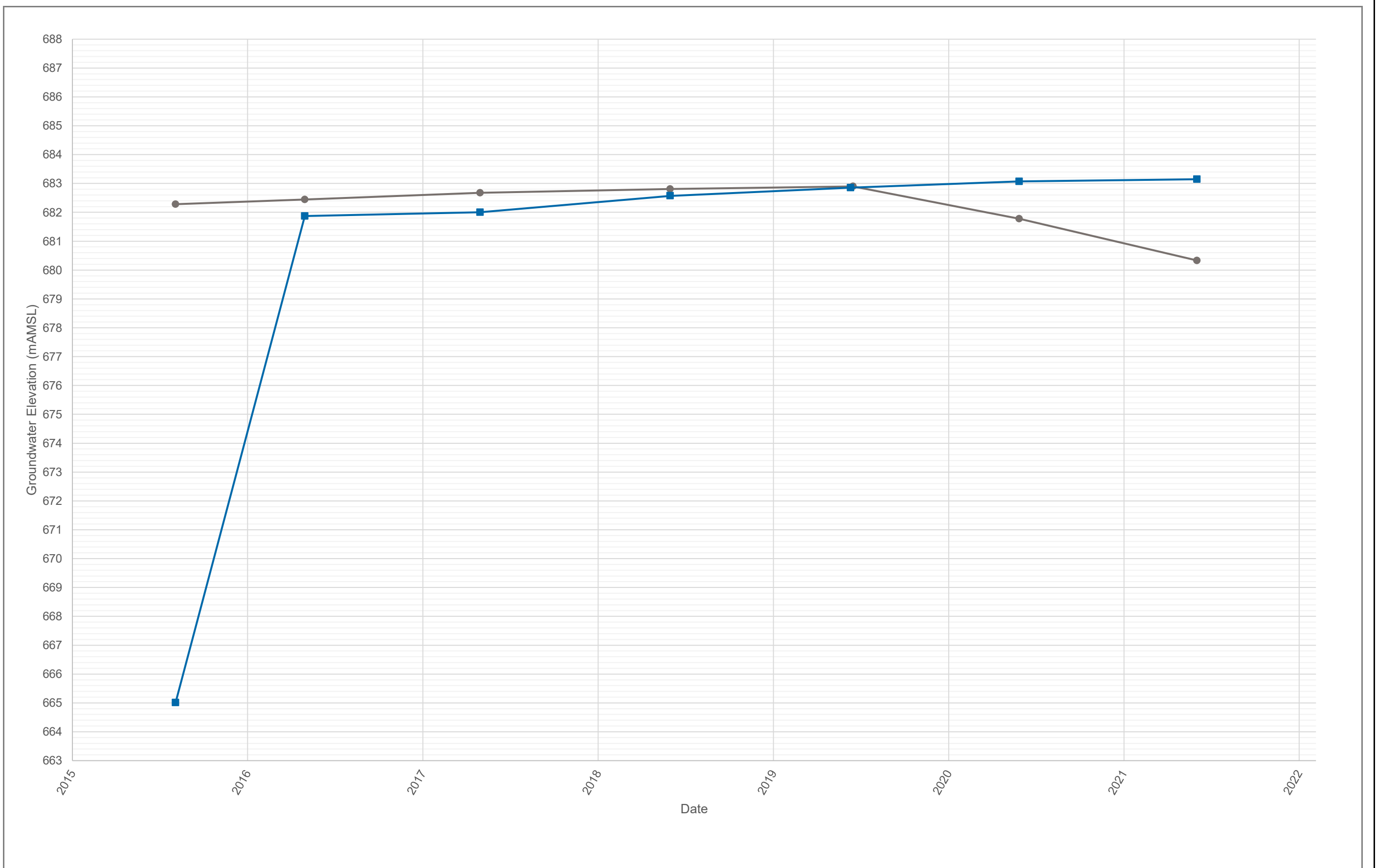



**2021 GROUNDWATER MONITORING PROGRAM
RILEY, AB**

Clay Shale East - Hydrograph

PROJECT NO. SWM.SWOP04401-01	DWN CF	CKD MC	APVD AS	REV 001
OFFICE Tt - EBA - CAL	DATE March, 2022	STATUS Issued for Use		

Figure 5f



LEGEND

● 15MW35-Deep ■ 15MW36-Deep



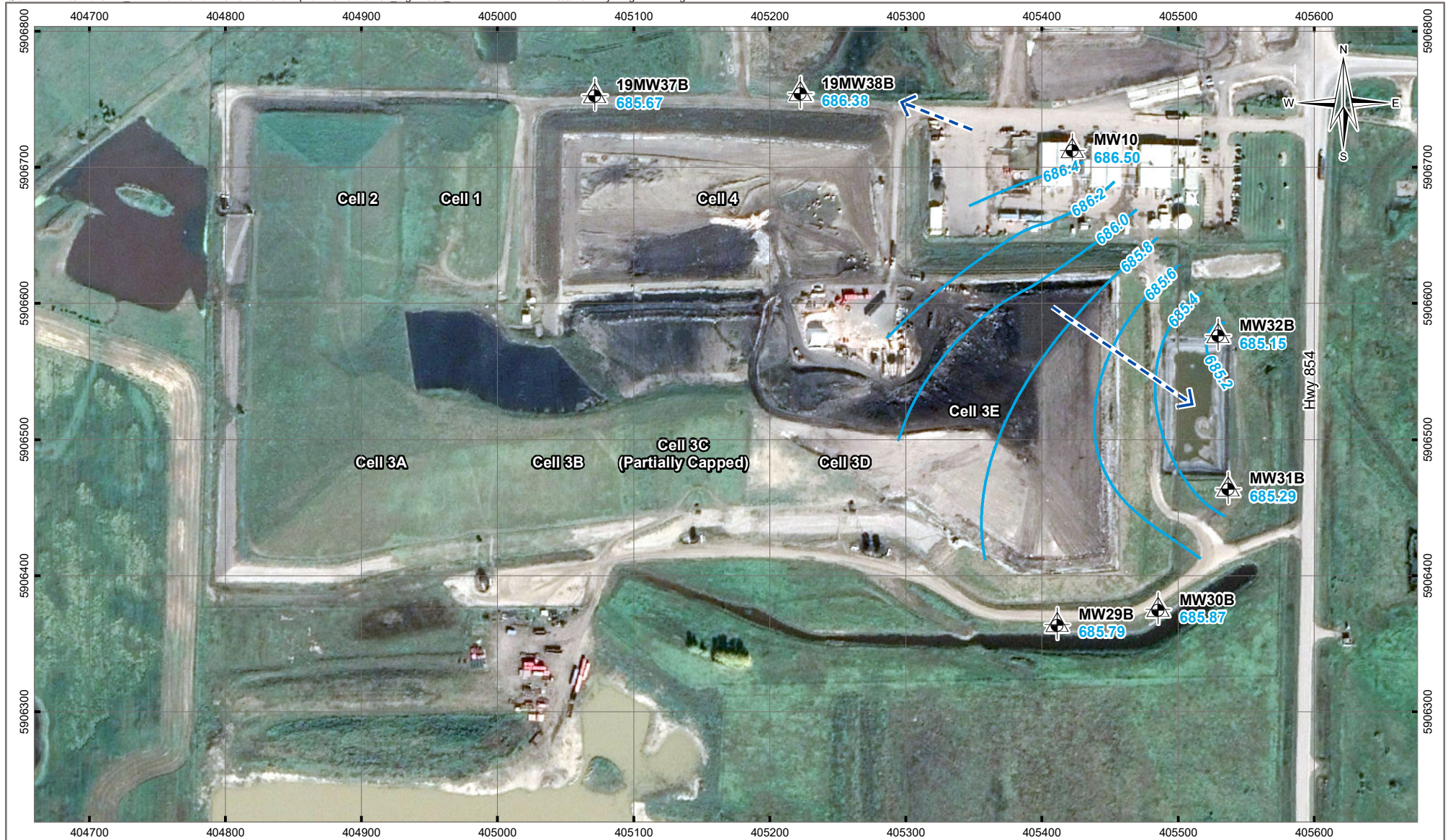



<p>CLIENT</p> 	<p>2021 GROUNDWATER MONITORING PROGRAM RILEY, AB</p>				
	<p>Lower Bedrock - Hydrograph</p>				
	PROJECT NO.	DWN	CKD	APVD	REV
	SWM.SWOP04401-01	CF	MC	AS	001
OFFICE	DATE	STATUS			
Tt - EBA - CAL	March, 2022	Issued for Use			

Figure 5g

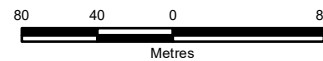


LEGEND

-  Monitoring Well
- 68X.XX Groundwater Elevation (masl)
-  Groundwater Elevation Contour (0.2 m)
-  Inferred Direction of Groundwater Flow

NOTES
Base data source: Imagery provided by Google Earth; Maxar (2019)

Scale: 1:4,000



PROJECTION
UTM Zone 12

DATUM
NAD83

FILE NO.
SWOP04401-01_Figure06a_Surficial.mxd

CLIENT



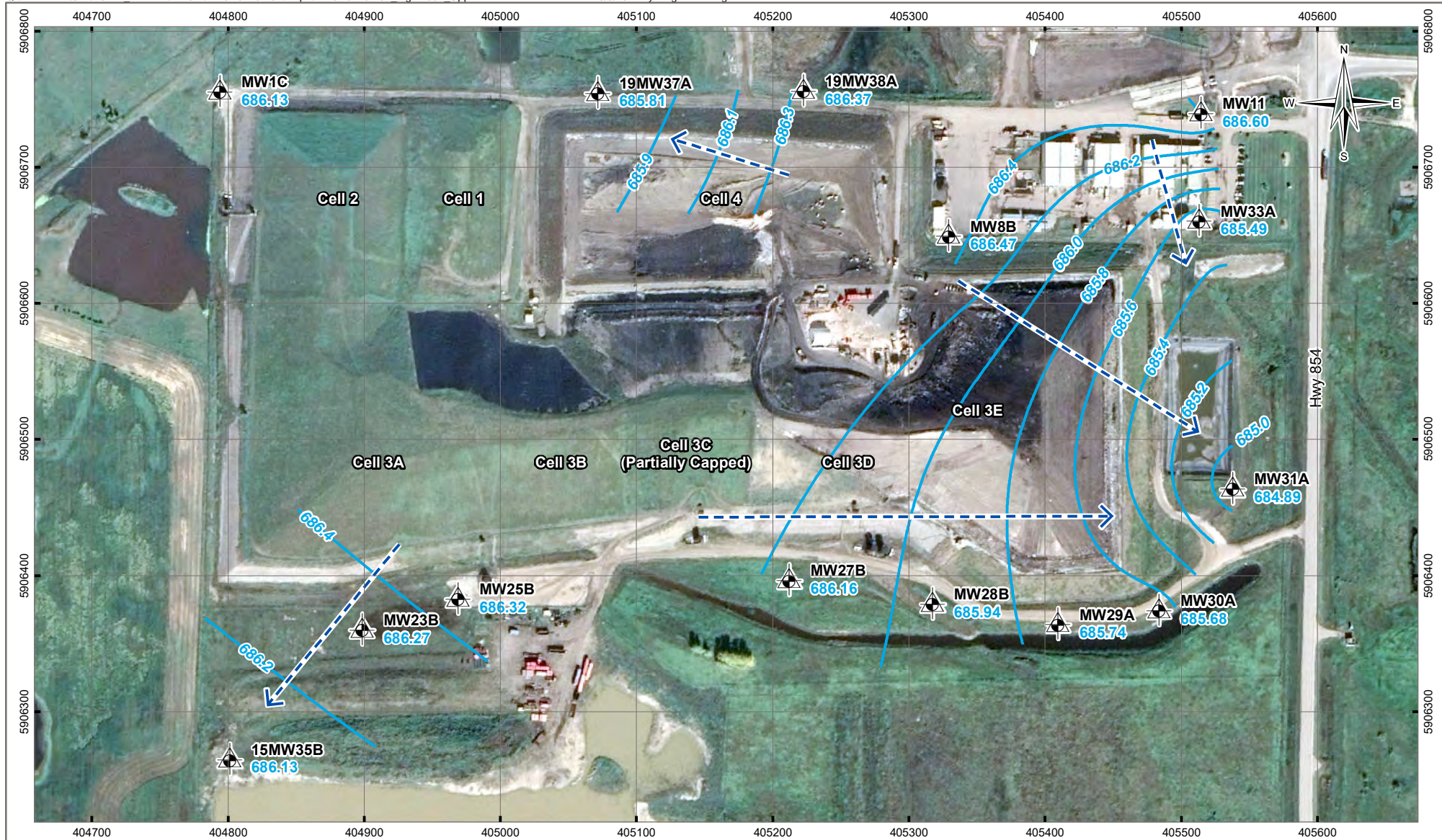

2021 GROUNDWATER MONITORING PROGRAM RILEY, ALBERTA

Groundwater Elevation Contours Surficial Materials - May 27, 2021




OFFICE TL-EDM	DWN MRV	CKD SL	APVD MS	REV 0
DATE March 8, 2022	PROJECT NO. SWM.SWOP04401-01			

Figure 6a

STATUS
ISSUED FOR USE

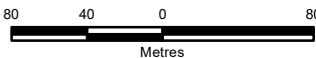


LEGEND

-  Monitoring Well
- 68X.XX Groundwater Elevation (masl)
-  Groundwater Elevation Contour (0.2 m)
-  Inferred Direction of Groundwater Flow

NOTES
Base data source: Imagery provided by Google Earth; Maxar (2019)

Scale: 1:4,000



PROJECTION
UTM Zone 12

DATUM
NAD83

FILE NO.
SWOP04401-01_Figure06b_UpperSandstone.mxd

CLIENT
 

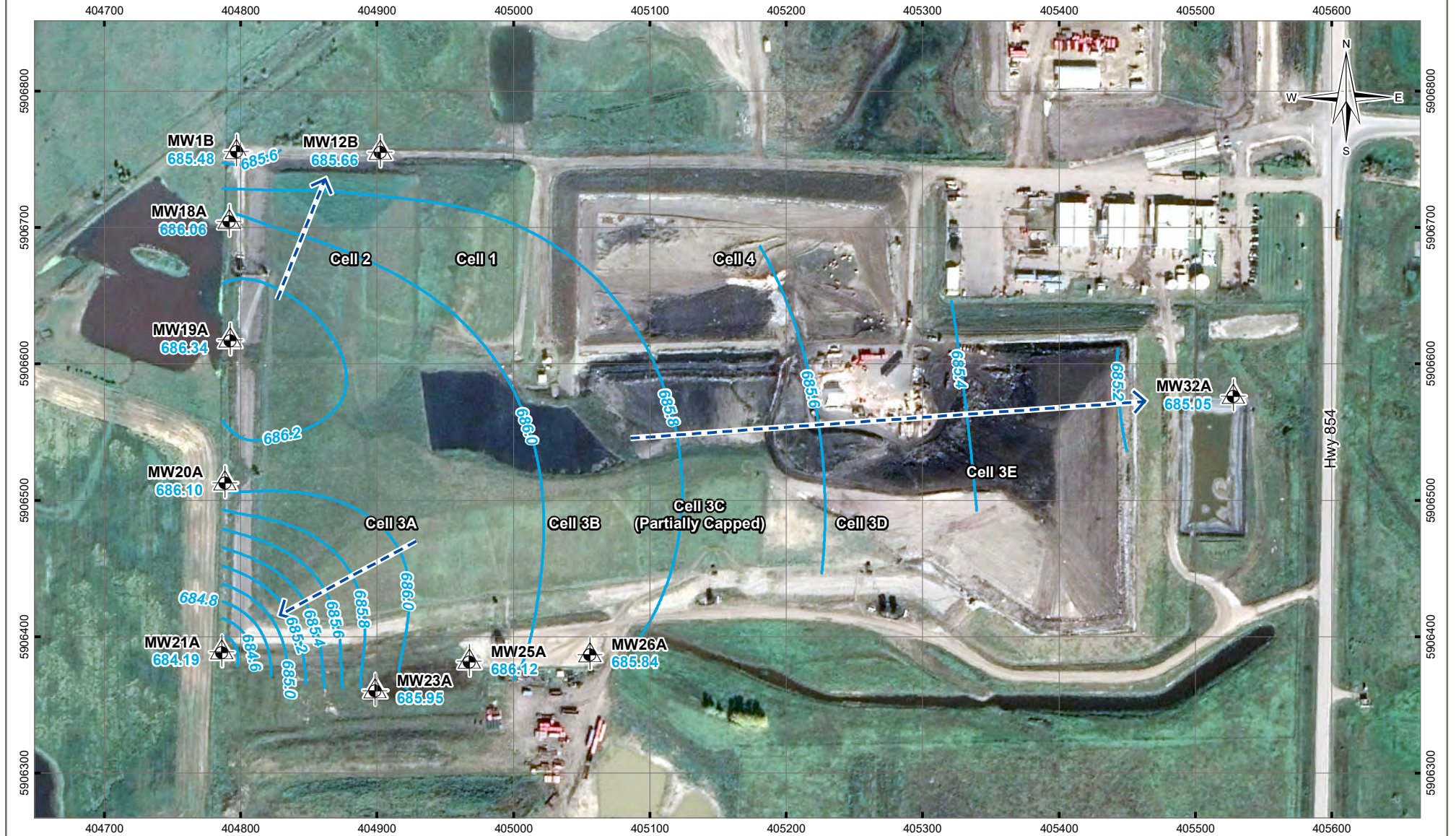
2021 GROUNDWATER MONITORING PROGRAM RILEY, ALBERTA

Groundwater Elevation Contours Upper Sandstone - May 27, 2021




OFFICE TL-EDM	DWN MRV	CKD SL	APVD MS	REV 0
DATE March 8, 2022	PROJECT NO. SWM.SWOP04401-01			

Figure 6b

STATUS
ISSUED FOR USE

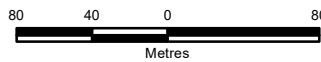


LEGEND

-  Monitoring Well
- 68X.XX Groundwater Elevation (masl)
-  Groundwater Elevation Contour (0.2 m)
-  Inferred Direction of Groundwater Flow

NOTES
Base data source: Imagery provided by Google Earth; Maxar (2019)

Scale: 1:4,000



PROJECTION
UTM Zone 12

DATUM
NAD83

FILE NO.
SWOP04401-01_Figure06c_ClayShale.mxd

CLIENT




2021 GROUNDWATER MONITORING PROGRAM RILEY, ALBERTA

Groundwater Elevation Contours Clay Shale - May 27, 2021

OFFICE TL-EDM	DWN MRV	CKD SL	APVD MS	REV 0
DATE March 17, 2022	PROJECT NO. SWM.SWOP04401-01			

Figure 6c

STATUS
ISSUED FOR USE

APPENDIX A

REGULATORY APPROVAL - ALBERTA ENVIRONMENT AND RECORD OF SITE CONDITION

File No.: 10348-03-00

May 25, 2018

Mr. Michael E. Parker
Vice President, Canadian Environmental Compliance
Clean Harbors Environmental Services
RR 1 4090 Telfer Road
Corunna, ON N0N 1G0
e-mail: parker.michaele@cleanharbors.com

Dear Mr. Parker:

**Re: *Environmental Protection and Enhancement Act (EPEA)* Approval No. 10348-03-00
Revised Groundwater Monitoring Program**

Alberta Environment and Parks (AEP) has reviewed the referenced revised Groundwater Monitoring Program submitted by Tetra Tech Canada Inc. on behalf of Clean Harbors Canada, Inc. (Clean Harbors) on September 25, 2017 pursuant to Section 4.9.2 of the *Environmental Protection and Enhancement Act* Approval No. 10348-03-00 (the Approval).

In accordance with Section 4.9.4 of the Approval, Clean Harbors is hereby authorized to proceed with the aforementioned revised Groundwater Monitoring Program.

If you have any questions or require clarification with respect to this letter, please contact Weiguo Wu, Industrial Approvals Engineer, at (780) 427-0630.

Sincerely,



Mohammad Habib, P.Eng.
(Designated Director under the Act)
Red-Deer – North Saskatchewan Region

cc: Stan Yuha, Clean Harbors Canada, Inc (e-mail: YUHA.STAN@cleanharbors.com)
Bryan Hensel, Tetra Tech Canada Inc. (e-mail: Bryan.Hensel@tetrattech.com)
Gene Leskiw, Contaminant Hydrogeologist, AEP
Weiguo Wu, Industrial Approvals Engineer, AEP

April 19, 2017

Michael Parker
Vice President, Canadian Environmental Compliance
Clean Harbors Canada, Inc.
4090 Telfer Road RR#1
Corunna ON NON 1G0

Dear Mr. Parker:

**Re: Ryley Hazardous Waste Storage Facility and Landfill
Application No. 014-10348**

Your application for a renewal of an existing approval under the *Environmental Protection and Enhancement Act* (EPEA) has been reviewed and enclosed is Approval No. 10348-03-00.

It is your responsibility to obtain any approvals, permits or licences that are required from other agencies.

The Act may provide the approval holder a right of appeal against any term or condition contained in the approval to the Alberta Environmental Appeals Board. You should note that there are strict time lines for filing an appeal dependent on the type of appeal. If you choose to appeal, please contact the office of the Registrar of Appeals, Environmental Appeals Board of Alberta, 3rd Floor, 10011 - 109 Street, Edmonton, Alberta, T5J 3S8, telephone (780) 427-6207.

If you have any questions, please contact me at (780) 415-2201 in Edmonton.

Yours truly,



Annette Vawter
Application Coordinator

Enclosure

cc: Weiguo Wu, Red Deer/North Saskatchewan Region - Edmonton
cc: Tetra Tech EBA Inc.
Attention: J. Paul Ruffell

APPROVAL

PROVINCE OF ALBERTA

**ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT
R.S.A. 2000, c.E-12, as amended.**

APPROVAL NO. 10348-03-00

APPLICATION NO. 014-10348

EFFECTIVE DATE: March 31, 2017

EXPIRY DATE: March 31, 2027

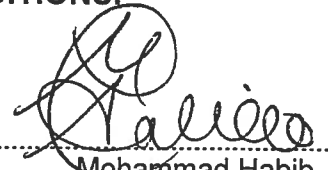
APPROVAL HOLDER: Clean Harbors Canada, Inc.

.....
.....
.....

ACTIVITY: CONSTRUCTION, OPERATION AND RECLAMATION OF THE

Ryley Industrial Waste Management Facility, consisting of a Class I and Class II Industrial Landfill and a Hazardous Waste/Recyclable Storage and Processing Facility,

IS SUBJECT TO THE ATTACHED TERMS AND CONDITIONS.

Designated Director under the Act 
Mohammad Habib, P. Eng.

Date Signed March 31, 2017

TERMS AND CONDITIONS ATTACHED TO APPROVAL

PART 1: DEFINITIONS

SECTION 1.1: DEFINITIONS

- 1.1.1 All definitions from the Act and the regulations apply except where expressly defined in this approval.
- 1.1.2 In all PARTS of this approval:
- (a) "Act" means the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c.E-12, as amended;
 - (b) "action leakage rate" means the leakage rate that would occur through the primary liner, based on two holes per hectare, each with a diameter of 2 mm and that is calculated to be 790L/ha/day;
 - (c) "active landfill area" means the portion of the landfill that has received or is receiving waste for disposal, where final cover has not been placed, and includes areas that are being used for interim management of waste prior to disposition;
 - (d) "active landfill life" means the period of landfill life during which waste is received for disposal at the landfill, beginning with the initial receipt of waste and ending with the start of final landfill closure activities;
 - (e) "AER" means Alberta Energy Regulator;
 - (f) "affected lands" means lands which have received substances released from the facility;
 - (g) "air effluent stream" means any substance in a gaseous medium released by or from a facility;
 - (h) "APEGA" means the Association of Professional Engineers and Geoscientists of Alberta;
 - (i) "application" means the written submissions from the approval holder to the Director in respect of application No. 014-10348 and any subsequent applications where amendments are issued for this approval;
 - (j) "application No. 005-10348" means the written submissions from the approval holder to the Director in respect of renewal application No. 005-10348;
 - (k) "application No. 008-10348" means the written submissions from the approval holder to the Director in respect of amendment application No. 008-10348;

.....
TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (l) "application No. 012-10348" means the written submissions from the approval holder to the Director in respect of amendment application No. 012-10348;
- (m) "as-built plans" means survey plans, signed and stamped by a professional registered with APEGA, that document variances from design or construction plans that were either approved or authorized according to the terms and conditions of this approval;
- (n) "BTEX" means benzene, toluene, ethylbenzene and xylene;
- (o) "COD" means Chemical Oxygen Demand;
- (p) "composite liner" means a liner that meets the specifications in 3.1.2(b) of this approval;
- (q) "container" means any portable device in which a substance is kept, including but not limited to the following:
 - (i) drums, barrels and pails which have a capacity greater than 18 litres but less than 210 litres,
 - (ii) 320 litre overpack drums, and
 - (iii) 1000 litre tote tanks or sacks;
- (r) "cover" means soil or other approved material that is used to cover compacted wastes in a landfill cell;
- (s) "day", when referring to sampling, means any sampling period of 24 consecutive hours;
- (t) "decommissioning" means the dismantling and decontamination of the facility undertaken subsequent to the termination or abandonment of any activity or any part of any activity regulated under the Act, excluding the landfill cells and those infrastructure components and facilities that are required for the landfill post-closure;
- (u) "decontamination" means the treatment or removal of substances from the facility and affected lands;
- (v) "Director" means an employee of the Government of Alberta designated as a Director under the Act;
- (w) "dismantling" means the removal of buildings, structures, process and pollution abatement equipment, vessels, storage facilities, material handling

.....
TERMS AND CONDITIONS ATTACHED TO APPROVAL

facilities, railways, roadways, pipelines and any other installations that are being or have been used or held for or in connection with the facility;

- (x) "DOC" means Dissolved Organic Carbon;
- (y) "domestic wastewater" means wastewater that is the composite of liquid and water-carried wastes associated with the use of water for drinking, cooking, cleaning, washing, hygiene, sanitation or other domestic purposes, together with any infiltration and inflow wastewater, that is released into a wastewater collection system;
- (z) "domestic wastewater system" means the parts of the facility that collect, store, or treat domestic wastewater from the facility;
- (aa) "existing landfill cells" means Cell 1, Cell 2, Cell 3A, Cell 3B, and Cell 3C as described in application No. 005-10348;
- (bb) "facility" means all buildings, structures, process and pollution abatement equipment, vessels, storage facilities, material handling facilities, roadways, railways, pipelines and other installations, the Class I and Class II industrial landfill and the HWRSP Facility, and includes the land, located on the SE 1/4 of Section 9, Township 50, Range 17, West of the 4th Meridian, that is being or has been used or held for or in connection with the Ryley Industrial Waste Management Facility;
- (cc) "facility developed area" means the areas of the facility used for the storage, treatment, processing, transport, or handling of raw material, intermediate product, by-product, finished product, process chemicals, or waste material, and includes the active landfill area;
- (dd) "final cover" means a designed system, natural or man-made, that is placed on the surface of a landfill or landfill cell that has reached its maximum designated waste elevation to control transmission of moisture and landfill gas, and conforms to the end use plan;
- (ee) "final landfill closure" means the period of time when waste is no longer placed in the defined portion of a landfill and activities are undertaken to complete the final cover system and decommission components and facilities that are no longer required, and includes the construction of any additional components or monitoring systems that are necessary for post-closure;
- (ff) "free liquids" means the liquids as determined by the US EPA SW-846 Test Method 9095B: Paint Filter Liquids Test, as specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, US EPA Publication No. SW-846, as amended;

.....
TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (gg) "fugitive emissions" means emissions of substances to the atmosphere other than ozone depleting substances, originating from a facility source other than a flue, vent, or stack but does not include sources which may occur due to breaks or ruptures in process equipment;
- (hh) "GCL" means geosynthetic clay liner that is made of a thin layer of bentonite either bonded to a geomembrane or fixed between two sheets of geotextile;
- (ii) "geomembrane" means a sheet of manufactured synthetic material designed to control migration of liquid and gas;
- (jj) "grab sample" means an individual sample collected in less than 30 minutes and which is representative of the substance sampled;
- (kk) "groundwater" means groundwater as defined in the *Water Act*, R.S.A. 2000, c.W-3, as amended;
- (ll) "groundwater monitoring well" means a well drilled at a site to measure groundwater levels and collect groundwater samples for the purpose of physical, chemical, or biological analysis to determine the concentration of groundwater constituents;
- (mm) "HDPE" means High Density Polyethylene;
- (nn) "HWRSP Facility" means the Hazardous Waste/Recyclable Storage and Processing Facility as described in the application for storage, processing and transfer of hazardous wastes and hazardous recyclables and which includes the Maintenance Shop, and is an integral part of the facility;
- (oo) "hydraulic conductivity" means the ease with which water can be transported through a material
- (pp) "hydrocarbon" means a chemical compound that consists entirely of hydrogen and carbon;
- (qq) "ISO/IEC 17025" means the international standard, developed and published by International Organization for Standardization (ISO), specifying management and technical requirements for laboratories;
- (rr) "incompatible waste" means waste materials which could cause dangerous reactions from direct contact with one another;
- (ss) "industrial wastewater" means the composite of liquid wastes and water-carried wastes, any portion of which results from any industrial process carried on at the HWRSP Facility;

.....

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (tt) "landfill" means the Class I and Class II industrial landfill as described in the application and which includes the waste stabilization area, and is an integral part of the facility;
- (uu) "landfill cell" means a designed area of a landfill comprised of an excavation or earthen structure in which waste is enclosed;
- (vv) "landfill cell closure" means the construction of a final cover for landfill cell including placement of previously conserved top soil and upper subsoil and re-vegetation as required for the intended future use of the landfill;
- (ww) "landfill gas" means a mixture of gases generated by the microbial decomposition of and chemical reactions between wastes in a landfill;
- (xx) "lateral expansion" means an expansion of landfill cell boundaries beyond the approved area;
- (yy) "leachate" means a liquid that has been in contact with waste in the landfill cell and has undergone chemical or physical changes;
- (zz) "leachate collection system" means a system that gathers leachate so that it may be removed from a landfill, and includes a permeable drainage material, a network of perforated pipes and sumps or manholes from where leachate can be removed;
- (aaa) "leak detection liquid" means any liquid collected within the leak detection system;
- (bbb) "leak detection system" means a system that gathers liquid between a primary liner and a secondary liner system, and consists of a permeable drainage material, a network of perforated pipes and sumps or manholes from where the liquid can be removed;
- (ccc) "liner" means a continuous layer of synthetic material or compacted natural clay placed beneath and at the sides of a landfill cell that is compatible with the waste and restricts the migration of leachate, or landfill gas, or both;
- (ddd) "local environmental authority" means the Department of Environment and Parks, in the Province of Alberta, or the agency that has the equivalent responsibilities for any jurisdiction outside the Province;

TERMS AND CONDITIONS ATTACHED TO APPROVAL

(eee) "major ions" means the following:

Calcium	Carbonate
Magnesium	Bicarbonate
Sodium	Chloride
Potassium	Sulfate

(fff) "maximum acceptable leachate head" means the maximum depth of leachate above the lowest part of the primary liner, not including the sumps or leachate collection pipe trenches, and is:

- (i) 1.0 m in each of the existing landfill cells, and
- (ii) 0.3 m in each of the new landfill cells

during active landfill life, landfill cell closure, final landfill closure, and post-closure;

(ggg) "maximum designated waste elevation" means the maximum elevation of waste in metres above sea level that can be disposed of at the landfill prior to construction of final cover, and is 714 metres;

(hhh) "metals" means the following:

Aluminum, dissolved	Chromium, dissolved (hexavalent)	Nickel, dissolved
Antimony, dissolved	Cobalt, dissolved	Selenium, dissolved
Arsenic, dissolved	Copper, dissolved	Silver, dissolved
Barium, dissolved	Lead, dissolved	Thallium, dissolved
Boron, dissolved	Manganese, dissolved	Tin, dissolved
Cadmium, dissolved	Mercury, total	Uranium, dissolved
Chromium, total	Molybdenum, dissolved	Zinc, dissolved

(iii) "monitoring system" means all equipment used for sampling, conditioning, analyzing or recording data in respect of any parameter listed or referred to in this approval, including equipment used for continuous monitoring;

(jjj) "month" means calendar month;

(kkk) "municipal solid waste" means solid waste resulting from or incidental to municipal, community, commercial, institutional and recreation activities, and includes garbage, rubbish, ashes, street cleanings, abandoned automobiles and all other solid wastes except hazardous waste, industrial solid waste, oilfield waste and biomedical wastes;

TERMS AND CONDITIONS ATTACHED TO APPROVAL

(lll) "new landfill cells" means Cell 3D as described in application No. 005-10348, Cell 3E as described in application No. 012-10348, and Cell 4 as described in the application;

(mmm) "new surface water detention pond" means the surface water detention pond as described in application No. 012-10348;

(nnn) "NORM" means Naturally Occurring Radioactive Materials;

(ooo) "NORM waste" means any waste material with concentrations of NORM above the limits specified in Tables 5.1, 5.2, or 5.3 of the *Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials (NORM)*, Health Canada, 2011, as amended;

(ppp) "nutrients" means the following:

Ammonia nitrogen	Nitrite nitrogen
Total Kjeldahl nitrogen	Total phosphorus
Nitrate nitrogen	Dissolved phosphorus

(qqq) "old surface water detention pond" means the surface water detention pond as described in application No. 005-10348;

(rrr) "Petroleum Hydrocarbons Fractions F1 and F2" means the specific hydrocarbon fraction measured by the analytical methods described in the *Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method*, published by the Canadian Council of Ministers of the Environment, 2001, as amended;

(sss) "points of compliance" means the location or locations of the groundwater monitoring wells where measurements of groundwater quality are taken to assess landfill and waste treatment performance;

(ttt) "post-closure" means the period of time after completion of the final landfill closure;

(uuu) "ppm" means concentration in parts per million;

(vvv) "primary liner" means the uppermost geomembrane liner;

(www) "QA/QC" means quality assurance and quality control;

(xxx) "quarter year" means a time period of three consecutive months designated as January, February and March; or April, May and June; or July, August and September; or October, November and December;

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (yyy) "regulations" means the regulations enacted pursuant to the Act, as amended;
- (zzz) "representative grab" means a sample consisting of equal volume portions of water collected from at least four sites between 0.20 to 0.30 metres below the water surface within a pond;
- (aaaa) "runoff" means any rainwater or melt water that drains as surface flow from the facility developed areas, excluding leachate;
- (bbbb) "runoff control system" means the parts of the facility that collect, store or treat runoff from the facility, and includes but is not limited to runoff collection ditches, surface water detention pond(s) and tank farm bermed area;
- (cccc) "run-on" means any rainwater or melt water that drains as surface flow toward the active landfill area;
- (dddd) "run-on control system" means the parts of the facility that divert run-on away from the active landfill area;
- (eeee) "scrubber exhaust stack" means the exhaust stack through which the air effluent streams that are:
- (i) collected from the exhaust vents of the Drum Processing Building or Staging Building or both, and
 - (ii) treated with the caustic scrubber and activated carbon filter
- are released to the atmosphere as described in the application;
- (ffff) "secondary liner" means the lowermost geomembrane liner;
- (gggg) "soil" means mineral or organic earthen materials that can, have, or are being altered by weathering, biological processes, or human activity;
- (hhhh) "SOP" means Standard Operating Procedures;
- (iiii) "storm event" means a 1 in 25 year, 24 hour duration rainfall event at Ryley, Alberta;
- (jjjj) "tank" means a stationary device, designed to contain an accumulation of a substance, which is constructed primarily of non-earthen materials that provide structural support including wood, concrete, steel, and plastic;
- (kkkk) "TDGR" means the *Transportation of Dangerous Goods Regulations* (SOR/2001-286) made under the *Transportation of Dangerous Goods Act*, 1992 (Canada), as amended;

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (llll) "TDS" means Total Dissolved Solids;
- (mmmm) "topsoil" means the uppermost layer of soil and consists of:
- (i) the A-horizons and all organic horizons as defined in *The Canadian System of Soil Classification* (Third Edition), Agriculture and Agri-Food Canada, Publication 1646, 1998, as amended, and
 - (ii) the soil ordinarily moved during tillage;
- (nnnn) "TSS" means Total Suspended Solids;
- (oooo) "upper subsoil" means the layer of soil directly below the topsoil layer that consists of the B-horizons as defined in *The Canadian System of Soil Classification*, (Third Edition), Agriculture and Agri-Food Canada, Publication 1646, 1998, as amended;
- (pppp) "volume estimate" means a technical evaluation based on the sources contributing to the release including but not limited to pump capabilities, water meters, and batch release volumes;
- (qqqq) "waste stabilization area" means the portion of the landfill that is used for waste stabilization or solidification or both, as described in application no. 008-10348;
- (rrrr) "waste storage area" means the areas designated for storage of containers for waste or hazardous recyclable or both, or for storage of tanks for waste or hazardous recyclable or both, or for storage of both, as described in application No. 005-10348;
- (ssss) "week" means any consecutive 7-day period;
- (tttt) "working face" means that portion of the active landfill area where waste is currently being deposited, spread and compacted; and
- (uuuu) "year" means calendar year.

PART 2: GENERAL

SECTION 2.1: REPORTING

- 2.1.1 The approval holder shall immediately report to the Director by telephone any contravention of the terms and conditions of this approval at 1-780-422-4505.
- 2.1.2 The approval holder shall submit a written report to the Director within 7 days of the reporting pursuant to 2.1.1.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 2.1.3 The approval holder shall immediately notify the Director in writing if any of the following events occurs:
- (a) the approval holder is served with a petition into bankruptcy;
 - (b) the approval holder files an assignment in bankruptcy or Notice of Intent to make a proposal;
 - (c) a receiver or receiver-manager is appointed;
 - (d) an application for protection from creditors is filed for the benefit of the approval holder under any creditor protection legislation; or
 - (e) any of the assets which are the subject matter of this approval are seized for any reason.
- 2.1.4 If the approval holder monitors for any substances or parameters which are the subject of operational limits as set out in this approval more frequently than is required and uses procedures authorized in this approval, then the approval holder shall provide the results of such monitoring as an addendum to the reports required by this approval.
- 2.1.5 The approval holder shall submit all monthly reports required by this approval to be compiled or submitted to the Director on or before the end of the month following the month in which the information was collected, unless otherwise specified in this approval.
- 2.1.6 The approval holder shall submit all annual reports required by this approval to be compiled or submitted to the Director on or before March 31 of the year following the year in which the information was collected, unless otherwise specified in this approval.

SECTION 2.2: RECORD KEEPING

2.2.1 The approval holder shall:

- (a) record; and
- (b) retain

all the following information in respect of any sampling conducted or analyses performed in accordance with this approval for a minimum of ten years, unless otherwise authorized in writing by the Director:

- (i) the place, date and time of sampling,
- (ii) sample type,

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (iii) the dates the analyses were performed,
- (iv) the analytical techniques, methods or procedures used in the analyses,
- (v) the names of the persons who collected and analysed each sample, and
- (vi) the results of the analyses.

2.2.2 The approval holder shall keep and maintain an Operating Record of the landfill as per 4.6.34(a) until the end of the landfill post-closure.

2.2.3 The Operating Record referred to in 2.2.2 shall include, at a minimum, all of the following information:

- (a) the information required in section 7.3(c) of the *Standards for Landfills in Alberta*, as amended;
- (b) the name and contact information of all persons who discover any contravention;
- (c) the names and contact information of all persons who take any remedial actions arising from the contravention of the Act, the regulations, or this approval; and
- (d) a description of the remedial measures taken in respect of a contravention of the Act, the regulations, or this approval.

2.2.4 The approval holder shall submit a copy of the most recent Operating Record to the Director upon written request from the Director within the timeline specified in writing by the Director.

SECTION 2.3: ANALYTICAL REQUIREMENTS

2.3.1 With respect to any sample required to be taken pursuant to this approval, the approval holder shall ensure that:

- (a) collection;
- (b) preservation;
- (c) storage;
- (d) handling; and
- (e) analysis

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

shall be conducted in accordance with the following unless otherwise authorized in writing by the Director:

- (i) for air:
 - (A) the *Alberta Stack Sampling Code*, Alberta Environment, 1995, as amended,
 - (B) the *Methods Manual for Chemical Analysis of Atmospheric Pollutants*, Alberta Environment, 1993, as amended, and
 - (C) the *Air Monitoring Directive*, Alberta Environment, 1989, as amended;
- (ii) for industrial wastewater, industrial runoff, groundwater and domestic wastewater:
 - (A) the *Standard Methods for the Examination of Water and Wastewater*, published jointly by the American Public Health Association, American Water Works Association, and the Water Environment Federation, 1998, as amended;
- (iii) for whole effluent toxicity tests:
 - (A) the *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout*, Environment Canada, Environmental Protection Series 1/RM/13, December 2000, as amended,
 - (B) the *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia Magna*, Environment Canada, Environmental Protection Series 1/RM/14, December 2000, as amended,
 - (C) the *Biological Test Method: Growth Inhibition Test Using the Freshwater Alga *Selenastrum capricornutum**, Environment Canada, Environmental Protection Series, November 1992, as amended,
 - (D) the *Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia**, Environment Canada, Environmental Protection Series 1/RM/21, February 1992, as amended,
 - (E) the *Biological Test Method: Test of Larval Growth and Survival Using Fathead Minnows*, Environment Canada,

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

Environmental Protection Series 1/RM/22, February 1992, as amended, and

(F) the *Biological Test Method: Toxicity Test Using Luminescent Bacteria (Photobacterium phosphoreum)*, Environment Canada, Environmental Protection Series, 1/RM/24, November 1992, as amended;

(iv) for soil:

(A) the *Soil Monitoring Directive*, Alberta Environment, May 2009, as amended, and

(B) the *Soil Quality Criteria Relative to Disturbance and Reclamation*, Alberta Agriculture, March 1987, as amended; and

(v) for waste:

(A) the *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA, SW-846, September 1986, as amended,

(B) the *Methods Manual for Chemical Analysis of Water and Wastes*, Alberta Environmental Centre, Vegreville, Alberta, 1996, AECV96-M1, as amended,

(C) the *Toxicity Characteristic Leaching Procedure (TCLP)* USEPA Regulation 40 CFR261, Appendix II, Method No. 1311, as amended, or

(D) the *Standard Methods for the Examination of Water and Wastewater*, American Public Health Association, American Water Works Association, and the Water Environment Federation, 2010, as amended.

2.3.2 The approval holder shall analyse all samples that are required to be obtained by this approval in a laboratory accredited pursuant to ISO/IEC 17025, as amended, for the specific parameter(s) to be analysed, unless otherwise authorized in writing by the Director.

2.3.3 The term sample used in 2.3.2 does not include samples directed to continuous monitoring equipment, unless specifically required in writing by the Director.

2.3.4 The approval holder shall comply with the terms and conditions of any written authorization issued by the Director under 2.3.2.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

SECTION 2.4: OTHER

- 2.4.1 The terms and conditions of this approval are severable. If any term or condition of this approval or the application of any term or condition is held invalid, the application of such term or condition to other circumstances and the remainder of this approval shall not be affected thereby.
- 2.4.2 Any conflict between the *Standards for Landfills in Alberta*, as amended, and the terms and conditions of this approval shall be resolved in favour of this approval.
- 2.4.3 *Environmental Protection and Enhancement Act* Approval No. 10348-02-00, as amended, is cancelled.
- 2.4.4 All tanks shall conform to the *Guidelines for Secondary Containment for Above Ground Storage Tanks*, Alberta Environmental Protection, 1997, as amended, unless otherwise authorized in writing by the Director.
- 2.4.5 All above ground storage tanks containing liquid hydrocarbons or organic compounds shall conform to the *Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks*, Canadian Council of Ministers of the Environment, PN 1180, 1995, as amended.

PART 3: CONSTRUCTION

SECTION 3.1: LANDFILL

- 3.1.1 The approval holder shall not commence construction of Cell 4 unless and until updated financial security of the facility has been provided to include Cell 4 lateral expansion.
- 3.1.2 The approval holder shall construct each new Class I industrial landfill cell in such a way that each new Class I landfill cell shall consist of the following components, at a minimum, unless otherwise authorized in writing by the Director:
- (a) a minimum of 0.45 metre thick cover of clean sand or soil placed over top of the uppermost drainage layer;
 - (b) a composite liner that consists of, at a minimum:
 - (i) a GCL liner placed in direct contact with an underlying 80 mil HDPE geomembrane liner as a primary liner;
 - (ii) a GCL liner placed in direct contact with an underlying 80 mil HDPE geomembrane liner as a secondary liner; and

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (iii) a GCL liner placed in direct contact with an underlying clay liner that has:
 - (A) a minimum thickness of 1.0 metre at all points, measured perpendicular to the slope, and
 - (B) been compacted to achieve an in-place hydraulic conductivity of 1×10^{-9} m/s or less;
- (c) a leachate collection system that:
 - (i) is placed over the primary liner;
 - (ii) is capable of maintaining the maximum acceptable leachate head; and
 - (iii) consists of:
 - (A) a geo-composite drainage layer with a transmissivity of at least 1×10^{-4} m²/s placed over top of the primary liner,
 - (B) a network of perforated leachate collection pipes, and
 - (C) a leachate collection sump placed over the primary liner;
- (d) a leak detection system that:
 - (i) is installed over the secondary liner;
 - (ii) is capable of detecting the leakage through the primary liner; and
 - (iii) consists of:
 - (A) a geo-composite drainage layer with a transmissivity of at least 1×10^{-4} m²/s placed over top of the secondary liner,
 - (B) a network of perforated leak detection liquid collection pipes, and
 - (C) a leak detection liquid collection sump placed over the secondary liner;
- (e) a final cover:
 - (i) that meets the requirements in section 6.1(c) of the *Standards for Landfills in Alberta*, as amended; or

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (ii) as specified in the Landfill Cell Closure Plan submitted by the approval holder and authorized in writing by the Director pursuant to 7.1.1 and 7.1.4;
 - (f) a run-on control system capable of preventing flow onto the active landfill area from at least the peak discharge from a 1 in 25 year, 24 hour duration storm event at the facility; and
 - (g) a runoff control system capable of collecting and controlling at least the runoff volume resulting from a 1 in 25 year, 24 hour duration storm event at the facility.
- 3.1.3 The composite liner for the landfill shall be constructed on a foundation or base such that there shall be no failure of the liners due to settlement, compression, or uplift.
- 3.1.4 The approval holder shall submit to the Director the following plans and specifications for the proposed construction of each of the items listed in 3.1.2, signed and stamped by a professional registered with APEGA at least three (3) months prior to construction:
 - (a) a Detailed Construction Plan and Specifications prepared as per 3.1.2;
 - (b) a Construction Quality Assurance Plan; and
 - (c) a Construction Quality Control Plan.
- 3.1.5 If the Detailed Construction Plan and Specifications in 3.1.4 is found deficient by the Director, the approval holder shall correct all deficiencies as outlined in writing by the Director within the timeline specified in writing by the Director.
- 3.1.6 The approval holder shall implement the Detailed Construction Plan and Specifications in 3.1.4 as authorized in writing by the Director.
- 3.1.7 During construction of any of the items listed in 3.1.2, the approval holder shall not deviate from the Detailed Construction Plan and Specifications as authorized in writing by the Director in 3.1.6, unless the following conditions are met:
 - (a) the deviation results in a minor adjustment to the Detailed Construction Plan and Specifications in order to suit field conditions encountered; and
 - (b) the deviation will result in an equivalent or better design performance of the landfill.
- 3.1.8 The approval holder shall submit to the Director a summary report of the Construction Quality Assurance and Construction Quality Control results signed and stamped by a professional registered with APEGA.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 3.1.9 The summary report in 3.1.8 shall contain the following information, at a minimum:
- (a) confirmation that the landfill has been constructed according to:
 - (i) the Construction Quality Assurance Plan,
 - (ii) the Construction Quality Control Plan, and
 - (iii) the Detailed Construction Plan and Specifications as authorized in writing by the Director in 3.1.6, subject to the deviations as per 3.1.7;
 - (b) description of any minor deviations as per 3.1.7;
 - (c) confirmation by the professional registered with APEGA, that deviations as per 3.1.7 will result in an equivalent or better design performance of the landfill;
 - (d) "as-built" plans;
 - (e) photo-documentation of important stages of construction including any repair work or remediation activities to establish or maintain liner integrity; and
 - (f) any other information as required in writing by the Director.
- 3.1.10 The approval holder shall notify the Director in writing at least fourteen (14) days prior to commencing operations of any new landfill cell.
- 3.1.11 The approval holder shall construct the off-loading area (tipping area) as described in the application, unless otherwise authorized in writing by the Director.
- 3.1.12 The approval holder shall manage landfill progression in such a manner as to minimize off-site visual impacts of the landfill, as described in the Landfill Cell Closure Plan submitted by the approval holder and authorized in writing by the Director pursuant to 7.1.1 and 7.1.4.

SECTION 3.2: WASTE STABILIZATION AREA

- 3.2.1 The approval holder shall construct the waste stabilization area in accordance with the following:
- (a) application No. 008-10348; and
 - (b) within a Class I landfill cell;
- unless otherwise authorized in writing by the Director.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

SECTION 3.3: SOIL CONSERVATION

3.3.1 The approval holder shall:

- (a) salvage; and
- (b) conserve

all topsoil for land reclamation of the landfill.

3.3.2 The approval holder shall:

- (a) salvage; and
- (b) conserve

all upper subsoil for land reclamation of the landfill.

3.3.3 The approval holder shall:

- (a) conserve; and
- (b) stockpile

all topsoil separately from the upper subsoil.

3.3.4 The approval holder shall place all:

- (a) topsoil stockpiles; and
- (b) upper subsoil stockpiles

at the landfill.

3.3.5 The approval holder shall stockpile all topsoil as follows:

- (a) on stable foundations; and
- (b) on undisturbed topsoil.

3.3.6 The approval holder shall stockpile all upper subsoil as follows:

- (a) on stable foundations; and
- (b) on areas where the topsoil has been removed.

3.3.7 The approval holder shall take all steps necessary to prevent any erosion (e.g., wind or water), including but not limited to, all of the following:

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (a) revegetating the stockpiles; and
- (b) any other steps authorized in writing by the Director.

3.3.8 The approval holder shall immediately suspend conservation of:

- (a) topsoil; and
- (b) upper subsoil

when:

- (i) wet or frozen conditions will result in mixing, loss, degradation or compaction of topsoil or upper subsoil, or
- (ii) high wind velocities, any other field conditions or facility operations will result in mixing, loss, or degradation of topsoil or upper subsoil.

3.3.9 The approval holder shall recommence conservation of:

- (a) topsoil; and
- (b) upper subsoil

only when conditions in 3.3.8 no longer exist.

PART 4: OPERATIONS, LIMITS, MONITORING AND REPORTING

SECTION 4.1: GENERAL

- 4.1.1 The approval holder shall maintain the geographical boundaries of the landfill to that located within SE 1/4 of Section 9, Township 50, Range 17, West of the 4th Meridian, as described in the application.
- 4.1.2 The approval holder shall limit the waste elevation of the landfill to no more than the maximum designated waste elevation.
- 4.1.3 The approval holder shall restrict access to the facility to only personnel authorized by the approval holder.
- 4.1.4 The approval holder shall maintain a publicly available 24 hour "HOTLINE" number for a prompt response during an emergency.
- 4.1.5 The approval holder shall:
 - (a) operate; and

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

(b) maintain the integrity of

the following waste management facilities at the facility:

- (i) the HWRSP Facility;
- (ii) the Class I and Class II industrial landfill, including:
 - (A) Class I landfill cells,
 - (B) Class II landfill cell(s), and
 - (C) waste stabilization area within a Class I landfill cell; and
- (iii) waste storage area(s);

as described in the application.

4.1.6 In addition to 4.1.5, the approval holder shall:

- (a) operate; and
- (b) maintain the integrity of

the following infrastructure components at the facility:

- (i) the composite liner;
- (ii) the leachate collection system,
- (iii) the leak detection system,
- (iv) the run-on control system,
- (v) the runoff control system,
- (vi) the groundwater monitoring wells,
- (vii) the weigh scale, and
- (viii) the site access control;

as described in the application.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

FACILITY AUDIT

- 4.1.7 The approval holder shall cause the facility to be audited by an independent third-party environmental consultant or organization to assess compliance with the terms and conditions of this approval:
- (a) at least once every three years; and
 - (b) commencing on or before October 1, 2018 for the first audit.
- 4.1.8 The approval holder shall submit the audit report required in 4.1.7 in the Annual Landfill Operations Report as required in 4.6.58(c).
- 4.1.9 The requirements in 4.1.7 and 4.1.8 shall not relieve the approval holder of any duty under the Act, or its associated regulations, or this approval.

SECTION 4.2: AIR

OPERATIONS

- 4.2.1 The approval holder shall not release any air effluent streams to the atmosphere except as authorized by this approval.
- 4.2.2 The approval holder shall only release air effluent streams to the atmosphere from the following sources:
- (a) the scrubber exhaust stack;
 - (b) the Drum Processing Building natural gas fired air make up unit exhaust vent;
 - (c) the Staging Building natural gas fired air make up unit exhaust vent;
 - (d) the Administration Building natural gas fired furnaces exhaust vents;
 - (e) the Laboratory fume hood and natural gas fired air make up unit exhaust vents;
 - (f) the Maintenance Shop equipment and natural gas fired Radiant Heater exhaust vents;
 - (g) the Leachate Collection Tanks natural gas fired heaters exhaust vents;
 - (h) the leachate transfer lines passive gas vents; and
 - (i) any other source authorized in writing by the Director.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.2.3 The approval holder shall not operate any process equipment unless and until the pollution abatement equipment associated with the corresponding process equipment is:
- (a) operational; and
 - (b) operating.
- 4.2.4 The approval holder shall treat all air effluent streams from the exhaust vents of the Drum Processing or Staging or both Buildings with a caustic scrubber and an activated carbon filter before directing the air effluent streams to the scrubber exhaust stack for release to the atmosphere while:
- (a) hazardous waste or hazardous recyclables or both are being processed;
 - (b) hazardous waste or hazardous recyclables or both are being transferred; or
 - (c) containers of hazardous waste or hazardous recyclables or both are open in the Drum Processing or Staging or both Buildings.
- 4.2.5 The approval holder shall control fugitive emissions and any source not specified in 4.2.2 in accordance with 4.2.6 of this approval unless otherwise authorized in writing by the Director.
- 4.2.6 With respect to fugitive emissions and any source not specified in 4.2.2, the approval holder shall not release a substance or cause to be released a substance that causes or may cause any of the following:
- (a) impairment, degradation or alteration of the quality of natural resources;
 - (b) material discomfort, harm or adverse effect to the well being or health of a person; or
 - (c) harm to property or to vegetative or animal life.
- 4.2.7 The approval holder shall not burn any debris by means of an open fire unless authorized in writing by the Director.
- 4.2.8 If the approval holder receives complaints of offensive odours, or fugitive dust, or both, beyond the facility boundaries, the approval holder shall:
- (a) conduct the following to reduce the release of those odours, or fugitive dust, or both by:

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (i) placing restrictions on types, or volumes, or both, of the wastes being handled or processed or deposited that are causing those odours, or fugitive dust, or both,
 - (ii) increasing the frequency of cover placement, or modifying waste handling activities, or performing both, at the landfill,
 - (iii) modifying waste handling activities at the HWRSP Facility, or
 - (iv) performing any combination of the above; and
- (b) activate the Odour and Fugitive Dust Response Program as specified in the Landfill Operations Plan 4.6.34(j).

LIMITS

- 4.2.9 The approval holder shall maintain the pH of the scrubbing liquid of the caustic scrubber referred to in 4.2.4 at 8.0 or higher.
- 4.2.10 The approval holder shall replace activated carbon in the activated carbon filter referred to in 4.2.4 immediately when the concentration of total petroleum hydrocarbons in the air effluent streams released from the scrubber exhaust stack to the atmosphere exceeds 25 ppm.

MONITORING AND REPORTING

- 4.2.11 The approval holder shall monitor, daily at a minimum, the pH of the scrubbing liquid of the caustic scrubber referred to in 4.2.4.
- 4.2.12 The approval holder shall monitor, weekly at a minimum, the air effluent streams released from the scrubber exhaust stack, using a portable total petroleum hydrocarbon analyzer while:
- (a) hazardous waste or hazardous recyclables or both are being processed;
 - (b) hazardous waste or hazardous recyclables or both are being transferred; or
 - (c) containers of hazardous waste or hazardous recyclables or both are open
- in the Drum Processing or Staging or both Buildings.
- 4.2.13 The portable total petroleum hydrocarbon analyzer referred to in 4.2.12 shall:
- (a) have a detection limit of 1 ppm or lower for total petroleum hydrocarbons;
 - (b) be located in a straight section of the scrubber exhaust stack, a minimum of one (1) metre downstream from the last flow disturbance; and

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

(c) be calibrated regularly in accordance with the analyzer manufacturer's specifications.

4.2.14 The approval holder shall continue to implement the Ambient Air Monitoring Program as authorized in writing by the Director on June 24, 2009, unless and until otherwise authorized in writing by the Director pursuant to 4.2.18.

4.2.15 The approval holder shall submit to the Director the results of the Ambient Air Monitoring Program in 4.2.14 with the following reports:

- (a) a Monthly Ambient Air Monitoring Report; and
- (b) an Annual Ambient Air Monitoring Report

in accordance with the written authorization by the Director on June 24, 2009, unless and until otherwise authorized in writing by the Director pursuant to 4.2.18.

4.2.16 The approval holder shall submit:

- (a) a revised Ambient Air Monitoring Program;
- (b) revised reporting requirements, or
- (c) both of the above

to the Director upon written request from the Director within the timeline specified in writing by the Director.

4.2.17 If the revised:

- (a) Ambient Air Monitoring Program;
- (b) reporting requirements; or
- (c) both of the above

submitted pursuant to 4.2.16 is found deficient by the Director, the approval holder shall correct all deficiencies as outlined in writing by the Director within the timeline specified in writing by the Director.

4.2.18 The approval holder shall implement the revised:

- (a) Ambient Air Monitoring Program;
- (b) reporting requirements; or
- (c) both of the above

.....
TERMS AND CONDITIONS ATTACHED TO APPROVAL

submitted pursuant to 4.2.16 as authorized in writing by the Director within the timeline specified in writing by the Director.

SECTION 4.3: RUNOFF AND INDUSTRIAL WASTEWATER

OPERATIONS

- 4.3.1 The approval holder shall not release any substances from the facility to the surrounding watershed except as authorized by this approval.
- 4.3.2 The approval holder shall operate and maintain the integrity of:
- (a) the run-on control system to prevent flow onto the active landfill area from at least the peak discharge from a 1 in 25 year, 24 hour duration storm event at the facility; and
 - (b) the runoff control system for the facility to collect and control at least the runoff volume resulting from a 1 in 25 year, 24 hour duration storm event at the facility.
- 4.3.3 All runoff from the facility developed area shall be directed to the runoff control system as described in:
- (a) application No. 012-10348, prior to decommissioning and reclamation of the old surface water detention pond; and
 - (b) the application, after decommissioning and reclamation of the old surface water detention pond;
- unless otherwise authorized in writing by the Director.
- 4.3.4 Prior to decommissioning and reclamation of the old surface water detention pond and subject to 4.3.7, the approval holder shall only make or permit a release from the old surface water detention pond:
- (a) at the release point as designated in application No. 012-10348, which is:
 - (i) located in the south east corner of the old surface water detention pond, and
 - (ii) referred to as sampling location A1 in 4.3.11;
 - (b) through a pump and a release hose over the south berm into the drainage control ditch, east of the landfill access road, to the new surface water detention pond, under normal operating conditions; and

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (c) through a pump and a release hose over the south berm directly to the culvert under Highway 854, during periods of high runoff exceeding the holding capacity of the old surface water detention pond;

unless otherwise authorized in writing by the Director.

4.3.5 Subject to 4.3.7, the approval holder shall only make or permit a release from the new surface water detention pond:

- (a) at the release point as designated in application No. 012-10348, which is:
 - (i) located in the north east corner of the new surface water detention pond, and
 - (ii) referred to as sampling location B1 in 4.3.11; and
- (b) through a pump and a release hose over the east berm into the culvert under Highway 854;

unless otherwise authorized in writing by the Director.

4.3.6 The approval holder shall only dispose of industrial wastewaters, or specified runoff in TABLE 4.3-A, or both, by one or more of the following methods:

- (a) to facilities holding a current Act authorization to accept such waste;
- (b) to facilities approved by a local environmental authority outside of Alberta to accept such waste;
- (c) to a disposal well approved by AER;
- (d) as per 4.6.51; or
- (e) as otherwise authorized in writing by the Director.

TABLE 4.3-A: SPECIFIED RUNOFF

SOURCES
Runoff that exceeds any of the limits for the parameters listed in TABLE 4.3-B.
Runoff for which the results of the parameters listed in TABLE 4.3-B are unavailable at the time that the runoff must be disposed of.
Runoff from within the tank farm bermed area.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

LIMITS

4.3.7 Releases of runoff from:

- (a) the old surface water detention pond;
- (b) the new surface water detention pond; or
- (c) both ponds

to the surrounding watershed shall comply with the limits specified in TABLE 4.3-B.

4.3.8 Releases of runoff from within the tank farm bermed area to the old or new or both surface water detention ponds shall comply with the limits specified in TABLE 4.3-C.

TABLE 4.3-B: RUNOFF LIMITS FOR SURFACE WATER DETENTION POND

PARAMETER	LIMITS Maximum unless otherwise indicated
pH	6.0 – 9.5 pH units
COD	50 mg/L
TDS	2500 mg/L
TSS	25 mg/L
Ammonia (expressed as Nitrogen)	5 mg/L
Chloride	250 mg/L
Sodium	200 mg/L
Sulphate	500 mg/L
Oil or other substances	Not present in amounts sufficient to create a visible film or sheen
96-Hour Multiple Concentration Acute Lethality Test Using Rainbow Trout (<i>Oncorhynchus mykiss</i>)	50% or greater survival

TABLE 4.3-C: RUNOFF LIMITS FOR TANK FARM BERMED AREA

PARAMETER	LIMITS Maximum unless otherwise indicated
pH	6.0 – 9.5 pH units
COD	50 mg/L
TSS	25 mg/L
Ammonia (expressed as Nitrogen)	5 mg/L
Oil or other substances	Not present in amounts sufficient to create a visible film or sheen

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

MONITORING AND REPORTING

- 4.3.9 The approval holder shall monitor the runoff control system as required in TABLE 4.3-D, subject to 4.3.12.
- 4.3.10 The approval holder shall report to the Director the results of the runoff control system monitoring as required in TABLE 4.3-D, subject to 4.3.12.
- 4.3.11 For the purpose of TABLE 4.3-D:
 - (a) sampling location A1 is defined as the old surface water detention pond release point;
 - (b) sampling location A2 is defined as the old surface water detention pond;
 - (c) sampling location B1 is defined as the new surface water detention pond release point;
 - (d) sampling location B2 is defined as the new surface water detention pond; and
 - (e) sampling location C is defined as the tank farm bermed area.
- 4.3.12 The monitoring and reporting requirements in 4.3.9 and 4.3.10 for the old surface water detention pond (sampling locations A1 and A2) shall not apply after decommissioning and reclamation of the old surface water detention pond.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

TABLE 4.3-D: RUNOFF CONTROL SYSTEM MONITORING AND REPORTING

MONITORING				REPORTING	
Parameter	Frequency	Sample Type	Sampling Location	Monthly	Annually
Surface Water Detention Pond(s)				Monthly Runoff and Industrial Wastewater Report, for each month when release occurs	Annual Runoff and Industrial Wastewater Report
Flow (m ³ /day)	Daily during release	Estimate	A1, B1		
pH	Once per batch release, prior to release	Representative Grab	A2, B2		
COD					
TDS					
TSS					
Ammonia (expressed as nitrogen)					
Chloride					
Sodium					
Sulphate					
Oil or other substances	Daily during release	Visual			
96-hour multiple concentration acute lethality test using rainbow trout (<i>oncorhynchus mykiss</i>)	Each month when release occurs, prior to release, for the first batch release of the month	Representative Grab			
48-hour static acute lethality test using <i>daphnia magna</i>					
Tank Farm Bermed Area					
Volume (m ³)	Total batch volume released	Estimate	C		
pH	Once per batch release, prior to release to the surface water detention pond(s)	Representative Grab			
COD					
TSS					
Ammonia (expressed as nitrogen)					
Oil or other substances		Visual			

4.3.13 The monitoring and reporting required in TABLE 4.3-D for the acute lethality tests shall comply with:

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (a) the *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout*, Environment Canada, Environmental Protection Series 1/RM/13, December 2000, as amended; and
 - (b) the *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia Magna*, Environment Canada, Environmental Protection Series 1/RM/14, December 2000, as amended.
- 4.3.14 The approval holder shall:
- (a) treat any acute lethality test that deviates from the corresponding test method referred to in 4.3.13 as invalid; and
 - (b) repeat the test as soon as logistically possible.
- 4.3.15 In the event that less than 50% of the rainbow trout survived in the 100% concentration sample, the approval holder shall:
- (a) implement a program immediately to identify the source of the toxicity; and
 - (b) submit to the Director within 90 days after the test result is available, a proposed program to reduce the toxicity of the runoff.
- 4.3.16 The approval holder shall submit the Monthly Runoff and Industrial Wastewater Report in TABLE 4.3-D to the Director.
- 4.3.17 The Monthly Runoff and Industrial Wastewater Report shall include, at a minimum, all of the following information:
- (a) a monthly assessment of the monitoring results relative to the limits in TABLE 4.3-B;
 - (b) a monthly assessment of the monitoring results relative to the limits in TABLE 4.3-C;
 - (c) a monthly assessment of the performance of the:
 - (i) runoff control system,
 - (ii) pollution abatement equipment, and
 - (iii) monitoring equipment;
 - (d) a monthly summary of management and disposal of the:
 - (i) industrial wastewaters, and

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

(ii) specified runoff

as per 4.3.6;

(e) a monthly summary of management and disposal of runoff in general;

(f) a monthly summary of runoff contraventions reported pursuant to 2.1.1; and

(g) any other information as required in writing by the Director.

4.3.18 The approval holder shall submit the Annual Runoff and Industrial Wastewater Report in TABLE 4.3-D to the Director.

4.3.19 The Annual Runoff and Industrial Wastewater Report shall include, at a minimum, all of the following information:

(a) an annual summary assessment of the monitoring results relative to the limits in TABLE 4.3-B;

(b) an annual summary assessment of the monitoring results relative to the limits in TABLE 4.3-C;

(c) an annual summary assessment of the performance of the:

(i) runoff control system,

(ii) pollution abatement equipment, and

(iii) monitoring equipment;

(d) an annual summary of management and disposal of the:

(i) industrial wastewaters, and

(ii) specified runoff

as per 4.3.6;

(e) an annual summary and evaluation of management and disposal of runoff in general;

(f) an annual summary of the results pursuant to 4.3.21;

(g) an annual summary of runoff contraventions reported pursuant to 2.1.1; and

(h) any other information as required in writing by the Director.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.3.20 The approval holder shall:
- (a) collect a representative grab sample from the old surface water detention pond at least once per year, prior to decommissioning and reclamation of the pond;
 - (b) collect a representative grab sample from the new surface water detention pond at least once per year; and
 - (c) analyze the sample(s) for all of the parameters specified in TABLE 4.3-E.
- 4.3.21 The approval holder shall submit the results of the analyses in 4.3.20 to the Director in the Annual Runoff and Industrial Wastewater Report.

TABLE 4.3-E: ANNUAL MONITORING OF SURFACE WATER DETENTION POND

PARAMETERS			
pH	TDS; TSS	Fluoride, dissolved	Phenols
Electrical conductivity	Metals	Cyanide (weak acid dissociable)	Total chlorinated phenols
COD	Major ions	BTEX	Polychlorinated biphenyls, total
DOC	Nutrients	Petroleum Hydrocarbons Fractions F1 and F2	Total organic halogens

SECTION 4.4: LEACHATE COLLECTION AND LEAK DETECTION

OPERATIONS

- 4.4.1 The approval holder shall only dispose of leachate removed from the leachate collection system by one or more of the following methods:
- (a) to facilities holding a current Act authorization to accept such waste;
 - (b) to facilities approved by a local environmental authority outside of Alberta to accept such waste;
 - (c) to a disposal well approved by AER; or
 - (d) as per 4.6.51.
- 4.4.2 The approval holder shall only dispose of liquid removed from the leak detection system by one or more of the following methods:

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (a) to facilities holding a current Act authorization to accept such waste;
- (b) to facilities approved by a local environmental authority outside of Alberta to accept such waste;
- (c) to a disposal well approved by AER; or
- (d) as per 4.6.51.

LIMITS

- 4.4.3 Subject to 4.4.4, the approval holder shall not exceed the maximum acceptable leachate head in any landfill cell.
- 4.4.4 Subsequent to a storm event, the leachate head in any landfill cell shall not exceed the maximum acceptable leachate head for more than fourteen (14) days, unless otherwise authorized in writing by the Director.
- 4.4.5 The volume of liquid in the leak detection system, as monitored in TABLE 4.6-D, shall not exceed the action leakage rate in any landfill cell.

MONITORING AND REPORTING

- 4.4.6 The approval holder shall monitor the leachate collection and leak detection systems as required in TABLE 4.6-D and for all parameters specified in TABLE 4.4-A, subject to 4.4.8 and 4.4.9.
- 4.4.7 The approval holder shall report to the Director the results of the leachate collection and leak detection systems monitoring as required in TABLE 4.6-D, including the results of the analyses for all parameters specified in TABLE 4.4-A, subject to 4.4.8 and 4.4.9.

TABLE 4.4-A: LEACHATE AND LEAK DETECTION LIQUID MONITORING

PARAMETERS		
pH (field and laboratory)	TDS	Nutrients
Electrical conductivity (field and laboratory)	TSS	BTEX
COD	Metals	Phenols
DOC	Major Ions	Petroleum Hydrocarbons Fractions F1 and F2

- 4.4.8 The requirements in 4.4.6 and 4.4.7 for monitoring and reporting the parameters in TABLE 4.4-A for leachate shall not apply if insufficient leachate is available for conducting the analyses.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.4.9 The requirements in 4.4.6 and 4.4.7 for monitoring and reporting the parameters in TABLE 4.4-A for leak detection liquid shall not apply if insufficient leak detection liquid is available for conducting the analyses.
- 4.4.10 If the volume of liquid removed from the leak detection system exceeds the action leakage rate, in addition to reporting pursuant to 2.1.1, the approval holder shall submit a Response Action Plan to the Director within 30 days of the exceedance.

SECTION 4.5: DUGOUTS AND WATER WELLS IN SURROUNDING AREA

MONITORING AND REPORTING

- 4.5.1 The approval holder shall:
 - (a) collect a representative sample from:
 - (i) each of the dugouts, and
 - (ii) each of the water wells
 within an approximate 1.6 kilometre radius around the facility; and
 - (b) analyze the sample for the parameters listed in TABLE 4.5-A;

unless the approval holder is not granted access by the landowner.
- 4.5.2 The monitoring required in 4.5.1 shall be conducted once each year in October unless otherwise authorized in writing by the Director.
- 4.5.3 The approval holder shall record the analytical results of the sampling information required in 4.5.1 in an Annual Dugout and Water Well Sampling Program Report.
- 4.5.4 The approval holder shall submit the Annual Dugout and Water Well Sampling Program Report to the Director pursuant to 4.6.58(i).

TABLE 4.5-A: DUGOUT AND WATER WELL MONITORING

PARAMETERS		
pH (field and laboratory)	TDS	Nutrients
Electrical conductivity (field and laboratory)	TSS	BTEX
COD	Metals	Phenols
DOC	Major Ions	Petroleum Hydrocarbons Fractions F1 and F2

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

SECTION 4.6: HWRSP FACILITY AND LANDFILL

GENERAL

4.6.1 The approval holder shall not:

- (a) receive;
- (b) process;
- (c) dispose of; or
- (d) perform any combination of the above for

any of the following wastes, individually or in any combination, at the places specified below respectively:

- (i) explosives (Class 1 TDGR wastes), at the facility;
- (ii) radioactive wastes (Class 7 TDGR wastes), at the facility;
- (iii) radioactive wastes regulated under the *Nuclear Safety and Control Act* (Canada), at the facility;
- (iv) biomedical waste, at the facility;
- (v) waste containing free liquids, at the landfill, excluding the waste stabilization area;
- (vi) material containing ozone depleting substances, at the landfill;
- (vii) municipal solid waste, at the facility; and
- (viii) NORM waste, at the facility.

4.6.2 Incompatible wastes and incompatible hazardous recyclables shall be prevented from mixing.

4.6.3 The approval holder shall dispose of wastes generated at the facility only:

- (a) to facilities holding a current Act authorization;
- (b) to facilities approved by a local environmental authority outside of Alberta; or
- (c) as otherwise authorized in writing by the Director.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

HWRSP FACILITY

OPERATIONS PLAN

4.6.4 The approval holder shall:

- (a) develop;
- (b) keep up-to-date; and
- (c) implement

an HWRSP Facility Operations Plan.

4.6.5 The approval holder shall:

- (a) review the HWRSP Facility Operations Plan annually, at a minimum; and
- (b) update the HWRSP Facility Operations Plan if any of the following circumstances apply:
 - (i) there are facility expansions or changes in site operations or equipment,
 - (ii) there is an applicable change to an applicable regulation, or
 - (iii) an update is required in writing by the Director.

4.6.6 The approval holder shall retain a copy of the most recent HWRSP Facility Operations Plan at the facility.

4.6.7 The approval holder shall submit a copy of the most recent HWRSP Facility Operations Plan to the Director upon written request from the Director within the timeline specified in writing by the Director.

4.6.8 If the HWRSP Facility Operations Plan submitted pursuant to 4.6.7 is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

4.6.9 The approval hold shall implement the latest HWRSP Facility Operations Plan, unless otherwise authorized in writing by the Director.

OPERATIONS

4.6.10 The approval holder shall only transfer wastes and hazardous recyclables at designated transfer areas designed to contain spills and leaks.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.6.11 The approval holder shall use the following when transferring substances to, from, and between containers, tanks, and trucks:
- (a) couplings equipped with seals that are compatible with the substance transferred;
 - (b) the necessary precautions to prevent spills when the couplings are disconnected;
 - (c) emergency shut-off valves;
 - (d) established transfer areas and associated curbing, paving and catchment areas;
 - (e) drip trays to capture potential losses under coupling devices and other connections; and
 - (f) manual inspections of the transfer area for leaks and spills during and after waste transfer.
- 4.6.12 All wastes and all hazardous recyclables that are unloaded shall be immediately transferred to the waste storage area.
- 4.6.13 All containers and unrinsed empty containers shall be stored in the waste storage area.
- 4.6.14 The approval holder shall:
- (a) provide and maintain an adequate aisle space between containers in the waste storage area to allow:
 - (i) inspection, and
 - (ii) unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment to any area of the waste storage area; and
 - (b) arrange inspection aisles in the waste storage area such that the identification label on each container is readable.
- 4.6.15 All tanks within the tank farm area shall be equipped, at a minimum, with all of the following:
- (a) sensors for detecting the level in each tank;
 - (b) high level alarms that activate when a tank overflow is imminent;

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (c) automatic shut-off devices or sufficient free board space above the high level sensor to allow operators time to prevent overflow from occurring; and
 - (d) earthen dikes or equivalent secondary containment structures capable of containing 110% of the volume of the largest tank within the bermed area plus 10% of the aggregate capacity of all other tanks in the bermed area.
- 4.6.16 All tanks containing hazardous waste and all tanks containing hazardous recyclables in each building shall be equipped, at a minimum, with all of the following:
- (a) sensors or gauges for detecting the level in each tank;
 - (b) a written operating procedure to prevent tank overflow; and
 - (c) secondary containment structures capable of containing 110% of the volume of the largest tank within the building plus 10% of the aggregate capacity of all other tanks containing hazardous waste and hazardous recyclables in the same building.
- 4.6.17 Hazardous waste and hazardous recyclables stored in containers and tanks shall be stored in accordance with the *Hazardous Waste Storage Guidelines*, June 1988, Alberta Environment, as amended.
- 4.6.18 The approval holder shall only carry out the following activities, individually or in any combination, at the HWRSP Facility in relation to hazardous waste or hazardous recyclables or both:
- (a) commingling of hazardous waste or hazardous recyclables to make maximum use of available container or tank capacity, only if the resultant mixture has the same TDGR hazard classification as any one of the individual components;
 - (b) phase separation by gravity settling, only without the addition of any chemicals designed to accelerate settling;
 - (c) dispersion of solids into liquids by natural or mechanical means, only if the resultant mixture has the same TDGR hazard classification as the original waste;
 - (d) physical segregation of hazardous from non-hazardous articles or components from the same container, only if no process equipment is used;
 - (e) washing of drums or other objects, only for the purpose of removing hazardous residue;

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (f) crushing or shredding of used filters, rags, absorbent materials, or empty containers, only for the purpose of volume reduction or liquid recovery, unless otherwise authorized in writing by the Director; or
- (g) treatment of hazardous waste, only as authorized in writing by the Director.

4.6.19 Notwithstanding 4.6.18(g), the approval holder shall not incinerate waste at the facility.

LIMITS

4.6.20 The approval holder shall not store a total of more than 752,500 litres of hazardous waste or hazardous recyclables or both at the HWRSP Facility at any time.

4.6.21 In addition to the storage limits in 4.6.20, the approval holder shall not exceed the waste storage limits as specified in TABLE 4.6-A.

TABLE 4.6-A: STORAGE LIMITS FOR HAZARDOUS WASTE OR HAZARDOUS RECYCLABLES OR BOTH AT HWRSP FACILITY

Waste/Recyclable Type	Material	Maximum Quantity
Containers: Hazardous waste or hazardous recyclables or both	TDGR Classification 2, 3, 4, 5, 6, 8 or 9 waste type only	512,500 litres (consisting of 2,500 drum equivalents, each 205 litre capacity)
Bulk Tanks: Hazardous waste or hazardous recyclables or both	Waste flammable liquids, used oil, or wastewaters; or TDGR Classification 3, 5, 6, 8 or 9 waste type only	240,000 litres (consisting of a total of 135 m ³ in the tank farm area, and a total of 105 m ³ inside the buildings)

4.6.22 Containers other than 205 litre drums shall be prorated to 205 litre drum equivalents based on their nominal volumes, e.g., 10 X 20 litre pails = 1 X 205 litre drum.

4.6.23 The limits referred to in 4.6.20 and 4.6.21 shall be calculated based on the:

- (a) total nominal volumes of all containers, treating all partially filled containers as if they were full; and
- (b) total filled capacities of all tanks.

MONITORING AND REPORTING

4.6.24 The approval holder shall:

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (a) identify;
- (b) characterize; and
- (c) classify

all waste streams and all hazardous recyclables, generated or received at the HWRSP Facility, not including runoff, industrial wastewater streams and air effluent streams in accordance with the:

- (i) *Industrial Waste Identification and Management Options*, Alberta Environment, May 1996, as amended, and
- (ii) *Alberta User Guide for Waste Managers*, Alberta Environment, August 1996, as amended.

4.6.25 The approval holder shall measure or, when not feasible to measure, estimate, the quantity of each waste and hazardous recyclable identified in 4.6.24 each year.

4.6.26 The approval holder shall keep a daily:

- (a) total; and
- (b) inventory

of all materials being stored at the HWRSP Facility.

4.6.27 The daily total and inventory records in 4.6.26 shall be available at the facility at all times for inspection by the Director or an inspector.

4.6.28 The approval holder shall submit a Monthly Waste Management Report to the Director.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

TABLE 4.6-B: MONTHLY WASTE INVENTORY REPORT (BY WASTE CLASS)

COMPANY NAME: _____ APPROVAL NO.: _____
 REPORT PERIOD: MONTH _____ YEAR _____

CLASS	UNIT (Kg or L)	OPENING BALANCE	+ RECEIVED IN PROVINCE	+ RECEIVED OUT OF PROVINCE	- SHIPPED *		ON-SITE DISPOSAL	+ or - ADJUSTMENT **	CLOSING BALANCE	APPROVAL LIMIT
					RECYCLING / PRODUCT	OFF-SITE DISPOSAL				
2										
3										
4										
5										
6.1										
8										
9.1										
9.2										
9.3										
PCB										
NR										XXXXX
TOTAL										XXXXX
								No. of Containers On site		XXXXX
								Total Litres in Bulk Tanks		XXXXX

Name of Company Official: _____ Title: _____ Signature: _____

Report Date: _____

* Provide a list of the recycling and disposal locations.

** Identify the amount and reason for each adjustment.

Adjustments include consolidation/reclassification, losses to processing, spills, volume miscalculations, or any other circumstances, which would affect the mass balance of the monthly inventory report.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.6.29 The approval holder shall compile all of the information indicated in TABLE 4.6-B in the Monthly Waste Management Report which shall contain, at minimum, all of the following information:
- (a) an opening waste and hazardous recyclables inventory balance in kilograms or litres by waste class or material type;
 - (b) the amount and type of waste and hazardous recyclables received:
 - (i) within the province, and
 - (ii) from outside the province;
 - (c) the amount and type of waste and hazardous recyclables:
 - (i) shipped for recycling or product,
 - (ii) shipped off-site for disposal, and
 - (iii) disposed on-site;
 - (d) any adjustments, including but not limited to, consolidation, reclassification, losses to processing, spills, volume miscalculations, or any other circumstances, which would affect the mass balance of the monthly inventory report;
 - (e) closing balance in kilograms or litres;
 - (f) a summary of contraventions reported pursuant to 2.1.1 related to waste and hazardous recyclables; and
 - (g) any other information as required in writing by the Director.
- 4.6.30 The approval holder shall compile all the information required by 4.6.24 and 4.6.25 in an Annual Waste Management Summary Report:
- (a) as specified in TABLE 4.6-C; and
 - (b) in accordance with the:
 - (i) *Industrial Waste Identification and Management Options*, Alberta Environment, May 1996, as amended, and
 - (ii) *Alberta User Guide for Waste Managers*, Alberta Environment, August 1996, as amended.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

TABLE 4.6-C: ANNUAL WASTE MANAGEMENT SUMMARY

Waste or Hazardous Recyclable Name	Uniform Waste Code				Quantity (kg or L)		Stored	Recycled		Disposed	
	WC	PIN	Class	Mgmt	Hazardous	Non-hazardous	On-site	On-site	Off-site	On-site	Off-site
TOTAL											

4.6.31 The approval holder shall submit the Annual Waste Management Summary Report to the Director.

LANDFILL

OPERATIONS PLAN

4.6.32 The approval holder shall:

- (a) develop;
- (b) keep up-to-date; and
- (c) implement

a Landfill Operations Plan that does not contravene with the requirements of this approval.

4.6.33 The approval holder shall:

- (a) review the Landfill Operations Plan annually, at a minimum; and
- (b) update the Landfill Operations Plan if any of the following circumstances apply:
 - (i) there are facility expansions or changes in site operations or equipment,
 - (ii) there is an applicable change to the *Standards for Landfills in Alberta*, as amended,
 - (iii) an update is required in writing by the Director, or
 - (iv) there is an update to an applicable regulation.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.6.34 The Landfill Operations Plan shall include, at a minimum, all of the following:
- (a) SOP for keeping and maintaining an Operating Record;
 - (b) SOP for waste control, run-on and runoff controls, and nuisance controls;
 - (c) SOP for the waste stabilization area operations;
 - (d) SOP for the acceptance, handling and disposal of wastes, including;
 - (i) waste characterization and classification at source,
 - (ii) waste manifesting and tracking,
 - (iii) QA/QC waste acceptance procedures, and
 - (iv) waste sampling;
 - (e) SOP for detecting, preventing and disposal of unauthorized wastes;
 - (f) SOP for placing waste in a landfill cell including;
 - (i) working face width,
 - (ii) lift depth,
 - (iii) compaction, and
 - (iv) waste placement location using a grid system;
 - (g) SOP for managing contaminated sulphur and sulphur containing wastes;
 - (h) SOP for managing asbestos wastes;
 - (i) SOP for placing leachate, leak detection liquid, or other authorized wastes and liquids over the surface of the active landfill area for the purpose of evaporation or dust suppression;
 - (j) an Odour and Fugitive Dust Response Program;
 - (k) a Fugitive Dust and Odour Best Management Plan;
 - (l) a runoff and industrial wastewater monitoring and management program;
 - (m) a leachate monitoring and management program;
 - (n) a leak detection liquid monitoring and management program;

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (o) a groundwater monitoring program;
- (p) a Remediation Plan to deal with groundwater quality deterioration;
- (q) a soil monitoring program;
- (r) a soil management program;
- (s) a landfill cell cover system;
- (t) a monitoring and maintenance program for the scale house and heavy operational equipment;
- (u) a health and safety program;
- (v) an emergency response program, including SOP for handling fires, substance releases to the environment, and health concerns; and
- (w) an up-to-date plan of the landfill layout with survey records showing the location of all infrastructure components of the landfill including final cover elevations and contours.

4.6.35 The approval holder shall retain a copy of the most recent Landfill Operations Plan at the facility.

4.6.36 The approval holder shall submit to the Director the most recent Landfill Operations Plan when requested in writing by the Director within the timeline specified in writing by the Director.

4.6.37 The approval holder shall correct all deficiencies in the Landfill Operations Plan submitted pursuant to 4.6.36, as outlined in writing by the Director, within the timeline specified in writing by the Director.

4.6.38 The approval holder shall implement the latest Landfill Operations Plan, unless otherwise authorized in writing by the Director.

OPERATIONS

4.6.39 The approval holder shall classify all materials entering the landfill in accordance with the:

- (a) *Waste Control Regulation (AR 192/96)*;
- (b) *Industrial Waste Identification and Management Options*, Alberta Environment, May 1996, as amended; and
- (c) *Alberta User Guide for Waste Managers*, May 1995, as amended.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.6.40 The approval holder shall obtain a detailed representative physical and chemical analysis of a waste prior to disposal of the waste into the landfill at the following times, at a minimum:
- (a) the first time a waste is received from a new generator;
 - (b) the first time a delivery is received from a different process associated with a known waste generator;
 - (c) the first time a waste is received from a different location associated with a known waste generator; and
 - (d) when the nature or composition of the waste that was previously characterized by the generator changes.
- 4.6.41 The approval holder shall not dispose of hazardous waste in any Class II landfill cell.
- 4.6.42 The approval holder shall:
- (a) only carry out waste stabilization or solidification or both within the waste stabilization area; and
 - (b) not transfer waste from the waste stabilization area to the Class I landfill cell before the waste stabilization or solidification or both have completed.
- 4.6.43 The approval holder shall only dispose of any liquid collected within the waste stabilization area by one or more of the following methods:
- (a) to facilities holding a current Act authorization to accept such waste;
 - (b) to facilities approved by a local environmental authority outside of Alberta to accept such waste;
 - (c) to a disposal well approved by AER; or
 - (d) as otherwise authorized in writing by the Director.
- 4.6.44 The approval holder shall conduct:
- (a) annually, in-house visual inspections for corrosion; and
 - (b) biennially, ultrasonic testing to monitor thickness
- of the steel plate liner of the stabilization pits in the waste stabilization area, unless otherwise authorized in writing by the Director.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.6.45 The approval holder shall dispose of asbestos wastes in accordance with "*Guidelines for the Disposal of Asbestos Waste*", Environmental Protection Services, Alberta Environment, 1989, as amended.
- 4.6.46 The approval holder shall dispose of sulphur waste in accordance with "*Guidelines for Landfill Disposal of Sulphur Wastes and Remediation of Sulphur Containing Soils*", Alberta Environment, 2011, as amended.
- 4.6.47 The approval holder shall only dispose of wastes that the landfill is not authorized to dispose of:
- (a) to facilities holding a current Act authorization;
 - (b) to facilities approved by a local environmental authority outside of Alberta; or
 - (c) as otherwise authorized in writing by the Director.
- 4.6.48 If an unauthorized waste is received at the landfill, the approval holder shall remove the waste from the landfill within seven (7) days of the receipt, unless otherwise authorized in writing by the Director.
- 4.6.49 The approval holder shall restrict the working face of each landfill cell to the smallest practical area.
- 4.6.50 For any waste disposed of at the landfill that is subject to wind dispersal, the approval holder shall:
- (a) wet the waste to prevent dispersal of particulate matter; or
 - (b) immediately apply cover on top of the waste to minimize entrainment of particulate matter.
- 4.6.51 Notwithstanding 4.6.1(v), the approval holder may place any of the following wastes over the surface of the active landfill area for the purpose of dust suppression:
- (a) specified runoff;
 - (b) leachate;
 - (c) leak detection liquid;
 - (d) sump waste of car wash bays or similar operations;
 - (e) waste from hydrovac excavation operations; or
 - (f) any other waste authorized by *the Alberta User Guide for Waste Managers*, May 1995, as amended;

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

provided that placement of such wastes will not cause offensive odours.

4.6.52 The approval holder shall inspect the landfill, at a minimum:

- (a) weekly; and
- (b) immediately after each storm event to:
 - (i) detect evidence of deterioration of any infrastructure components, including the composite liner,
 - (ii) detect any malfunction or improper operation of the run-on and runoff control systems, leachate collection system, or leak detection system, and
 - (iii) take corrective measures to repair any damage to infrastructure components, including the composite liner.

4.6.53 The approval holder shall:

- (a) keep a record of inspections conducted pursuant to 4.6.52;
- (b) have the record of inspections available for review upon written request from the Director; and
- (c) immediately report any deficiencies detected by the inspection in 4.6.52 to the Director in writing along with any corrective measures taken or proposed.

4.6.54 The approval holder shall not stockpile waste exceeding the maximum designated waste elevation of the landfill for a period of more than two (2) weeks, unless otherwise authorized in writing by the Director.

4.6.55 The approval holder shall take all practical measures to prevent off-site tracking of waste from vehicles and equipment leaving the facility.

MONITORING AND REPORTING

4.6.56 The approval holder shall monitor the landfill operations as required in TABLE 4.6-D.

4.6.57 The approval holder shall report to the Director the results of the landfill operations monitoring as required in TABLE 4.6-D.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

TABLE 4.6-D: LANDFILL OPERATIONS MONITORING AND REPORTING REQUIREMENTS

MONITORING AND REPORTING				
Parameter	Frequency	Sample Type	Sampling Location	Reporting
Quantity and type of waste received	Continuously, When operating	Measured or estimated	At entrance to landfill	Annual Landfill Operations Report
Quantity and type of material removed	Continuously, when operating	Measured or estimated	At entrance to landfill	
General location of waste deposited	Continuously, when operating	As per survey, or using grid system	At active landfill area, or survey coordinates	
Leachate head	at least: - once every three working days; - after storm event; and - immediately prior to leachate removal	Calculated	At primary leachate collection system sumps for existing landfill Cell 1	
		Measured	At primary leachate collection system sumps for all other landfill cells	
Leachate analysis, as per TABLE 4.4-A	At least once every quarter year, unless insufficient sample volume is available	Grab sample	At each primary leachate collection system sump	
Volume of leachate removed from the leachate collection system	As removed	Measured or calculated	At leachate collection system sumps	
Leak detection liquid analysis, as per TABLE 4.4-A	At least once every quarter year, unless insufficient sample volume is available	Grab sample	At each leak detection system sump	
Volume of leak detection liquid removed from the leak detection system	At least once every working day, as removed	Measured or calculated	At leak detection system sumps	
Final cover	When final cover is applied	Final cover by survey cores or test pits or both	On each completed landfill cell	

4.6.58 The Annual Landfill Operations Report required in TABLE 4.6-D shall include, at a minimum, all of the following:

- (a) the name and contact information of the person responsible for the facility;
- (b) a summary of all information collected as required in TABLE 4.6-D;
- (c) a summary of the results of any audit conducted in accordance with 4.1.7;

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (d) a summary of the operations of the waste stabilization area;
- (e) a summary of the performance of the run-on and runoff control systems, including a comparison to the limits in TABLES 4.3-B and 4.3-C;
- (f) a summary of the performance of the leachate collection system, including a comparison to the maximum acceptable leachate head;
- (g) a summary of the performance of the leak detection system, including a comparison to the action leakage rate limit;
- (h) the Response Action Plan for the leak detection system pursuant to 4.4.10;
- (i) the Annual Dugout and Water Well Sampling Program Report pursuant to 4.5.4;
- (j) a summary of all revisions to the Landfill Operations Plan pursuant to 4.6.33(b);
- (k) any groundwater remedial action taken pursuant to 4.6.34(p);
- (l) a summary of records of landfill inspections pursuant to 4.6.53;
- (m) a summary of:
 - (i) operational issues encountered,
 - (ii) emergencies occurred, and
 - (iii) measures or actions taken;
- (n) a summary of records of:
 - (i) public complaints, and
 - (ii) the approval holder's responses;
- (o) an up-to-date financial security estimate pursuant to 5.1.2;
- (p) an updated site development plan showing the status of the landfill progression at the end of the operating year, including but not limited to:
 - (i) contour mapping,
 - (ii) the location of active and inactive disposal areas,
 - (iii) areas where a final cover has been placed, and

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (iv) the location of new landfill cell(s) constructed;
 - (q) the Annual Landfill Cell Closure Report pursuant to 7.1.7;
 - (r) a summary of contraventions reported pursuant to 2.1.1 related to landfill operations; and
 - (s) any other information as required in writing by the Director.
- 4.6.59 The approval holder shall submit the Annual Landfill Operations Report to the Director.

SECTION 4.7: DOMESTIC WASTEWATER

OPERATIONS

- 4.7.1 The approval holder shall not release any substances from the domestic wastewater system to the surrounding watershed except as authorized by this approval.
- 4.7.2 The approval holder shall direct all domestic wastewater to the domestic wastewater system.
- 4.7.3 The approval holder shall only dispose of substances from the domestic wastewater system:
- (a) to facilities holding a current Act authorization;
 - (b) to facilities approved by a local environmental authority outside of Alberta; or
 - (c) as otherwise authorized in writing by the Director.

SECTION 4.8: WATERWORKS

Not used at this time.

SECTION 4.9: GROUNDWATER

MONITORING

- 4.9.1 The approval holder shall continue to implement the existing Groundwater Monitoring Program as authorized in writing by the Director, unless and until otherwise authorized in writing by the Director pursuant to 4.9.4.
- 4.9.2 The approval holder shall submit a revised Groundwater Monitoring Program to the Director on or before September 30, 2017, unless otherwise authorized in writing by the Director.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.9.3 If the revised Groundwater Monitoring Program submitted pursuant to 4.9.2 is found deficient by the Director, the approval holder shall correct all deficiencies as outlined in writing by the Director within the timeline specified in writing by the Director.
- 4.9.4 The approval holder shall implement the revised Groundwater Monitoring Program submitted pursuant to 4.9.2 as authorized in writing by the Director within the timeline specified in writing by the Director.
- 4.9.5 The approval holder shall:
 - (a) collect a representative groundwater sample from each of the groundwater monitor wells specified in the Groundwater Monitoring Program, including the groundwater monitoring wells designated as points of compliance; and
 - (b) analyze each sample for the parameters listed in TABLE 4.9-A.

TABLE 4.9-A: GROUNDWATER MONITORING PROGRAM

PARAMETERS	
pH	Metals
Electrical conductivity	Major ions
COD	Nutrients
DOC	BTEX
TDS	Petroleum Hydrocarbons Fractions F1 and F2

- 4.9.6 The monitoring required in 4.9.5 shall be conducted at the following frequencies, unless otherwise authorized in writing by the Director:
 - (a) a minimum of once per year during each of the active landfill life, landfill cell closure, final landfill closure, and post-closure periods; and
 - (b) a minimum of four times per year following detection of leachate constituents in groundwater at levels above those specified in 4.9.7, and until the levels specified in 4.9.7 have been met.
- 4.9.7 The groundwater quality in the monitoring wells, designated as points of compliance in the Groundwater Monitoring Program, shall not exceed the higher of:
 - (a) the objectives established in the water quality objectives in the *Canadian Environmental Quality Guidelines (CEQG)* for drinking water published by the Canadian Council of Ministers of the Environment (CCME), as amended; or
 - (b) background groundwater chemistry as determined through a statistical analysis, as a derived alternate groundwater performance standard.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.9.8 The approval holder shall implement the Remediation Plan as specified in the Landfill Operations Plan, when groundwater quality exceeds the groundwater performance criteria in 4.9.7.
- 4.9.9 The samples extracted from the groundwater monitor wells shall be collected using scientifically acceptable purging, sampling and preservation procedures so that a representative groundwater sample is obtained.
- 4.9.10 The approval holder shall:
- (a) protect from damage; and
 - (b) keep locked except when being sampled
- all groundwater monitoring wells unless otherwise authorized in writing by the Director.
- 4.9.11 If a representative groundwater sample cannot be collected because the groundwater monitoring well is damaged or is no longer capable of producing a representative groundwater sample, the approval holder shall:
- (a) clean, repair or replace the groundwater monitoring well; and
 - (b) collect and analyse a representative groundwater sample prior to the next scheduled sampling event;
- unless otherwise authorized in writing by the Director.
- 4.9.12 In addition to the sampling information recorded in 2.2.1, the approval holder shall record the following sampling information for all groundwater samples collected:
- (a) a description of purging and sampling procedures;
 - (b) the static elevations above sea level, and depth below ground surface of fluid phases in the groundwater monitoring well prior to purging;
 - (c) the temperature of each sample at the time of sampling;
 - (d) the pH of each sample at the time of sampling; and
 - (e) the specific conductance of each sample at the time of sampling.
- 4.9.13 The approval holder shall carry out remediation of the groundwater in accordance with the following:
- (a) *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*, Alberta Environment, February 2009, as amended; and

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (b) *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*, Alberta Environment, February 2009, as amended.

REPORTING

- 4.9.14 The approval holder shall compile an Annual Groundwater Monitoring Program Report which shall include, at a minimum, all of the following information:
- (a) a completed *Record of Site Condition Form*, Alberta Environment, 2009, as amended;
 - (b) a legal land description of the facility and a map illustrating the facility boundaries;
 - (c) a topographic map of the facility;
 - (d) a description of the industrial activity and processes;
 - (e) a map showing the location of all surface and groundwater users, and a listing describing surface water and water well use details, within at least a 1.6 kilometre radius of the facility;
 - (f) a general hydrogeological characterization of the region within a five kilometre radius of the facility;
 - (g) a detailed hydrogeological characterization of the facility, including an interpretation of groundwater flow patterns;
 - (h) cross-sections showing depth to water table, patterns of groundwater movement and hydraulic gradients at the facility;
 - (i) borehole logs and completion details for groundwater monitoring wells;
 - (j) a map showing locations of all known buried channels within at least five kilometre of the facility;
 - (k) a map of surface drainage within the facility and surrounding area to include nearby water bodies;
 - (l) a map of groundwater monitoring well locations and a table summarizing the existing groundwater monitoring program for the facility;
 - (m) a summary of any changes to the groundwater monitoring program made since the last groundwater monitoring report;
 - (n) analytical data recorded as required in 4.9.5 and 4.9.11(b);

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (o) a summary of fluid elevations recorded as required in 4.9.12(b) and an interpretation of changes in fluid elevations;
- (p) an interpretation of QA/QC program results;
- (q) an interpretation of all the data in this report, including the following:
 - (i) diagrams indicating the location and extent of any contamination,
 - (ii) a description of probable sources of contamination, and
 - (iii) a site map showing the location and type of current and historical potential sources of groundwater contamination;
- (r) a summary and interpretation of the data collected since the groundwater monitoring program began including:
 - (i) control charts which indicate trends in concentrations of parameters, and
 - (ii) the migration of contaminants;
- (s) a description of the following:
 - (i) contaminated groundwater remediation techniques employed,
 - (ii) source elimination measures employed,
 - (iii) risk assessment studies undertaken, and
 - (iv) risk management studies undertaken;
- (t) a proposed sampling schedule for the following year(s);
- (u) a description of any contaminant remediation, risk assessment or risk management action conducted at the facility; and
- (v) recommendations for:
 - (i) changes to the groundwater monitoring program to make it more effective, and
 - (ii) remediation, risk assessment or risk management of contamination identified.

4.9.15 The approval holder shall submit the Annual Groundwater Monitoring Program Report to the Director.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.9.16 If the Annual Groundwater Monitoring Program Report is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director, within the timeline specified in writing by the Director.

SECTION 4.10: SOIL

- 4.10.1 In addition to any other requirements specified in this approval, the approval holder shall conduct all of the following activities related to soil monitoring and soil management required by this approval in accordance with the *Soil Monitoring Directive*, Alberta Environment, 2009, as amended:
- (a) designing and developing proposals for the Soil Monitoring Program;
 - (b) designing and developing proposals for the Soil Management Program;
 - (c) all other actions, including sampling, analysing, and reporting, associated with the Soil Monitoring Program; and
 - (d) all other actions, including sampling, analysing and reporting, associated with the Soil Management Program.

MONITORING AND REPORTING

- 4.10.2 The approval holder shall submit the Soil Monitoring Program proposal to the Director according to the following schedule:
- (a) for the first soil monitoring event on or before January 31, 2019; and
 - (b) for the second soil monitoring event on or before January 31, 2024;
- unless otherwise authorized in writing by the Director.
- 4.10.3 If any Soil Monitoring Program proposal is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.
- 4.10.4 Subject to 4.10.3, the approval holder shall implement the Soil Monitoring Program as authorized in writing by the Director.
- 4.10.5 If an authorization or a deficiency letter is not issued within 120 days of the applicable date required by 4.10.2, the approval holder shall implement the Soil Monitoring Program:
- (a) in accordance with the program as set out in the proposal submitted by the approval holder; and
 - (b) within 270 days after the applicable date required by 4.10.2.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 4.10.6 The approval holder shall submit to the Director each Soil Monitoring Program Report obtained from the soil monitoring referred to in 4.10.4 and 4.10.5 according to the following schedule:
- (a) for the first Soil Monitoring Program Report on or before January 31, 2020;
and
 - (b) for the second Soil Monitoring Program Report on or before January 31, 2025;
- unless otherwise authorized in writing by the Director.
- 4.10.7 If any Soil Monitoring Program Report is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

SOIL MANAGEMENT PROGRAM

- 4.10.8 If the Soil Monitoring Program, or any other soil monitoring, reveals that there are substances present in the soil at concentrations greater than any of the applicable concentrations set out in the standards in the *Soil Monitoring Directive, Alberta Environment, 2009*, as amended, the approval holder shall develop a Soil Management Program Proposal.
- 4.10.9 If a Soil Management Program Proposal is required pursuant to 4.10.8, the approval holder shall submit a Soil Management Program Proposal to the Director according to the following schedule:
- (a) for Soil Management Program Proposal that is triggered by the findings from the first soil monitoring event on or before the date in 4.10.6(a);
 - (b) for Soil Management Program Proposal that is triggered by the findings from a second soil monitoring event on or before the date in 4.10.6(b); or
 - (c) for any other soil monitoring event not specified in this approval within six months of completion of the soil monitoring event.
- 4.10.10 If any Soil Management Program Proposal is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.
- 4.10.11 The approval holder shall implement the Soil Management Program as authorized in writing by the Director.
- 4.10.12 If the approval holder is required to implement a Soil Management Program pursuant to 4.10.11, the approval holder shall submit a written Soil Management Program

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

Report to the Director on or before March 31 of each year following the year in which the information was collected.

- 4.10.13 If any Soil Management Program Report is found deficient by the Director, the approval holder shall correct all deficiencies identified by the Director by the date specified in writing by the Director.

PART 5: FINANCIAL SECURITY REQUIREMENTS

- 5.1.1 The approval holder shall annually review and revise the cost estimate for reclamation of the facility including decommissioning and land reclamation.
- 5.1.2 The annual revised cost estimate for the facility shall be submitted to the Director by March 31 of each year.
- 5.1.3 The approval holder shall review and revise the cost estimate for reclamation of the facility when one or more of the following occurs:
- (a) the cost estimate of future conservation and reclamation of the facility changes;
 - (b) the extent of the operation of the facility is increased or reduced;
 - (c) the facility or any portion of it is conserved and reclaimed;
 - (d) the conservation and reclamation plan required by this approval is changed;
or
 - (e) the activities conducted at the facility for which security is required is increased or decreased.
- 5.1.4 The approval holder shall submit the revised cost estimate arising from 5.1.3 to the Director within 30 days after the occurrence of any of the circumstances described in 5.1.3.
- 5.1.5 The approval holder shall provide additional financial security as required in writing by the Director.
- 5.1.6 The approval holder shall renew the financial security for the facility at least 30 days prior to the date it expires.
- 5.1.7 The approval holder shall maintain the financial security for the facility until returned in accordance with the Act or the regulations.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

PART 6: DECOMMISSIONING AND LAND RECLAMATION OF HWRSP FACILITY

SECTION 6.1: GENERAL

6.1.1 The approval holder shall apply for an amendment to this approval to reclaim the HWRSP Facility by submitting to the Director:

- (a) a Decommissioning Plan; and
- (b) a Land Reclamation Plan.

6.1.2 The approval holder shall submit the:

- (a) Decommissioning Plan; and
- (b) Land Reclamation Plan

referred to in 6.1.1 within six (6) months of the HWRSP Facility ceasing operation, except for repairs and maintenance, unless otherwise authorized in writing by the Director.

SECTION 6.2: DECOMMISSIONING

6.2.1 The Decommissioning Plan referred to in 6.1.1 shall include, at a minimum, all of the following:

- (a) a plan for dismantling the HWRSP Facility;
- (b) a comprehensive study to determine the nature, degree and extent of contamination at the HWRSP Facility and affected lands;
- (c) a plan to manage all wastes at the HWRSP Facility;
- (d) evaluation of remediation technologies proposed to be used at the HWRSP Facility and affected lands;
- (e) a plan for decontamination of the HWRSP Facility and affected lands in accordance with the following:
 - (i) for soil or groundwater, *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*, Alberta Environment, February 2009, as amended,
 - (ii) for soil or groundwater, *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*, Alberta Environment, February 2009, as amended,

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (iii) for drinking water, *Canadian Environmental Quality Guidelines*, Canadian Council of Ministers of the Environment, PN 1299, 1999, as amended, and
- (iv) for surface water, *Surface Water Quality Guidelines for Use in Alberta*, Alberta Environment, November 1999, as amended;
- (f) confirmatory testing to indicate compliance with the remediation objectives;
- (g) a plan for maintaining and operating contaminant monitoring systems;
- (h) a schedule for activities (a) through (g) above; and
- (i) any other information as required in writing by the Director.

6.2.2 If the Decommissioning Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

SECTION 6.3: LAND RECLAMATION

6.3.1 The Land Reclamation Plan referred to in 6.1.1 shall include, at a minimum, all of the following:

- (a) the final use of the reclaimed area and how equivalent land capability will be achieved;
- (b) removal of infrastructure;
- (c) restoration of drainage;
- (d) soil replacement;
- (e) erosion control;
- (f) revegetation and conditioning of the HWRSP Facility including:
 - (i) species list, seed source and quality, seeding rates and methods,
 - (ii) fertilization rates and methods, and
 - (iii) wildlife habitat plans where applicable;
- (g) reclamation schedule; and
- (h) any other information as required in writing by the Director.

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TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 6.3.2 If the Land Reclamation Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

PART 7: FINAL LANDFILL CLOSURE AND POST-CLOSURE

SECTION 7.1: LANDFILL CELL CLOSURE AND MAINTENANCE

- 7.1.1 The approval holder shall submit a Landfill Cell Closure Plan for individual landfill cell closure to the Director on or before September 30, 2017, unless otherwise authorized in writing by the Director.
- 7.1.2 The Landfill Cell Closure Plan submitted pursuant to 7.1.1 shall be signed and stamped by a professional registered with APEGA.
- 7.1.3 If the Landfill Cell Closure Plan submitted pursuant to 7.1.1 is found deficient by the Director, the approval holder shall correct all deficiencies as outlined in writing by the Director within the timeline specified in writing by the Director.
- 7.1.4 The approval holder shall implement the Landfill Cell Closure Plan submitted pursuant to 7.1.1 as authorized in writing by the Director.
- 7.1.5 The approval holder shall maintain the closed landfill cells to:
- (a) protect and maintain the integrity of the final cover and surface water drainage systems;
 - (b) prevent erosion;
 - (c) prevent surface water ponding;
 - (d) remediate areas affected by subsidence and differential settlement; and
 - (e) prevent leachate break out.
- 7.1.6 If the approval holder completes landfill cell closure in a year, the approval holder shall prepare an Annual Landfill Cell Closure Report, and include, at a minimum, all of the following information in the Report:
- (a) as-built plans and details on the location of landfill cells that have been closed;
 - (b) certified construction QA/QC procedures employed during cover construction and installation; and
 - (c) survey reports showing the final cover depths.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 7.1.7 The approval holder shall submit the Annual Landfill Cell Closure Report with the Annual Landfill Operations Report required in 4.6.58.

SECTION 7.2: FINAL LANDFILL CLOSURE AND POST-CLOSURE

- 7.2.1 The approval holder shall apply for an amendment to this approval for final landfill closure by submitting to the Director:

- (a) a Detailed Final Landfill Closure Plan ; and
- (b) a Landfill Post-Closure Plan.

- 7.2.2 The approval holder shall submit the:

- (a) Detailed Final Landfill Closure Plan; and
- (b) Landfill Post-Closure Plan

referred to in 7.2.1 within six (6) months of the landfill ceasing operations, unless otherwise authorized in writing by the Director.

DETAILED FINAL LANDFILL CLOSURE PLAN

- 7.2.3 The Detailed Final Landfill Closure Plan shall be developed in accordance with sections 6.1(b) and 6.1(c) of the *Standards for Landfills in Alberta*, as amended.

- 7.2.4 In addition to 7.2.3, the Detailed Final Landfill Closure Plan shall include, at a minimum, all of the following:

- (a) a plan for replacement of soil;
- (b) a QA/QC Program; and
- (c) any deviations from the most recently submitted closure plan.

- 7.2.5 The Detailed Final Landfill Closure Plan shall be signed and stamped by a professional registered with APEGA.

- 7.2.6 If the Detailed Final Landfill Closure Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

- 7.2.7 The approval holder shall implement the Detailed Final Landfill Closure Plan as authorized in writing by the Director.

.....
TERMS AND CONDITIONS ATTACHED TO APPROVAL

LANDFILL POST-CLOSURE PLAN

- 7.2.8 The Landfill Post-Closure Plan shall be developed in accordance with sections 6.2 and 6.3 of the *Standards for Landfills in Alberta*, as amended.
- 7.2.9 In addition to 7.2.8, the Landfill Post-Closure Plan shall include, at a minimum, all of the following:
- (a) the groundwater monitoring program including performance standards and points of compliance;
 - (b) the subsurface landfill gas monitoring program and performance standards at points of compliance;
 - (c) a plan for erosion control;
 - (d) a plan for maintaining vegetative cover; and
 - (e) any other information requested in writing by the Director.
- 7.2.10 The Landfill Post-Closure Plan shall be signed and stamped by a professional registered with APEGA.
- 7.2.11 If the Landfill Post-Closure Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.
- 7.2.12 The approval holder shall implement the Landfill Post-Closure Plan as authorized in writing by the Director.

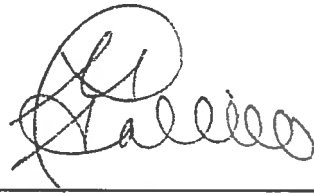
PART 8: DECOMMISSIONING AND LAND RECLAMATION OF OLD SURFACE WATER DETENTION POND

- 8.1.1 The approval holder shall:
- (a) decommission; and
 - (b) reclaim
- the old surface water detention pond prior to construction of Cell 4.
- 8.1.2 The approval holder shall submit a Decommissioning and Land Reclamation Plan for the old surface water detention pond to the Director a minimum of six (6) months prior to decommissioning and land reclamation of the pond.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 8.1.3 If the Decommissioning and Land Reclamation Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

DATED March 31, 2017



DESIGNATED DIRECTOR UNDER THE ACT
Mohammad Habib, P. Eng.

Alberta Environment and Parks

Record of Site Condition

Public Disclosure and Privacy Notification

The Record of Site Condition form is a public record that is disclosed in accordance with section 35 of the Environmental Protection and Enhancement Act, Disclosure of Information Regulation, and Ministerial Order 23/2004. Reasonable efforts have been made to minimize collection of personal information where possible. Personal information on the form is collected under the authority of section 12(c) and other provisions of the Environmental Protection and Enhancement Act and is in compliance with section 33(a) and 33(c) of the Freedom of Information and Protection of Privacy Act (FOIP). Personal information collected on this form will be used by Alberta Environment and Parks (AEP) for the purposes of administering its programs.

The information in this form is securely stored by Alberta Environment and Parks.

Accuracy of Information

The information in this document has been submitted by persons other than AEP. The Department and the Government of Alberta cannot and do not warrant that the information in this document is current, accurate, complete, or free of errors. Persons accessing the information provided should not rely on it, and any reliance on the information provided is taken as the sole risk of the user. Users of this information are advised to conduct their own due diligence to satisfy themselves of the environmental condition of the property of interest.

Instructions

This form requires that JavaScript be enabled. If you do not see page numbers in the bottom-right corner of the pages, then the form will not work as intended. Please see the instructions for your particular software.

This form must be completed by a **qualified environmental professional**. The declaration must be signed by both the qualified environmental professional and an authorized representative of the operator.

This form is a living document, and report submissions must be accompanied by the most current version of the form (available from the Alberta Environment and Parks website). This form must not be embedded into or combined with any other report.

A Record of Site Condition form is a **regulatory reporting requirement** for all Phase 2 Environmental Site Assessment (ESA), remediation and risk management projects submitted to the department. The RSC form is designed for release reporting under Section 111 of the *Environmental Protection and Enhancement Act* (EPEA). Any site that requires an ESA requires submission of an RSC form. The form is a summary document, designed to track major environmental characteristics for an assessed site. The RSC does not replace detailed technical reports. Both must be submitted to the Department and are needed for different levels of site management.

The RSC form is **not required** for the following reports or situations:

- Environmental Impact Assessment (EIA) reports under Part 2 of EPEA;
- Small volume releases to land that are normally reported to the Department and managed under the Incident Tracking System that do not require a written 7-day report;
- Proposals to conduct ESAs, soil monitoring, groundwater monitoring, remediation or risk management projects; and
- Releases on Federal Land.

The RAP is intended to be a brief outline of how and when contamination will be remediated following a substance release and building on a summarizing information in the RSC form. Once a substance release has been reported, the person responsible must develop a detailed understanding of site conditions and contaminants of potential concern. This information will be used to determine a course of action and timelines to meet the Tier 1 or Tier 2 Guidelines.

If the substance release **has not** been remediated to meet Tier 1 or Tier 2 within two years of discovering the release a RAP needs be submitted. Where a site **has been** fully remediated within two years, no RAP is required.

Guidance documents are available on the Alberta Environment and Parks website.

1. Administrative Information

Site Name Clean Harbors - Class 1 Waste Management Facility Ryley, AB

File, approval, or registration number of site 10348-03-00

Incident number

List all professional reports accompanying this form.

+	Type of Report	Date	Title of Report
-	Routine/Annual Monitoring Report	10-Mar-2022	2021 Groundwater Monitoring Program - Class 1 Waste Management Facility
-			

Attach Reports

Environmental Professional (preparing this form)

Alberta Environment and Parks

Record of Site Condition

Company name	Tetra Tech Canada Inc.
Contact person	Amy Homister
Position	Senior Hydrogeologist
Mailing address	110-140 Quarry Park Blvd SE
Phone number	403-723-1567
Professional organization	APEGA
Registration or member number	119417
Email	Amy.Homister@tetrattech.com

Is this the first digital submission of the RSC form for this site after January 1, 2021?	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Is a new Remedial Action Plan (RAP) required for this site/release?	<input type="radio"/> Yes	<input checked="" type="radio"/> No

2. Site Location and Identification

Municipal address	2 km No. of Hwy.14 on Secondary Rd.854, Ryley, AB T0B 4A0		
GIS coordinates	Latitude 53.175940	Longitude 112.25139	
UTM coordinates	Zone	Easting	Northing

Does the site have a Plan Block Lot (PBL) or Alberta Township System (ATS) location?

PBL ATS

Alberta Township System (ATS) information (use buttons to add or remove rows)

+	Quarter	LSD	Section	Township	Range	Meridian
-	SE		9	50	17	4

Municipality of site:	Beaver County
River Lot ID	
Disposition No (if public)	

land) Operator Information

Company name	Clean Harbors	Contact person	Stan Yuha
Mailing address	P.O. Box 390 Ryley, AB T0B 4A0	Phone number	780-717-9606
Email	Yuha.Stan@cleanharbors.com		

Landowner Information

Name/Company	Clean Harbors Inc.	Contact person	Stan Yuha
Mailing address	P.O. Box 390 Ryley, AB T0B 4A0	Phone number	780-717-9606
Email	Yuha.Stan@cleanharbors.com		

Is there an occupant/tenant on the site that is NOT the Operator or the Landowner?	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Have any remediation or reclamation certificates previously been issued for this site?	<input type="radio"/> Yes	<input checked="" type="radio"/> No

3. Type of Activity

Classification of site activity:	Approved Site under EPEA
Approved Activity Under EPEA	
Approved Activity Under EPEA	

Alberta Environment and Parks

Record of Site Condition

Approved Activity Under EPEA	
Activity:	Landfill
Activity:	
Activity:	
Which approval clause(s) is this report being submitted in fulfillment of?	10348-03-00
Has the due date been met?	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A

4. Release Reporting	
Has a new release occurred on the site?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Have ALL releases on this site been reported before January 1, 2019?	<input checked="" type="radio"/> Yes <input type="radio"/> No
What is the status of the source(s) on site?	No identified potential source in groundwater

5. Site Assessment Information/CSM			
Guideline Selection			
Current land use	Industrial	Is the adjacent land use more sensitive?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Future land use	Industrial	Adjacent land use	Agricultural
Soil particle size	Fine		
Most complex guideline applicable to the site	Tier 1		
Have contaminants not listed in Tier 1 guidelines been identified at the site?	<input type="radio"/> Yes <input checked="" type="radio"/> No	List:	
Does the site have any of the conditions where Tier 1 guidelines are not applicable?	<input type="radio"/> Yes <input checked="" type="radio"/> No		

Add New Area	Delete Area (cannot be undone)
--------------	--------------------------------

Areas of Environmental Concern (selected guideline not met)				
Area 1				
Area name (optional)				
Dimensions in metres	Length	Width	Depth to top	Depth to bottom
Were there any impediments (building foundation, active utilities) that prevented assessment of the worst-case scenario?	<input type="radio"/> Yes <input type="radio"/> No	Comment		
Was LNAPL observed in this area?	<input type="radio"/> Yes <input type="radio"/> No			
Was DNAPL observed in this area?	<input type="radio"/> Yes <input type="radio"/> No			

Contaminant Details						
(Use the + button to add new rows. Use the – button to remove a row.)						
+	Type	Contaminant group	Specific contaminant	Depth / screen zone	Max concentration	Site-specific guideline
–						

Receptor Information (all distances in metres from extent of contamination, not site boundary or property line)				
Distance to surface water	Distance to nearest domestic water well	Distance to nearest dugout	Depth to groundwater	Distance to building or residential area

Alberta Environment and Parks Record of Site Condition



Status of Delineation for Area				
Is horizontal delineation complete for this area?		<input type="radio"/> Yes	<input type="radio"/> No	
Is vertical delineation complete for this area?		<input type="radio"/> Yes	<input type="radio"/> No	
Has this area been remediated to below applicable guidelines for all contaminants?		<input type="radio"/> Yes	<input type="radio"/> No	
Is this contaminated area contained onsite?		<input type="radio"/> Yes	<input type="radio"/> No	

Alberta Environment and Parks

Record of Site Condition

Declarations and Signatures

Environmental Professional


1. This Declaration is made as part of the submission of this Record of Site Condition form for the purpose of reporting on the state of environmental site conditions and, where applicable, for the purpose of remediation (including remedial action plans), reclamation, risk management, or environmental monitoring at this Site.

2. I am a practicing professional member of a professional organization, which is a regulated professional organization (the "Professional Organization") as identified in section 2.2 of the Alberta Environmental Site Assessment Standard, (AEP 2016, as amended). I have a minimum of five years verifiable experience in remediation or reclamation relevant to the Competencies Table contained in the Competencies for Remediation and Reclamation Advisory Committee's Recommendations Report (AENV 2006). As a member of the Professional Organization, I possess the necessary competence to sign off on Environmental Site Assessments, Environmental Monitoring Reports, Remedial Action Plans and Risk Management Plans, as defined in the Environmental Site Assessment Standard, Contaminated Sites Policy Framework, and Remediation Regulation. I am authorized by the operator to prepare this form and attach the professional reports or documents listed in the table of Professional Reports (the "Professional Reports").

3. To the best of my knowledge and the best of my professional ability, recognizing the standard of care expected of a reasonable professional doing this work, it is my professional opinion that all relevant and required information is included in the Professional Reports and this form, and that the information is complete and accurately describes the current environmental condition of the Site. It is also my professional opinion that the information in this form is consistent with the contents of the Professional Reports, and that the results reported in the Professional Reports are consistent with all current and applicable Government of Alberta criteria, standards and guidelines for remediation or reclamation, together with any relevant additional guidance that is available from the Government of Alberta as of this date for conducting Environmental Site Assessments, Environmental Monitoring Reports, Remedial Action Plans and Risk Management Plans.

4. I carry, or my employer carries, professional liability insurance (errors and omissions).

5. I am aware that it is an offence under section 227 of the Environmental Protection and Enhancement Act to provide false, misleading or inaccurate information and that there are significant fines for committing such an offence, including the possibility of imprisonment.

Name of Environmental Professional	Amy Homister
Position	Senior Hydrogeologist
Registration or member number	119417
Date	17-Mar-2022
Signature	

Alberta Environment and Parks

Record of Site Condition

Authorized Representative

This Declaration must be signed by the person responsible for submitting this Record of Site Condition form (consultant signatures are NOT acceptable in this declaration).

1. This Record of Site Condition form was prepared and is submitted for the purpose of reporting on the state of environmental site conditions and, where applicable, for the purpose of remediation (including remedial action plans), reclamation, risk management, or environmental monitoring located at this Site.
2. I, as the authorized representative of the operator, am aware of and have the authority and responsibility to bind and ensure compliance with the requirements imposed by the legislation, standards, guidelines, directives and other instruments of the Province of Alberta that are pertinent to , including without limitation, those requirements pertaining to a 'person responsible' as that term is defined in the Environmental Protection and Enhancement Act.
3. I have reviewed the attached professional reports or documents listed in the table of Professional Reports (the "Professional Reports") and all information that was used in preparation of this form, and this form was completed under my direction. The appropriate professional declarations provided in or in conjunction with the Professional Reports have been completed and signed by properly accredited and qualified professional members of a regulated professional organization as identified in section 2.2 of the Alberta Environmental Site Assessment Standard who conducted the work. I am satisfied that this form was prepared in a manner consistent with all current and applicable Government of Alberta criteria, standards and guidelines for remediation or reclamation, together with any relevant additional guidance that is available from the Government of Alberta as of this date for conducting Environmental Site Assessments, Environmental Monitoring Reports, Remedial Action Plans and Risk Management Plans.
4. I conducted reasonable inquiries to obtain all relevant information and the information provided in this form and the Professional Reports is to the best of my knowledge and belief, true, accurate and complete as of this date, and consistent with the contents of the Professional Reports. I have fulfilled the responsibilities of the proponent as set out in section 2.1 of the Environmental Site Assessment Standard, including the selection of appropriate environmental professionals and/or competent practitioners.
5. This form discloses all relevant information of which I am aware of concerning the historical and current environmental condition of the Site and I have made all reasonable efforts to inform myself about the Site.
6. I have read and understand any remedial action plans and/or risk management plans that have been submitted with or as part of this form. I will satisfy any and all requirements necessary to fulfill and maintain the remedial action plans and/or risk management plans submitted with this form until such time as the Site has been remediated in accordance with all current and applicable statutes, regulations, and rules of the Province of Alberta together with any applicable Government of Alberta criteria, standards and guidelines.
7. Any use which a third party, other than the Crown in Right of Alberta, makes of this form, or any reliance on or decisions to be made based on it, is the responsibility of such third parties. The undersigned accepts no responsibility for damages, if any, suffered by any third party, other than the Crown in Right of Alberta, as a result of decisions made or actions based on this form.
8. If the Professional Reports or any other attachment to this form have any liability limitations, restrictions or waiver clauses that limit or exclude the ability of the Crown in Right of Alberta or affected third parties to rely on the Professional Reports or any other attachment to this form, I hereby specifically identify the Crown in Right of Alberta as authorized users of the Professional Reports and any other attachment to this form. Any such liability limitations, restrictions or waiver clauses are of no force or effect as against the Crown in Right of Alberta.
9. I am aware that the Government of Alberta may audit the information contained in this form and that the Government of Alberta may take further regulatory actions based on the results of that audit. I am also aware that it is an offence under section 227 of the Environmental Protection and Enhancement Act to provide false, misleading or inaccurate information and that there are significant fines for committing such an offence, including the possibility of imprisonment.

Operator Company Name	
Name of Contact Person	
Date	
Signature	

I agree to submit this Record of Site Condition form to AEP electronically as part of AEP's electronic reporting system.

By signing the form with an electronic signature, you are bound with the same force as though you had a fixed signature on paper.

Save Form

Print Form

Submit

APPENDIX B

WATER WELL AND SURFACE WATER SEARCH RESULTS



Reconnaissance Report

[View in Metric](#)

[Export to Excel](#)

Groundwater Wells

Please click the water Well ID to generate the Water Well Drilling Report.

GIC Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (ft)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (ft)	TEST RATE (igpm)	SC_DIA (in)
94699	SW	3	50	17	4	UNKNOWN DRILLER		200.00	Chemistry	Domestic & Stock				MIZERA, RUDY			0.00
94700	NW	3	50	17	4	HOLLAND WATER WELLS		350.00	Existing Well- Decommissioned	Unknown		1		BEAVER COUNTY			
94700	NW	3	50	17	4	UNKNOWN DRILLER		350.00	Chemistry	Domestic				MIZERA, RUDY	150.00		0.00
94701	WH	4	50	17	4	MERV'S WATER WELL DRILLING	1986-05-01	395.00	New Well	Domestic & Industrial		13		ABRAHAM, JOE	80.00	2.50	5.50
94702	NE	4	50	17	4	UNKNOWN DRILLER		50.00	Chemistry	Municipal	2			RYLEY, VILL OF			
94703	NE	4	50	17	4	UNKNOWN DRILLER		200.00	Chemistry	Municipal	1			RYLEY, VILL OF			
94704		4	50	17	4	ALF'S DRILLING & SUPPLIES LTD.	1986-10-02	435.00	New Well	Industrial		9		ANDRUKOW FARM SALES LTD	72.00	60.00	5.56
94707	9	8	50	17	4	UNKNOWN DRILLER	1930-01-01	14.00	Federal Well Survey	Domestic & Stock				MAGNUSSEN			0.00
94708	SE	8	50	17	4	UNKNOWN DRILLER		400.00	Federal Well Survey	Domestic & Stock							0.00
94709	SE	9	50	17	4	UNKNOWN DRILLER		24.00	Chemistry	Unknown				MAGNUSSEN, E.	10.00		0.00
94710	4	9	50	17	4	UNKNOWN DRILLER		14.00	Federal Well Survey	Domestic & Stock				HOSTLUND			0.00
94711	NE	9	50	17	4	BIG QUILL DRILLING LTD.	1983-01-31	297.00	Test Hole- Decommissioned	Unknown		13		C.E. MOELL CONSULTING LTD#1	0.00	3.00	7.00
94712	NE	9	50	17	4	BIG QUILL DRILLING LTD.	1983-02-01	297.00	Test Hole- Decommissioned	Unknown		13		C.E. MOELL CONSULTING LTD#2	0.00	4.00	7.00
94713	SE	10	50	17	4	UNKNOWN DRILLER	1915-01-01	23.00	Federal Well Survey	Domestic				MASTERS, J.E.	13.00		0.00
94714	SW	10	50	17	4	UNKNOWN DRILLER		220.00	Chemistry	Domestic				GARSTAD, MARK	160.00		0.00
94715	14	10	50	17	4	UNKNOWN DRILLER	1919-01-01	300.00	Federal Well Survey	Stock				MCDONAGH, W.N.			2.00
94716	14	10	50	17	4	UNKNOWN DRILLER	1912-01-01	20.00	Federal Well Survey	Domestic				MCDONAGH, W.N.			0.00
94717	NW	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-27	98.00	Piezometer	Observation		5		ALTA ENV #2143E			0.00
94718	NW	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-27	139.00	Piezometer	Observation		7		ALTA ENV #2144E			0.00
94719	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-27	15.00	Test Hole	Other		3		ALTA ENV #2133E			0.00



Reconnaissance Report

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GIC Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (ft)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (ft)	TEST RATE (igpm)	SC_DIA (in)
94720	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-26	49.00	Piezometer	Observation		4		ALTA ENV #2140E			0.00
94721	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-26	50.00	Test Hole	Unknown		4		ALTA ENV #2137E			0.00
94722	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-26	86.00	Piezometer	Observation		4		ALTA ENV #2141E			0.00
94723	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-31	48.00	Test Hole	Unknown		3		ALTA ENV #2139E			2.00
94724	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-31	83.00	Piezometer	Observation		5		ALTA ENV #2138E			2.00
94725	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-28	98.00	Test Hole	Unknown		6		ALTA ENV #2136E			2.00
94744	8	16	50	17	4	UNKNOWN DRILLER	1929-01-01	405.00	Federal Well Survey	Stock				NICHOLS	70.00		6.00
94745	SE	16	50	17	4	UNKNOWN DRILLER	1920-01-01	25.00	Federal Well Survey	Unknown				NICHOLS			0.00
159228	SE	9	50	17	4	LAKELAND DRILLING LTD.	1991-09-07	460.00	New Well	Domestic & Industrial		11		LAIDLAW ENVIRONMENTAL SVC LTD	61.00	10.00	5.00
232795	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-27	300.00	Test Hole	Investigation		13		ALTA ENV #2132E			0.00
232797	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-27	200.00	Test Hole	Investigation		14		ALTA ENV #2134E			0.00
232798	NE	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-28	200.00	Test Hole	Investigation		13		ALTA ENV #2135E			0.00
232800	NW	10	50	17	4	ALBERTA ENVIRONMENT/EARTH SCIENCES DIVISION	1983-01-27	198.00	Test Hole	Investigation		10		ALTA ENV #2142			0.00
286840	4	10	50	17	4	LOSNESS DRILLING (1975) LTD.	1997-05-14	270.00	New Well	Domestic		11	25	PEPPES, RONALD	30.50	4.00	0.00
1888429	SE	10	50	17	4	HILL DRILLING LTD.	2004-04-16	160.00	Test Hole	Other		8		C. E. MODELL & ASSOC. LTD			5.00
1888430	SE	10	50	17	4	HILL DRILLING LTD.	2004-04-15	160.00	Test Hole	Other		11		C. E. MOELL & ASSOC. LLTD			5.00
1888439	SE	10	50	17	4	HILL DRILLING LTD.	2004-04-13	152.00	New Well	Domestic		7	19	C.E. MOELL & ASSOCIATES LTD.		0.00	5.00
1888439	SE	10	50	17	4	HILL DRILLING LTD.	2020-08-04	152.00	Existing Well- Decommissioned	Unknown				C.E. MOELL & ASSOCIATES			
1889172	9	10	50	17	4	HILL DRILLING LTD.	2013-05-21	121.00	Piezometer	Monitoring		1		BEAVER MUNICIPAL SOLUTIONS			
1889173	10	10	50	17	4	HILL DRILLING LTD.	2013-05-21	18.00	Piezometer	Monitoring		1		BEAVER MUNICIPAL SOLUTIONS			

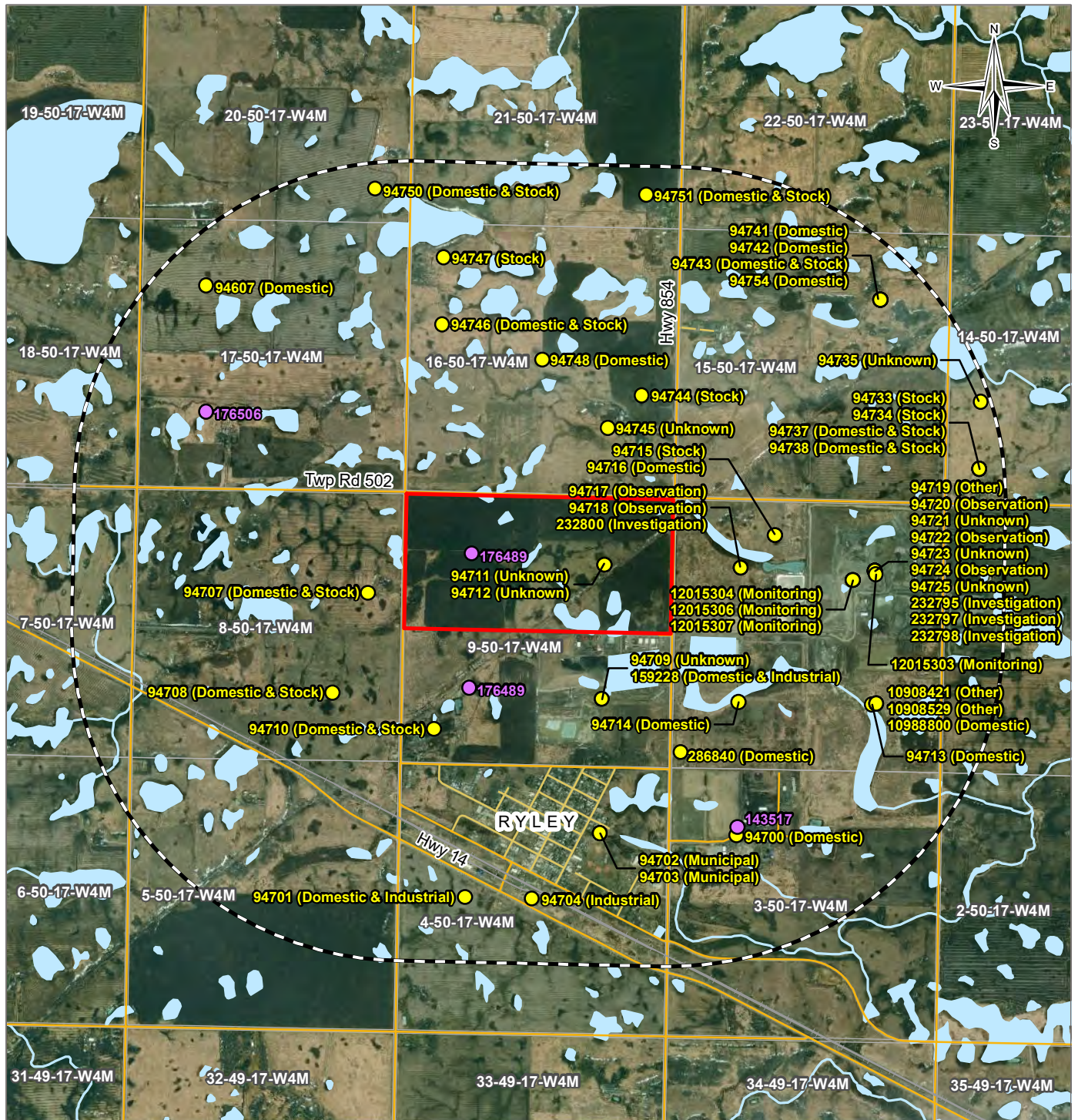


Reconnaissance Report

[View in Metric](#)

[Export to Excel](#)

GIC Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (ft)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (ft)	TEST RATE (igpm)	SC_DIA (in)
1889174	10	10	50	17	4	HILL DRILLING LTD.	2013-05-22	33.00	Piezometer	Monitoring		1		BEAVER MUNICIPAL SOLUTIONS			
1889175	10	10	50	17	4	HILL DRILLING LTD.	2013-05-22	70.00	Piezometer	Monitoring		1		BEAVER MUNICIPAL SOLUTIONS			



Q:\Edmonton\GIS\SWOP\SWOP04268-01_AppB_GW.mxd modified 1/8/2021 by megan.verburg

LEGEND

- Groundwater User (Approval ID)
- Water Well (Well ID, Well Use)
- Approximate Site
- 2 km Search Area
- Main Road
- Local Road
- Resource/Recreational Road
- Railway
- ~ Watercourse
- Waterbody

NOTES
 Base data source: CanVec 1:50,000
 Imagery provided by ESRI; DigitalGlobe (2018)

STATUS
 ISSUED FOR REVIEW

2021 GROUNDWATER MONITORING PROGRAM RYLEY, ALBERTA

Alberta Water Well Information Database 2.0 km Search Radius

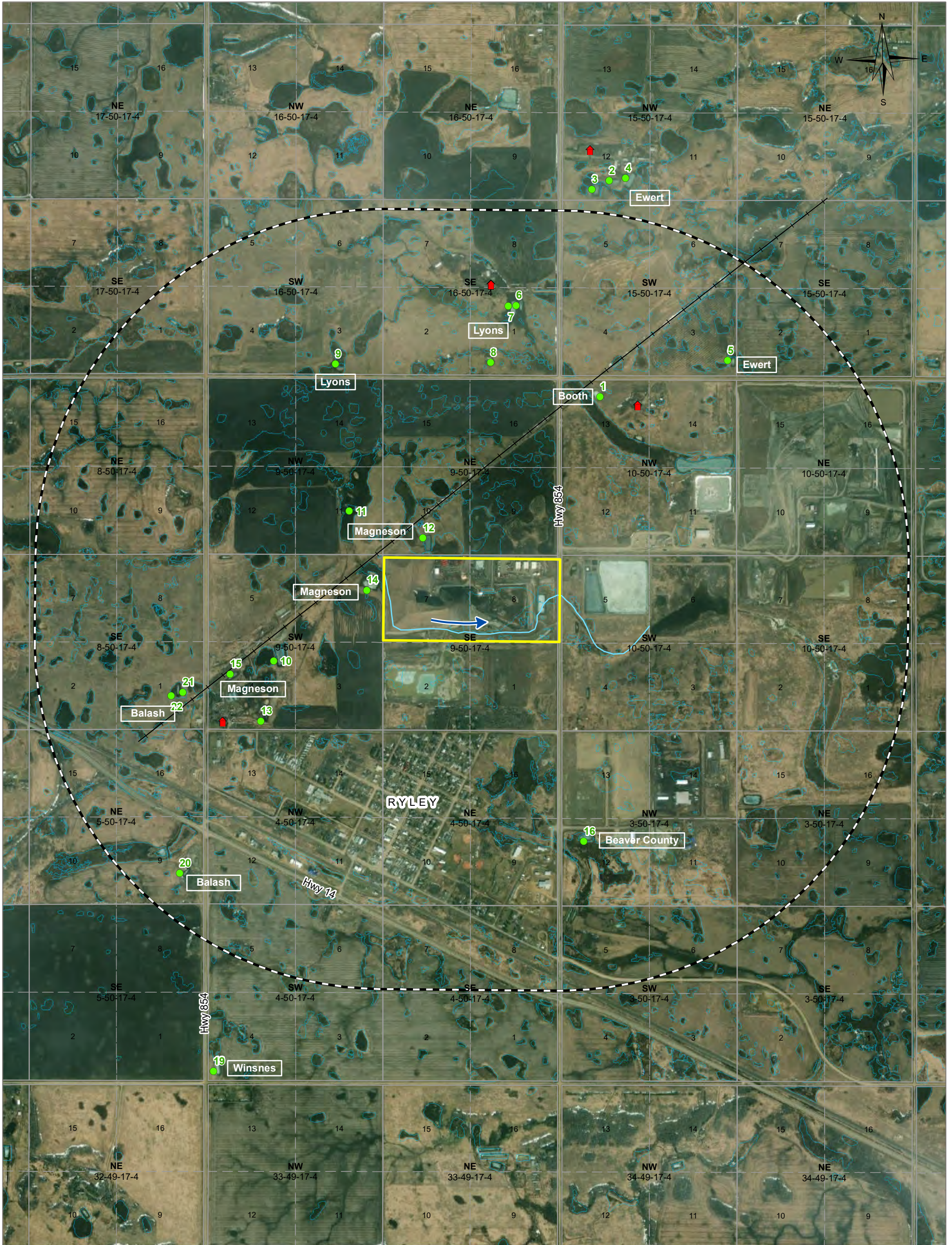
PROJECTION UTM Zone 12	DATUM NAD83	CLIENT
Scale: 1:35,000 500 250 0 500 Metres		
FILE NO. SWOP04268-01_AppB_GW.mxd		
OFFICE Tt-EDM	DWN MRV	CKD SL
APVD MC	REV 0	
DATE January 8, 2021	PROJECT NO. SWM.SWOP04268-01	
Appendix B		

Appendix B: Surface Water Users

Priority	Applicant	Project	Approval ID	Latitude	Longitude	Specific Purpose	Licensed Date
19980417001	CLAYSTONE WASTE LTD.	RYLEY/OTHER/CLAYSTONE WASTE LTD. - F26835	67670	53.30554	-112.41038	SOTHER	7/28/1998
19950303013	CLAYSTONE WASTE LTD.	RYLEY/OTHER/CLAYSTONE WASTE LTD. - F26835	24404	53.30554	-112.39834	OTHR	8/30/1996
19720726001	BEAVER COUNTY	RYLEY/MUNICIPAL/BEAVER REGIONAL WASTE MANAGEMENT SERVICES (BEAVER COUNTY) - F26835	35644	53.3193	-112.4356	FLOODCNT	2/4/1982
19791111001	WOOD, DENNIS	RYLEY/REGISTRATION/DENNIS W. WOOD - F00169280	169280	53.32018	-112.39832	REGISTRY	3/20/2002
19801231084	RUDY & GERTIE MIZERA	RYLEY/FARM UNIT/MIZERA, RUDY & GERTIE - F00143517	143517	53.29107	-112.41031	REGISTRY	1/28/2002
19801231085	RUDY & GERTIE MIZERA	RYLEY/FARM UNIT/MIZERA, RUDY & GERTIE - F00143517	143517	53.29107	-112.41031	REGISTRY	1/28/2002
19881223001	STIER, PAT	MAGNESON, WR, 23378	28088	53.2958	-112.4361	STCKWT	9/30/1991
19661231268	CATHAY FARMS	RYLEY/REGISTRATION/CATHAY FARMS - F00175254	175254	53.32018	-112.42271	REGISTRY	1/16/2003
19420630006	HELGELAND, SIGNAR	RYLEY/REGISTRATION/HELGELAND SIGNAR - F00150710	150710	53.29105	-112.45902	REGISTRY	6/13/2002
19910826001	LAIDLAW ENVIRONMENTAL SERVICES LTD.	LAIDLAW ENVIORNMENTAL SERVICE, WR 24753	26794	53.2958	-112.4242	FLOODCNT	3/9/1992
19781231338	RICHARD & JUDITH DUECK	RYLEY/REGISTRATION/RICHARD & JUDITH DUECK - F00176506	176506	53.31297	-112.44704	REGISTRY	3/27/2002
19601231880	RICHARD & JUDITH DUECK	RYLEY/REGISTRATION/RICHARD & JUDITH DUECK - F00176506	176506	53.31295	-112.45899	REGISTRY	3/27/2002
19601231879	RICHARD & JUDITH DUECK	RYLEY/REGISTRATION/RICHARD & JUDITH DUECK - F00176506	176506	53.31295	-112.45899	REGISTRY	3/27/2002
19661231181	RICHARD & JUDITH DUECK	RYLEY/REGISTRATION/RICHARD & JUDITH DUECK - F00176506	176506	53.31295	-112.45899	REGISTRY	3/27/2002
19981021002	CLAYSTONE WASTE LTD.	RYLEY/PARK/BRWMS - F85381	72398	53.30554	-112.41038	RCRTN	10/21/1998
19901231806	LYONS, BRIAN	RYLEY/FARM UNIT/LYONS BRIAN - F00176295	176295	53.31296	-112.42273	REGISTRY	3/28/2002
19701231829	LYONS, BRIAN	RYLEY/FARM UNIT/LYONS BRIAN - F00176295	176295	53.31297	-112.43475	REGISTRY	3/28/2002
19901231807	LYONS, BRIAN	RYLEY/FARM UNIT/LYONS BRIAN - F00176295	176295	53.31297	-112.43475	REGISTRY	3/28/2002
19901231805	LYONS, BRIAN	RYLEY/FARM UNIT/LYONS BRIAN - F00176295	176295	53.31296	-112.42273	REGISTRY	3/28/2002
19601231912	LYONS, BRIAN	RYLEY/FARM UNIT/LYONS BRIAN - F00176295	176295	53.31296	-112.42273	REGISTRY	3/28/2002
19601231913	LYONS, BRIAN	RYLEY/FARM UNIT/LYONS BRIAN - F00176295	176295	53.31296	-112.42273	REGISTRY	3/28/2002

Notes:

Active Surface Water Licences and Authorizations within 1.6 km of SE 9-50-17-W4M as of January 3, 2022



LEGEND

- Rural Residence
- Water Sample Location
- Site Outline
- 1.6 km Buffer
- Abandoned Railway Bed (Approximate Centreline)
- Bible Creek (Approximate Centreline)
- Bible Creek Flow Direction
- Potential Wetland

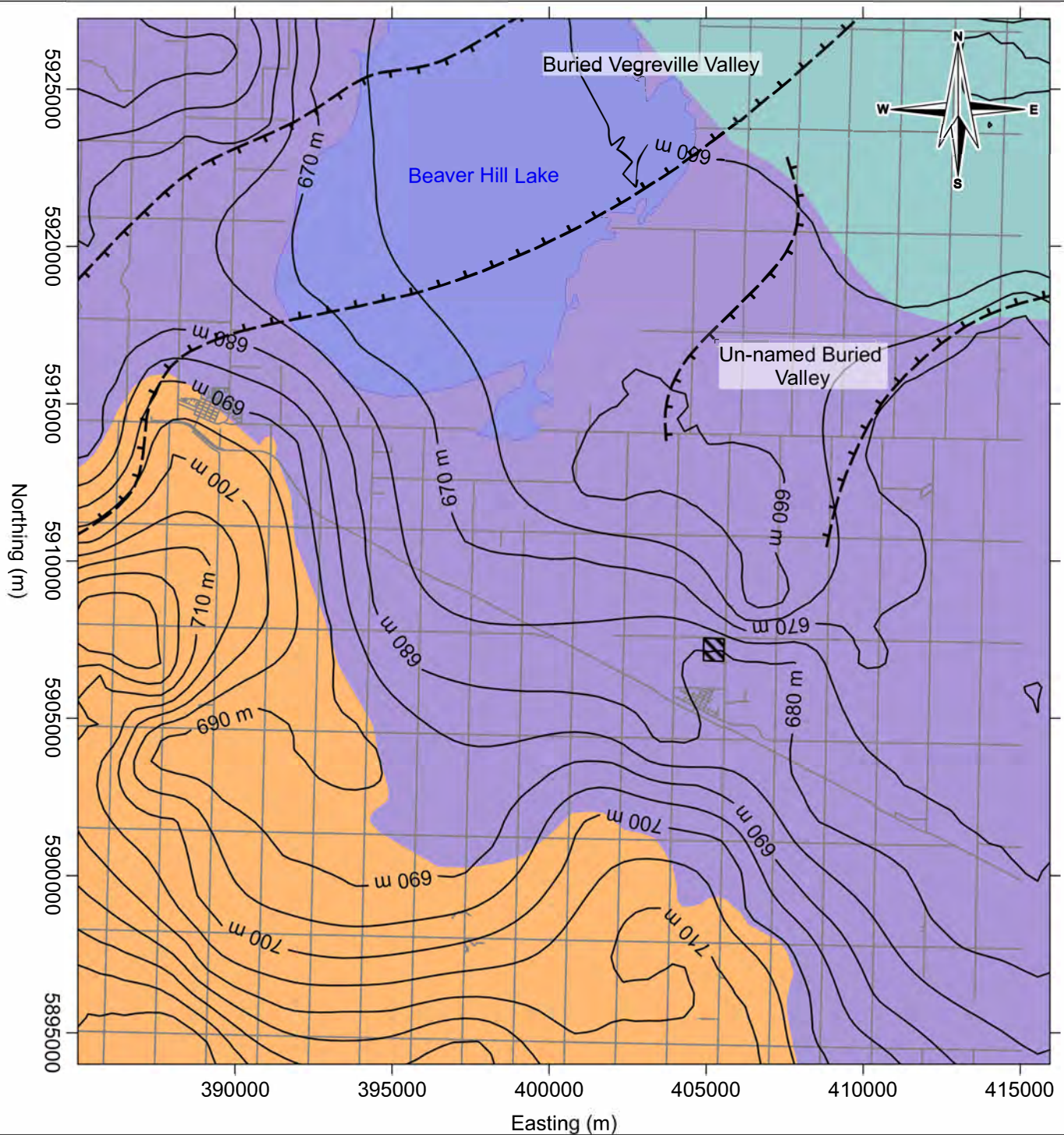
NOTES
 Base data source: ESRI, CanVec (50,000)
 & ESRD
 Imagery provided by ESRI; Maxar (2017)

**2021 Groundwater Monitoring Program
 Ryley, Alberta**

**Alberta Surface Water Users 2.0 km
 Search Radius**

PROJECTION UTM Zone 12	DATUM NAD83	CLIENT
Scale: 1:17,000 		
FILE NO. SWOP04402-01_Fig01_SamplingPlan.mxd		
OFFICE Tr-EDM	DWN DS DS	CKD SL SL
DATE December 20, 2021	APVD MD MD	REV 0 0
PROJECT NO. SWM.SWOP04401-01		Appendix B

STATUS
 ISSUED FOR REVIEW



LEGEND

- Buried Valley
- Bedrock Elevation Contour
- Roadway
- Water body
- Site Location

- Bedrock Formation**
- Lower Horseshoe Canyon
 - Bearpaw
 - Oldman (Belly River Group)

NOTES
 Geological data obtained from:
 County of Beaver No.9
 Revised Regional Groundwater Assessment
 HCL, 1999
 NRC, CanVec+ Base Map
STATUS
 Issued for Use

2021 GROUNDWATER MONITORING PROGRAM, RYLEY,

Regional Geology

PROJECTION
 UTM Zone 12

DATUM
 NAD83

CLIENT



FILE NO.
 AppendixBa - Regional Geology.srf

PROJECT NO.
 SWM.SWOP04401-01

DWN
 CF

CKD
 BS

APVD
 AS

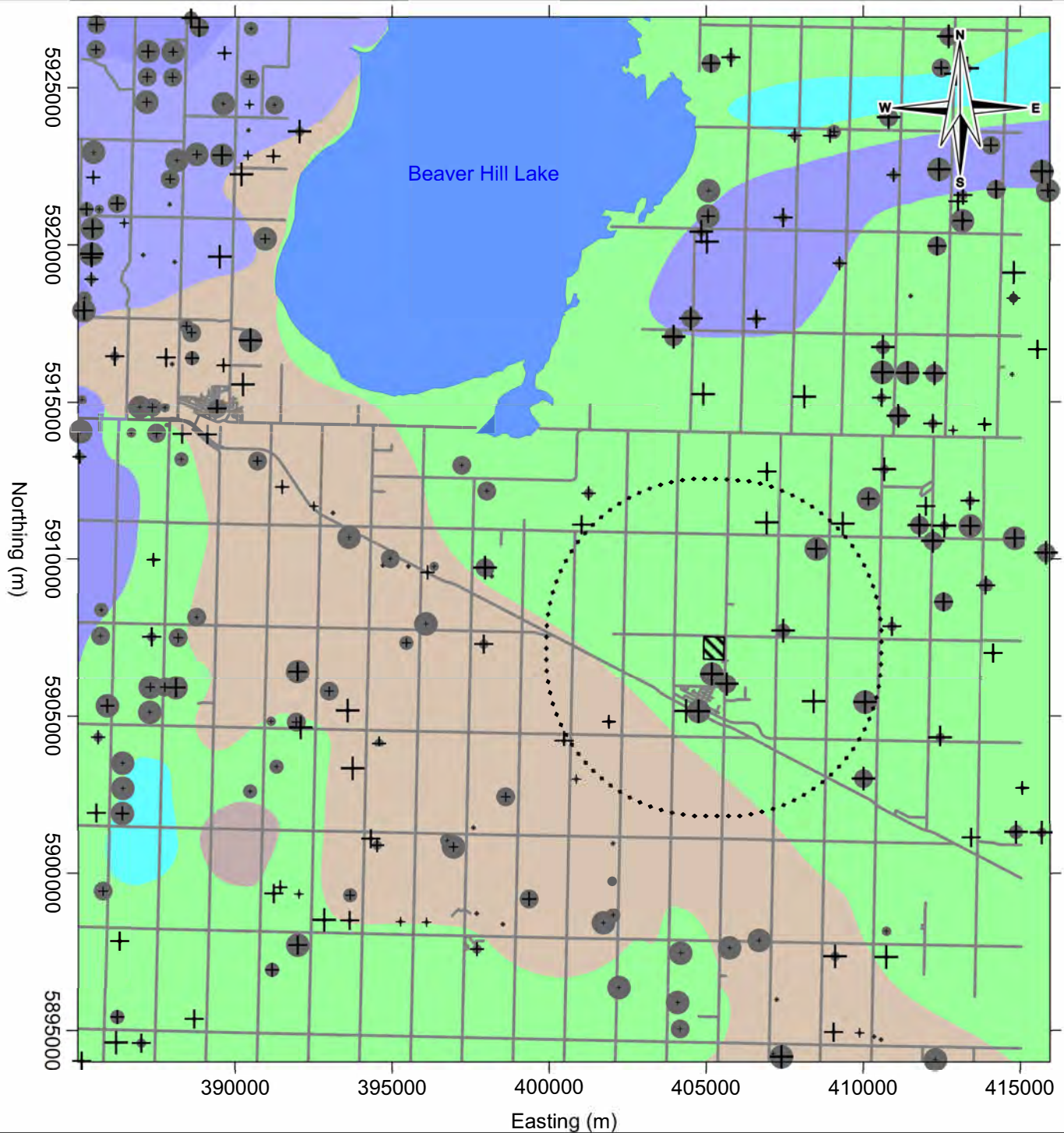
REV
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OFFICE
 TIEBA-CAL

DATE
 September 2017

TETRA TECH

**Appendix B
 Figure A**



LEGEND

- Well Depth (m)
- + 184-470
 - + 141-184
 - + 105-141
 - + 75-105
 - + 19-75
- Roadway
- Water body
- Site Location
- 5 km Site Radius

- Recommended Pump Rate (L/sec)
- 0.44 - 3.15
 - 0.32 - 0.44
 - 0.25 - 0.32
 - 0.14 - 0.25
 - 0.03 - 0.14

Expected Groundwater Yield (L/sec)

- < 0.1
- 0.1 - 0.4
- 0.4 - 2
- 2 - 8

NOTES

Hydrogeological data obtained from: Hydrogeology of the Edmonton Area Southeast Segment, Alberta R. Stein, 1982
 AB Water Well Information Database June 28, 2016
 NRC, CanVec+ Base Map

STATUS

Issued for Use

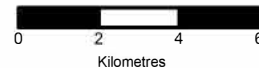
2021 GROUNDWATER MONITORING PROGRAM, RYLEY,

Regional Hydrogeology Water Wells

PROJECTION
 UTM Zone 12

DATUM
 NAD83

CLIENT



FILE NO.

AppendixBc - Regional Hydrogeology.srf



PROJECT NO.

SWM.SWOP04401-01

DWN

CF

CKD

BS

APVD

AS

REV

0

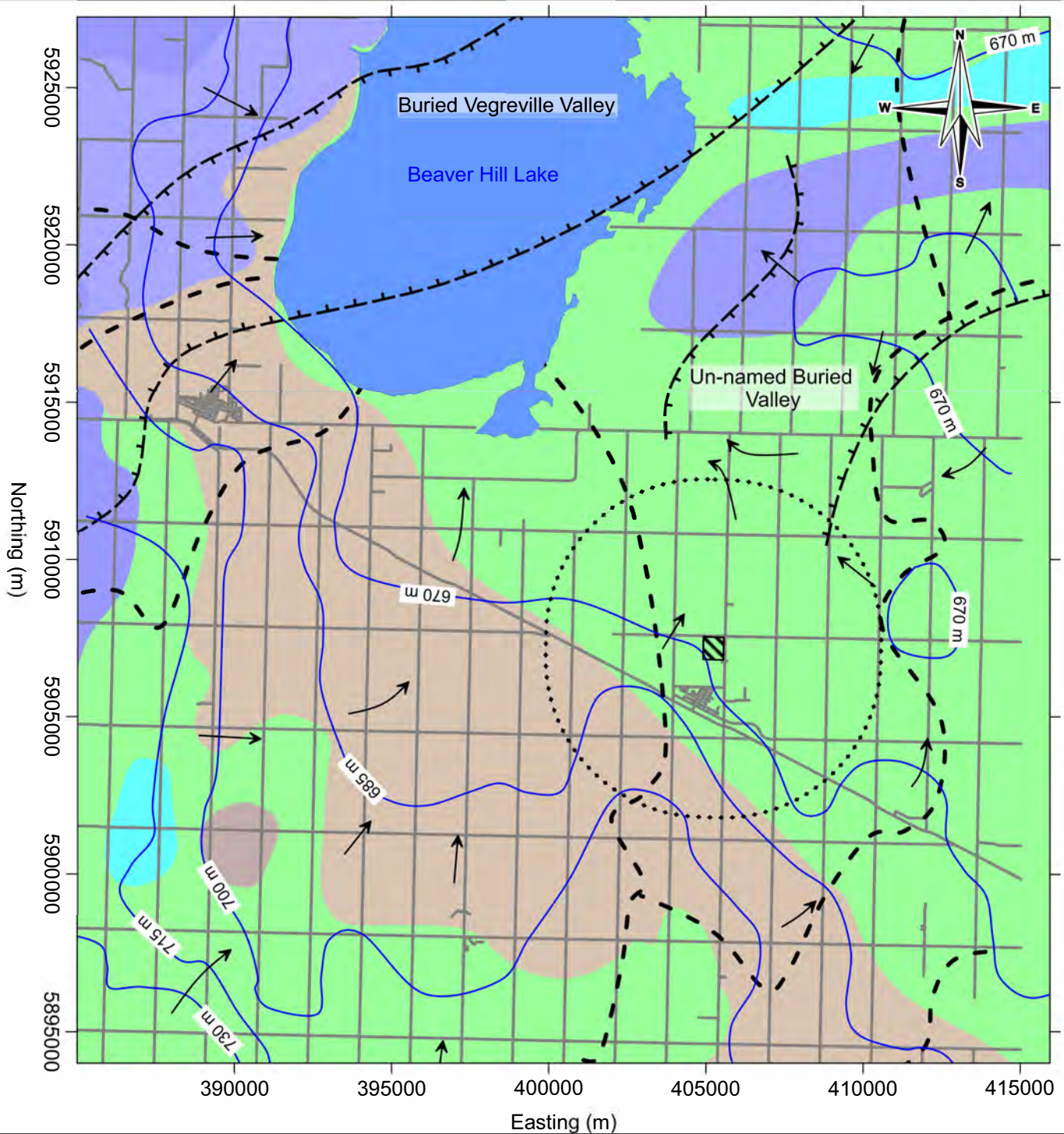
OFFICE

TIEBA-CAL

DATE

September 2017

**Appendix B
 Figure C**



LEGEND

- Surface Water Divide
- Buried Valley
- Groundwater Flow Direction
- Groundwater Elevation
- Roadway
- Water body
- Site Location
- 5 km Site Radius

Expected Groundwater Yield (L/sec)

- < 0.1
- 0.1 - 0.4
- 0.4 - 2
- 2 - 8

NOTES
 Hydrogeological data obtained from:
 Hydrogeology of the Edmonton Area
 Southeast Segment, Alberta
 R.Stein, 1982
 NRC, CanVec+ Base Map
STATUS
 Issued for Use

2021 GROUNDWATER MONITORING PROGRAM, RYLEY,

Regional Hydrogeology Groundwater Flow

PROJECTION
 UTM Zone 12

DATUM
 NAD83

CLIENT



FILE NO.
 AppendixBb - Regional Hydrogeology.srf

PROJECT NO. SWM.SWOP04401-01	DWN CF	CKD BS	APVD AS	REV 0
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OFFICE TIEBA-CAL	DATE September 2017
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Appendix B Figure B

APPENDIX C

BOREHOLE LOGS

RYLEY REGIONAL LANDFILL ASSESSMENT	LIDLAW WASTE SYSTEMS LTD.	BOREHOLE NO: 01
NE 1/4, SEC. 10-50-17-W4M	DRILL: HOLLOW STEM AUGER	PROJECT: 0105-11099
RYLEY, ALBERTA		ELEVATION: 683.67 m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS				Elevation (m)
				1	2	3	
0	TOPSOIL - silty, organics, damp, very soft, dark brown, (100mm thick)						683.0
1	SAND - trace to some silt, trace of organics, fine to medium grained, unstratified, dry, dense, medium to dark brown - clayey, clay occurs in random 5mm thick layers, medium to coarse grained, moist, compact, light to medium brown		random backfill -				682.0
2	SAND AND CLAY - trace of coal crystals, moist, soft, medium to dark brown CLAY - some silt and fine grained sand, bentonitic, moist, very soft - silty, 1-2mm thick black laminae, damp, stiff, light brown		bentonite -				681.0
3	SANDSTONE - silty, bentonitic, weathered, fine to medium grained, matrix supported, very dense, grey		slotted section - pea gravel -				680.0
4	SILTSTONE - clayey, trace of fine to medium grained, sand, damp, dense, grey		bentonite -				679.0
5	CLAY SHALE - silty, plated, damp, hard, dark grey to brown		random cuttings -				678.0
6	END OF BOREHOLE (5.3 metres) slough - none at 0 hrs. water - 3.19 metres at 6 hrs. - 2.21 metres at 10 days Piezometer installed to 3.5 metres						677.0
7							
7.5							



TETRA TECH EBA

LOGGED BY: RJM

REVIEWED BY: RJM

DRAWING NO: 11099-01

COMPLETION DEPTH: 5.33 m

COMPLETE: 92/11/13

Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT	LIDLAW WASTE SYSTEMS LTD.	BOREHOLE NO: 02
NE 1/4, SEC. 10-50-17-W4M	DRILL: HOLLOW STEM AUGER	PROJECT: 0105-11099
RYLEY, ALBERTA		ELEVATION: 686.17 m

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	1	2	3	Elevation (m)
0	TOPSOIL - silty, organics, roots, damp, very soft, dark brown						686.0
0	CLAY (TILL) - silty, sandy, trace of subangular gravel, salt inclusions, unstratified, damp, very stiff, low plastic, medium brown						
1							685.0
2	- moist, firm		random backfill -				684.0
3	- dry to damp, very stiff, dark brown to black						683.0
3	SANDSTONE - silty, bentonitic, weathered, fine to medium grained, dry, very dense, grey		bentonite -				
4			slotted section -				682.0
4			pea gravel -				
5	SILTSTONE - clayey, trace of fine to medium grained sand, clay shale stringers, damp, dense, grey						681.0
5			bentonite -				
6	END OF BOREHOLE (5.3 metres) slough - none at 0 hrs. water - 3.99 metres at 4 hrs. - 3.92 metres at 10 days Piezometer installed to 4.6 metres						680.0
7							679.0
7.5							



LOGGED BY: RJM	COMPLETION DEPTH: 5.33 m
REVIEWED BY: RJM	COMPLETE: 92/11/13
DRAWING NO: 11099-02	Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT		LAIDLAW WASTE SYSTEMS LTD.		BOREHOLE NO: 03			
NE 1/4, SEC. 10-50-17-W4M		DRILL: SOLID FLIGHT AUGER		PROJECT: 0105-11099			
RYLEY, ALBERTA				ELEVATION: 688.78 m			
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	1	2	3	Elevation (m)
0	CLAY (FILL)		grout -				
1	GARBAGE		bentonite -				688.0
2	CLAY (FILL)						687.0
3	GARBAGE		slotted section -				686.0
4	CLAY (FILL)		sand filter -				685.0
5	GARBAGE		random backfill -				684.0
6	CLAY (TILL) - silty, sandy, gravel sizes, clay shale nodules, sandstone pockets, stiff, medium plastic, brown						683.0
7	END OF BOREHOLE (5.3 metres) slough - none at 0 hrs. water - dry at 0 hrs. - dry at 5 hrs. - dry at 10 days - dry at 25 days Well installed to 3.8 metres Note: Backfilled to 3.8 metres.						682.0
7.5							



TETRA TECH EBA

LOGGED BY: RJM

REVIEWED BY: RJM

DRAWING NO: 11099-03

COMPLETION DEPTH: 5.33 m

COMPLETE: 92/11/13

Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT		LAIDLAW WASTE SYSTEMS LTD.		BOREHOLE NO: 04			
NE 1/4, SEC. 10-50-17-W4M		DRILL: SOLID FLIGHT AUGER		PROJECT: 0105-11099			
RYLEY, ALBERTA		ELEVATION: 688.17 m					
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	1	2	3	Elevation (m)
0	CLAY (FILL)						688.0
1	GARBAGE		grout -				687.0
2			bentonite -				686.0
3	CLAY (FILL)						685.0
4	GARBAGE		slotted section - sand filter -				684.0
5	END OF BOREHOLE (4.7 metres) slough - none at 0 hrs. water - dry at 3 hrs. - dry at 10 days - dry at 25 days Well installed to 4.7 metres						683.0
6							682.0
7							681.0
7.5							



TETRA TECH EBA

LOGGED BY: RJM

REVIEWED BY: RJM

DRAWING NO: 11099-04

COMPLETION DEPTH: 4.72 m

COMPLETE: 92/11/13

Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT		LAIDLAW WASTE SYSTEMS LTD.		BOREHOLE NO: 05			
NE 1/4, SEC. 10-50-17-W4M		DRILL: SOLID FLIGHT AUGER		PROJECT: 0105-11099			
RYLEY, ALBERTA				ELEVATION: 688.21 m			
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Casing			Elevation (m)
				1	2	3	
0	CLAY (FILL) - silty, sandy, sandstone inclusions, brown						688.0
1	GARBAGE		grout -				687.0
2			bentonite -				686.0
3							685.0
4			slotted section - sand filter -				684.0
5							683.0
6			slough -				682.0
7							681.0
7.5							

SANDSTONE - silty, medium to coarse grained, very dense, grey
 END OF BOREHOLE (6.1 metres)
 slough - 5.93 metres at 0 hrs.
 water - 5.3 metres at 2 hrs.
 - 5.37 metres at 10 days
 - 5.31 metres at 25 days
 Well installed to 5.93 metres

Archive



LOGGED BY: RJM	COMPLETION DEPTH: 6.1 m
REVIEWED BY: RJM	COMPLETE: 92/11/13
DRAWING NO: 11099-05	Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT		LAIDLAW WASTE SYSTEMS LTD.		BOREHOLE NO: 06		
NE 1/4, SEC. 10-50-17-W4M		DRILL: SOLID FLIGHT AUGER		PROJECT: 0105-11099		
RYLEY, ALBERTA		ELEVATION: 684.47 m				
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	1	2	3	Elevation (m)
0	CLAY (FILL) - silty, sandy, dessicated, low plastic, brown		grout -				684.0
1							
2	GARBAGE - metal, cable		bentonite -				683.0
3							682.0
4			sand filter - slotted section -				681.0
5	SANDSTONE - silty, coarse grained, dense, grey						680.0
5	CLAY SHALE - silty, hard, high plastic, grey/brown						679.0
6	END OF BOREHOLE (5.2 metres) slough - none at 0 hrs. water - 2.55 metres at 1 hr. - 2.17 metres at 10 days Well installed to 5.15 metres						678.0
7							677.0
7.5							677.0



LOGGED BY: RJM	COMPLETION DEPTH: 5.15 m
REVIEWED BY: RJM	COMPLETE: 92/11/13
DRAWING NO: 11099-06	Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT	LIDLAW WASTE SYSTEMS LTD.	BOREHOLE NO: 08
NE 1/4, SEC. 10-50-17-W4M	DRILL: SOLID FLIGHT AUGER	PROJECT: 0105-11099
RYLEY, ALBERTA		ELEVATION: 685.53 m

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	1	2	3	Elevation (m)
0	TOPSOIL - organic silt, sandy, some clay, brown to black, frozen, (75mm thick)						685.0
	CLAY (TILL) - silty, sandy, occasional gravel sizes, low plastic, brown, frozen - end of frost		grout -				
1							684.0
2	- coal pockets, moist, very stiff		bentonite -				
3	- sandstone and clay shale nodules, grey		slotted section -				683.0
	CLAY SHALE - carbonaceous, friable, very stiff, dark brown						
	SANDSTONE - silty, clayey, clay shale stringers and lenses, medium to coarse grained, moist, grey		sand filter -				682.0
4							
5	END OF BOREHOLE (4.3 metres) slough - none at 0 hrs. water - dry at 0 hrs. - dry at 6 hrs. - 3.26 metres at 11 days Well installed to 4.1 metres						681.0
6							680.0
7							679.0
7.5							



TETRA TECH EBA

LOGGED BY: RJM

REVIEWED BY: RJM

DRAWING NO: 11099-08

COMPLETION DEPTH: 4.26 m

COMPLETE: 92/11/27

Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT		LAIDLAW WASTE SYSTEMS LTD.		BOREHOLE NO: 09			
NE 1/4, SEC. 10-50-17-W4M		DRILL: SOLID FLIGHT AUGER		PROJECT: 0105-11099			
RYLEY, ALBERTA		ELEVATION: 685.77 m					
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Casing			Elevation (m)
				1	2	3	
0	TOPSOIL - organic silt, sandy, some clay, frozen, (100mm thick) CLAY (TILL) - silty, sandy, occasional gravel sizes, brown, frozen - end of frost		grout -				685.0
1			bentonite -				684.0
2							683.0
3	CLAY SHALE - silty, reworked, very stiff, high plastic, brown to grey		slotted section -				682.0
4	SANDSTONE AND CLAY SHALE - interbedded, sandstone - silty, clayey, dense, grey, clay shale - silty, very stiff, high plastic, grey/brown SANDSTONE - silty, clayey, medium to coarse grained, damp, dense, grey		sand filter -				681.0
5	END OF BOREHOLE (4.4 metres) slough - none at 0 hrs. water - dry at 0 hrs. - dry at 5 days - 3.33 metres at 11 days Well installed to 4.4 metres						680.0
6							679.0
7							
7.5							



TETRA TECH EBA

LOGGED BY: RJM

REVIEWED BY: RJM

DRAWING NO: 11099-09

COMPLETION DEPTH: 4.41 m

COMPLETE: 92/11/27

Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT	LIDLAW WASTE SYSTEMS LTD.	BOREHOLE NO: 10
NE 1/4, SEC. 10-50-17-W4M	DRILL: SOLID FLIGHT AUGER	PROJECT: 0105-11099
RYLEY, ALBERTA		ELEVATION: 683.96 m

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	1	2	3	Elevation (m)
0	TOPSOIL - (25mm thick) CLAY - sandy, silty, white salt deposits, rust specks, dessicated, brown, frozen - end of frost		grout -				
1	CLAY (TILL) - silty, sandy, gravel sizes, coal pockets, clay shale and sandstone nodules, damp, stiff, medium plastic, brown		bentonite -				683.0
2	SANDSTONE - clayey, silty, clay shale stringers, weathered, medium to coarse grained, moist, brown to grey		slotted section -				682.0
3	- bentonitic, occasional clay shale stringers, dense, grey		sand filter -				681.0
4							680.0
5	END OF BOREHOLE (4.3 metres) slough - none at 0 hrs. water - dry at 0 hrs. - dry at 4 hrs. - dry at 11 days Well installed to 3.1 metres						679.0
6							678.0
7							677.0
7.5							



TETRA TECH EBA

LOGGED BY: RJM

REVIEWED BY: RJM

DRAWING NO: 11099-10

COMPLETION DEPTH: 4.26 m

COMPLETE: 92/11/27

Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT	LIDLAW WASTE SYSTEMS LTD.	BOREHOLE NO: 11
NE 1/4, SEC. 10-50-17-W4M	DRILL: SOLID FLIGHT AUGER	PROJECT: 0105-11099
RYLEY, ALBERTA		ELEVATION: 683.85 m

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	1	2	3	Elevation (m)
0	TOPSOIL - silt, sandy, frozen, (50mm thick)						
	CLAY - silty, sandy, white salt stains, dessicated, brown						
	CLAY (TILL) - silty, sandy, gravel sizes, moist, low plastic, brown		grout -				683.0
1							
	CLAY SHALE - silty, plated, very stiff, brown		bentonite -				682.0
2							
			slotted section -				681.0
3	- blocky, high plastic, grey		sand filter -				680.0
4							
	END OF BOREHOLE (4.3 metres) slough - none at 0 hrs. water - dry at 0 hrs. - dry at 3 hrs. - dry at 11 days						679.0
5	Well installed to 4.2 metres						
6							678.0
7							
7.5							677.0



LOGGED BY: RJM	COMPLETION DEPTH: 4.26 m
REVIEWED BY: RJM	COMPLETE: 92/11/27
DRAWING NO: 11099-11	Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT		LAIDLAW WASTE SYSTEMS LTD.		BOREHOLE NO: 12			
NE 1/4, SEC. 10-50-17-W4M		DRILL: SOLID FLIGHT AUGER		PROJECT: 0105-11099			
RYLEY, ALBERTA				ELEVATION: 684.2 m			
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Casing			Elevation (m)
				1	2	3	
0	TOPSOIL - organic silt, sandy, frozen, (50mm thick) CLAY - sandy, silt, white salt stains, rust specks, dessicated, brown CLAY (TILL) - silty, sandy, gravel sizes, stiff to very stiff, low plastic		grout -				684.0
1							683.0
2	SANDSTONE - silty, clayey, clay shale stringers, oxidized, weathered, medium to coarse grained, brown - grey		bentonite -				682.0
3			slotted section -				681.0
4	CLAY SHALE - silty, friable, damp, hard, high plastic, brown - grey/brown		sand filter -				680.0
5	END OF BOREHOLE (4.3 metres) slough - none at 0 hrs. water - dry at 0 hrs. - dry at 2 hrs. - 3.54 metres at 11 days Well installed to 4.32 metres						679.0
6							678.0
7							677.0
7.5							



TETRA TECH EBA

LOGGED BY: RJM

REVIEWED BY: RJM

DRAWING NO: 11099-12

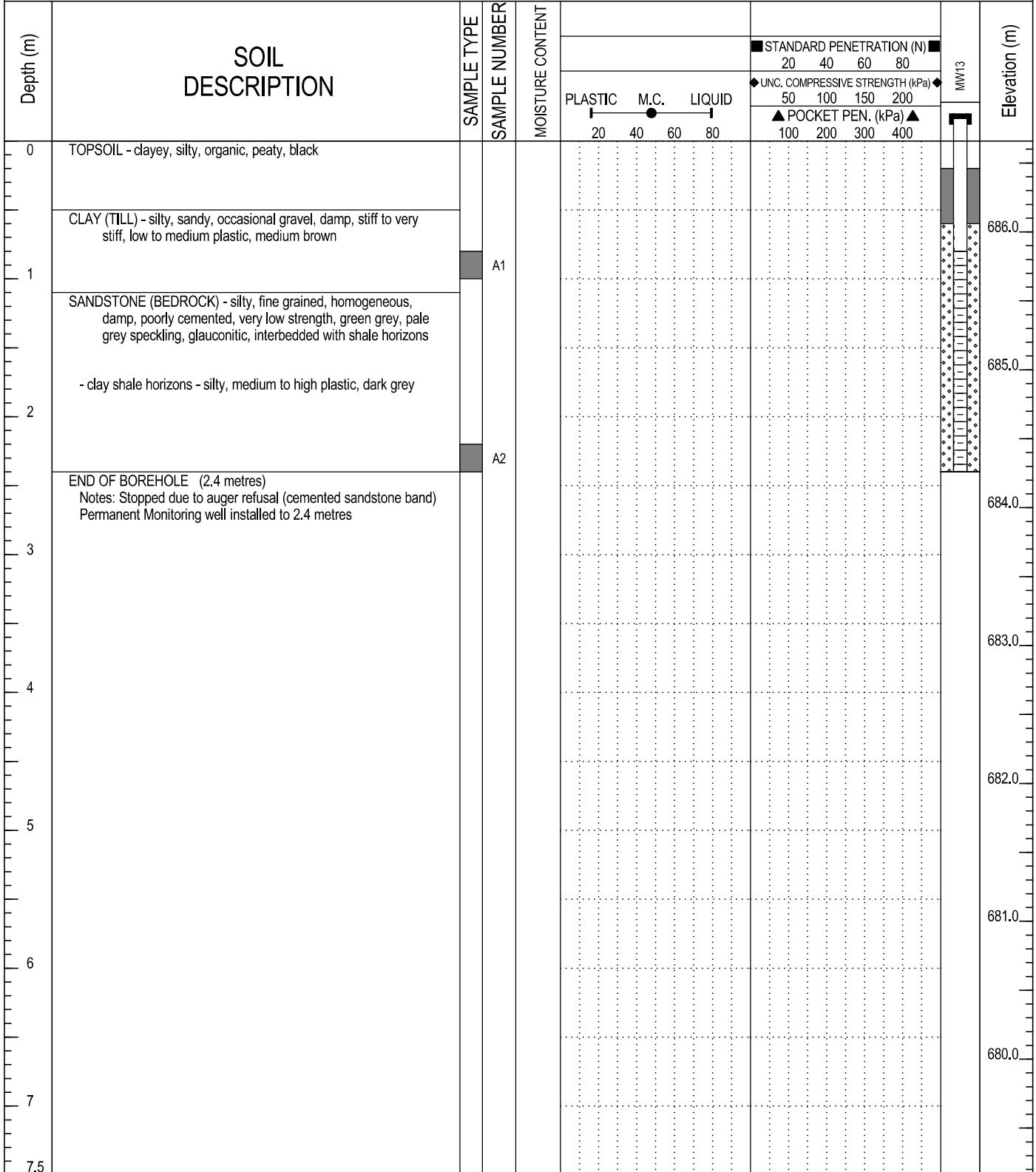
COMPLETION DEPTH: 4.26 m

COMPLETE: 92/11/27

Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT	LIDLAW WASTE SYSTEMS LTD.	BOREHOLE NO: 13
NE 1/4, SEC. 10-50-17-W4M	DRILL: SOLID FLIGHT AUGER	PROJECT: 0105-11099
RYLEY, ALBERTA		ELEVATION: 686.66 m

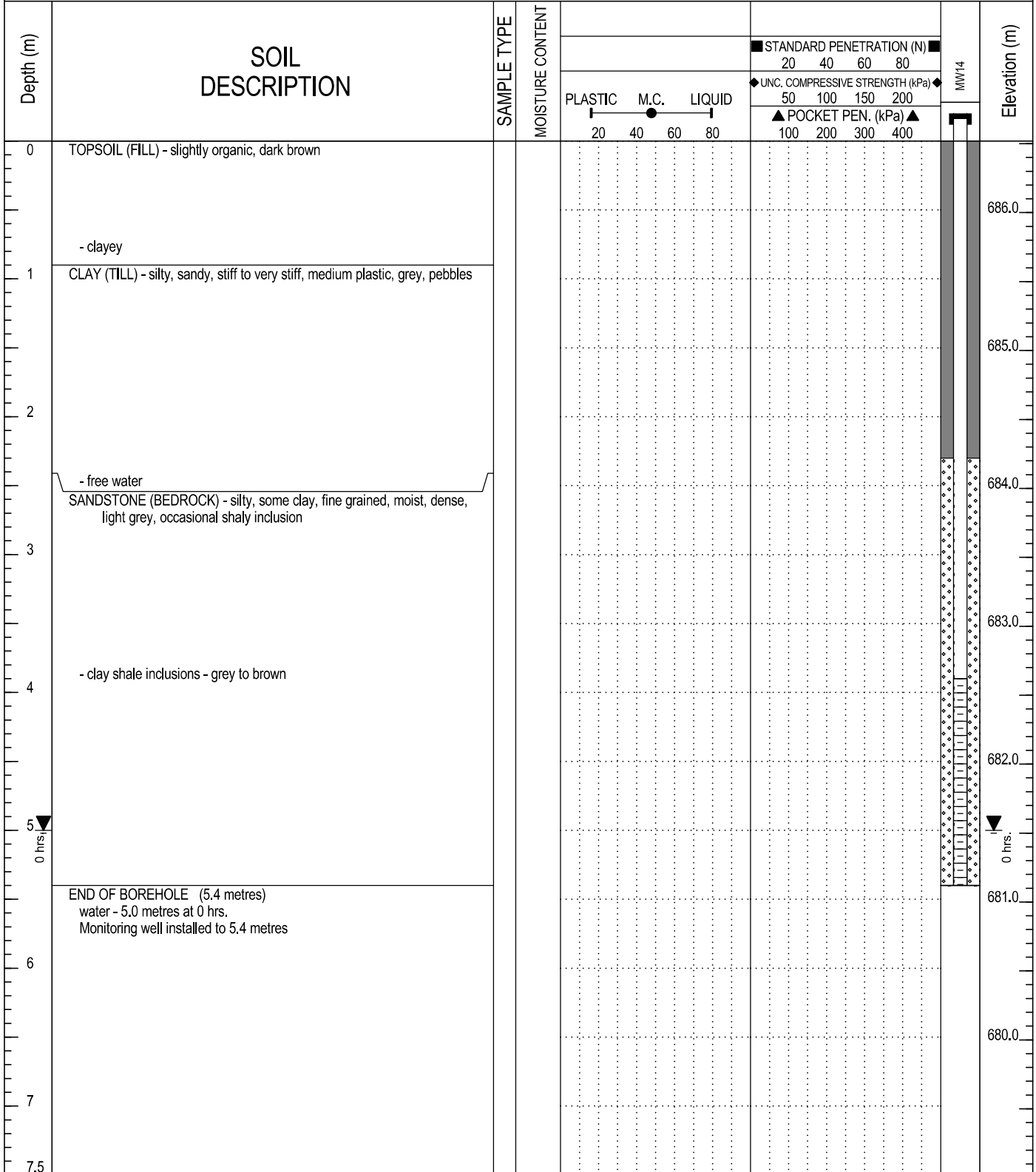
SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND



LOGGED BY: VS/VJ	COMPLETION DEPTH: 2.4 m
REVIEWED BY:	COMPLETE: 91/02/19
DRAWING NO: 11099-12	Page 1 of 1

RYLEY REGIONAL LANDFILL ASSESSMENT	LIDLAW WASTE SYSTEMS LTD.	BOREHOLE NO: 14
NE 1/4, SEC. 10-50-17-W4M	DRILL: SOLID FLIGHT AUGER	PROJECT: 0105-11099
RYLEY, ALBERTA		ELEVATION: 686.52 m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND



LOGGED BY: VS/VJ	COMPLETION DEPTH: 5.4 m
REVIEWED BY:	COMPLETE: 92/07/22
DRAWING NO: 11099-12	Page 1 of 1

RILEY - CELL 2 MONITORING WELLS		LAIDLAW ENVIRONMENTAL SERVICES LTD.		BOREHOLE NO: 01B			
		DRILL: SOLID STEM AUGER		PROJECT: 0105-96-12416			
RILEY, ALBERTA				ELEVATION: 687.85 m			
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - sandy, roots, black, (150mm thick)		Pipe stickup = 0.91 metres	687.0
1	CLAY - silty, some oxide stains, white salt and carbonate pockets, damp, very stiff, medium plastic, grey brown - occasional pebbles, coal pockets, no visible white pockets, olive grey brown - moist, stiff			686.0
2				685.0
3				684.0
4	CLAY SHALE - silty, some sand, friable, damp, soft, low to medium plastic, dark grey			683.0
5	SANDSTONE - some silt and clay, fine to medium grained, friable, uncemented, blue green grey - clay shale interbeds			682.0
6				681.0
7	CLAY SHALE - sandstone interbeds - siltstone layer - some silt and clay, fine to medium grained, friable, uncemented, blue green grey			680.0
8				679.0
9				678.0
10	END OF BOREHOLE (9.9 metres) slough - none at 0 hrs. water - dry at 0 hrs. - 5.2 metres at 1 day Monitoring well installed to 9.9 metres			677.0
11				676.0
12				



LOGGED BY: SP	COMPLETION DEPTH: 9.9 m
REVIEWED BY: SP	COMPLETE: 96/09/30
DRAWING NO: 12416-04	Page 1 of 1

RILEY - CELL 2 MONITORING WELLS		LAIDLAW ENVIRONMENTAL SERVICES LTD.		BOREHOLE NO: 05B			
		DRILL: SOLID STEM AUGER		PROJECT: 0105-96-12416			
RILEY, ALBERTA				ELEVATION: 687.41 m			
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - silty, sandy, organics, roots, moist, brown black, (150mm thick)		Pipe stickup = 0.91 metres	687.0
1	CLAY - silty, sandy, some salt inclusions, pebbles, coal pockets, oxide stains, very fine grained sand, damp, stiff, medium plastic, grey brown - more silty, less sand, moist			686.0
2				685.0
3	- harder			684.0
4	CLAY SHALE - silty, some sand, damp, hard, high plastic, green grey with dark blue pockets			683.0
5	SANDSTONE - some clay, silt, fine to medium grained, friable, hard, low plastic, blue green grey - clay shale lenses			682.0
6	SILTSTONE - pebbles, strongly cemented, dry, hard, light grey			681.0
7	CLAY SHALE - silty, some sand, damp, hard, high plastic, green grey with dark blue pockets			680.0
8	SILTSTONE - pebbles, strongly cemented, dry, hard, light grey			679.0
9	CLAY SHALE - silty, some sand, damp, hard, high plastic, green grey with dark blue pockets - less silt and sand, stronger, dry, dark grey			678.0
10	END OF BOREHOLE (9.8 metres) slough - none at 0 hrs. water - dry at 0 hrs. - 9.1 metres at 7 days Monitoring well installed to 9.8 metres			677.0
11				676.0
12				



LOGGED BY: SP	COMPLETION DEPTH: 9.75 m
REVIEWED BY: SP	COMPLETE: 96/09/23
DRAWING NO: 12416-02	Page 1 of 1

RYLEY - CELL 2 MONITORING WELLS		LAIDLAW ENVIRONMENTAL SERVICES LTD.		BOREHOLE NO: 12B	
		DRILL: SOLID STEM AUGER		PROJECT: 0105-96-12416	
RYLEY, ALBERTA				ELEVATION: 687.09 m	
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - silty, sandy, roots, black, (150mm thick)		Pipe stickup = 0.76 metres	687.0
1	CLAY (TILL) - silty, some sand, salt pockets, oxide stains, damp, very stiff, medium plastic, brown			686.0
2	- sand lense - silty, clay, fine to medium grained, firm, medium plastic, mottled brown grey			685.0
3	- some pebbles, coal pockets, moist, stiff, green brown			684.0
4	CLAY SHALE - silty, dry to damp, hard, high plastic, dark grey			683.0
5	SANDSTONE - silty, some clay, fine to medium grained, friable, uncemented, damp, soft, low plastic, blue green grey			682.0
6	- siltstone layer - strongly cemented, hard, light grey, (100mm thick)			681.0
7	- sandier			680.0
8	SILTSTONE - strongly cemented, hard, light grey			679.0
9	CLAY SHALE - silty, some sand, glauconitic sand layers, damp to moist, hard, medium plastic, blue green grey to brown grey			678.0
10	END OF BOREHOLE (9.9 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 9.9 metres		677.0	
11			676.0	
12				



LOGGED BY: SP	COMPLETION DEPTH: 9.9 m
REVIEWED BY: SP	COMPLETE: 96/09/30
DRAWING NO: 12416-03	Page 1 of 1

RILEY - CELL 2 MONITORING WELLS		LAIDLAW ENVIRONMENTAL SERVICES LTD.		BOREHOLE NO: 18A			
		DRILL: HOLLOW STEM AUGER		PROJECT: 0105-96-12416			
RILEY, ALBERTA				ELEVATION: 687.16 m			
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - silty, sandy, organics, roots, soft, low plastic, grey black		Pipe stickup = 0.76 metres	687.0
1	SAND - silty, clayey, some pebbles, orange oxide stains, friable, loose, low plastic, grey brown			686.0
2	CLAY (TILL) - silty, orange oxide stains, blocky, very stiff to hard, medium to high plastic, mottled grey brown			685.0
3	CLAY SHALE AND SANDSTONE - interbedded, clay shale - silty, damp, hard, high plastic, mottled brown grey			684.0
4	sandstone - silty, glauconitic, fine to medium grained, friable, uncemented, damp, blue green grey			683.0
5	SANDSTONE - with clay shale seams			682.0
6	SILTSTONE - some sand, cemented, friable, dry, light grey			681.0
7	SANDSTONE - with clay shale seams 13-25mm thick			680.0
8	CLAY SHALE - with sandstone seams			679.0
9	- no visible sandstone seams - sandstone seam			678.0
10	SILTSTONE - some clay, cemented, dry, hard, light brown			677.0
11	END OF BOREHOLE (9.9 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 9.9 metres			676.0
12				



LOGGED BY: SP	COMPLETION DEPTH: 9.9 m
REVIEWED BY: SP	COMPLETE: 96/10/01
DRAWING NO: 12416-05	Page 1 of 1

RYLEY - CELL 2 MONITORING WELLS		LAIDLAW ENVIRONMENTAL SERVICES LTD.		BOREHOLE NO: 18B			
		DRILL: SOLID STEM AUGER		PROJECT: 0105-96-12416			
RYLEY, ALBERTA				ELEVATION: 687.15 m			
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - silty, sandy, organics, roots, soft, low plastic, grey black		Pipe stickup = 0.76 metres	687.0
1	SAND - silty, clayey, some pebbles, orange oxide stains, friable, loose, low plastic, grey brown			686.0
2	CLAY (TILL) - silty, orange oxide stains, blocky, very stiff to hard, medium to high plastic, mottled grey brown			685.0
3	CLAY SHALE AND SANDSTONE - interbedded, clay shale - silty, damp, hard, high plastic, mottled brown grey			684.0
4	sandstone - silty, glauconitic, fine to medium grained, friable, uncemented, damp, blue green grey			683.0
5	SANDSTONE - with clay shale seams			682.0
6	END OF BOREHOLE (5.3 metres) slough - none at 0 hrs. water - 4.0 metres at 0 hrs. Monitoring well installed to 5.3 metres			681.0
7				680.0
8				679.0
9				678.0
10				677.0
11				676.0
12				



TETRA TECH EBA

LOGGED BY: SP

REVIEWED BY: SP

DRAWING NO: 12416-06

COMPLETION DEPTH: 5.33 m

COMPLETE: 96/10/01

Page 1 of 1

RYLEY - CELL 2 MONITORING WELLS		LAIDLAW ENVIRONMENTAL SERVICES LTD.		BOREHOLE NO: 19A	
		DRILL: HOLLOW STEM AUGER		PROJECT: 0105-96-12416	
RYLEY, ALBERTA				ELEVATION: 686.46 m	
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT
				<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
				<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	CLAY (FILL) - silty, sandy, moist, soft, medium plastic, yellow brown, (100mm thick)		Pipe stickup = 0.76 metres	686.0
1	CLAY - silty, some sand pockets, salt pockets, damp, stiff, medium plastic, mottled grey brown - moist, softer			685.0
2	- clay layer - oxidized, blocky, (75mm thick)			684.0
3	SANDSTONE - clayey, silty, glauconitic, fine to medium grained, poorly cemented, friable, damp, very stiff, blue green grey - wet			683.0
4	- clay shale seams			682.0
5	SANDSTONE AND CLAY SHALE - interbedded			681.0
6	CLAY SHALE - silty, some sand interbeds, damp, hard, high plastic, dark grey - more frequent sandstone layers			680.0
7	- no visible sandstone layers			679.0
8	- 13-25mm thick sandstone seams			678.0
9				677.0
10	END OF BOREHOLE (9.9 metres) slough - 9.6 metres at 0 hrs. water - 2.1 metres at 0 hrs. Monitoring well installed to 9.9 metres		676.0	
11			675.0	
12				



TETRA TECH EBA

LOGGED BY: SP

REVIEWED BY: SP

DRAWING NO: 12416-07

COMPLETION DEPTH: 9.9 m

COMPLETE: 96/10/01

Page 1 of 1

RYLEY - CELL 2 MONITORING WELLS		LAIDLAW ENVIRONMENTAL SERVICES LTD.		BOREHOLE NO: 19B	
		DRILL: SOLID STEM AUGER		PROJECT: 0105-96-12416	
RYLEY, ALBERTA				ELEVATION: 686.54 m	
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	CLAY (FILL) - silty, sandy, moist, soft, medium plastic, yellow brown, (100mm thick)		Pipe stickup = 0.76 metres	686.0
1	CLAY - silty, some sand pockets, salt pockets, damp, stiff, medium plastic, mottled grey brown - moist, softer			685.0
2	- clay layer - oxidized, blocky, (75mm thick)			684.0
3	SANDSTONE - clayey, silty, glauconitic, fine to medium grained, poorly cemented, friable, damp, very stiff, blue green grey - wet			683.0
4	- clay shale seams			682.0
5	SANDSTONE AND CLAY SHALE - interbedded			681.0
6	END OF BOREHOLE (5.3 metres) slough - none at 0 hrs. water - 2.1 metres at 0 hrs. Monitoring well installed to 5.3 metres			680.0
7				679.0
8				678.0
9				677.0
10				676.0
11				675.0
12				



LOGGED BY: SP	COMPLETION DEPTH: 5.33 m
REVIEWED BY: SP	COMPLETE: 96/10/01
DRAWING NO: 12416-08	Page 1 of 1

RYLEY - CELL 2 MONITORING WELLS		LAIDLAW ENVIRONMENTAL SERVICES LTD.		BOREHOLE NO: 20A			
		DRILL: HOLLOW STEM AUGER		PROJECT: 0105-96-12416			
RYLEY, ALBERTA				ELEVATION: 688.94 m			
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - silty, sandy, organics, roots, brown black, (300mm thick)		Pipe stickup = 0.76 metres	
1	CLAY (TILL) - silty, sandy, some pebbles, abundant salt pockets, roots to 0.5 metres, dry, hard, medium plastic, grey brown			688.0
2	- 2-4mm thick white carbonate salt seams at 13mm spacing			687.0
3	- orange oxide stains, coal pockets, very stiff			686.0
4				685.0
5	CLAY SHALE - silty, some sand lenses, friable, damp, hard, high plastic, dark grey			684.0
6	SANDSTONE - silty, clay shale seams, medium grained, friable, uncemented, damp, blue green grey CLAY SHALE AND SANDSTONE - interbedded			683.0
7	SANDSTONE - with 25mm thick clay shale layers			682.0
8	SILTSTONE - clayey, very fine grained, cemented, dry, hard, light grey CLAY SHALE AND SANDSTONE - interbedded			681.0
9	CLAY SHALE - silty, some sand lenses, friable, damp, hard, high plastic, dark grey			680.0
10	END OF BOREHOLE (9.9 metres) slough - 9.7 metres at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 9.9 metres			679.0
11				678.0
12				677.0



LOGGED BY: SP	COMPLETION DEPTH: 9.9 m
REVIEWED BY: SP	COMPLETE: 96/10/01
DRAWING NO: 12416-09	Page 1 of 1

RILEY - CELL 2 MONITORING WELLS		LAIDLAW ENVIRONMENTAL SERVICES LTD.		BOREHOLE NO: 20B	
		DRILL: SOLID STEM AUGER		PROJECT: 0105-96-12416	
RILEY, ALBERTA				ELEVATION: 688.99 m	
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - silty, sandy, organics, roots, brown black, (300mm thick)		Pipe stickup = 0.76 metres	688.0
1	CLAY (TILL) - silty, sandy, some pebbles, abundant salt pockets, roots to 0.5 metres, dry, hard, medium plastic, grey brown			687.0
2	- 2-4mm thick white carbonate salt seams at 13mm spacing			686.0
3	- orange oxide stains, coal pockets, very stiff			685.0
4	CLAY SHALE - silty, some sand lenses, friable, damp, hard, high plastic, dark grey			684.0
5	SANDSTONE - silty, clay shale seams, medium grained, friable, uncemented, damp, blue green grey			683.0
6	CLAY SHALE AND SANDSTONE - interbedded			682.0
7	END OF BOREHOLE (5.3 metres) slough - none at 0 hrs. water - 5.2 metres at 0 hrs. Monitoring well installed to 5.3 metres			681.0
8				680.0
9				679.0
10				678.0
11				677.0
12				677.0



LOGGED BY: SP	COMPLETION DEPTH: 5.33 m
REVIEWED BY: SP	COMPLETE: 96/10/01
DRAWING NO: 12416-10	Page 1 of 1

CELL 3 - CONSTRUCTION	SAFETY KLEEN INC.	BOREHOLE NO: 21A
	DRILL: SOLID STEM AUGER	PROJECT: 0105-98-12892.4
RYLEY, ALBERTA	628.02N; 1001.60E	ELEVATION: 687.65 m
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE	
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND	

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - silty, sandy, organics, rootlets, dark brown, (50mm thick)		Pipe stickup = 0.73 metres	687.0
0.5	SILT AND CLAY - abundant salt deposits, friable, dry, loose, light brown			686.0
1	CLAY (TILL) - silty, trace of sand, friable, damp to moist, very stiff, low to medium plastic, mottled brown			685.0
2				684.0
3	SANDSTONE - interbedded clay seams, silty, some 50mm angular rock, brown nodules, medium grained, uncemented, damp to moist, olive blue - dry to moist, blue green - free water			683.0
4				682.0
5	SILTSTONE - very fine grained, cemented, dry, hard, light grey - trace of fine gravel to 5mm diameter			681.0
6	CLAY SHALE AND SANDSTONE - interbedded, medium grained, uncemented, moist, stiff, medium plastic, grey brown clay shale, blue-green sandstone			680.0
7	CLAY SHALE - trace of gravel to 2mm diameter, friable, damp to moist, very stiff to hard, low to medium plastic, grey			679.0
8	SILTSTONE - friable, cemented, dry, grey CLAY SHALE - silty, some sand lenses and brown lenses, friable, damp, hard, low to medium plastic, grey			678.0
9	CLAY SHALE AND SILTSTONE - interbedded			677.0
10	END OF BOREHOLE (9.9 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 9.9 metres			676.0



LOGGED BY: JSF	COMPLETION DEPTH: 9.9 m
REVIEWED BY: RJM	COMPLETE: 98/10/01
DRAWING NO: 12892-01	Page 1 of 1

CELL 3 - CONSTRUCTION	SAFETY KLEEN INC.	BOREHOLE NO: 21B
	DRILL: SOLID STEM AUGER	PROJECT: 0105-98-12892.4
RYLEY, ALBERTA	626.61N; 1001.58E	ELEVATION: 687.55 m
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE	
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND	

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	2	3	Elevation (m)
0	TOPSOIL - silty, sandy, organics, rootlets, dark brown, (50mm thick)		Pipe stickup = 1.04 metres			687.0
0.5	SILT AND CLAY - abundant salt deposits, friable, dry, loose, light brown					686.0
1	CLAY (TILL) - silty, trace of sand, friable, damp to moist, very stiff, low to medium plastic, mottled brown					685.0
2						684.0
3	SANDSTONE - interbedded clay seams, silty, some 50mm angular rock, brown nodules, medium grained, uncemented, damp to moist, olive blue					683.0
4	- dry to moist, blue green					682.0
4.5	- free water					681.0
5	SILTSTONE - very fine grained, cemented, dry, hard, light grey					680.0
5.5	- trace of fine gravel to 5mm diameter					679.0
6	END OF BOREHOLE (5.0 metres)					678.0
6.5	slough - none at 0 hrs.					677.0
7	water - dry at 0 hrs.					676.0
7.5	Monitoring well installed to 4.9 metres					



TETRA TECH EBA

LOGGED BY: JSF

REVIEWED BY: RJM

DRAWING NO: 12892-02

COMPLETION DEPTH: 5.02 m

COMPLETE: 98/10/01

Page 1 of 1

CELL 3 - CONSTRUCTION	SAFETY KLEEN INC.	BOREHOLE NO: 22A				
	DRILL: SOLID STEM AUGER	PROJECT: 0105-98-12892.4				
RYLEY, ALBERTA	591.82N; 1069.20E	ELEVATION: 687.86 m				
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	SILT AND CLAY - salt deposits, friable, damp, soft, low plastic, brown		Pipe stickup = 0.88 metres	
1	CLAY (TILL) - silty, moist, stiff, medium plastic, mottled brown - salt streaks			687.0
2	- gypsum, oxide stains			686.0
3	SANDSTONE - some clay, trace of pebbles, medium grained, uncemented, damp to moist, brown - oxide stains, very moist - interbedded clay seams, silty, brown nodules, olive green			685.0
4	- 50mm angular rock			684.0
5	CLAY SHALE - trace of very hard siltstone, friable, cemented, dry to damp, hard, medium plastic, grey - trace of sand, medium grained			683.0
6				682.0
7	- brown nodules			681.0
8				680.0
9	CLAY SHALE AND SANDSTONE - interbedded, medium grained, damp to moist, hard, low to medium plastic, grey mottled brown			679.0
	SILTSTONE - trace of gravel to 5mm diameter, cemented, dry, very hard, light grey			
10	CLAY SHALE AND SILTSTONE - interbedded			678.0
11	END OF BOREHOLE (10.1 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 9.8 metres			677.0
12				676.0



TETRA TECH EBA

LOGGED BY: JSF

REVIEWED BY: RJM

DRAWING NO: 12892-03

COMPLETION DEPTH: 10.05 m

COMPLETE: 98/10/01

Page 1 of 1

CELL 3 - CONSTRUCTION	SAFETY KLEEN INC.	BOREHOLE NO: 22B
	DRILL: SOLID STEM AUGER	PROJECT: 0105-98-12892.4
RYLEY, ALBERTA	590.10N; 1069.07E	ELEVATION: 687.8 m
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE	
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND	

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	2	3	Elevation (m)
0	SILT AND CLAY - salt deposits, friable, damp, soft, low plastic, brown		Pipe stickup = 0.97 metres			
1	CLAY (TILL) - silty, moist, stiff, medium plastic, mottled brown - salt streaks					687.0
2	- gypsum, oxide stains					686.0
3	SANDSTONE - some clay, trace of pebbles, medium grained, uncemented, damp to moist, brown - oxide stains, very moist - interbedded clay seams, silty, brown nodules, olive green					685.0
4	- 50mm angular rock					684.0
5	CLAY SHALE - trace of very hard siltstone, friable, cemented, dry to damp, hard, medium plastic, grey					683.0
6	END OF BOREHOLE (5.02 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 4.9 metres					682.0
7						681.0
8						680.0
9						679.0
10						678.0
11						677.0
12						676.0



TETRA TECH EBA

LOGGED BY: JSF

REVIEWED BY: RJM

DRAWING NO: 12892-04

COMPLETION DEPTH: 5.02 m

COMPLETE: 98/10/01

Page 1 of 1

CELL 3 - CONSTRUCTION	SAFETY KLEEN INC.	BOREHOLE NO: 23A
	DRILL: SOLID STEM AUGER	PROJECT: 0105-98-12892.4
RYLEY, ALBERTA	601.96N; 1114.83E	ELEVATION: 686.44 m
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE	
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND	

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	CLAY - very silty, disturbed, very moist, soft to firm, high plastic, brown		Pipe stickup = 0.72 metres	686.0
1	SAND - silty, some clay, fine grained, moist, rust colour - some clay and silt, oxide stains, moist to very moist, firm to dense			685.0
2	SANDSTONE - some clay, trace of gravel to 2mm diameter, brown nodules, uncemented, firm to very firm, olive green - free water			684.0
3	- clay shale interbedded, silty, medium grained, uncemented, friable, damp to moist, very stiff to hard, low to medium plastic, grey clay shale, olive green sandstone			683.0
4	- trace of siltstone, hard, medium plastic, brown			682.0
5				681.0
6	SILTSTONE - uncemented, dry to damp, hard, low plastic, brown			680.0
7	CLAY SHALE AND SANDSTONE - interbedded, friable, damp to moist, hard, mottled grey			679.0
8				678.0
9	CLAY SHALE AND SILTSTONE - trace of sand, damp, hard, mottled grey			677.0
10	END OF BOREHOLE (9.9 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 9.9 metres		676.0	
11			675.0	
12				



TETRA TECH EBA

LOGGED BY: JSF

REVIEWED BY: RJM

DRAWING NO: 12892-05

COMPLETION DEPTH: 9.9 m

COMPLETE: 98/10/01

Page 1 of 1

CELL 3 - CONSTRUCTION	SAFETY KLEEN INC.	BOREHOLE NO: 23B
	DRILL: SOLID STEM AUGER	PROJECT: 0105-98-12892.4
RYLEY, ALBERTA	601.22N; 1114.44E	ELEVATION: 686.49 m
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE	
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND	

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS				Elevation (m)
0	CLAY - very silty, disturbed, very moist, soft to firm, high plastic, brown		Pipe stickup = 0.59 metres				686.0
1	SAND - silty, some clay, fine grained, moist, rust colour - some clay and silt, oxide stains, moist to very moist, firm to dense						685.0
2	SANDSTONE - some clay, trace of gravel to 2mm diameter, brown nodules, uncemented, firm to very firm, olive green - free water						684.0
3	- clay shale interbedded, silty, medium grained, uncemented, friable, damp to moist, very stiff to hard, low to medium plastic, grey clay shale, olive green sandstone						683.0
4	- trace of siltstone, hard, medium plastic, brown						682.0
5	END OF BOREHOLE (4.7 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 4.7 metres						681.0
6							680.0
7							679.0
8							678.0
9							677.0
10							676.0
11							675.0
12							



TETRA TECH EBA

LOGGED BY: JSF

REVIEWED BY: RJM

DRAWING NO: 12892-06

COMPLETION DEPTH: 4.72 m

COMPLETE: 98/10/01

Page 1 of 1

WELL INSTALLATION	CLEAN HARBORS INC.	BOREHOLE NO: 24A
	DRILL: SOLID STEM AUGER	PROJECT: 5100812.001
RYLEY, ALBERTA		ELEVATION: 688.68 m
SAMPLE TYPE	<input type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Casing		Elevation (m)
				1	2	3
0	GRAVEL (FILL)		Pipe stickup = 1.04 metres			
1	CLAY (TILL) - silty, trace of oxides, moist, hard, brown					688.0
2						687.0
3						686.0
4	CLAY SHALE - silty, damp, hard, grey					685.0
5						684.0
6	SANDSTONE - silty, very moist, loose, blue grey					683.0
7						682.0
8	SILTSTONE - cemented, loose, light brown grey SANDSTONE - trace of clay shale					681.0
9						680.0
10	END OF BOREHOLE (9.91 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 9.69m					679.0
11						678.0
12						677.0



TETRA TECH EBA

LOGGED BY: DM

REVIEWED BY: PRM

DRAWING NO: 5100812-01

COMPLETION DEPTH: 9.91 m

COMPLETE: 04/08/13

Page 1 of 1

WELL INSTALLATION	CLEAN HARBORS INC.	BOREHOLE NO: 24B
	DRILL: SOLID STEM AUGER	PROJECT: 5100812.001
RYLEY, ALBERTA		ELEVATION: 688.61 m
SAMPLE TYPE	<input type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	2	3	Elevation (m)
0	GRAVEL (FILL)		Pipe stickup = 1.00 metre			688.0
1	CLAY (TILL) - silty, trace of oxides, moist, hard, brown					687.0
2						686.0
3						685.0
4	CLAY SHALE - silty, damp, hard, grey					684.0
5						683.0
6	END OF BOREHOLE (5.33 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 5.28m					682.0
7						681.0
8						680.0
9						679.0
10						678.0
11						677.0
12						



TETRA TECH EBA

LOGGED BY: DM

REVIEWED BY: PRM

DRAWING NO: 5100812-02

COMPLETION DEPTH: 5.33 m

COMPLETE: 04/08/13

Page 1 of 1

WELL INSTALLATION	CLEAN HARBORS INC.	BOREHOLE NO: 25A
	DRILL: SOLID STEM AUGER	PROJECT: 5100812.001
RYLEY, ALBERTA		ELEVATION: 686.55 m
SAMPLE TYPE	<input type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	2	3	Elevation (m)
0	TOPSOIL - rootlets, moist, soft, grey		Pipe stickup = 1.00 metre			686.0
1	CLAY SHALE - silty, loose, hard, brown					685.0
2	SANDSTONE - silty, moist, loose, blue grey					684.0
3	- wet					683.0
4	CLAY SHALE - moist, loose, brown					682.0
5						681.0
6						680.0
7						679.0
8						678.0
9	- very moist, grey					677.0
10	END OF BOREHOLE (9.91 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 9.91m					676.0
11						675.0
12						



TETRA TECH EBA

LOGGED BY: DM

REVIEWED BY: PRM

DRAWING NO: 5100812-03

COMPLETION DEPTH: 9.91 m

COMPLETE: 04/08/13

Page 1 of 1

WELL INSTALLATION	CLEAN HARBORS INC.	BOREHOLE NO: 25B
	DRILL: SOLID STEM AUGER	PROJECT: 5100812.001
RYLEY, ALBERTA		ELEVATION: 686.71 m
SAMPLE TYPE	<input type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	2		3	Elevation (m)
0	TOPSOIL - rootlets, moist, soft, dark		Pipe stickup = 0.79 metres				
1	CLAY SHALE - silty, hard, loose, brown						686.0
2	SANDSTONE - silty, moist, loose, blue grey						685.0
3	- wet						684.0
4	CLAY SHALE - moist, loose, brown						683.0
5							682.0
6	END OF BOREHOLE (5.33 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 5.28m						681.0
7							680.0
8							679.0
9							678.0
10							677.0
11							676.0
12							675.0



LOGGED BY: DM	COMPLETION DEPTH: 5.33 m
REVIEWED BY: PRM	COMPLETE: 04/08/13
DRAWING NO: 5100812-04	Page 1 of 1

WELL INSTALLATION	CLEAN HARBORS INC.	BOREHOLE NO: 26A
	DRILL: SOLID STEM AUGER	PROJECT: 5100812.001
RILEY, ALBERTA		ELEVATION: 686.7 m
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	1	2	3	Elevation (m)
0	TOPSOIL - rootlets, moist, soft, grey		Pipe stickup = 0.92 metres				
1	CLAY SHALE - silty, dry, loose, hard, brown						686.0
2							685.0
3	SANDSTONE - silty, wet, loose, blue grey						684.0
4							683.0
5	SILTSTONE - cemented, loose, light brown						682.0
6							681.0
7	SANDSTONE - silty, moist, loose, blue grey						680.0
8							679.0
9	SILTSTONE - cemented, loose, light brown						678.0
10	CLAY SHALE - silty, hard, brown						677.0
11							676.0
12	END OF BOREHOLE (9.91 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 10.05m						675.0



LOGGED BY: DM	COMPLETION DEPTH: 9.91 m
REVIEWED BY: PRM	COMPLETE: 04/08/13
DRAWING NO: 5100812-05	Page 1 of 1

WELL INSTALLATION	CLEAN HARBORS INC.	BOREHOLE NO: 26B
	DRILL: SOLID STEM AUGER	PROJECT: 5100812.001
RYLEY, ALBERTA		ELEVATION: 686.8 m
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Diagram			Elevation (m)
0	TOPSOIL - rootlets, moist, soft, dark		Pipe stickup = 0.85 metres	[Diagram: Well casing and core sections]			
1	CLAY SHALE - silty, dry, hard, brown			[Diagram: Core section]			686.0
2				[Diagram: Core section]			685.0
3	SANDSTONE - silty, wet, loose, blue grey			[Diagram: Core section]			684.0
4				[Diagram: Core section]			683.0
5	SILTSTONE - cemented, loose, light brown			[Diagram: Core section]			682.0
6	SANDSTONE - silty, moist, loose, blue grey			[Diagram: Core section]			681.0
6	END OF BOREHOLE (5.33 metres) slough - none at 0 hrs. water - dry at 0 hrs. Monitoring well installed to 5.43m			[Diagram: Core section]			681.0
7				[Diagram: Core section]			680.0
8				[Diagram: Core section]			679.0
9				[Diagram: Core section]			678.0
10				[Diagram: Core section]			677.0
11				[Diagram: Core section]			676.0
12				[Diagram: Core section]			675.0



LOGGED BY: DM	COMPLETION DEPTH: 5.33 m
REVIEWED BY: PRM	COMPLETE: 04/08/13
DRAWING NO: 5100812-06	Page 1 of 1

CLEAN HARBORS 2007 GROUNDWATER MONITORING	CLEAN HARBORS CANADA INC.	BOREHOLE NO: 27A
	DRILL: SOLID STEM AUGER	PROJECT: E22101022
RYLEY, ALBERTA		ELEVATION: 686.91 m
SAMPLE TYPE	<input type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE	
BACKFILL TYPE	<input type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND	

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - clay, silty, dry, low plastic, black and grey, rootlets, (150mm thick) CLAY (TILL) - silty, moist, hard, medium plastic, brown, oxide staining		Pipe stickup = 0.82 metres	686.0
1	SAND - silty, massive, medium grained, moist, loose, olive green to brown, iron oxide staining			685.0
2	- blue green			684.0
3	- wet, interbedded with siltstone - cemented, dry, hard, grey to light brown			683.0
4				682.0
5				681.0
6	SILTSTONE - cemented, dry, hard, grey to light brown			680.0
7				679.0
8				678.0
9				677.0
10				676.0
11	END OF BOREHOLE (10.67 metres) water - 10.67 metres at 0 hrs. Monitoring well installed to 10.67 metres			675.0
12				675.0

Archive



LOGGED BY: AS	COMPLETION DEPTH: 10.67 m
REVIEWED BY: AS	COMPLETE: 07/10/01
DRAWING NO: 22101022-01	Page 1 of 1

CLEAN HARBORS 2007 GROUNDWATER MONITORING	CLEAN HARBORS CANADA INC.	BOREHOLE NO: 27B
	DRILL: SOLID STEM AUGER	PROJECT: E22101022
RYLEY, ALBERTA		ELEVATION: 687.01 m
SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE	
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND	

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Elevation (m)
0	TOPSOIL - clay, silty, dry, low plastic, black and grey, rootlets, (150mm thick) CLAY (TILL) - silty, moist, hard, medium plastic, brown, oxide staining		Pipe stickup = 0.80 metres	687.0
1	SAND - silty, massive, medium grained, moist, loose, olive green to brown, iron oxide staining			686.0
2	- blue green			685.0
3	- wet, interbedded with siltstone - cemented, dry, hard, grey to light brown			684.0
4				683.0
5	SILTSTONE - cemented, dry, hard, grey to light brown			682.0
6				681.0
7	END OF BOREHOLE (6.65 metres) water - 6.61 metres at 0 hrs. Monitoring well installed to 6.65 metres			680.0
8				679.0
9				678.0
10				677.0
11				676.0
12				



LOGGED BY: AS	COMPLETION DEPTH: 6.65 m
REVIEWED BY: AS	COMPLETE: 07/10/01
DRAWING NO: 22101022-02	Page 1 of 1

2011 GROUNDWATER MONITORING PROGRAM	CLEAN HARBOR	BOREHOLE NO: MW01C
	DRILL: SOLID STEM AUGER	PROJECT: E22101936
RILEY, ALBERTA		
SAMPLE TYPE	<input type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE	
BACKFILL TYPE	<input type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND	

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	TOPSOIL - moist, loose, non plastic, black, trace of roots, (300 mm thick)			0
	CLAY - silty, moist, firm, high plastic, light brown			
1	- trace of cobbles, trace of iron			
2	- trace of coal			
3	CLAY SHALE - moist, hard, low plastic, grey, trace of white precipitates			10
4	SANDSTONE - moist, hard, low plastic, dark greenish grey			15
5				
6	END OF BOREHOLE (5.33 metres) water - 2.35 metres at 2 hrs. Monitoring well installed to 5.55 metres			20
7				25
8				30
9				30
10				33



LOGGED BY: KF/MC	COMPLETION DEPTH: 5.33 m
REVIEWED BY: MH	COMPLETE: 11/06/14
DRAWING NO: 22101936-01	Page 1 of 1

2012 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS CANADA INC.	BOREHOLE NO: MW08A
CLASS I WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	PROJECT: E22103058-01
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	PAVEMENT - (100 mm thick) GRAVEL AND PEBBLE (FILL) - moist, soft, brown, (300 mm thick) CLAY - some sand, moist, hard, medium plastic, black, some coal, silt inclusions			0
1	- silty, brown, iron and silt inclusions			5
2	SAND - coarse grained, wet, soft, green grey			10
3	- hard			
4	SILTSTONE - some pebbles, dry, extremely weak, light grey			15
5	SAND - some silt and clay, moist, hard, low plastic, grey blue - siltstone lens - dry, extremely weak, light grey			20
6				25
7	- saturated, grey, water lenses SILTSTONE - some clay, cemented, extremely weak, grey			25
8				30
9	CLAY - some silt and sand, dry, hard, grey			35
10	END OF BOREHOLE (10.00 metres) water - 6.91 metres at 0 hrs. Monitoring well installed to 10.00 metres			39
11				
12				



TETRA TECH EBA

LOGGED BY: MC

REVIEWED BY: MH

DRAWING NO: 22103058-01

COMPLETION DEPTH: 10 m

COMPLETE: 12/10/04

Page 1 of 1

2012 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS CANADA INC.	BOREHOLE NO: MW08B
CLASS I WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	PROJECT: E22103058-01
RYLEY, ALBERTA		

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	PAVEMENT - (100 mm thick)			0
	GRAVEL AND PEBBLE (FILL) - moist, soft, red brown, (300 mm thick)			
	CLAY - some sand, moist, hard, medium plastic, black, some coal, white silt inclusions			
1	- silty, brown, iron, silt and coal inclusions			
2				
	SAND - some silt, coarse grained, wet, green blue, some silt inclusions			
3				
0 hrs.				0 hrs.
4				
	END OF BOREHOLE (4.50 metres) water - 2.76 metres at 0 hrs. Monitoring well installed to 4.63 metres			
5				
6				
7				
8				
9				
10				
11				
12				39

Archive



TETRA TECH EBA

LOGGED BY: MC

REVIEWED BY: MH

DRAWING NO: 22103058-02

COMPLETION DEPTH: 4.5 m

COMPLETE: 12/10/04

Page 1 of 1

2012 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS CANADA INC.	BOREHOLE NO: MW28A
CLASS I WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	PROJECT: E22103058-01
RYLEY, ALBERTA		

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (TILL) - silty, moist, hard, medium plastic, light brown, iron inclusions			0
1	- some sand, loose, brown, coal inclusions			5
2	SAND - coarse grained, moist, loose, brown, iron inclusions - blue green			10
3	SILTSTONE - cemented, dry, extremely weak, grey			15
4	SAND - coarse grained, wet, hard, blue green, some clay pockets, silt inclusions			20
5	- silty, dry, grey, silty inclusions			25
6	SILTSTONE - fine grained, moist, extremely weak, grey blue to light brown, silty inclusions			30
7				35
8				40
9				45
10	- dry, grey			50
11	END OF BOREHOLE (10.50 metres) water - 9.84 metres at 15 minutes Monitoring well installed to 10.86 metres			55
12				60



LOGGED BY: MC	COMPLETION DEPTH: 10.5 m
REVIEWED BY: MH	COMPLETE: 12/10/04
DRAWING NO: 22103058-03	Page 1 of 1

2012 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS CANADA INC.	BOREHOLE NO: MW28B
CLASS I WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	PROJECT: E22103058-01
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (TILL) - silty, sticky, moist, hard, medium plastic, iron inclusions			0
2	SAND - coarse grained, wet, light brown			5
	- blue			
3	SILTSTONE - cemented, dry, extremely weak, grey			10
4	SAND - silty, moist, hard, grey, some blue lenses, silty white inclusions			15
5	- some clay			20
6	END OF BOREHOLE (6.00 metres) water - 5.83 metres at 0 hrs. Monitoring well installed to 6.19 metres			20
7				25
8				30
9				35
10				39
11				
12				

Archive



LOGGED BY: MC	COMPLETION DEPTH: 6 m
REVIEWED BY: MH	COMPLETE: 12/10/04
DRAWING NO: 22103058-04	Page 1 of 1

2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW29A
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (FILL) - moist, high plastic, brown, (300 mm thick)		Pipe stickup = 0.81 metres	0
	SAND (TILL) - fine grained, moist, loose, dark brown - reddish brown			5
1	CLAY (TILL) - sandy, moist, firm, brown, silt, iron and coal inclusions			10
2	- dry, reddish brown, white precipitates			15
3	SAND - medium grained, moist, firm, brown, iron and white precipitates throughout			20
4	- bluish grey, clay seams throughout			25
5	SANDSTONE - medium grained, very firm, grey, dark grey mottles throughout		30	
6			35	
7			40	
8			45	
9	END OF BOREHOLE (9.00 metres) water - 3.28 metres at 0 hrs. Monitoring well installed to 9.41 metres		49	
10				
11				
12				
13				
14				
15				



LOGGED BY: MC	COMPLETION DEPTH: 9 m
REVIEWED BY: TD	COMPLETE: 14/10/06
DRAWING NO:	Page 1 of 1

2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW29B
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (FILL) - moist, high plastic, brown, (300 mm thick)		Pipe stickup = 0.79 metres	0
	SAND (TILL) - fine grained, moist, loose, dark brown - reddish brown			5
1	CLAY (TILL) - sandy, moist, firm, brown, silt, iron and coal inclusions			10
2	- dry, reddish brown, white precipitates			15
3	SAND - medium grained, moist, firm, brown, iron and white precipitates throughout			20
4	- bluish grey, clay seams throughout		25	
5	END OF BOREHOLE (4.50 metres) water - 3.89 metres at 0 hrs. Monitoring well installed to 4.64 metres Note: 1 m east of MW29A - sandstone		30	
6			35	
7			40	
8			45	
9			50	
10			55	
11			60	
12			65	
13			70	
14			75	
15			80	



LOGGED BY: MC	COMPLETION DEPTH: 4.5 m
REVIEWED BY: TD	COMPLETE: 14/10/08
DRAWING NO:	Page 1 of 1

2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW30A
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (FILL) - gravelly, moist, dark brown		Pipe stickup = 0.72 metres	0
1	CLAY (TILL) - sandy, moist, firm, brown, iron, coal and silt inclusions			5
2	SAND - silty, coarse grained, moist, loose, light brown, white lenses			10
3	CLAY (TILL) - sandy, moist, firm, brown, iron, coal and silt inclusions			15
4	- iron inclusions			20
5	SANDSTONE - dry, extremely weak, light grey			25
6	- medium grained, moist, dark grey			30
7				35
8	- light brown			40
9	- dry, dark grey			45
10	END OF BOREHOLE (9.00 metres) water - dry at 0 hrs. Monitoring well installed to 8.17 metres			49



LOGGED BY: MC	COMPLETION DEPTH: 9 m
REVIEWED BY: TD	COMPLETE: 14/10/08
DRAWING NO:	Page 1 of 1

2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW30B
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (FILL) - gravelly, moist, dark brown		Pipe stickup = 0.76 metres	0
1	CLAY (TILL) - sandy, moist, firm, brown, iron, coal and silt inclusions			5
2	SAND - silty, coarse grained, moist, loose, light brown, white lenses			10
3	CLAY (TILL) - sandy, moist, firm, brown, iron, coal and silt inclusions			15
4	- iron inclusions			20
5	- greyish blue, brown mottles			25
5	END OF BOREHOLE (4.50 metres) water - dry at 0 hrs. Monitoring well installed to 4.67 metres Note: 1 m east of MW30A			30
6				35
7				40
8				45
9				50
10				55
11				60
12				65
13				70
14				75
15				80



LOGGED BY: MC	COMPLETION DEPTH: 4.5 m
REVIEWED BY: TD	COMPLETE: 14/10/08
DRAWING NO:	Page 1 of 1

2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW31A
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (FILL) - gravelly, moist, dark brown, white and orange precipitates. (300 mm thick)		Pipe stickup = 0.71 metres	0
0.5	SAND (TILL) - fine grained, dry, brown, white and red, coal and iron inclusions			5
1	CLAY (TILL) - sandy, moist, soft, grey, iron inclusions			10
1.5	- bluish grey, brown mottles			15
2	- dry			20
2.5	SANDSTONE - medium grained, dark grey clay inclusions throughout			25
3				30
3.5	- 200 mm thick sandstone layer - dry, light brown			35
4	- moist, dark grey, light grey and brown silt, shale and sand			40
4.5				45
5			50	
5.5			55	
6			60	
6.5			65	
7	- bluish grey, dark brown inclusions		70	
7.5	- dark grey		75	
8			80	
8.5			85	
9	END OF BOREHOLE (9.00 metres) water - dry at 0 hrs. Monitoring well installed to 9.02 metres		90	
9.5			95	
10			100	
10.5			105	
11			110	
11.5			115	
12			120	
12.5			125	
13			130	
13.5			135	
14			140	
14.5			145	
15			150	



LOGGED BY: MC	COMPLETION DEPTH: 9 m
REVIEWED BY: TD	COMPLETE: 14/10/08
DRAWING NO:	Page 1 of 1

2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW31B
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (FILL) - gravelly, moist, dark brown, white and orange precipitates. (300 mm thick)		Pipe stickup = 0.72 metres	0
0.5	SAND (TILL) - fine grained, dry, brown, white and red, coal and iron inclusions			0.5
1	CLAY (TILL) - sandy, moist, soft, grey, iron inclusions			1
1.5	- bluish grey, brown mottles - dry			1.5
2	SANDSTONE - medium grained, dark grey clay inclusions throughout			2
3	END OF BOREHOLE (3.00 metres) water - 3.00 metres at 0 hrs. Monitoring well installed to 3.18 metres Note: 1 m west of MW31A			3
4				4
5				5
6				6
7				7
8				8
9				9
10				10
11				11
12				12
13				13
14				14
15				15



LOGGED BY: MC	COMPLETION DEPTH: 3 m
REVIEWED BY: TD	COMPLETE: 14/10/08
DRAWING NO:	Page 1 of 1

2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW32A
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (FILL) - sandy clay mix, bluish grey		Pipe stickup = 0.67 metres	0
1	CLAY (TILL) - sandy, moist, brown, iron inclusions			5
2	SAND - medium grained, dry, loose, light grey			10
3	CLAY (TILL) - sandy, moist, firm, medium plastic, dark grey - loose, bluish grey			15
4	SAND - medium grained, dry, light grey - grey, iron inclusions			20
5	CLAY - moist, firm, medium plastic, dark grey			25
6	- dark brown			30
7	- sandy, soft, bluish grey, dark grey throughout			35
8	- saturated			40
9	- moist			45
10	END OF BOREHOLE (9.00 metres) water - 8.04 metres at 0 hrs. Monitoring well installed to 9.42 metres			49



LOGGED BY: MC	COMPLETION DEPTH: 9 m
REVIEWED BY: TD	COMPLETE: 14/10/08
DRAWING NO:	Page 1 of 1

2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW32B
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	CLAY (FILL) - sandy clay mix, bluish grey		Pipe stickup = 0.72 metres	0
1	CLAY (TILL) - sandy, moist, brown, iron inclusions			5
2	SAND - medium grained, dry, loose, light grey			10
3	CLAY (TILL) - sandy, moist, firm, medium plastic, dark grey - loose, bluish grey			15
4	SAND - medium grained, dry, light grey - grey, iron inclusions			20
5	END OF BOREHOLE (4.50 metres) water - 4.03 metres at 0 hrs. Monitoring well installed to 4.16 metres Note: 1 m east of MW32A			25
6				30
7				35
8				40
9				45
10				50
11				55
12				60
13				65
14				70
15				75



LOGGED BY: MC	COMPLETION DEPTH: 4.5 m
REVIEWED BY: TD	COMPLETE: 14/10/08
DRAWING NO:	Page 1 of 1

2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW33A
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	SAND (FILL) - some pebbles and gravel, moist, loose, brown, (150 mm thick) CLAY (TILL) - gravelly, some sand, subangular blocky, firm, medium plastic, dark grey, silt inclusions		Pipe stickup = 0.94 metres	0
1	- massive, moist, very firm, high plastic, dark brown, coal, silt and iron inclusions			
2	SAND - coarse grained, moist, loose, dark brown, iron inclusions			5
	- mottles			
	- coarse grained, grey blue			
3	- 200 mm thick clay layer			10
	- siltstone			
	- saturated, silt mottled throughout			
4	SANDSTONE - fine grained, moist, grey blue, silt inclusions throughout			15
5				20
6	- siltstone			25
	- saturated, water seam			
	- grey, dark grey mottles			
7	- moist			30
8				35
	- saturated, grey			
9	- medium grained, moist			40
	- wet			
10	- wet seam			45
11				49
12				
	- fractured bedrock, saturated, light grey			
13				
14	END OF BOREHOLE (13.50 metres) water - 6.10 metres at 0 hrs. Monitoring well installed to 13.90 metres			
15				



LOGGED BY: MC	COMPLETION DEPTH: 13.5 m
REVIEWED BY: TD	COMPLETE: 14/10/06
DRAWING NO:	Page 1 of 1

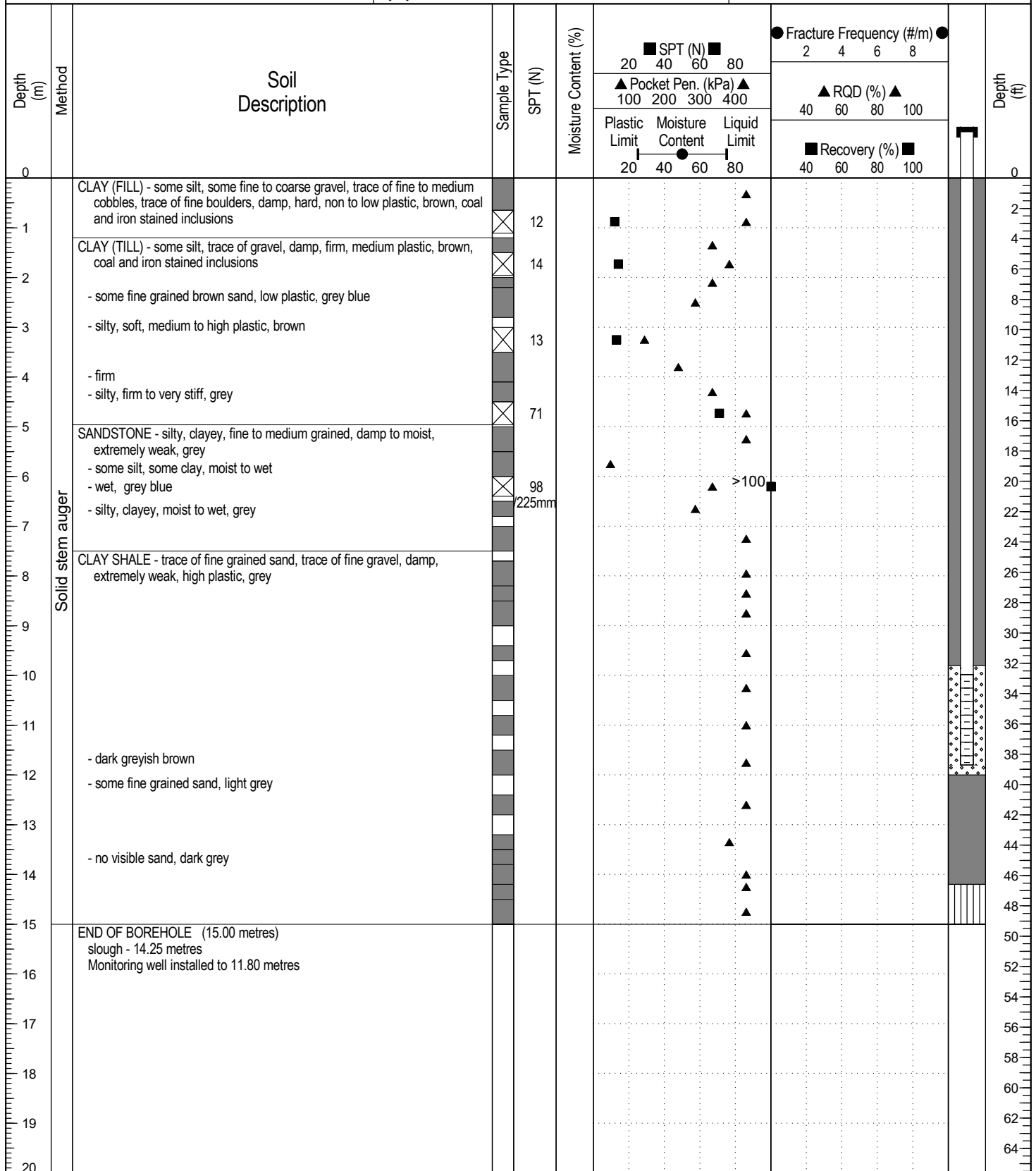
2014 GROUNDWATER WELLS INSTALLATION	CLEAN HARBORS	PROJECT NO. - BOREHOLE NO.
CLASS 1 WASTE MANAGEMENT FACILITY	DRILL: SOLID STEM AUGER	ENVSWM03472-01-MW33B
RYLEY, ALBERTA		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	SAND (FILL) - some pebbles and gravel, moist, loose, brown, (150 mm thick) CLAY (TILL) - gravelly, some sand, subangular blocky, firm, medium plastic, dark grey, silt inclusions		Pipe stickup = 0.83 metres	0
1	- massive, moist, very firm, high plastic, dark brown, coal, silt and iron inclusions			5
2	SAND - coarse grained, moist, loose, dark brown, iron inclusions - mottles - coarse grained, grey blue			10
3	- 200 mm thick clay layer - siltstone - silt mottled throughout			15
4	SANDSTONE - fine grained, moist, grey blue, silt inclusions throughout			20
5	END OF BOREHOLE (4.50 metres) water - 0.93 metres at 0 hrs. Monitoring well installed to 4.68 metres Note: 1 m east of MW33A			25
6				30
7				35
8				40
9				45
10				50
11				55
12				60
13				65
14				70
15				75



LOGGED BY: MC	COMPLETION DEPTH: 4.5 m
REVIEWED BY: TD	COMPLETE: 14/10/06
DRAWING NO:	Page 1 of 1



END OF BOREHOLE (15.00 metres)
slough - 14.25 metres
Monitoring well installed to 11.80 metres



Contractor: Clean Harbors

Completion Depth: 15 m

Drilling Rig Type:

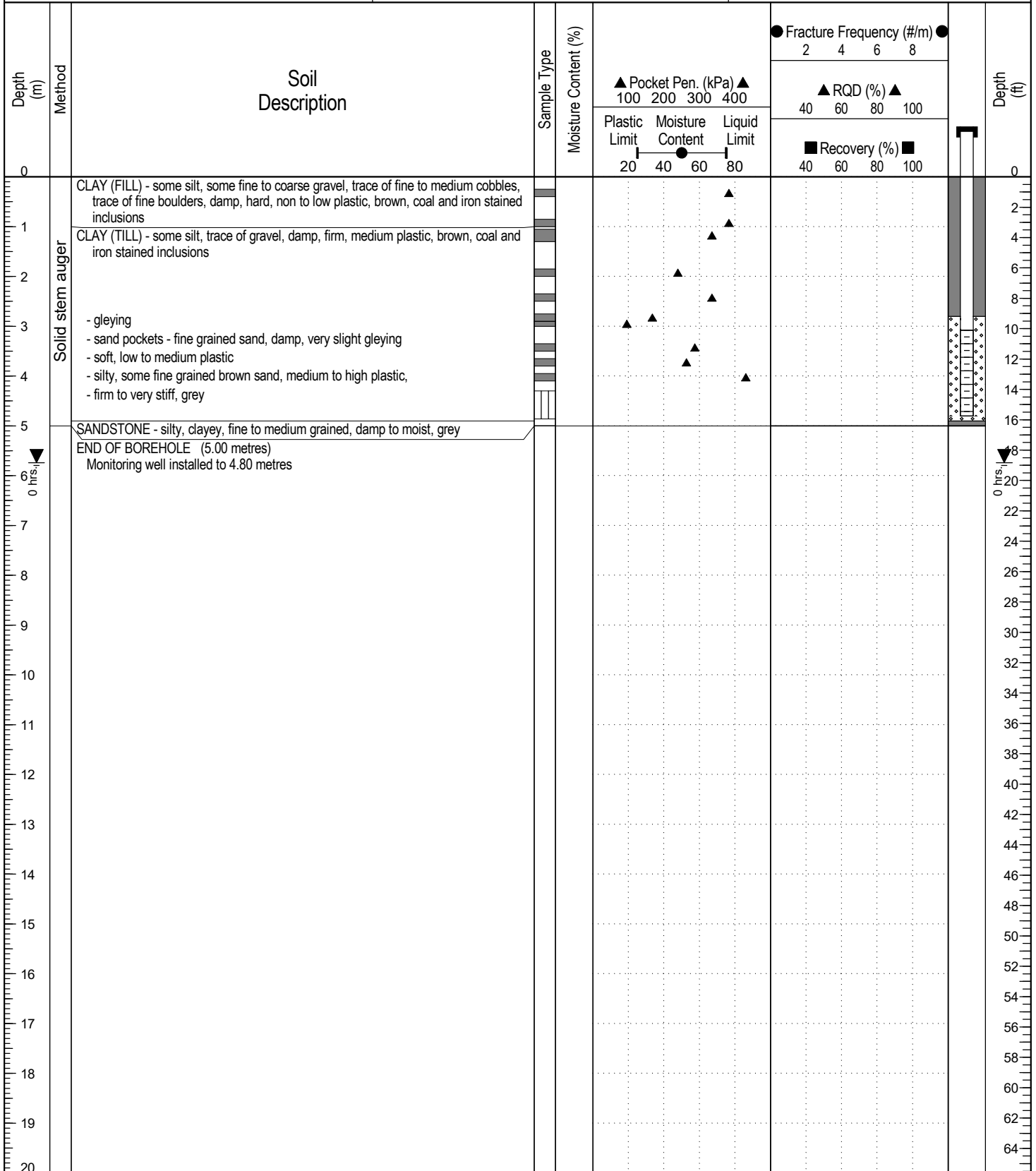
Start Date: 2015 July 21

Logged By: TH

Completion Date: 2015 July 21

Reviewed By: SS

Page 1 of 1



Contractor: Clean Harbors

Completion Depth: 5 m

Drilling Rig Type:

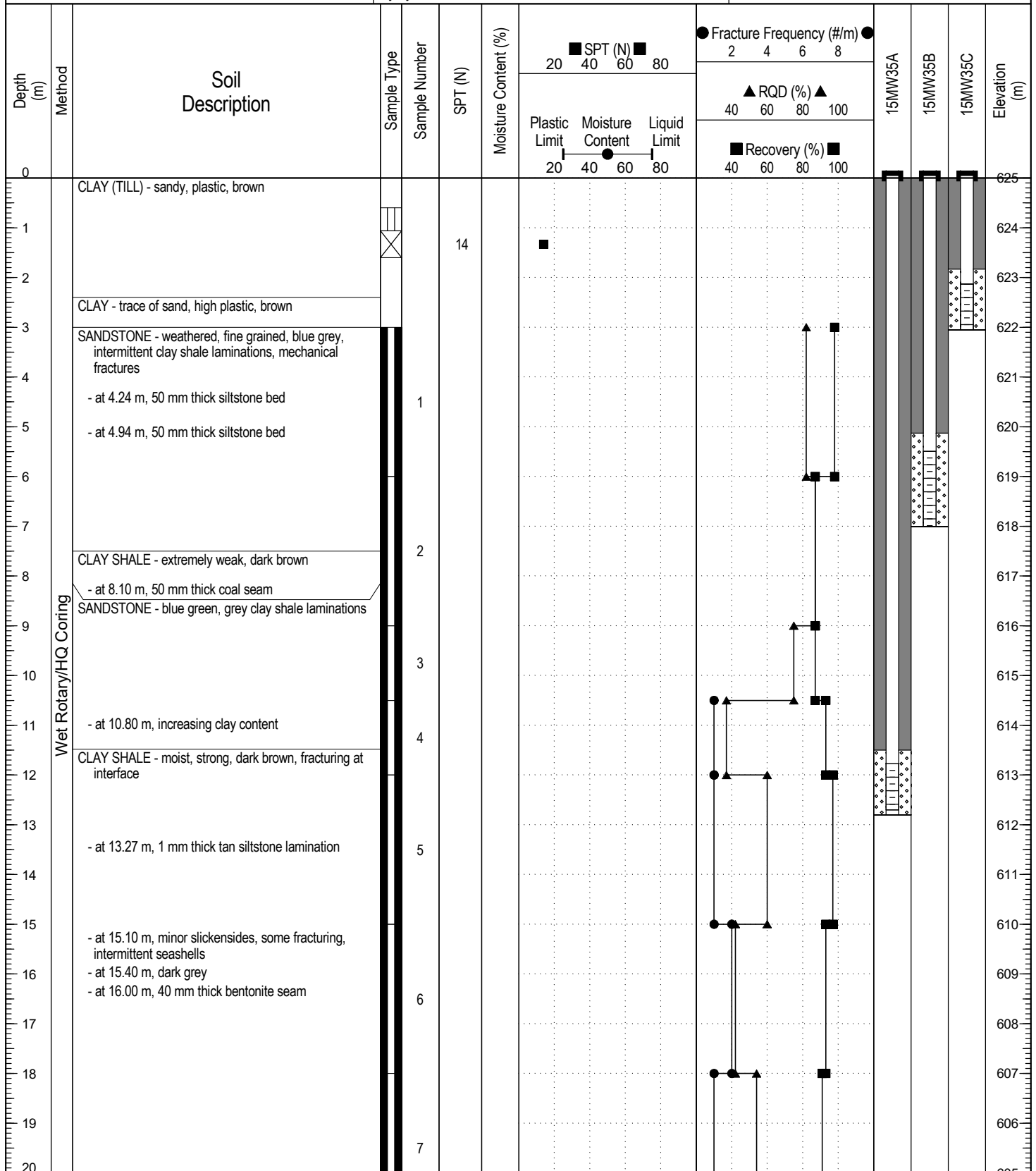
Start Date: 2015 July 21

Logged By: TH

Completion Date: 2015 July 21

Reviewed By: SS

Page 1 of 1



Contractor: Garritty and Baker

Completion Depth: 42.4 m

Drilling Rig Type:

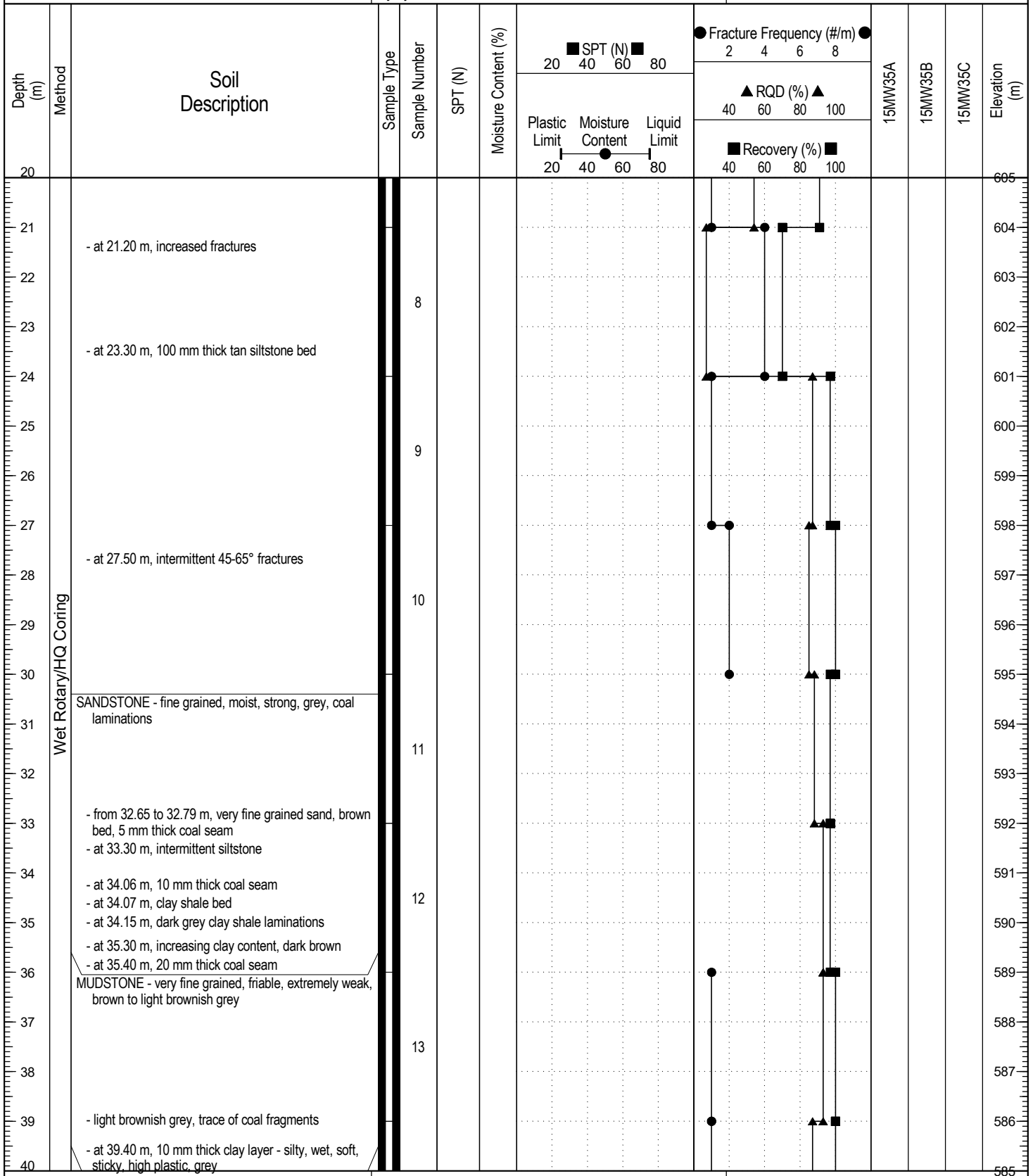
Start Date: 2015 July 27

Logged By: BS

Completion Date: 2015 July 28

Reviewed By: TH

Page 1 of 3



Clean Harbors Canada Inc.

Borehole No: 15MW35A/B/C

Project: Ryley Renewal Monitoring Well Installations

Project No: ENVSWM03011-04.003

Location: Ryley Facility

Ground Elev: 625 m

Ryley, Alberta

Depth (m)	Method	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)	SPT (N)		Fracture Frequency (#/m)		15MW35A	15MW35B	15MW35C	Elevation (m)	
							20	40	60	80					2
40		SANDSTONE - glauconitic, very fine grained, extremely weak, light grey, coal fragments		14										585	
41		CLAY SHALE - strong, dark brown - at 41.00 m, 10 mm thick coal seam													584
42		MUDSTONE - very fine grained, brittle, grey grey													583
43		END OF BOREHOLE (42.40 metres) Monitoring well A installed to 12.80 metres Monitoring well B installed to 7.01 metres Monitoring well C installed to 3.05 metres												582	
44														581	
45														580	
46														579	
47														578	
48														577	
49														576	
50														575	
51														574	
52														573	
53														572	
54														571	
55														570	
56														569	
57														568	
58														567	
59														566	
60														565	



Contractor: Garrity and Baker

Completion Depth: 42.4 m

Drilling Rig Type:

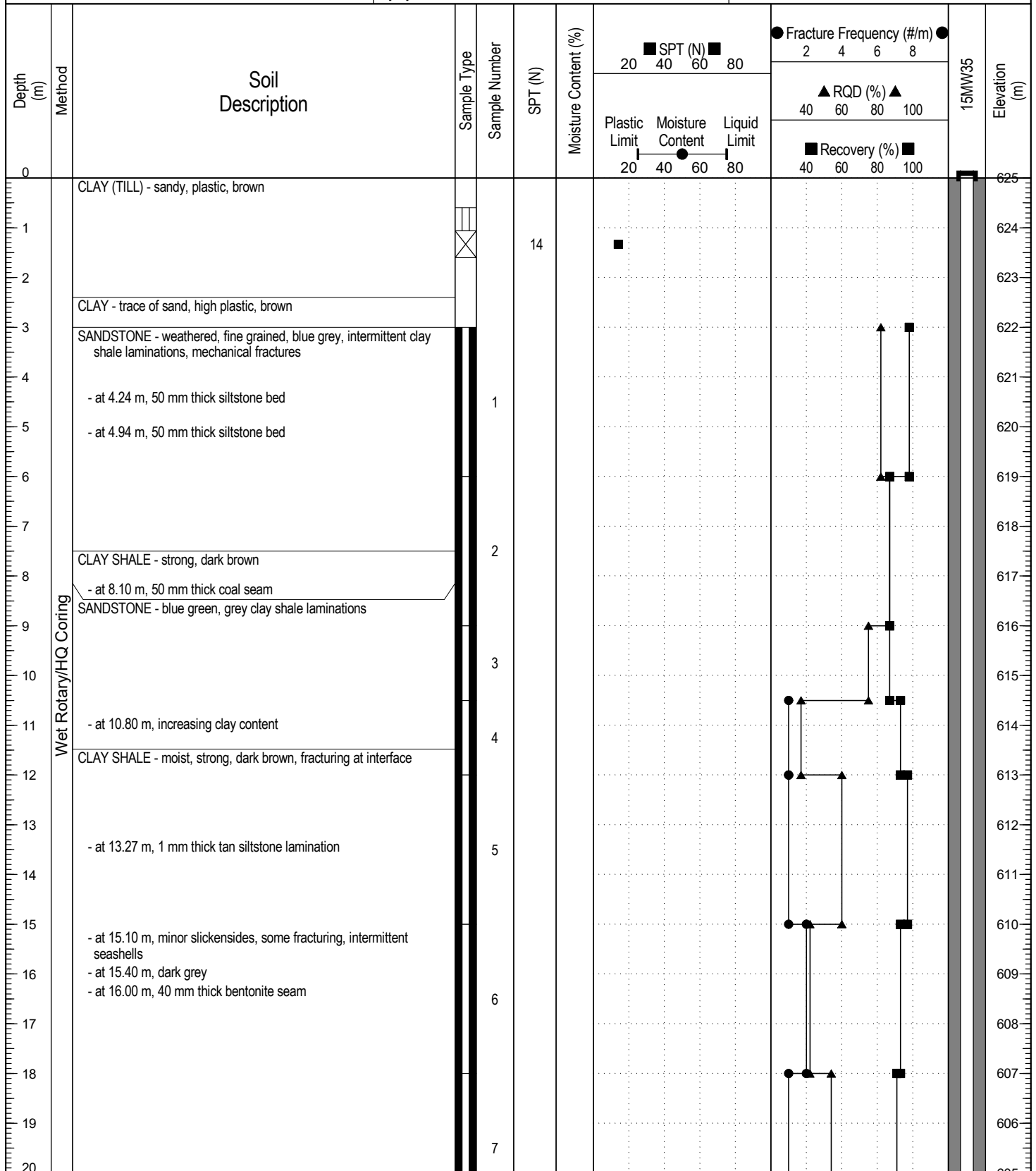
Start Date: 2015 July 27

Logged By: BS

Completion Date: 2015 July 28

Reviewed By: TH

Page 3 of 3



Contractor: Garrity and Baker

Completion Depth: 42.4 m

Drilling Rig Type:

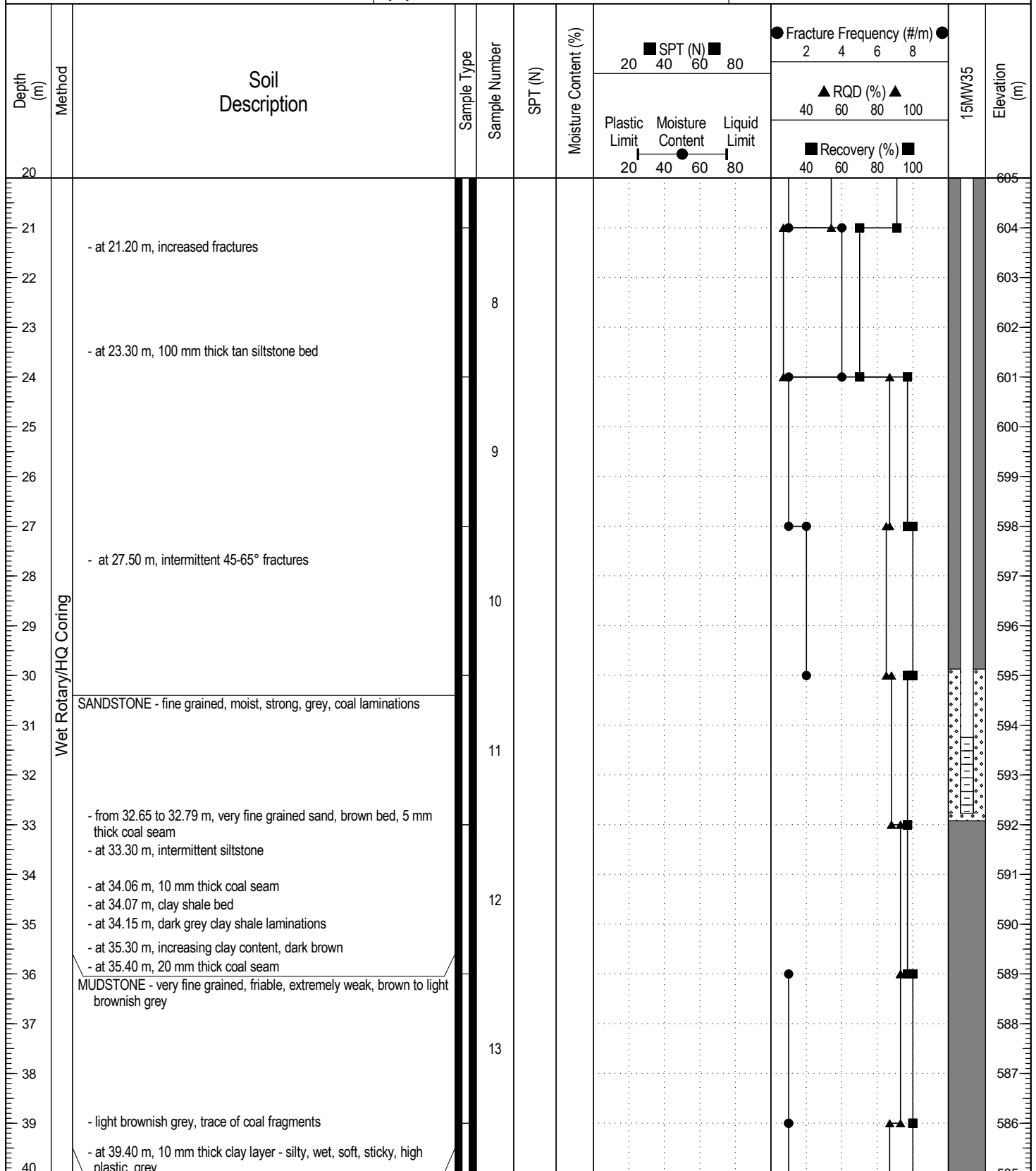
Start Date: 2015 July 27

Logged By: BS

Completion Date: 2015 July 28

Reviewed By: TH

Page 1 of 3



TETRA TECH EBA

Contractor: Garritty and Baker

Completion Depth: 42.4 m

Drilling Rig Type:

Start Date: 2015 July 27

Logged By: BS

Completion Date: 2015 July 28

Reviewed By: TH

Page 2 of 3

Project: Ryley Renewal Monitoring Well Installations

Project No: ENVSWM03011-04.003

Location: Ryley Facility

Ground Elev: 625 m

Ryley, Alberta

Depth (m)	Method	Soil Description	Sample Type	Sample Number	SPT (N)	Moisture Content (%)			Fracture Frequency (#/m)		RQD (%)	Recovery (%)	Elevation (m)	
						Plastic Limit	Moisture Content	Liquid Limit	2	4				6
40		SANDSTONE - glauconitic, very fine grained, extremely weak, light grey, coal fragments		14									585	
41		CLAY SHALE - strong, dark brown - at 41.00 m, 10 mm thick coal seam												584
42		MUDSTONE - very fine grained, brittle, grey grey												583
43		END OF BOREHOLE (42.40 metres) Monitoring well installed to 32.77 metres											582	
44													581	
45													580	
46													579	
47													578	
48													577	
49													576	
50													575	
51													574	
52													573	
53													572	
54													571	
55													570	
56													569	
57													568	
58													567	
59													566	
60													565	



Contractor: Garrity and Baker

Completion Depth: 42.4 m

Drilling Rig Type:

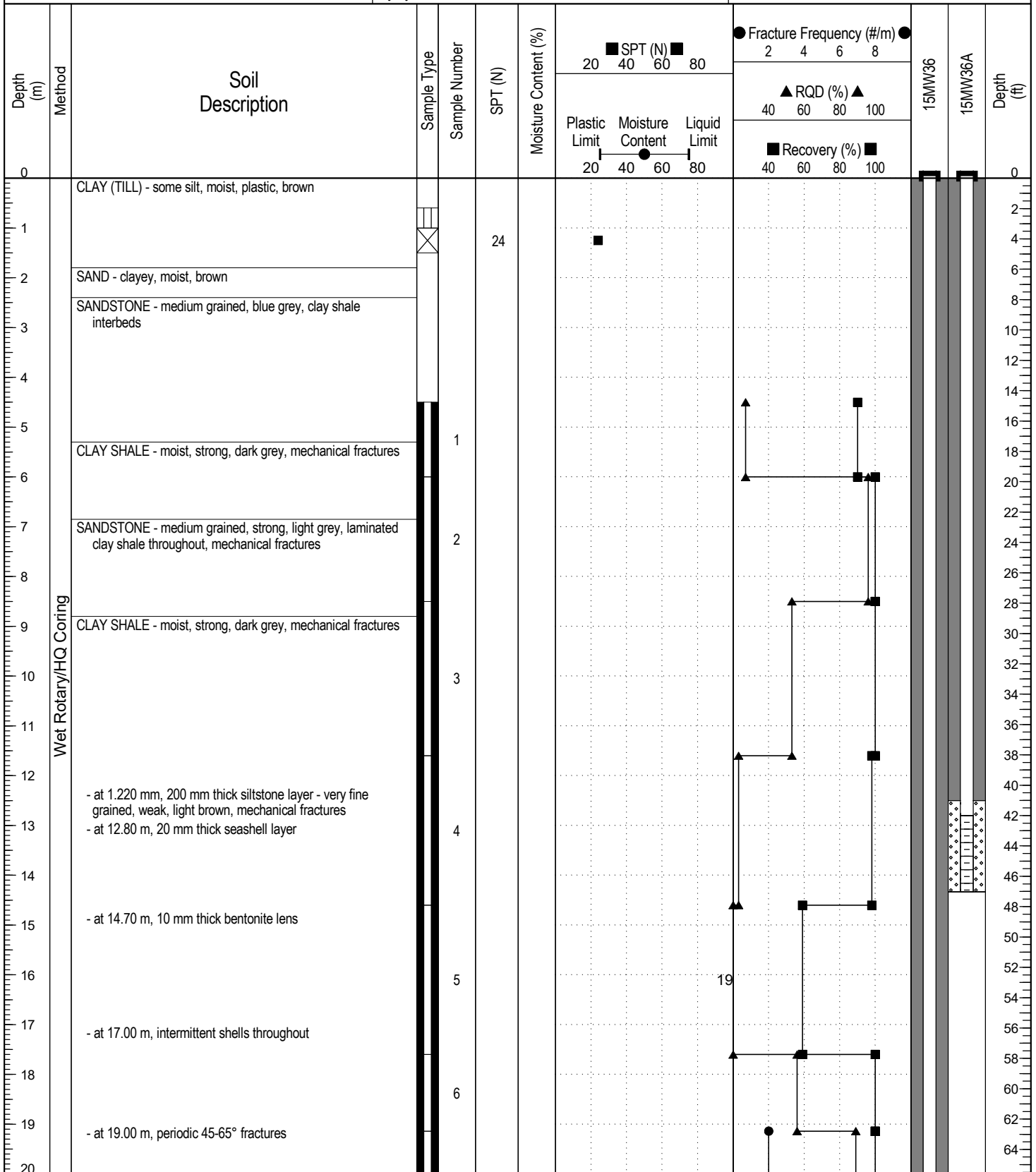
Start Date: 2015 July 27

Logged By: BS

Completion Date: 2015 July 28

Reviewed By: TH

Page 3 of 3



TETRA TECH EBA

Contractor: Garritty and Baker

Completion Depth: 38.8 m

Drilling Rig Type:

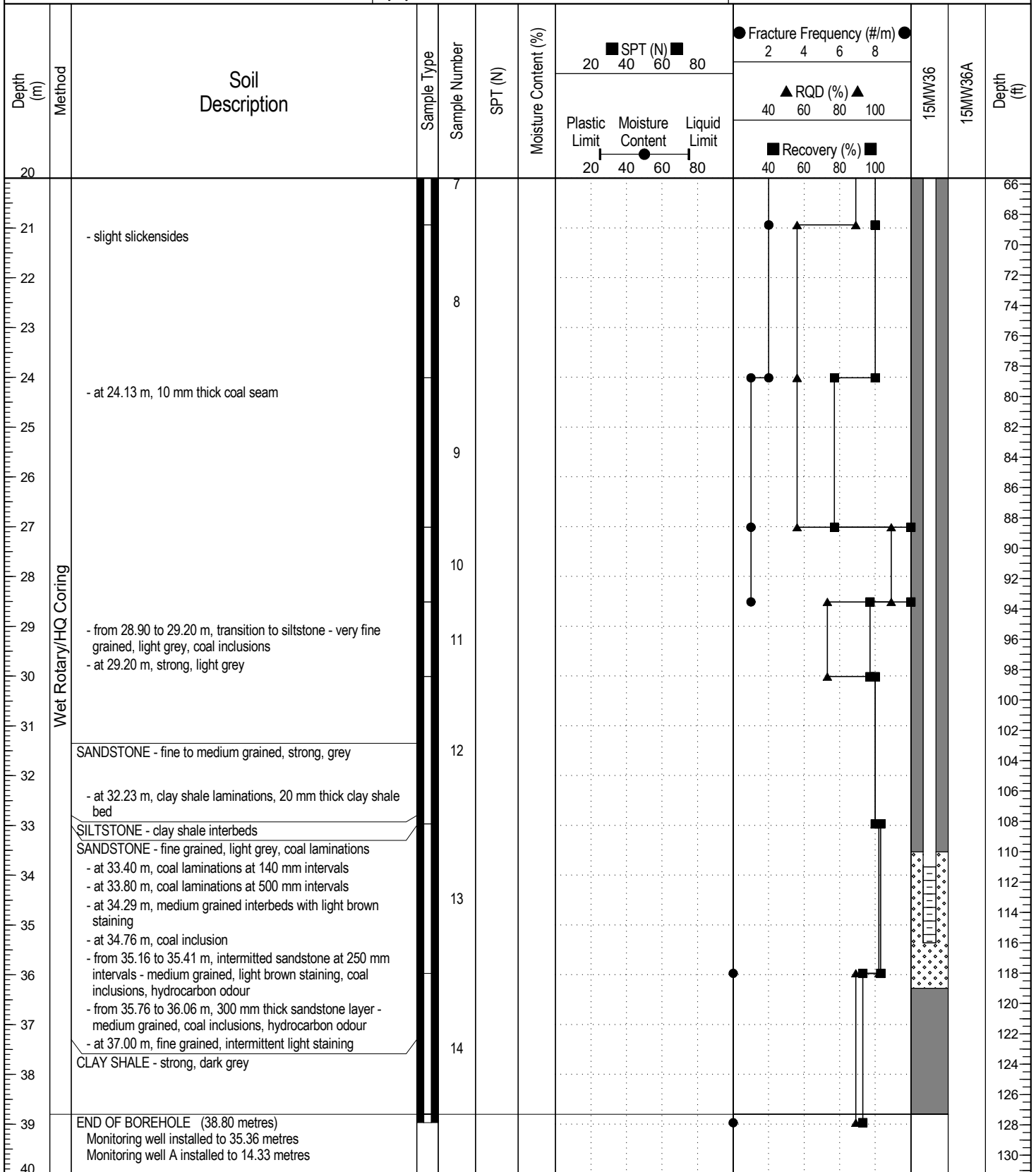
Start Date: 2015 July 21

Logged By: BS

Completion Date: 2015 July 21

Reviewed By: TH

Page 1 of 2



Contractor: Garrity and Baker

Completion Depth: 38.8 m

Drilling Rig Type:

Start Date: 2015 July 21

Logged By: BS

Completion Date: 2015 July 21

Reviewed By: TH

Page 2 of 2



Borehole No: 19MW37A

Project: 2019 Groundwater Monitoring Program

Project No: SWM.SWOP04117-01

Location: Class I Waste Management Facility

Ryley, Alberta

Depth (m)	Method	Soil Description	Sample Type	Notes and Comments	19MW37A	Depth (ft)
0			<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> Vapour readings (ppmv) </div> <div style="display: flex; justify-content: space-around; width: 100px; margin-top: 5px;"> 10 20 30 40 </div>			0
0 - 1.60	Solid stem auger	CLAY - organics, some silt, some gravel, dry, firm, non plastic, brown, frozen to 1.60 metres - no visible organics, trace gravel, medium plastic, iron inclusions				0 - 2
1 - 2		- some sand, no visible gravel, damp, soft, grey brown, fine to medium sand				2 - 6
2 - 3		SAND - some silt, some clay, damp, soft, blue grey, medium sand				6 - 10
3 - 4		SANDSTONE - silty, clayey, dry, very weak, grey, medium sandstone				10 - 14
4 - 6		- clayier CLAY SHALE - trace to some sand, very wet, grey, fine sand				14 - 20
6 - 7						20 - 22
7 - 8						22 - 24
8 - 9						24 - 26
9 - 10						26 - 28
10 - 11						28 - 30
11 - 12						30 - 32
12 - 13						32 - 34
13 - 14						34 - 36
14 - 15		END OF BOREHOLE (13.50 metres) slough - 4.00 metres at 0 hrs. Monitoring well installed to 12.00 metres				36 - 44



Contractor: Clean Harbors

Completion Depth: 13.5 m

Drilling Rig Type: Truck mounted

Start Date: 2019 October 30

Logged By: MDB

Completion Date: 2019 October 30

Reviewed By: BA

Page 1 of 1



Borehole No: 19MW37B

Project: 2019 Groundwater Monitoring Program

Project No: SWM.SWOP04117-01

Location: Class I Waste Management Facility

Ryley, Alberta

Depth (m)	Method	Soil Description	Sample Type	Notes and Comments	19MW37B	Depth (ft)
0						0
0 - 1.60	Solid stem auger	CLAY - organics, some silt, some gravel, dry, firm, non plastic, brown, frozen to 1.60 metres - no visible organics, trace gravel, medium plastic, iron inclusions				0 - 5.25
1.60 - 2.40		- some sand, no visible gravel, damp, soft, grey brown, fine to medium sand				5.25 - 7.87
2.40 - 3.00		SAND - some silt, some clay, damp, soft, blue grey, medium sand				7.87 - 9.84
3.00 - 4.20		SANDSTONE - silty, clayey, dry, very weak, grey, medium sandstone				9.84 - 13.78
4.20 - 4.50		END OF BOREHOLE (4.50 metres) Monitoring well installed to 4.20 metres				13.78 - 14.76

■ Vapour readings (ppmv) ■
10 20 30 40



Contractor: Clean Harbors

Completion Depth: 4.5 m

Drilling Rig Type: Truck mounted

Start Date: 2019 October 30

Logged By: MDB

Completion Date: 2019 October 30

Reviewed By: BA

Page 1 of 1



Borehole No: 19MW38A

Project: 2019 Groundwater Monitoring Program

Project No: SWM.SWOP04117-01

Location: Class I Waste Management Facility

Ryley, Alberta

Depth (m)	Method	Soil Description	Sample Type	Notes and Comments	19MW38A	Depth (ft)
0						0
0 - 0.5		CLAY (FILL) - some silt, some sand, trace gravel, loose, medium plastic, brown				0 - 1.5
0.5 - 1.5		CLAY - some silt, some sand, firm, high plastic, brown, fine to medium sand				1.5 - 4.5
1.5 - 3.5		- sandier				4.5 - 10.5
3.5 - 4.5		SAND - some silt, some clay, damp, soft, blue grey, medium sand				10.5 - 13.5
4.5 - 6.0		SANDSTONE - silty, clayey, dry, very weak, grey, medium sandstone				13.5 - 19.5
6.0 - 13.4	Solid stem auger	CLAY SHALE - trace sand, very weak, grey, fine sand - weak, dark brown				19.5 - 44.5
13.4		END OF BOREHOLE (13.50 metres) Monitoring well installed to 13.40 metres				44.5

■ Vapour readings (ppmv) ■
10 20 30 40



Contractor: Clean Harbors

Completion Depth: 13.5 m

Drilling Rig Type: Truck mounted

Start Date: 2019 October 30

Logged By: MDB

Completion Date: 2019 October 30

Reviewed By: BA

Page 1 of 1



Borehole No: 19MW38B

Project: 2019 Groundwater Monitoring Program

Project No: SWM.SWOP04117-01

Location: Class I Waste Management Facility

Ryley, Alberta

Depth (m)	Method	Soil Description	Sample Type	Notes and Comments	19MW38B	Depth (ft)
0						0
0 - 0.5	Solid stem auger	CLAY (FILL) - some silt, some sand, trace gravel, loose, medium plastic, brown				0 - 0.5
0.5 - 1.0		CLAY - some silt, some sand, firm, high plastic, brown, fine to medium sand	■			0.5 - 1.0
1.0 - 2.0			■			1.0 - 2.0
2.0 - 3.0		- sandier	■			2.0 - 3.0
3.0 - 4.0		SAND - some silt, some clay, damp, soft, blue grey, medium sand	■			3.0 - 4.0
4.0 - 5.0		SANDSTONE - silty, clayey, dry, very weak, grey, medium sandstone	■	■		4.0 - 5.0
5.0 - 15.0		END OF BOREHOLE (5.50 metres) Monitoring well installed to 4.00 metres				5.0 - 15.0

■ Vapour readings (ppmv) ■
10 20 30 40



Contractor: Clean Harbors

Completion Depth: 5.5 m

Drilling Rig Type: Truck mounted

Start Date: 2019 October 30

Logged By: MDB

Completion Date: 2019 October 30

Reviewed By: BA

Page 1 of 1

APPENDIX D

LABORATORY ANALYTICAL REPORTS



TETRA TECH CANADA INC..
ATTN: Michele Crawford
14940 123 Ave NW
North Bldg.
Edmonton AB T5V 1B4


Date Received: 02-JUN-21
Report Date: 15-JUL-21 09:22 (MT)
Version: FINAL REV. 4

Client Phone: 780-451-2121

Certificate of Analysis

Lab Work Order #: L2595874
Project P.O. #: SWOP04401
Job Reference:
C of C Numbers: 20-903128
Legal Site Desc:

Comments: ADDITIONAL 12-JUL-21 09:19
13-JUL-2021 .


Kieran Tordoff
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 9450 17 Avenue NW, Edmonton, AB T6N 1M9 Canada | Phone: +1 780 413 5227 | Fax: +1 780 437 2311
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-1 MW28B							
Sampled By: CLIENT on 02-JUN-21 @ 15:46							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	116.7		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	106.4		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	89.9		70-130	%	17-JUN-21	17-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	94.8		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	1.40		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	39		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	12.1		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	0.0035		0.0010	mg/L		10-JUN-21	R5486958
Total Kjeldahl Nitrogen	2.56		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-1 MW28B							
Sampled By: CLIENT on 02-JUN-21 @ 15:46							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	116.7		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	106.4		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	89.3		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	25.4	DLDS	5.0	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					05-JUN-21	R5478934
Aluminum (Al)-Dissolved	<0.010	DLDS	0.010	mg/L		06-JUN-21	R5479133
Antimony (Sb)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Arsenic (As)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Barium (Ba)-Dissolved	0.0092		0.0010	mg/L		06-JUN-21	R5479133
Beryllium (Be)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Bismuth (Bi)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Boron (B)-Dissolved	0.46		0.10	mg/L		06-JUN-21	R5479133
Cadmium (Cd)-Dissolved	<0.000050	DLDS	0.000050	mg/L		06-JUN-21	R5479133
Cesium (Cs)-Dissolved	0.00011		0.00010	mg/L		06-JUN-21	R5479133
Chromium (Cr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-1 MW28B							
Sampled By: CLIENT on 02-JUN-21 @ 15:46							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cobalt (Co)-Dissolved	0.0011		0.0010	mg/L		06-JUN-21	R5479133
Copper (Cu)-Dissolved	<0.0020	DLDS	0.0020	mg/L		06-JUN-21	R5479133
Iron (Fe)-Dissolved	<0.10	DLDS	0.10	mg/L		06-JUN-21	R5479133
Lead (Pb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Lithium (Li)-Dissolved	0.693		0.010	mg/L		06-JUN-21	R5479133
Manganese (Mn)-Dissolved	0.240		0.0010	mg/L		06-JUN-21	R5479133
Molybdenum (Mo)-Dissolved	0.00060		0.00050	mg/L		06-JUN-21	R5479133
Nickel (Ni)-Dissolved	<0.0050	DLDS	0.0050	mg/L		06-JUN-21	R5479133
Phosphorus (P)-Dissolved	<0.50	DLDS	0.50	mg/L		06-JUN-21	R5479133
Rubidium (Rb)-Dissolved	0.0143		0.0020	mg/L		06-JUN-21	R5479133
Selenium (Se)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Silicon (Si)-Dissolved	4.90		0.50	mg/L		06-JUN-21	R5479133
Silver (Ag)-Dissolved	<0.00010	DLDS	0.00010	mg/L		06-JUN-21	R5479133
Strontium (Sr)-Dissolved	5.53		0.0020	mg/L		06-JUN-21	R5479133
Sulfur (S)-Dissolved	2580		5.0	mg/L		06-JUN-21	R5479133
Tellurium (Te)-Dissolved	<0.0020	DLDS	0.0020	mg/L		06-JUN-21	R5479133
Thallium (Tl)-Dissolved	<0.00010	DLDS	0.00010	mg/L		06-JUN-21	R5479133
Thorium (Th)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Tin (Sn)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Titanium (Ti)-Dissolved	<0.0030	DLDS	0.0030	mg/L		06-JUN-21	R5479133
Tungsten (W)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Uranium (U)-Dissolved	0.00048		0.00010	mg/L		06-JUN-21	R5479133
Vanadium (V)-Dissolved	<0.0050	DLDS	0.0050	mg/L		06-JUN-21	R5479133
Zinc (Zn)-Dissolved	0.019		0.010	mg/L		06-JUN-21	R5479133
Zirconium (Zr)-Dissolved	<0.0020	DLDS	0.0020	mg/L		06-JUN-21	R5479133
Fluoride in Water by IC							
Fluoride (F)	0.23	DLDS	0.20	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	91.2			%		08-JUN-21	
TDS (Calculated)	12200			mg/L		08-JUN-21	
Hardness (as CaCO3)	1040			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.27	DLDS	0.20	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.27		0.22	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	7990	DLDS	3.0	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	8.10		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	11300		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	995		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	816		2.0	mg/L		03-JUN-21	R5477732
L2595874-2 MW29A							
Sampled By: CLIENT on 02-JUN-21 @ 16:05							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-2 MW29A							
Sampled By: CLIENT on 02-JUN-21 @ 16:05							
Matrix: WATER							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	109.2		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	101.0		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	100.4		70-130	%	17-JUN-21	17-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	93.3		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	1.16		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	26		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	8.8		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	<0.0010		0.0010	mg/L		10-JUN-21	R5486958
Total Kjeldahl Nitrogen	1.32		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-2 MW29A							
Sampled By: CLIENT on 02-JUN-21 @ 16:05							
Matrix: WATER							
EPA 8260 Volatile Organics							
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	92.9		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	93.8		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	94.2		70-130	%	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	109.2		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	101.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	100.4		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	2.8	DLDS	2.5	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					05-JUN-21	R5478934
Aluminum (Al)-Dissolved	0.0086		0.0050	mg/L		06-JUN-21	R5479133
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Arsenic (As)-Dissolved	0.00065		0.00050	mg/L		06-JUN-21	R5479133
Barium (Ba)-Dissolved	0.0139		0.00050	mg/L		06-JUN-21	R5479133
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		06-JUN-21	R5479133
Boron (B)-Dissolved	0.735		0.050	mg/L		06-JUN-21	R5479133
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		06-JUN-21	R5479133

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-2 MW29A							
Sampled By: CLIENT on 02-JUN-21 @ 16:05							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050	DLDS	0.000050	mg/L		06-JUN-21	R5479133
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Cobalt (Co)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Copper (Cu)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5479133
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		06-JUN-21	R5479133
Lithium (Li)-Dissolved	0.231		0.0050	mg/L		06-JUN-21	R5479133
Manganese (Mn)-Dissolved	0.0571		0.00050	mg/L		06-JUN-21	R5479133
Molybdenum (Mo)-Dissolved	0.00125		0.00025	mg/L		06-JUN-21	R5479133
Nickel (Ni)-Dissolved	<0.0025	DLDS	0.0025	mg/L		06-JUN-21	R5479133
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		06-JUN-21	R5479133
Rubidium (Rb)-Dissolved	0.0066		0.0010	mg/L		06-JUN-21	R5479133
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		06-JUN-21	R5479133
Silicon (Si)-Dissolved	3.65		0.25	mg/L		06-JUN-21	R5479133
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		06-JUN-21	R5479133
Strontium (Sr)-Dissolved	0.741		0.0010	mg/L		06-JUN-21	R5479133
Sulfur (S)-Dissolved	438		2.5	mg/L		06-JUN-21	R5479133
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		06-JUN-21	R5479133
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		06-JUN-21	R5479133
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Uranium (U)-Dissolved	0.000593		0.000050	mg/L		06-JUN-21	R5479133
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		06-JUN-21	R5479133
Zinc (Zn)-Dissolved	0.0200		0.0050	mg/L		06-JUN-21	R5479133
Zirconium (Zr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Fluoride in Water by IC							
Fluoride (F)	0.40	DLDS	0.10	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	98.2			%		08-JUN-21	
TDS (Calculated)	2560			mg/L		08-JUN-21	
Hardness (as CaCO3)	127			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.26	DLDS	0.10	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.26		0.11	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	1300	DLDS	1.5	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	8.37		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	3190		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	745		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	7.9		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	624		2.0	mg/L		03-JUN-21	R5477732
L2595874-3 MW29B							
Sampled By: CLIENT on 02-JUN-21 @ 16:15							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-3 MW29B							
Sampled By: CLIENT on 02-JUN-21 @ 16:15							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	95.8		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	102.2		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	111.8		70-130	%	17-JUN-21	17-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	101.0		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	0.512		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	49		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	14.5		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	<0.0010		0.0010	mg/L		10-JUN-21	R5486958
Total Kjeldahl Nitrogen	1.01		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-3 MW29B							
Sampled By: CLIENT on 02-JUN-21 @ 16:15							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	118.9		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	79.6		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	100.2		70-130	%	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	95.8		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	102.2		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	111.8		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	8.4	DLDS	5.0	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					05-JUN-21	R5478934
Aluminum (Al)-Dissolved	0.011		0.010	mg/L		06-JUN-21	R5479133
Antimony (Sb)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Arsenic (As)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Barium (Ba)-Dissolved	0.0116		0.0010	mg/L		06-JUN-21	R5479133
Beryllium (Be)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Bismuth (Bi)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Boron (B)-Dissolved	0.22		0.10	mg/L		06-JUN-21	R5479133

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-3 MW29B							
Sampled By: CLIENT on 02-JUN-21 @ 16:15							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.000050	DLDS	0.000050	mg/L		06-JUN-21	R5479133
Cesium (Cs)-Dissolved	<0.00010	DLDS	0.00010	mg/L		06-JUN-21	R5479133
Chromium (Cr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Cobalt (Co)-Dissolved	0.0026		0.0010	mg/L		06-JUN-21	R5479133
Copper (Cu)-Dissolved	<0.0020	DLDS	0.0020	mg/L		06-JUN-21	R5479133
Iron (Fe)-Dissolved	<0.10	DLDS	0.10	mg/L		06-JUN-21	R5479133
Lead (Pb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Lithium (Li)-Dissolved	0.696		0.010	mg/L		06-JUN-21	R5479133
Manganese (Mn)-Dissolved	0.689		0.0010	mg/L		06-JUN-21	R5479133
Molybdenum (Mo)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Nickel (Ni)-Dissolved	0.0077		0.0050	mg/L		06-JUN-21	R5479133
Phosphorus (P)-Dissolved	<0.50	DLDS	0.50	mg/L		06-JUN-21	R5479133
Rubidium (Rb)-Dissolved	0.0163		0.0020	mg/L		06-JUN-21	R5479133
Selenium (Se)-Dissolved	<0.00050	DLDS	0.00050	mg/L		06-JUN-21	R5479133
Silicon (Si)-Dissolved	5.43		0.50	mg/L		06-JUN-21	R5479133
Silver (Ag)-Dissolved	<0.00010	DLDS	0.00010	mg/L		06-JUN-21	R5479133
Strontium (Sr)-Dissolved	7.84		0.0020	mg/L		06-JUN-21	R5479133
Sulfur (S)-Dissolved	1950		5.0	mg/L		06-JUN-21	R5479133
Tellurium (Te)-Dissolved	<0.0020	DLDS	0.0020	mg/L		06-JUN-21	R5479133
Thallium (Tl)-Dissolved	<0.00010	DLDS	0.00010	mg/L		06-JUN-21	R5479133
Thorium (Th)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Tin (Sn)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Titanium (Ti)-Dissolved	<0.0030	DLDS	0.0030	mg/L		06-JUN-21	R5479133
Tungsten (W)-Dissolved	<0.0010	DLDS	0.0010	mg/L		06-JUN-21	R5479133
Uranium (U)-Dissolved	0.00634		0.00010	mg/L		06-JUN-21	R5479133
Vanadium (V)-Dissolved	<0.0050	DLDS	0.0050	mg/L		06-JUN-21	R5479133
Zinc (Zn)-Dissolved	0.018		0.010	mg/L		06-JUN-21	R5479133
Zirconium (Zr)-Dissolved	<0.0020	DLDS	0.0020	mg/L		06-JUN-21	R5479133
Fluoride in Water by IC							
Fluoride (F)	0.31	DLDS	0.20	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	95.9			%		08-JUN-21	
TDS (Calculated)	8460			mg/L		08-JUN-21	
Hardness (as CaCO3)	2230			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.54	DLDS	0.20	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.54		0.22	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	5660	DLDS	3.0	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	7.86		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	7630		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	575		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	471		2.0	mg/L		03-JUN-21	R5477732

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-4 MW30A							
Sampled By: CLIENT on 02-JUN-21 @ 16:32							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	116.8		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	91.7		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	101.7		70-130	%	17-JUN-21	17-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	89.4		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	0.411		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	28		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	8.3		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	<0.0010		0.0010	mg/L		10-JUN-21	R5486958
Total Kjeldahl Nitrogen	0.53		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-4 MW30A							
Sampled By: CLIENT on 02-JUN-21 @ 16:32							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	106.5		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	88.3		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	94.0		70-130	%	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	116.8		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	91.7		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	101.7		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	0.71		0.50	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					05-JUN-21	R5478934
Aluminum (Al)-Dissolved	0.0050		0.0010	mg/L		05-JUN-21	R5479133
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Arsenic (As)-Dissolved	0.00080		0.00010	mg/L		05-JUN-21	R5479133
Barium (Ba)-Dissolved	0.0133		0.00010	mg/L		05-JUN-21	R5479133
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		05-JUN-21	R5479133
Boron (B)-Dissolved	0.236		0.010	mg/L		05-JUN-21	R5479133

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-4 MW30A							
Sampled By: CLIENT on 02-JUN-21 @ 16:32							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	0.0000089		0.0000050	mg/L		05-JUN-21	R5479133
Cesium (Cs)-Dissolved	0.000018		0.000010	mg/L		05-JUN-21	R5479133
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Cobalt (Co)-Dissolved	0.00018		0.00010	mg/L		05-JUN-21	R5479133
Copper (Cu)-Dissolved	0.00166		0.00020	mg/L		05-JUN-21	R5479133
Iron (Fe)-Dissolved	0.061		0.010	mg/L		05-JUN-21	R5479133
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		05-JUN-21	R5479133
Lithium (Li)-Dissolved	0.138		0.0010	mg/L		05-JUN-21	R5479133
Manganese (Mn)-Dissolved	0.0184		0.00010	mg/L		05-JUN-21	R5479133
Molybdenum (Mo)-Dissolved	0.000725		0.000050	mg/L		05-JUN-21	R5479133
Nickel (Ni)-Dissolved	0.00066		0.00050	mg/L		05-JUN-21	R5479133
Phosphorus (P)-Dissolved	0.098		0.050	mg/L		05-JUN-21	R5479133
Rubidium (Rb)-Dissolved	0.00329		0.00020	mg/L		05-JUN-21	R5479133
Selenium (Se)-Dissolved	0.000120		0.000050	mg/L		05-JUN-21	R5479133
Silicon (Si)-Dissolved	3.93		0.050	mg/L		05-JUN-21	R5479133
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		05-JUN-21	R5479133
Strontium (Sr)-Dissolved	0.123		0.00020	mg/L		05-JUN-21	R5479133
Sulfur (S)-Dissolved	138		0.50	mg/L		05-JUN-21	R5479133
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		05-JUN-21	R5479133
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		05-JUN-21	R5479133
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		05-JUN-21	R5479133
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Uranium (U)-Dissolved	0.000106		0.000010	mg/L		05-JUN-21	R5479133
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		05-JUN-21	R5479133
Zinc (Zn)-Dissolved	0.0196		0.0010	mg/L		05-JUN-21	R5479133
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L		05-JUN-21	R5479133
Fluoride in Water by IC							
Fluoride (F)	0.570		0.020	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	109			%		08-JUN-21	
TDS (Calculated)	1280			mg/L		08-JUN-21	
Hardness (as CaCO3)	24.2			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.131		0.020	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.143		0.022	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	0.012		0.010	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	380		0.30	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	8.54		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	1750		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	744		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	15.7		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	636		2.0	mg/L		03-JUN-21	R5477732

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-5 MW30B							
Sampled By: CLIENT on 02-JUN-21 @ 16:39							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	100.6		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	87.1		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	119.6		70-130	%	17-JUN-21	17-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	93.3		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	24		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	8.4		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	0.0010		0.0010	mg/L		10-JUN-21	R5486958
Total Kjeldahl Nitrogen	0.41		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-5 MW30B							
Sampled By: CLIENT on 02-JUN-21 @ 16:39							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	98.3		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	82.9		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	108.3		70-130	%	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	100.6		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	87.1		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	119.6		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<2.5	DLDS	2.5	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					05-JUN-21	R5478934
Aluminum (Al)-Dissolved	0.0032		0.0010	mg/L		05-JUN-21	R5479133
Antimony (Sb)-Dissolved	0.00011		0.00010	mg/L		05-JUN-21	R5479133
Arsenic (As)-Dissolved	0.00075		0.00010	mg/L		05-JUN-21	R5479133
Barium (Ba)-Dissolved	0.0209		0.00010	mg/L		05-JUN-21	R5479133
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		05-JUN-21	R5479133
Boron (B)-Dissolved	0.078		0.010	mg/L		05-JUN-21	R5479133

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-5 MW30B							
Sampled By: CLIENT on 02-JUN-21 @ 16:39							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	0.0000054		0.0000050	mg/L		05-JUN-21	R5479133
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L		05-JUN-21	R5479133
Chromium (Cr)-Dissolved	0.00014		0.00010	mg/L		05-JUN-21	R5479133
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Copper (Cu)-Dissolved	0.00166		0.00020	mg/L		05-JUN-21	R5479133
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		05-JUN-21	R5479133
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		05-JUN-21	R5479133
Lithium (Li)-Dissolved	0.226		0.0010	mg/L		05-JUN-21	R5479133
Manganese (Mn)-Dissolved	0.00015		0.00010	mg/L		05-JUN-21	R5479133
Molybdenum (Mo)-Dissolved	0.000643		0.000050	mg/L		05-JUN-21	R5479133
Nickel (Ni)-Dissolved	0.00078		0.00050	mg/L		05-JUN-21	R5479133
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L		05-JUN-21	R5479133
Rubidium (Rb)-Dissolved	0.00303		0.00020	mg/L		05-JUN-21	R5479133
Selenium (Se)-Dissolved	0.00107		0.000050	mg/L		05-JUN-21	R5479133
Silicon (Si)-Dissolved	5.11		0.050	mg/L		05-JUN-21	R5479133
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		05-JUN-21	R5479133
Strontium (Sr)-Dissolved	0.306		0.00020	mg/L		05-JUN-21	R5479133
Sulfur (S)-Dissolved	274		0.50	mg/L		05-JUN-21	R5479133
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		05-JUN-21	R5479133
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		05-JUN-21	R5479133
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Tin (Sn)-Dissolved	0.00011		0.00010	mg/L		05-JUN-21	R5479133
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		05-JUN-21	R5479133
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Uranium (U)-Dissolved	0.00428		0.000010	mg/L		05-JUN-21	R5479133
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		05-JUN-21	R5479133
Zinc (Zn)-Dissolved	0.0195		0.0010	mg/L		05-JUN-21	R5479133
Zirconium (Zr)-Dissolved	0.00022		0.00020	mg/L		05-JUN-21	R5479133
Fluoride in Water by IC							
Fluoride (F)	0.76	DLDS	0.10	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	103			%		08-JUN-21	
TDS (Calculated)	1730			mg/L		08-JUN-21	
Hardness (as CaCO3)	89.0			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.71	DLDS	0.10	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.71		0.11	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	747	DLDS	1.5	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	8.38		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	2230		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	692		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	7.2		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	579		2.0	mg/L		03-JUN-21	R5477732

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-6 MW27A							
Sampled By: CLIENT on 02-JUN-21 @ 15:08							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	114.5		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	106.4		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	83.8		70-130	%	17-JUN-21	17-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	96.9		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	0.796		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	34		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	11.1		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	0.0059		0.0010	mg/L		10-JUN-21	R5486958
Total Kjeldahl Nitrogen	0.81		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-6 MW27A							
Sampled By: CLIENT on 02-JUN-21 @ 15:08							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	99.9		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	74.4		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	108.3		70-130	%	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	114.5		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	106.4		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	83.8		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	4.6	DLDS	2.5	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					05-JUN-21	R5478934
Aluminum (Al)-Dissolved	0.0211		0.0010	mg/L		05-JUN-21	R5479133
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Arsenic (As)-Dissolved	0.00277		0.00010	mg/L		05-JUN-21	R5479133
Barium (Ba)-Dissolved	0.0150		0.00010	mg/L		05-JUN-21	R5479133
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		05-JUN-21	R5479133
Boron (B)-Dissolved	0.451		0.010	mg/L		05-JUN-21	R5479133

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-6 MW27A							
Sampled By: CLIENT on 02-JUN-21 @ 15:08							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		05-JUN-21	R5479133
Cesium (Cs)-Dissolved	0.000025		0.000010	mg/L		05-JUN-21	R5479133
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Cobalt (Co)-Dissolved	0.00012		0.00010	mg/L		05-JUN-21	R5479133
Copper (Cu)-Dissolved	0.00104		0.00020	mg/L		05-JUN-21	R5479133
Iron (Fe)-Dissolved	0.014		0.010	mg/L		05-JUN-21	R5479133
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		05-JUN-21	R5479133
Lithium (Li)-Dissolved	0.109		0.0010	mg/L		05-JUN-21	R5479133
Manganese (Mn)-Dissolved	0.0120		0.00010	mg/L		05-JUN-21	R5479133
Molybdenum (Mo)-Dissolved	0.000967		0.000050	mg/L		05-JUN-21	R5479133
Nickel (Ni)-Dissolved	0.00056		0.00050	mg/L		05-JUN-21	R5479133
Phosphorus (P)-Dissolved	0.198		0.050	mg/L		05-JUN-21	R5479133
Rubidium (Rb)-Dissolved	0.00407		0.00020	mg/L		05-JUN-21	R5479133
Selenium (Se)-Dissolved	0.000076		0.000050	mg/L		05-JUN-21	R5479133
Silicon (Si)-Dissolved	4.25		0.050	mg/L		05-JUN-21	R5479133
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		05-JUN-21	R5479133
Strontium (Sr)-Dissolved	0.168		0.00020	mg/L		05-JUN-21	R5479133
Sulfur (S)-Dissolved	271		0.50	mg/L		05-JUN-21	R5479133
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		05-JUN-21	R5479133
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		05-JUN-21	R5479133
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L		05-JUN-21	R5479133
Titanium (Ti)-Dissolved	0.00031		0.00030	mg/L		05-JUN-21	R5479133
Tungsten (W)-Dissolved	0.00015		0.00010	mg/L		05-JUN-21	R5479133
Uranium (U)-Dissolved	0.000444		0.000010	mg/L		05-JUN-21	R5479133
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		05-JUN-21	R5479133
Zinc (Zn)-Dissolved	0.0191		0.0010	mg/L		05-JUN-21	R5479133
Zirconium (Zr)-Dissolved	0.00051		0.00020	mg/L		05-JUN-21	R5479133
Fluoride in Water by IC							
Fluoride (F)	0.84	DLDS	0.10	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	103			%		08-JUN-21	
TDS (Calculated)	1980			mg/L		08-JUN-21	
Hardness (as CaCO3)	21.1			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.32	DLDS	0.10	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.32		0.11	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	753	DLDS	1.5	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	8.62		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	2560		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	908		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	26.0		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	788		2.0	mg/L		03-JUN-21	R5477732

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-7 MW27B							
Sampled By: CLIENT on 02-JUN-21 @ 15:17							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	116.3		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	101.0		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	88.4		70-130	%	17-JUN-21	17-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	94.0		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	0.402		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	35		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	12.6		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	0.0054		0.0010	mg/L		10-JUN-21	R5486958
Total Kjeldahl Nitrogen	0.81		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-7 MW27B							
Sampled By: CLIENT on 02-JUN-21 @ 15:17							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	100.5		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	80.0		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	88.4		70-130	%	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	116.3		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	101.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	88.4		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	122	DLDS	5.0	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					06-JUN-21	R5479312
Aluminum (Al)-Dissolved	<0.010	DLDS	0.010	mg/L		08-JUN-21	R5480184
Antimony (Sb)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Arsenic (As)-Dissolved	0.0017		0.0010	mg/L		08-JUN-21	R5480184
Barium (Ba)-Dissolved	0.0091		0.0010	mg/L		08-JUN-21	R5480184
Beryllium (Be)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Bismuth (Bi)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Boron (B)-Dissolved	0.39		0.10	mg/L		08-JUN-21	R5480184

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-7 MW27B							
Sampled By: CLIENT on 02-JUN-21 @ 15:17							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.000050	DLDS	0.000050	mg/L		08-JUN-21	R5480184
Cesium (Cs)-Dissolved	<0.00010	DLDS	0.00010	mg/L		08-JUN-21	R5480184
Chromium (Cr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Cobalt (Co)-Dissolved	0.0012		0.0010	mg/L		08-JUN-21	R5480184
Copper (Cu)-Dissolved	<0.0020	DLDS	0.0020	mg/L		08-JUN-21	R5480184
Iron (Fe)-Dissolved	<0.10	DLDS	0.10	mg/L		08-JUN-21	R5480184
Lead (Pb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Lithium (Li)-Dissolved	0.545		0.010	mg/L		08-JUN-21	R5480184
Manganese (Mn)-Dissolved	0.0475		0.0010	mg/L		08-JUN-21	R5480184
Molybdenum (Mo)-Dissolved	0.00144		0.00050	mg/L		08-JUN-21	R5480184
Nickel (Ni)-Dissolved	<0.0050	DLDS	0.0050	mg/L		08-JUN-21	R5480184
Phosphorus (P)-Dissolved	<0.50	DLDS	0.50	mg/L		08-JUN-21	R5480184
Rubidium (Rb)-Dissolved	0.0091		0.0020	mg/L		08-JUN-21	R5480184
Selenium (Se)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Silicon (Si)-Dissolved	4.58		0.50	mg/L		08-JUN-21	R5480184
Silver (Ag)-Dissolved	<0.00010	DLDS	0.00010	mg/L		08-JUN-21	R5480184
Strontium (Sr)-Dissolved	4.34		0.0020	mg/L		08-JUN-21	R5480184
Sulfur (S)-Dissolved	2050		5.0	mg/L		08-JUN-21	R5480184
Tellurium (Te)-Dissolved	<0.0020	DLDS	0.0020	mg/L		08-JUN-21	R5480184
Thallium (Tl)-Dissolved	<0.00010	DLDS	0.00010	mg/L		08-JUN-21	R5480184
Thorium (Th)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Tin (Sn)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Titanium (Ti)-Dissolved	<0.0030	DLDS	0.0030	mg/L		08-JUN-21	R5480184
Tungsten (W)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Uranium (U)-Dissolved	0.00209		0.00010	mg/L		08-JUN-21	R5480184
Vanadium (V)-Dissolved	<0.0050	DLDS	0.0050	mg/L		08-JUN-21	R5480184
Zinc (Zn)-Dissolved	0.023		0.010	mg/L		08-JUN-21	R5480184
Zirconium (Zr)-Dissolved	0.0040		0.0020	mg/L		08-JUN-21	R5480184
Fluoride in Water by IC							
Fluoride (F)	0.62	DLDS	0.20	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	96.1			%		08-JUN-21	
TDS (Calculated)	10300			mg/L		08-JUN-21	
Hardness (as CaCO3)	845			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.99	DLDS	0.20	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.99		0.22	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	6010	DLDS	3.0	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	8.23		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	10400		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	1750		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	1430		2.0	mg/L		03-JUN-21	R5477732

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-8 MW28A							
Sampled By: CLIENT on 02-JUN-21 @ 15:40							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	108.1		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	100.7		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	97.5		70-130	%	17-JUN-21	17-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	96.3		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	1.24		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	28		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	10.7		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	0.0030		0.0010	mg/L		10-JUN-21	R5486958
Total Kjeldahl Nitrogen	1.31		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-8 MW28A							
Sampled By: CLIENT on 02-JUN-21 @ 15:40							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	96.0		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	77.7		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	101.9		70-130	%	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	108.1		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	100.7		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	97.5		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	3.7	DLDS	2.5	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					06-JUN-21	R5479312
Aluminum (Al)-Dissolved	0.0051		0.0020	mg/L		08-JUN-21	R5480184
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Arsenic (As)-Dissolved	0.00076		0.00020	mg/L		08-JUN-21	R5480184
Barium (Ba)-Dissolved	0.00868		0.00020	mg/L		08-JUN-21	R5480184
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		08-JUN-21	R5480184
Boron (B)-Dissolved	0.710		0.020	mg/L		08-JUN-21	R5480184

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-8 MW28A							
Sampled By: CLIENT on 02-JUN-21 @ 15:40							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.000010	DLDS	0.000010	mg/L		08-JUN-21	R5480184
Cesium (Cs)-Dissolved	0.000061		0.000020	mg/L		08-JUN-21	R5480184
Chromium (Cr)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Cobalt (Co)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Copper (Cu)-Dissolved	0.00051		0.00040	mg/L		08-JUN-21	R5480184
Iron (Fe)-Dissolved	<0.020	DLDS	0.020	mg/L		08-JUN-21	R5480184
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		08-JUN-21	R5480184
Lithium (Li)-Dissolved	0.151		0.0020	mg/L		08-JUN-21	R5480184
Manganese (Mn)-Dissolved	0.0231		0.00020	mg/L		08-JUN-21	R5480184
Molybdenum (Mo)-Dissolved	0.00175		0.00010	mg/L		08-JUN-21	R5480184
Nickel (Ni)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Phosphorus (P)-Dissolved	0.13		0.10	mg/L		08-JUN-21	R5480184
Rubidium (Rb)-Dissolved	0.00484		0.00040	mg/L		08-JUN-21	R5480184
Selenium (Se)-Dissolved	<0.00010	DLDS	0.00010	mg/L		08-JUN-21	R5480184
Silicon (Si)-Dissolved	4.03		0.10	mg/L		08-JUN-21	R5480184
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		08-JUN-21	R5480184
Strontium (Sr)-Dissolved	0.296		0.00040	mg/L		08-JUN-21	R5480184
Sulfur (S)-Dissolved	380		1.0	mg/L		08-JUN-21	R5480184
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		08-JUN-21	R5480184
Thallium (Tl)-Dissolved	<0.000020	DLDS	0.000020	mg/L		08-JUN-21	R5480184
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Tin (Sn)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Titanium (Ti)-Dissolved	<0.00060	DLDS	0.00060	mg/L		08-JUN-21	R5480184
Tungsten (W)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Uranium (U)-Dissolved	0.000388		0.000020	mg/L		08-JUN-21	R5480184
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Zinc (Zn)-Dissolved	0.0180		0.0020	mg/L		08-JUN-21	R5480184
Zirconium (Zr)-Dissolved	0.00044		0.00040	mg/L		08-JUN-21	R5480184
Fluoride in Water by IC							
Fluoride (F)	0.67	DLDS	0.10	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	98.7			%		08-JUN-21	
TDS (Calculated)	2340			mg/L		08-JUN-21	
Hardness (as CaCO3)	37.0			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.10	DLDS	0.10	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.11		0.11	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	1090	DLDS	1.5	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	8.57		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	2980		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	807		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	20.3		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	695		2.0	mg/L		03-JUN-21	R5477732

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-9 MW35B							
Sampled By: CLIENT on 02-JUN-21 @ 14:25							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	17-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	98.2		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	96.8		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	122.3		70-130	%	17-JUN-21	17-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	91.0		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	1.48		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	28		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	8.3		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	0.0037		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	1.47		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-9 MW35B							
Sampled By: CLIENT on 02-JUN-21 @ 14:25							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	103.9		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	83.9		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	108.9		70-130	%	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	98.2		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	96.8		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	122.3		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	5.7	DLDS	5.0	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					06-JUN-21	R5479312
Aluminum (Al)-Dissolved	0.0063		0.0050	mg/L		08-JUN-21	R5480184
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Arsenic (As)-Dissolved	0.00080		0.00050	mg/L		08-JUN-21	R5480184
Barium (Ba)-Dissolved	0.0232		0.00050	mg/L		08-JUN-21	R5480184
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		08-JUN-21	R5480184
Boron (B)-Dissolved	0.709		0.050	mg/L		08-JUN-21	R5480184

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-9 MW35B							
Sampled By: CLIENT on 02-JUN-21 @ 14:25							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		08-JUN-21	R5480184
Cesium (Cs)-Dissolved	0.000094		0.000050	mg/L		08-JUN-21	R5480184
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Cobalt (Co)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Copper (Cu)-Dissolved	0.0018		0.0010	mg/L		08-JUN-21	R5480184
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		08-JUN-21	R5480184
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		08-JUN-21	R5480184
Lithium (Li)-Dissolved	0.560		0.0050	mg/L		08-JUN-21	R5480184
Manganese (Mn)-Dissolved	0.0641		0.00050	mg/L		08-JUN-21	R5480184
Molybdenum (Mo)-Dissolved	0.00211		0.00025	mg/L		08-JUN-21	R5480184
Nickel (Ni)-Dissolved	<0.0025	DLDS	0.0025	mg/L		08-JUN-21	R5480184
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		08-JUN-21	R5480184
Rubidium (Rb)-Dissolved	0.0120		0.0010	mg/L		08-JUN-21	R5480184
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		08-JUN-21	R5480184
Silicon (Si)-Dissolved	3.52		0.25	mg/L		08-JUN-21	R5480184
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		08-JUN-21	R5480184
Strontium (Sr)-Dissolved	2.40		0.0010	mg/L		08-JUN-21	R5480184
Sulfur (S)-Dissolved	1350		2.5	mg/L		08-JUN-21	R5480184
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		08-JUN-21	R5480184
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		08-JUN-21	R5480184
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		08-JUN-21	R5480184
Uranium (U)-Dissolved	0.000780		0.000050	mg/L		08-JUN-21	R5480184
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		08-JUN-21	R5480184
Zinc (Zn)-Dissolved	0.0196		0.0050	mg/L		08-JUN-21	R5480184
Zirconium (Zr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Fluoride in Water by IC							
Fluoride (F)	0.21	DLDS	0.20	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	95.0			%		08-JUN-21	
TDS (Calculated)	6520			mg/L		08-JUN-21	
Hardness (as CaCO3)	327			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	1.06	DLDS	0.20	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	1.06		0.22	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	3970	DLDS	3.0	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	8.20		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	7010		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	886		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	726		2.0	mg/L		03-JUN-21	R5477732

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-10 DUP-1							
Sampled By: CLIENT on 02-JUN-21							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	18-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	18-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	17-JUN-21	18-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	18-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	18-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	17-JUN-21	18-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	17-JUN-21	18-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	17-JUN-21	18-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	89.0		70-130	%	17-JUN-21	18-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	78.5		70-130	%	17-JUN-21	18-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	100.4		70-130	%	17-JUN-21	18-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUN-21	05-JUN-21	R5479344
Surrogate: 2-Bromobenzotrifluoride	90.1		60-140	%	05-JUN-21	05-JUN-21	R5479344
Miscellaneous Parameters							
Ammonia, Total (as N)	1.20		0.050	mg/L		03-JUN-21	R5478050
Chemical Oxygen Demand	25		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	8.2		1.0	mg/L		19-JUN-21	R5494179
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	1.37		0.20	mg/L	04-JUN-21	04-JUN-21	R5479222
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					05-JUN-21	R5479112
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		05-JUN-21	R5479163
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-10 DUP-1							
Sampled By: CLIENT on 02-JUN-21							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	17-JUN-21	17-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	17-JUN-21	17-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	89.0		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	78.5		70-130	%	17-JUN-21	17-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	100.4		70-130	%	17-JUN-21	17-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	107.3		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	101.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	89.3		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	2.8	DLDS	2.5	mg/L		03-JUN-21	R5477944
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					06-JUN-21	R5479312
Aluminum (Al)-Dissolved	0.0076		0.0020	mg/L		08-JUN-21	R5480184
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Arsenic (As)-Dissolved	0.00053		0.00020	mg/L		08-JUN-21	R5480184
Barium (Ba)-Dissolved	0.0122		0.00020	mg/L		08-JUN-21	R5480184
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		08-JUN-21	R5480184
Boron (B)-Dissolved	0.544		0.020	mg/L		08-JUN-21	R5480184

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2595874-10 DUP-1							
Sampled By: CLIENT on 02-JUN-21							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.000010	DLDS	0.000010	mg/L		08-JUN-21	R5480184
Cesium (Cs)-Dissolved	0.000037		0.000020	mg/L		08-JUN-21	R5480184
Chromium (Cr)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Cobalt (Co)-Dissolved	0.00025		0.00020	mg/L		08-JUN-21	R5480184
Copper (Cu)-Dissolved	0.00071		0.00040	mg/L		08-JUN-21	R5480184
Iron (Fe)-Dissolved	<0.020	DLDS	0.020	mg/L		08-JUN-21	R5480184
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		08-JUN-21	R5480184
Lithium (Li)-Dissolved	0.203		0.0020	mg/L		08-JUN-21	R5480184
Manganese (Mn)-Dissolved	0.0482		0.00020	mg/L		08-JUN-21	R5480184
Molybdenum (Mo)-Dissolved	0.00114		0.00010	mg/L		08-JUN-21	R5480184
Nickel (Ni)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Phosphorus (P)-Dissolved	<0.10	DLDS	0.10	mg/L		08-JUN-21	R5480184
Rubidium (Rb)-Dissolved	0.00604		0.00040	mg/L		08-JUN-21	R5480184
Selenium (Se)-Dissolved	<0.00010	DLDS	0.00010	mg/L		08-JUN-21	R5480184
Silicon (Si)-Dissolved	3.34		0.10	mg/L		08-JUN-21	R5480184
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		08-JUN-21	R5480184
Strontium (Sr)-Dissolved	0.629		0.00040	mg/L		08-JUN-21	R5480184
Sulfur (S)-Dissolved	391		1.0	mg/L		08-JUN-21	R5480184
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		08-JUN-21	R5480184
Thallium (Tl)-Dissolved	<0.000020	DLDS	0.000020	mg/L		08-JUN-21	R5480184
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Tin (Sn)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Titanium (Ti)-Dissolved	<0.00060	DLDS	0.00060	mg/L		08-JUN-21	R5480184
Tungsten (W)-Dissolved	<0.00020	DLDS	0.00020	mg/L		08-JUN-21	R5480184
Uranium (U)-Dissolved	0.000516		0.000020	mg/L		08-JUN-21	R5480184
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		08-JUN-21	R5480184
Zinc (Zn)-Dissolved	0.0154		0.0020	mg/L		08-JUN-21	R5480184
Zirconium (Zr)-Dissolved	<0.00040	DLDS	0.00040	mg/L		08-JUN-21	R5480184
Fluoride in Water by IC							
Fluoride (F)	0.40	DLDS	0.10	mg/L		03-JUN-21	R5477944
Ion Balance Calculation							
Ion Balance	82.8	BL:INT		%		08-JUN-21	
TDS (Calculated)	2440			mg/L		08-JUN-21	
Hardness (as CaCO3)	108			mg/L		08-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.24	DLDS	0.10	mg/L		03-JUN-21	R5477944
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.24		0.11	mg/L		08-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		03-JUN-21	R5477944
Sulfate in Water by IC							
Sulfate (SO4)	1310	DLDS	1.5	mg/L		03-JUN-21	R5477944
pH, Conductivity and Total Alkalinity							
pH	8.40		0.10	pH		03-JUN-21	R5477732
Conductivity (EC)	3220		2.0	uS/cm		03-JUN-21	R5477732
Bicarbonate (HCO3)	741		5.0	mg/L		03-JUN-21	R5477732
Carbonate (CO3)	9.4		5.0	mg/L		03-JUN-21	R5477732
Hydroxide (OH)	<5.0		5.0	mg/L		03-JUN-21	R5477732
Alkalinity, Total (as CaCO3)	623		2.0	mg/L		03-JUN-21	R5477732

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
BL:INT	Balance Reviewed: Interference Or Non-Measured Component
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-ED	Water	BTEX, Styrene and F1 (C6-C10)	EPA 5021/8015&8260 GC-MS & FID
The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTEX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method.			
C-DIS-ORG-CL	Water	Dissolved Organic Carbon	APHA 5310 B-Instrumental
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
CL-IC-N-ED	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
COD-T-COL-ED	Water	Chemical Oxygen Demand	APHA 5220 D-Micro Colorimetry
This analysis is carried out using procedures adapted from APHA Method 5220 "Chemical Oxygen Demand (COD)". Chemical oxygen demand is determined using the closed reflux colourimetric method.			
F-IC-N-ED	Water	Fluoride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
F2-ED	Water	F2 (>C10-C16)	EPA 3510/CCME PHC CWS-GC-FID
HG-D-CVAA-ED	Water	Dissolved Mercury in Water by CVAAS	APHA 3030B/EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
IONBALANCE-ED	Water	Ion Balance Calculation	APHA 1030E
MET-D-CCMS-ED	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
MTBE-ADD-ED	Water	MTBE	EPA 5030/8021B-P&T GC-PID/FID
NH3-COL-ED	Water	Ammonia in Water by Colour	APHA 4500 NH3-NITROGEN (AMMONIA)
This analysis is carried out using procedures adapted from APHA Method 4500 NH3 "NITROGEN (AMMONIA)". Ammonia is determined using the automated phenate colourimetric method.			
NO2+NO3-CALC-ED	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-ED	Water	Nitrite in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
NO3-IC-N-ED	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
PH/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320
All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed). pH measurement is determined from the activity of the hydrogen ions using a hydrogen electrode and a reference electrode. Alkalinity measurement is based on the sample's capacity to neutralize acid. Auto-titration to pH 4.5 using 0.02N H2SO4 is performed. Conductivity measurement is based on the sample's capacity to convey an electric current, and is measured with a conductivity meter.			
PHENOLS-4AAP-ED	Water	Phenols (4AAP)	EPA 9066 AUTO-DISTILL-COLORIMETRIC
This automated method is based on the distillation of phenol and subsequent reaction of the distillate with an oxidizing agent (alkaline potassium ferricyanide), and 4-aminoantipyrine to form a red complex which is measured at 505 nm. The method will include ortho and meta-substituted phenols, and is collectively named 4AAP phenols.			
SO4-IC-N-ED	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
TKN-F-ED	Water	TKN (as N) by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.			
VOC-HS-8260-ED	Water	EPA 8260 Volatile Organics	SW 846 8260-GC-MS
The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

20-903128

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 1 of 18

Client: TETRA TECH CANADA INC.
14940 123 Ave NW North Bldg.
Edmonton AB T5V 1B4

Contact: Michele Crawford

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-ED		Water						
Batch	R5459439							
WG3555674-2	LCS							
Benzene			88.7		%		70-130	17-JUN-21
Toluene			94.5		%		70-130	17-JUN-21
EthylBenzene			96.5		%		70-130	17-JUN-21
m+p-Xylene			97.2		%		70-130	17-JUN-21
o-Xylene			106.4		%		70-130	17-JUN-21
WG3555674-3	LCS							
F1(C6-C10)			99.6		%		70-130	17-JUN-21
WG3555674-1	MB							
Benzene			<0.00050		mg/L		0.0005	17-JUN-21
Toluene			<0.00050		mg/L		0.0005	17-JUN-21
EthylBenzene			<0.00050		mg/L		0.0005	17-JUN-21
m+p-Xylene			<0.00050		mg/L		0.0005	17-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	17-JUN-21
F1(C6-C10)			<0.10		mg/L		0.1	17-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			119.3		%		70-130	17-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			120.6		%		70-130	17-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			104.0		%		70-130	17-JUN-21
C-DIS-ORG-CL		Water						
Batch	R5494179							
WG3559301-7	DUP	L2595874-10						
Dissolved Organic Carbon		8.2	8.3		mg/L	1.6	20	19-JUN-21
WG3559301-6	LCS							
Dissolved Organic Carbon			94.4		%		80-120	19-JUN-21
WG3559301-5	MB							
Dissolved Organic Carbon			<1.0		mg/L		1	19-JUN-21
CL-IC-N-ED		Water						
Batch	R5477944							
WG3546535-9	DUP	L2595874-4						
Chloride (Cl)		0.71	0.71		mg/L	0.3	20	03-JUN-21
WG3546535-15	LCS							
Chloride (Cl)			101.4		%		90-110	02-JUN-21
WG3546535-17	LCS							
Chloride (Cl)			102.0		%		90-110	03-JUN-21
WG3546535-19	LCS							
Chloride (Cl)			101.9		%		90-110	03-JUN-21
WG3546535-2	LCS							



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 2 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-ED								
	Water							
Batch	R5477944							
WG3546535-2	LCS							
Chloride (Cl)			101.7		%		90-110	03-JUN-21
WG3546535-21	LCS							
Chloride (Cl)			102.4		%		90-110	03-JUN-21
WG3546535-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	03-JUN-21
WG3546535-16	MB							
Chloride (Cl)			<0.50		mg/L		0.5	02-JUN-21
WG3546535-18	MB							
Chloride (Cl)			<0.50		mg/L		0.5	03-JUN-21
WG3546535-20	MB							
Chloride (Cl)			<0.50		mg/L		0.5	03-JUN-21
WG3546535-22	MB							
Chloride (Cl)			<0.50		mg/L		0.5	03-JUN-21
WG3546535-10	MS	L2595874-4						
Chloride (Cl)			102.1		%		75-125	03-JUN-21
COD-T-COL-ED								
	Water							
Batch	R5517744							
WG3573762-2	LCS							
Chemical Oxygen Demand			101.94		mg/L			12-JUL-21
WG3573762-1	MB							
Chemical Oxygen Demand			<10		mg/L		10	12-JUL-21
F-IC-N-ED								
	Water							
Batch	R5477944							
WG3546535-9	DUP	L2595874-4						
Fluoride (F)		0.570	0.569		mg/L	0.2	20	03-JUN-21
WG3546535-15	LCS							
Fluoride (F)			105.2		%		90-110	02-JUN-21
WG3546535-17	LCS							
Fluoride (F)			100.9		%		90-110	03-JUN-21
WG3546535-19	LCS							
Fluoride (F)			100.5		%		90-110	03-JUN-21
WG3546535-2	LCS							
Fluoride (F)			105.2		%		90-110	03-JUN-21
WG3546535-21	LCS							
Fluoride (F)			101.2		%		90-110	03-JUN-21
WG3546535-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	03-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 3 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F-IC-N-ED								
	Water							
Batch	R5477944							
WG3546535-16	MB							
Fluoride (F)			<0.020		mg/L		0.02	02-JUN-21
WG3546535-18	MB							
Fluoride (F)			<0.020		mg/L		0.02	03-JUN-21
WG3546535-20	MB							
Fluoride (F)			<0.020		mg/L		0.02	03-JUN-21
WG3546535-22	MB							
Fluoride (F)			<0.020		mg/L		0.02	03-JUN-21
WG3546535-10	MS	L2595874-4						
Fluoride (F)			99.1		%		75-125	03-JUN-21
F2-ED								
	Water							
Batch	R5479344							
WG3547216-2	LCS	DIESEL/MOTOR OIL						
F2 (C10-C16)			81.1		%		70-130	05-JUN-21
WG3547216-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	05-JUN-21
Surrogate: 2-Bromobenzotrifluoride			96.2		%		60-140	05-JUN-21
HG-D-CVAA-ED								
	Water							
Batch	R5479163							
WG3548754-6	LCS							
Mercury (Hg)-Dissolved			98.1		%		80-120	05-JUN-21
WG3548754-5	MB							
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	05-JUN-21
MET-D-CCMS-ED								
	Water							
Batch	R5479133							
WG3548559-2	LCS							
Aluminum (Al)-Dissolved			102.6		%		80-120	05-JUN-21
Antimony (Sb)-Dissolved			105.9		%		80-120	05-JUN-21
Arsenic (As)-Dissolved			101.3		%		80-120	05-JUN-21
Barium (Ba)-Dissolved			99.9		%		80-120	05-JUN-21
Beryllium (Be)-Dissolved			103.1		%		80-120	05-JUN-21
Bismuth (Bi)-Dissolved			105.3		%		80-120	05-JUN-21
Boron (B)-Dissolved			93.6		%		80-120	05-JUN-21
Cadmium (Cd)-Dissolved			97.3		%		80-120	05-JUN-21
Cesium (Cs)-Dissolved			101.8		%		80-120	05-JUN-21
Chromium (Cr)-Dissolved			98.5		%		80-120	05-JUN-21
Cobalt (Co)-Dissolved			99.8		%		80-120	05-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 4 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5479133							
WG3548559-2	LCS							
Copper (Cu)-Dissolved			98.6		%		80-120	05-JUN-21
Iron (Fe)-Dissolved			102.6		%		80-120	05-JUN-21
Lead (Pb)-Dissolved			105.2		%		80-120	05-JUN-21
Lithium (Li)-Dissolved			97.4		%		80-120	05-JUN-21
Manganese (Mn)-Dissolved			100.9		%		80-120	05-JUN-21
Molybdenum (Mo)-Dissolved			109.3		%		80-120	05-JUN-21
Nickel (Ni)-Dissolved			99.1		%		80-120	05-JUN-21
Phosphorus (P)-Dissolved			108.5		%		80-120	05-JUN-21
Rubidium (Rb)-Dissolved			103.0		%		80-120	05-JUN-21
Selenium (Se)-Dissolved			100.8		%		80-120	05-JUN-21
Silicon (Si)-Dissolved			107.0		%		80-120	05-JUN-21
Silver (Ag)-Dissolved			103.6		%		80-120	05-JUN-21
Strontium (Sr)-Dissolved			106.4		%		80-120	05-JUN-21
Sulfur (S)-Dissolved			97.4		%		80-120	05-JUN-21
Tellurium (Te)-Dissolved			103.5		%		80-120	05-JUN-21
Thallium (Tl)-Dissolved			106.5		%		80-120	05-JUN-21
Thorium (Th)-Dissolved			111.0		%		80-120	05-JUN-21
Tin (Sn)-Dissolved			97.6		%		80-120	05-JUN-21
Titanium (Ti)-Dissolved			101.3		%		80-120	05-JUN-21
Tungsten (W)-Dissolved			109.0		%		80-120	05-JUN-21
Uranium (U)-Dissolved			103.6		%		80-120	05-JUN-21
Vanadium (V)-Dissolved			101.0		%		80-120	05-JUN-21
Zinc (Zn)-Dissolved			96.3		%		80-120	05-JUN-21
Zirconium (Zr)-Dissolved			109.0		%		80-120	05-JUN-21
WG3548559-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	05-JUN-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	05-JUN-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	05-JUN-21
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	05-JUN-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	05-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 5 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5479133							
WG3548559-1	MB							
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	05-JUN-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	05-JUN-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	05-JUN-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	05-JUN-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	05-JUN-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	05-JUN-21
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	05-JUN-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	05-JUN-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	05-JUN-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	05-JUN-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	05-JUN-21
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	05-JUN-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	05-JUN-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	05-JUN-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	05-JUN-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	05-JUN-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	05-JUN-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	05-JUN-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	05-JUN-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	05-JUN-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	05-JUN-21
Batch	R5479327							
WG3548960-2	LCS							
Aluminum (Al)-Dissolved			119.7		%		80-120	08-JUN-21
Arsenic (As)-Dissolved			117.2		%		80-120	08-JUN-21
Barium (Ba)-Dissolved			118.3		%		80-120	08-JUN-21
Beryllium (Be)-Dissolved			113.4		%		80-120	08-JUN-21
Boron (B)-Dissolved			110.9		%		80-120	08-JUN-21
Cadmium (Cd)-Dissolved			118.2		%		80-120	08-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 6 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5479327							
WG3548960-2	LCS							
Cesium (Cs)-Dissolved			113.5		%		80-120	08-JUN-21
Chromium (Cr)-Dissolved			117.5		%		80-120	08-JUN-21
Cobalt (Co)-Dissolved			117.3		%		80-120	08-JUN-21
Copper (Cu)-Dissolved			116.9		%		80-120	08-JUN-21
Lithium (Li)-Dissolved			114.1		%		80-120	08-JUN-21
Manganese (Mn)-Dissolved			119.9		%		80-120	08-JUN-21
Nickel (Ni)-Dissolved			115.3		%		80-120	08-JUN-21
Phosphorus (P)-Dissolved			116.7		%		80-120	08-JUN-21
Selenium (Se)-Dissolved			116.5		%		80-120	08-JUN-21
Silicon (Si)-Dissolved			118.5		%		80-120	08-JUN-21
Silver (Ag)-Dissolved			118.2		%		80-120	08-JUN-21
Strontium (Sr)-Dissolved			113.6		%		80-120	08-JUN-21
Tellurium (Te)-Dissolved			118.1		%		80-120	08-JUN-21
Thallium (Tl)-Dissolved			118.4		%		80-120	08-JUN-21
Tin (Sn)-Dissolved			117.0		%		80-120	08-JUN-21
Titanium (Ti)-Dissolved			115.4		%		80-120	08-JUN-21
Vanadium (V)-Dissolved			119.4		%		80-120	08-JUN-21
Zinc (Zn)-Dissolved			107.5		%		80-120	08-JUN-21
Zirconium (Zr)-Dissolved			117.7		%		80-120	08-JUN-21
WG3548960-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	08-JUN-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	08-JUN-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	08-JUN-21
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	08-JUN-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	08-JUN-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	08-JUN-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	08-JUN-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	08-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 7 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED		Water						
Batch	R5479327							
WG3548960-1	MB							
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	08-JUN-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	08-JUN-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	08-JUN-21
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	08-JUN-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	08-JUN-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	08-JUN-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	08-JUN-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	08-JUN-21
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	08-JUN-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	08-JUN-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	08-JUN-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	08-JUN-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	08-JUN-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	08-JUN-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	08-JUN-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	08-JUN-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	08-JUN-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	08-JUN-21
MTBE-ADD-ED		Water						
Batch	R5459439							
WG3555674-2	LCS							
Methyl-t-butyl ether			109.0		%		70-130	13-JUL-21
WG3555674-1	MB							
Methyl-t-butyl ether			<0.00050		mg/L		0.0005	13-JUL-21
Surrogate: 1,4-Difluorobenzene			119.3		%		70-130	13-JUL-21
Surrogate: 4-Bromofluorobenzene			120.6		%		70-130	13-JUL-21
Surrogate: 3,4-Dichlorotoluene			104.0		%		70-130	13-JUL-21
NH3-COL-ED		Water						
Batch	R5478050							
WG3547372-10	LCS							
Ammonia, Total (as N)			103.7		%		85-115	03-JUN-21
WG3547372-2	LCS							



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 8 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-ED								
	Water							
Batch	R5478050							
WG3547372-2	LCS							
Ammonia, Total (as N)			101.4		%		85-115	03-JUN-21
WG3547372-6	LCS							
Ammonia, Total (as N)			94.7		%		85-115	03-JUN-21
WG3547372-1	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	03-JUN-21
WG3547372-5	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	03-JUN-21
WG3547372-9	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	03-JUN-21
NO2-IC-N-ED								
	Water							
Batch	R5477944							
WG3546535-9	DUP	L2595874-4						
Nitrite (as N)		0.012	0.014		mg/L	13	20	03-JUN-21
WG3546535-15	LCS							
Nitrite (as N)			99.9		%		90-110	02-JUN-21
WG3546535-17	LCS							
Nitrite (as N)			100.8		%		90-110	03-JUN-21
WG3546535-19	LCS							
Nitrite (as N)			100.6		%		90-110	03-JUN-21
WG3546535-2	LCS							
Nitrite (as N)			100.5		%		90-110	03-JUN-21
WG3546535-21	LCS							
Nitrite (as N)			100.8		%		90-110	03-JUN-21
WG3546535-1	MB							
Nitrite (as N)			<0.010		mg/L		0.01	03-JUN-21
WG3546535-16	MB							
Nitrite (as N)			<0.010		mg/L		0.01	02-JUN-21
WG3546535-18	MB							
Nitrite (as N)			<0.010		mg/L		0.01	03-JUN-21
WG3546535-20	MB							
Nitrite (as N)			<0.010		mg/L		0.01	03-JUN-21
WG3546535-22	MB							
Nitrite (as N)			<0.010		mg/L		0.01	03-JUN-21
WG3546535-10	MS	L2595874-4						
Nitrite (as N)			103.8		%		75-125	03-JUN-21
NO3-IC-N-ED								
	Water							



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 9 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-N-ED								
Water								
Batch	R5477944							
WG3546535-9	DUP	L2595874-4						
Nitrate (as N)		0.131	0.131		mg/L	0.2	20	03-JUN-21
WG3546535-15	LCS							
Nitrate (as N)			101.5		%		90-110	02-JUN-21
WG3546535-17	LCS							
Nitrate (as N)			101.2		%		90-110	03-JUN-21
WG3546535-19	LCS							
Nitrate (as N)			101.3		%		90-110	03-JUN-21
WG3546535-2	LCS							
Nitrate (as N)			101.0		%		90-110	03-JUN-21
WG3546535-21	LCS							
Nitrate (as N)			101.6		%		90-110	03-JUN-21
WG3546535-1	MB							
Nitrate (as N)			<0.020		mg/L		0.02	03-JUN-21
WG3546535-16	MB							
Nitrate (as N)			<0.020		mg/L		0.02	02-JUN-21
WG3546535-18	MB							
Nitrate (as N)			<0.020		mg/L		0.02	03-JUN-21
WG3546535-20	MB							
Nitrate (as N)			<0.020		mg/L		0.02	03-JUN-21
WG3546535-22	MB							
Nitrate (as N)			<0.020		mg/L		0.02	03-JUN-21
WG3546535-10	MS	L2595874-4						
Nitrate (as N)			100.8		%		75-125	03-JUN-21
PH/EC/ALK-ED								
Water								
Batch	R5477732							
WG3547100-20	DUP	L2595874-10						
pH		8.40	8.42	J	pH	0.02	0.3	03-JUN-21
Conductivity (EC)		3220	3210		uS/cm	0.3	10	03-JUN-21
Bicarbonate (HCO3)		741	748		mg/L	1.0	25	03-JUN-21
Carbonate (CO3)		9.4	10.3		mg/L	9.8	25	03-JUN-21
Hydroxide (OH)		<5.0	<5.0	RPD-NA	mg/L	N/A	25	03-JUN-21
Alkalinity, Total (as CaCO3)		623	630		mg/L	1.2	20	03-JUN-21
WG3547100-12	LCS	ED-PH6						
pH			6.04		pH		5.8-6.2	03-JUN-21
WG3547100-13	LCS	MID_1412						
Conductivity (EC)			98.4		%		90-110	03-JUN-21
WG3547100-14	LCS	PCTITRATE_LCS						



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 10 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH/EC/ALK-ED		Water						
Batch	R5477732							
WG3547100-14	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.1		%		85-115	03-JUN-21
WG3547100-17	LCS	ED-PH6						
pH			6.05		pH		5.8-6.2	03-JUN-21
WG3547100-18	LCS	MID_1412						
Conductivity (EC)			95.0		%		90-110	03-JUN-21
WG3547100-19	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			99.1		%		85-115	03-JUN-21
WG3547100-2	LCS	ED-PH6						
pH			6.05		pH		5.8-6.2	03-JUN-21
WG3547100-22	LCS	ED-PH6						
pH			6.04		pH		5.8-6.2	03-JUN-21
WG3547100-23	LCS	MID_1412						
Conductivity (EC)			96.2		%		90-110	03-JUN-21
WG3547100-24	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.1		%		85-115	03-JUN-21
WG3547100-3	LCS	MID_1412						
Conductivity (EC)			101.0		%		90-110	03-JUN-21
WG3547100-4	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.2		%		85-115	03-JUN-21
WG3547100-7	LCS	ED-PH6						
pH			6.03		pH		5.8-6.2	03-JUN-21
WG3547100-8	LCS	MID_1412						
Conductivity (EC)			92.8		%		90-110	03-JUN-21
WG3547100-9	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.5		%		85-115	03-JUN-21
WG3547100-1	MB							
Conductivity (EC)			<2.0		uS/cm		2	03-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	03-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	03-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	03-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	03-JUN-21
WG3547100-11	MB							
Conductivity (EC)			<2.0		uS/cm		2	03-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	03-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	03-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	03-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	03-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 11 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH/EC/ALK-ED		Water						
Batch	R5477732							
WG3547100-16 MB								
Conductivity (EC)			<2.0		uS/cm		2	03-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	03-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	03-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	03-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	03-JUN-21
WG3547100-21 MB								
Conductivity (EC)			<2.0		uS/cm		2	03-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	03-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	03-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	03-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	03-JUN-21
WG3547100-6 MB								
Conductivity (EC)			<2.0		uS/cm		2	03-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	03-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	03-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	03-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	03-JUN-21
PHENOLS-4AAP-ED		Water						
Batch	R5484206							
WG3552521-10 LCS								
Phenols (4AAP)			102.4		%		85-115	09-JUN-21
WG3552521-2 LCS								
Phenols (4AAP)			92.0		%		85-115	09-JUN-21
WG3552521-6 LCS								
Phenols (4AAP)			92.0		%		85-115	09-JUN-21
WG3552521-1 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	09-JUN-21
WG3552521-5 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	09-JUN-21
WG3552521-9 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	09-JUN-21
Batch	R5486958							
WG3553052-2 LCS								
Phenols (4AAP)			97.3		%		85-115	10-JUN-21
WG3553052-1 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	10-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 12 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-ED								
Water								
Batch	R5477944							
WG3546535-9	DUP	L2595874-4						
Sulfate (SO4)		380	380		mg/L	0.0	20	03-JUN-21
WG3546535-15	LCS							
Sulfate (SO4)			103.1		%		90-110	02-JUN-21
WG3546535-17	LCS							
Sulfate (SO4)			103.3		%		90-110	03-JUN-21
WG3546535-19	LCS							
Sulfate (SO4)			103.2		%		90-110	03-JUN-21
WG3546535-2	LCS							
Sulfate (SO4)			99.1		%		90-110	03-JUN-21
WG3546535-21	LCS							
Sulfate (SO4)			103.3		%		90-110	03-JUN-21
WG3546535-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	03-JUN-21
WG3546535-16	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	02-JUN-21
WG3546535-18	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	03-JUN-21
WG3546535-20	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	03-JUN-21
WG3546535-22	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	03-JUN-21
WG3546535-10	MS	L2595874-4						
Sulfate (SO4)			N/A	MS-B	%		-	03-JUN-21
TKN-F-ED								
Water								
Batch	R5479222							
WG3547854-6	LCS							
Total Kjeldahl Nitrogen			106		%		75-125	04-JUN-21
WG3547854-5	MB							
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	04-JUN-21
VOC-HS-8260-ED								
Water								
Batch	R5459439							
WG3555674-2	LCS							
Dichlorodifluoromethane			114.7		%		60-140	17-JUN-21
Chloromethane			86.1		%		60-140	17-JUN-21
Vinyl chloride			83.4		%		60-140	17-JUN-21
Bromomethane			87.3		%		60-140	17-JUN-21
Chloroethane			106.6		%		60-140	17-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 13 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555674-2	LCS							
Trichlorofluoromethane			108.4		%		60-140	17-JUN-21
1,1-Dichloroethene			128.9		%		70-130	17-JUN-21
Methylene chloride			124.2		%		70-130	17-JUN-21
trans-1,2-Dichloroethene			104.7		%		70-130	17-JUN-21
1,1-Dichloroethane			124.7		%		70-130	17-JUN-21
2,2-Dichloropropane			127.6		%		70-130	17-JUN-21
cis-1,2-Dichloroethene			91.5		%		70-130	17-JUN-21
Chloroform			120.4		%		70-130	17-JUN-21
1,1,1-Trichloroethane			116.6		%		70-130	17-JUN-21
Bromochloromethane			126.9		%		70-130	17-JUN-21
1,1-Dichloropropene			115.6		%		70-130	17-JUN-21
Carbon tetrachloride			123.6		%		70-130	17-JUN-21
Benzene			107.7		%		70-130	17-JUN-21
1,2-Dichloroethane			126.8		%		70-130	17-JUN-21
Trichloroethene			101.1		%		70-130	17-JUN-21
1,2-Dichloropropane			96.7		%		70-130	17-JUN-21
Dibromomethane			105.0		%		70-130	17-JUN-21
Bromodichloromethane			118.4		%		70-130	17-JUN-21
cis-1,3-Dichloropropene			122.2		%		70-130	17-JUN-21
Toluene			93.8		%		70-130	17-JUN-21
Tetrachloroethene			108.1		%		70-130	17-JUN-21
trans-1,3-Dichloropropene			94.6		%		70-130	17-JUN-21
1,3-Dichloropropane			111.6		%		70-130	17-JUN-21
1,1,2-Trichloroethane			125.4		%		70-130	17-JUN-21
1,2-Dibromoethane			113.8		%		70-130	17-JUN-21
Ethylbenzene			87.1		%		70-130	17-JUN-21
Dibromochloromethane			106.6		%		70-130	17-JUN-21
Chlorobenzene			111.4		%		70-130	17-JUN-21
m+p-Xylenes			107.0		%		70-130	17-JUN-21
1,1,1,2-Tetrachloroethane			118.8		%		70-130	17-JUN-21
o-Xylene			99.3		%		70-130	17-JUN-21
Styrene			102.0		%		70-130	17-JUN-21
Isopropylbenzene			116.5		%		70-130	17-JUN-21
n-Propylbenzene			96.7		%		70-130	17-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 14 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED		Water						
Batch	R5459439							
WG3555674-2	LCS							
Bromobenzene			100.9		%		70-130	17-JUN-21
2-Chlorotoluene			99.6		%		70-130	17-JUN-21
1,3,5-Trimethylbenzene			100.6		%		70-130	17-JUN-21
Bromoform			102.3		%		70-130	17-JUN-21
4-Chlorotoluene			99.6		%		70-130	17-JUN-21
tert-Butylbenzene			114.8		%		70-130	17-JUN-21
1,2,3-Trichloropropane			104.4		%		70-130	17-JUN-21
1,2,4-Trimethylbenzene			101.3		%		70-130	17-JUN-21
sec-Butylbenzene			115.0		%		70-130	17-JUN-21
1,1,1,2-Tetrachloroethane			109.1		%		70-130	17-JUN-21
p-Isopropyltoluene			96.4		%		70-130	17-JUN-21
1,3-Dichlorobenzene			96.2		%		70-130	17-JUN-21
n-Butylbenzene			89.1		%		70-130	17-JUN-21
1,4-Dichlorobenzene			100.3		%		70-130	17-JUN-21
1,2-Dichlorobenzene			103.1		%		70-130	17-JUN-21
1,2-Dibromo-3-chloropropane			103.1		%		70-130	17-JUN-21
Hexachlorobutadiene			116.6		%		70-130	17-JUN-21
1,2,4-Trichlorobenzene			96.4		%		70-130	17-JUN-21
1,2,3-Trichlorobenzene			96.6		%		70-130	17-JUN-21
WG3555674-1	MB							
Dichlorodifluoromethane			<0.0010		mg/L		0.001	17-JUN-21
Chloromethane			<0.010		mg/L		0.01	17-JUN-21
Vinyl chloride			<0.0010		mg/L		0.001	17-JUN-21
Bromomethane			<0.010		mg/L		0.01	17-JUN-21
Chloroethane			<0.010		mg/L		0.01	17-JUN-21
Trichlorofluoromethane			<0.0010		mg/L		0.001	17-JUN-21
1,1-Dichloroethene			<0.0010		mg/L		0.001	17-JUN-21
Methylene chloride			<0.0010		mg/L		0.001	17-JUN-21
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-JUN-21
1,1-Dichloroethane			<0.0010		mg/L		0.001	17-JUN-21
2,2-Dichloropropane			<0.0010		mg/L		0.001	17-JUN-21
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-JUN-21
Chloroform			<0.0010		mg/L		0.001	17-JUN-21
1,1,1-Trichloroethane			<0.0010		mg/L		0.001	17-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 15 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555674-1	MB							
Bromochloromethane			<0.0010		mg/L		0.001	17-JUN-21
1,1-Dichloropropene			<0.0010		mg/L		0.001	17-JUN-21
Carbon tetrachloride			<0.00050		mg/L		0.0005	17-JUN-21
Benzene			<0.00050		mg/L		0.0005	17-JUN-21
1,2-Dichloroethane			<0.0010		mg/L		0.001	17-JUN-21
Trichloroethene			<0.0010		mg/L		0.001	17-JUN-21
1,2-Dichloropropane			<0.0010		mg/L		0.001	17-JUN-21
Dibromomethane			<0.0010		mg/L		0.001	17-JUN-21
Bromodichloromethane			<0.0010		mg/L		0.001	17-JUN-21
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-JUN-21
Toluene			<0.00050		mg/L		0.0005	17-JUN-21
Tetrachloroethene			<0.0010		mg/L		0.001	17-JUN-21
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-JUN-21
1,3-Dichloropropane			<0.0010		mg/L		0.001	17-JUN-21
1,1,2-Trichloroethane			<0.0010		mg/L		0.001	17-JUN-21
1,2-Dibromoethane			<0.0010		mg/L		0.001	17-JUN-21
Ethylbenzene			<0.00050		mg/L		0.0005	17-JUN-21
Dibromochloromethane			<0.0010		mg/L		0.001	17-JUN-21
Chlorobenzene			<0.0010		mg/L		0.001	17-JUN-21
m+p-Xylenes			<0.00050		mg/L		0.0005	17-JUN-21
1,1,1,2-Tetrachloroethane			<0.0010		mg/L		0.001	17-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	17-JUN-21
Styrene			<0.00050		mg/L		0.0005	17-JUN-21
Isopropylbenzene			<0.0010		mg/L		0.001	17-JUN-21
n-Propylbenzene			<0.0010		mg/L		0.001	17-JUN-21
Bromobenzene			<0.0010		mg/L		0.001	17-JUN-21
2-Chlorotoluene			<0.0010		mg/L		0.001	17-JUN-21
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	17-JUN-21
Bromoform			<0.0010		mg/L		0.001	17-JUN-21
4-Chlorotoluene			<0.0010		mg/L		0.001	17-JUN-21
tert-Butylbenzene			<0.0010		mg/L		0.001	17-JUN-21
1,2,3-Trichloropropane			<0.0020		mg/L		0.002	17-JUN-21
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	17-JUN-21
sec-Butylbenzene			<0.0010		mg/L		0.001	17-JUN-21



Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 16 of 18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555674-1	MB							
1,1,2,2-Tetrachloroethane			<0.0020		mg/L		0.002	17-JUN-21
p-Isopropyltoluene			<0.0010		mg/L		0.001	17-JUN-21
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	17-JUN-21
n-Butylbenzene			<0.0010		mg/L		0.001	17-JUN-21
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	17-JUN-21
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	17-JUN-21
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	17-JUN-21
Hexachlorobutadiene			<0.0010		mg/L		0.001	17-JUN-21
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	17-JUN-21
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	17-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			102.4		%		70-130	17-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			82.3		%		70-130	17-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			114.6		%		70-130	17-JUN-21

Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 17 of 18

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2595874

Report Date: 15-JUL-21

Page 18 of 18

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Aggregate Organics							
Chemical Oxygen Demand							
	1	02-JUN-21 15:46	12-JUL-21 10:00	28	40	days	EHT
	2	02-JUN-21 16:05	12-JUL-21 10:00	28	40	days	EHT
	3	02-JUN-21 16:15	12-JUL-21 10:00	28	40	days	EHT
	4	02-JUN-21 16:32	12-JUL-21 10:00	28	40	days	EHT
	5	02-JUN-21 16:39	12-JUL-21 10:00	28	40	days	EHT
	6	02-JUN-21 15:08	12-JUL-21 10:00	28	40	days	EHT
	7	02-JUN-21 15:17	12-JUL-21 10:00	28	40	days	EHT
	8	02-JUN-21 15:40	12-JUL-21 10:00	28	40	days	EHT
	9	02-JUN-21 14:25	12-JUL-21 10:00	28	40	days	EHT
	10	02-JUN-21	12-JUL-21 10:00	28	40	days	EHT
Volatile Organic Compounds							
BTEX, Styrene and F1 (C6-C10)							
	10	02-JUN-21	17-JUN-21 00:00	14	15	days	EHT
EPA 8260 Volatile Organics							
	10	02-JUN-21	17-JUN-21 00:00	14	15	days	EHT

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).

Notes*:
 Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
 Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2595874 were received on 02-JUN-21 18:18.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

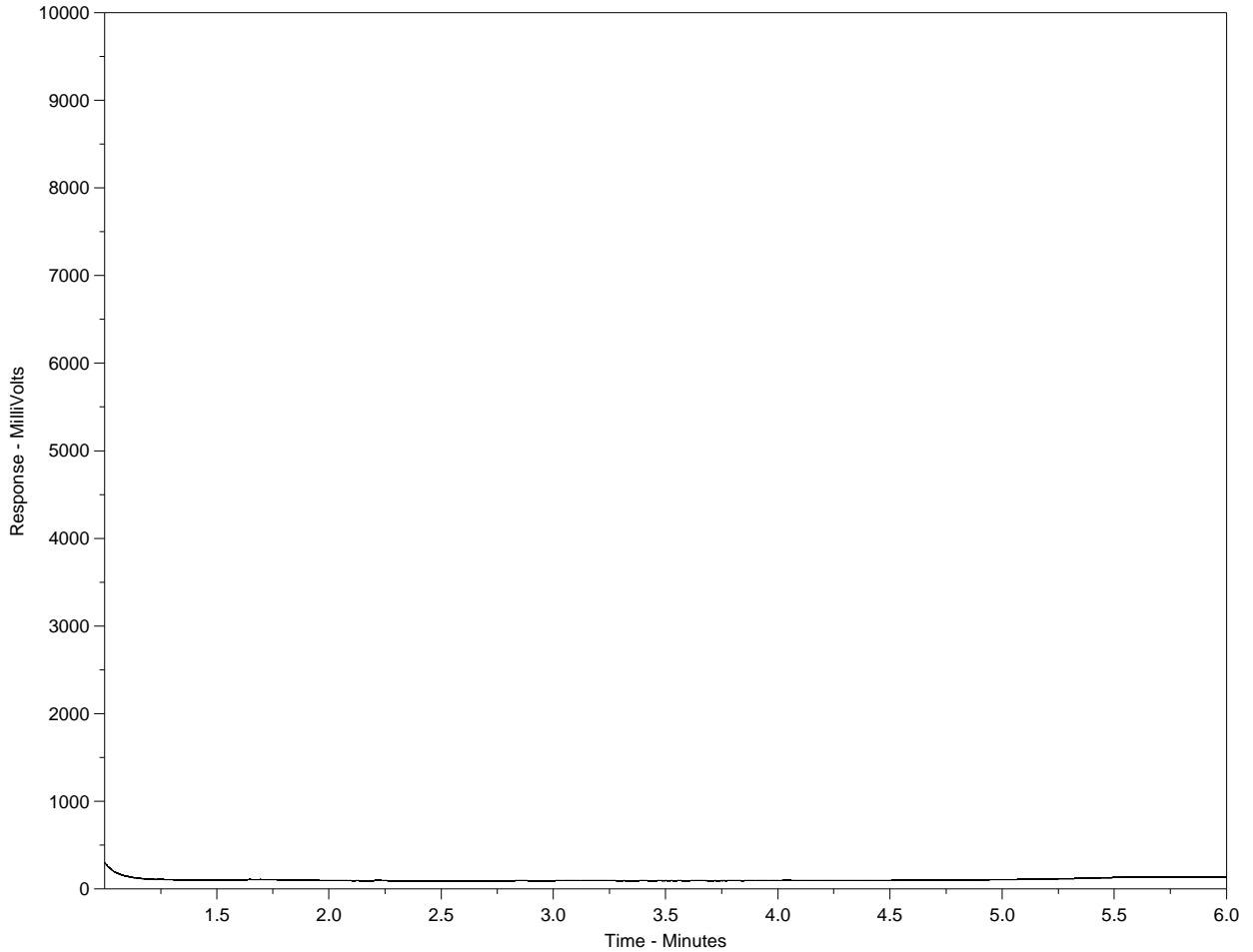
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-1
 Client ID: MW28B



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →				← Motor Oils/ Lube Oils/ Grease →	

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

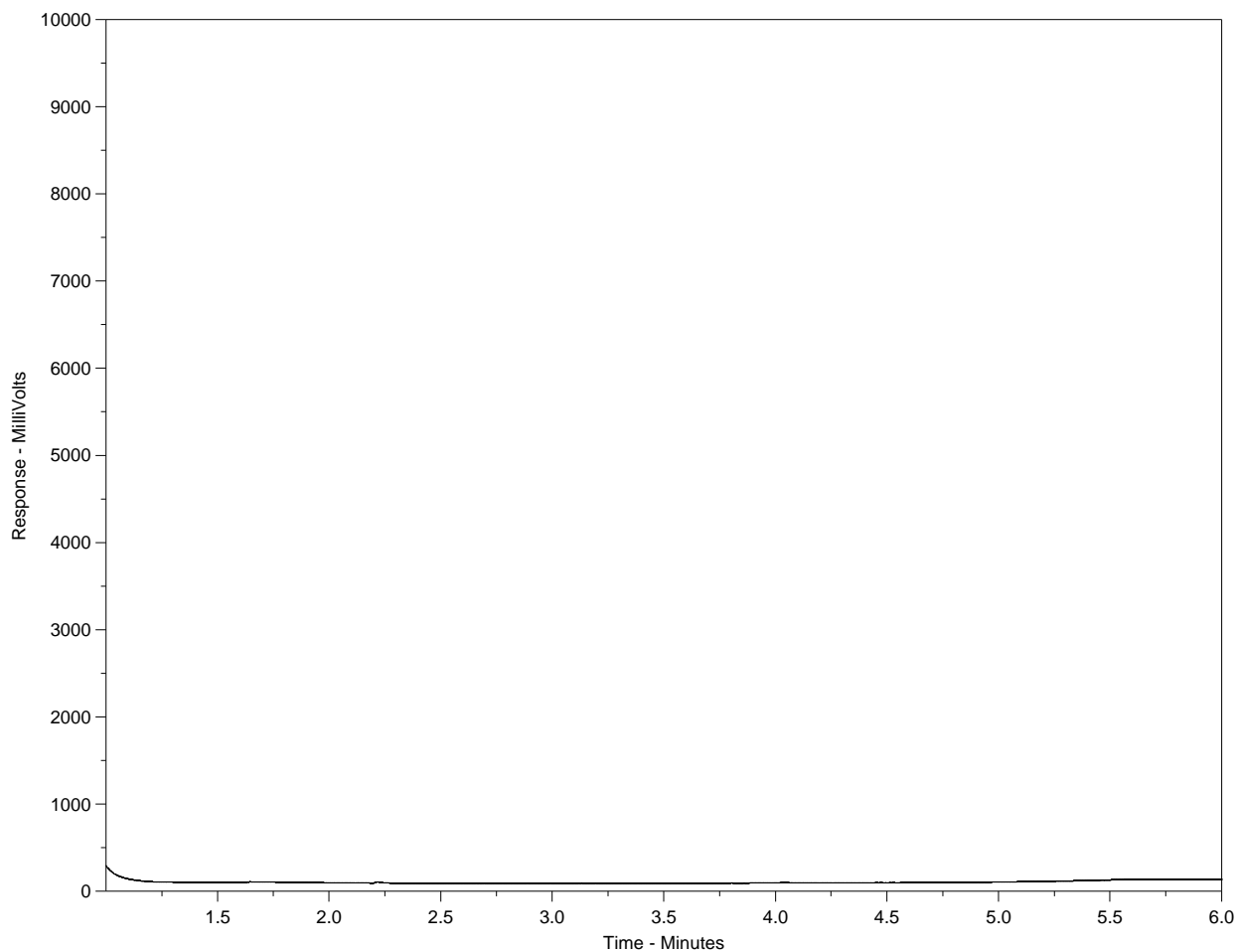
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-2
Client ID: MW29A



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

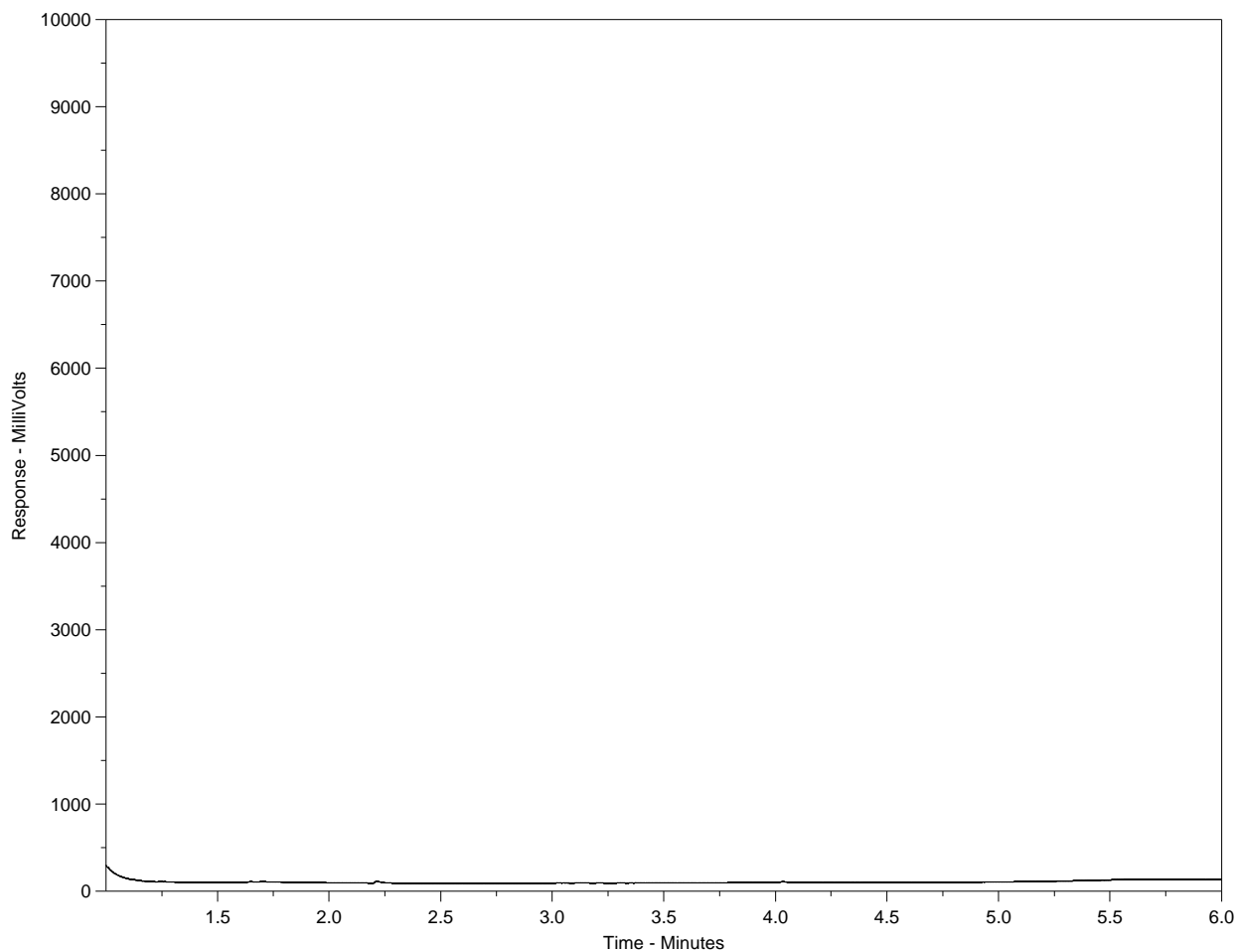
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-3
Client ID: MW29B



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

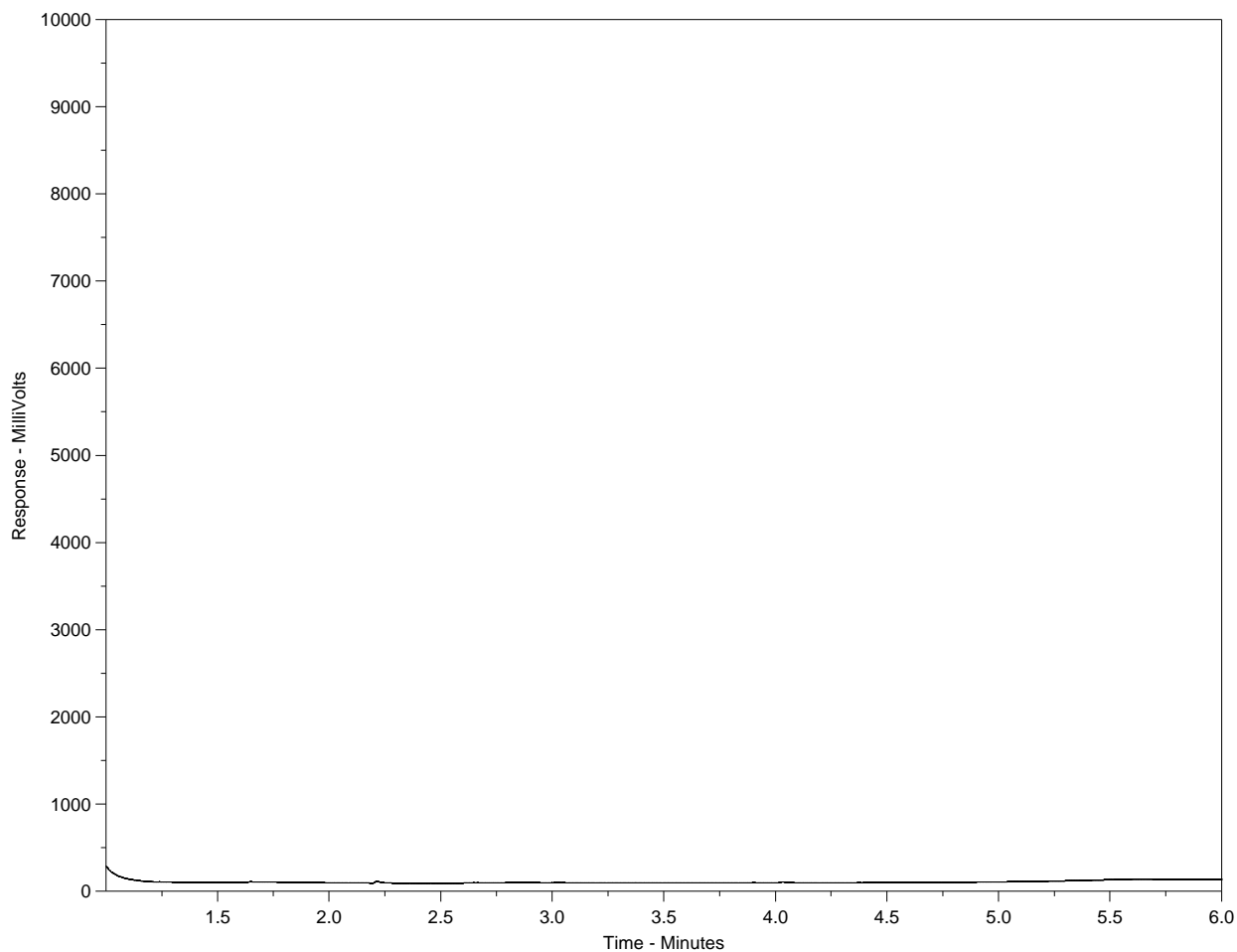
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-4
Client ID: MW30A



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

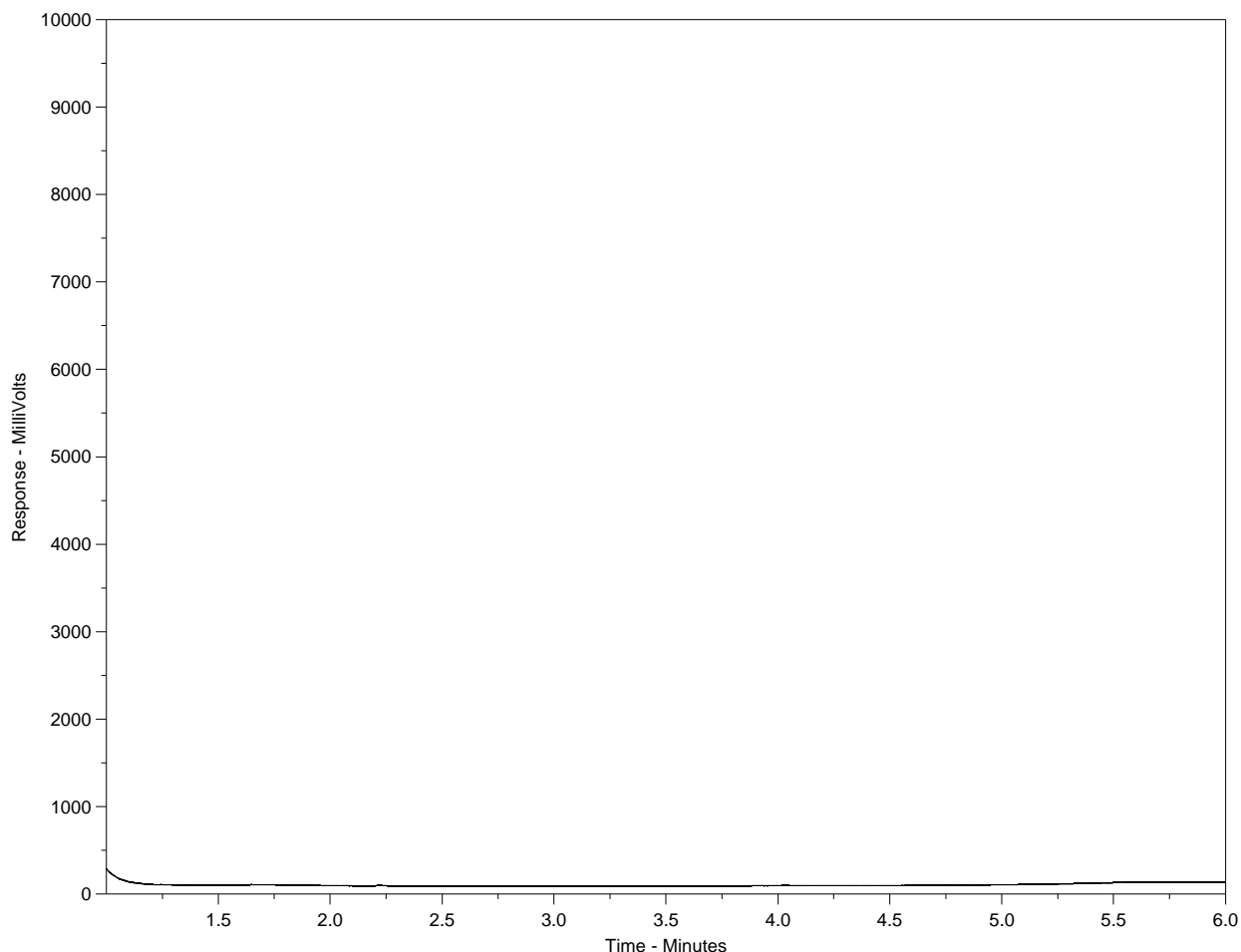
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-5
Client ID: MW30B



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

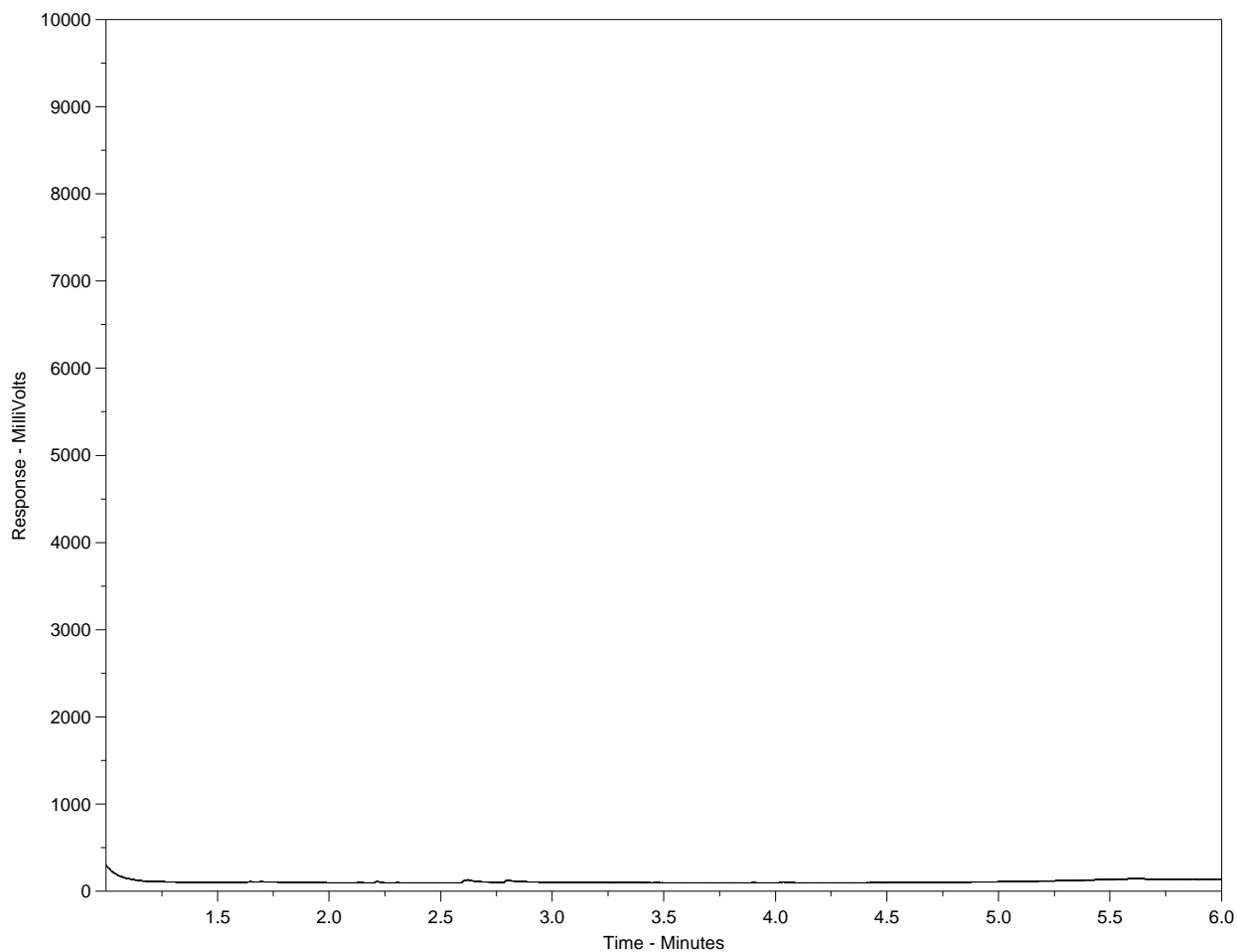
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-6
Client ID: MW27A



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

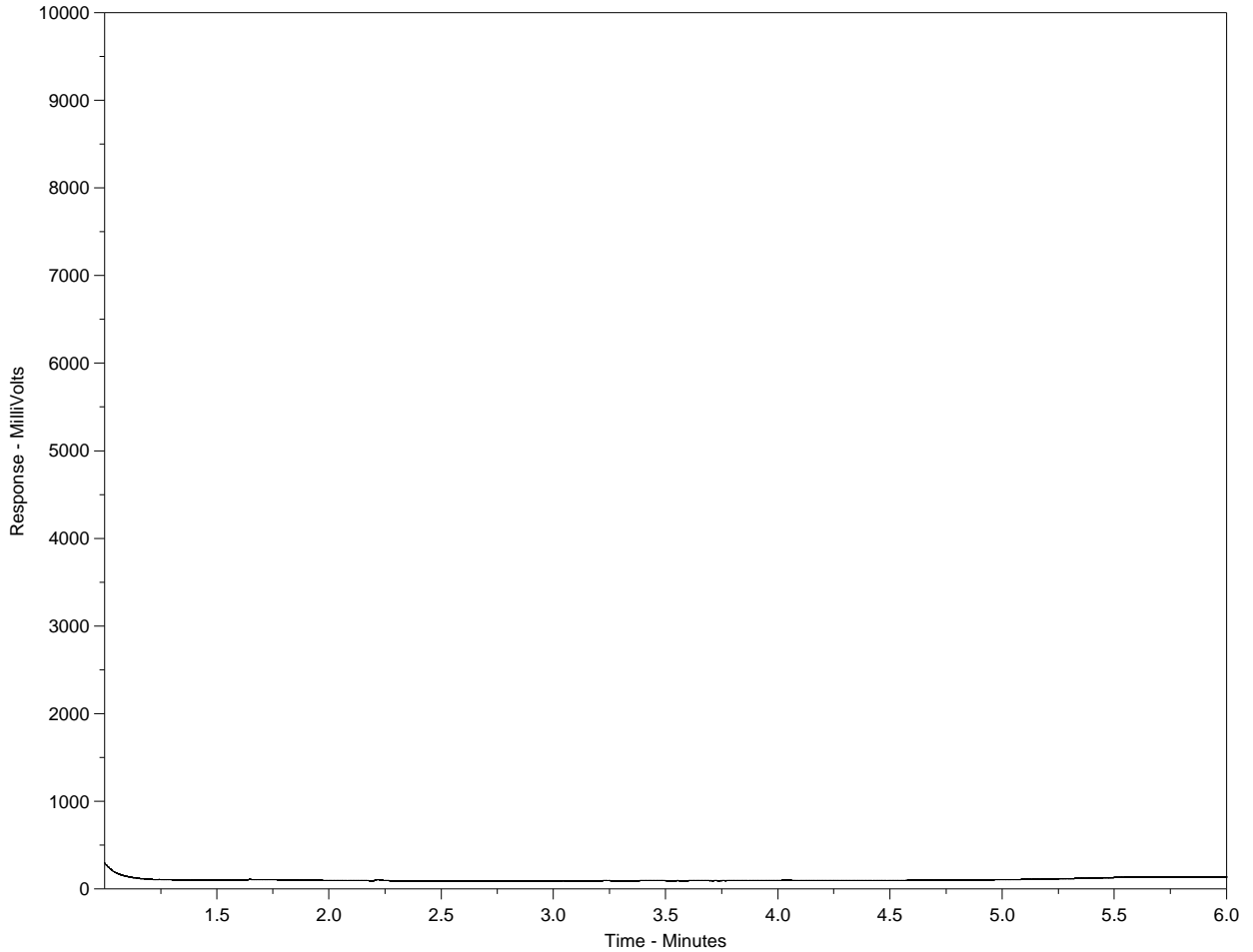
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-7
 Client ID: MW27B



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

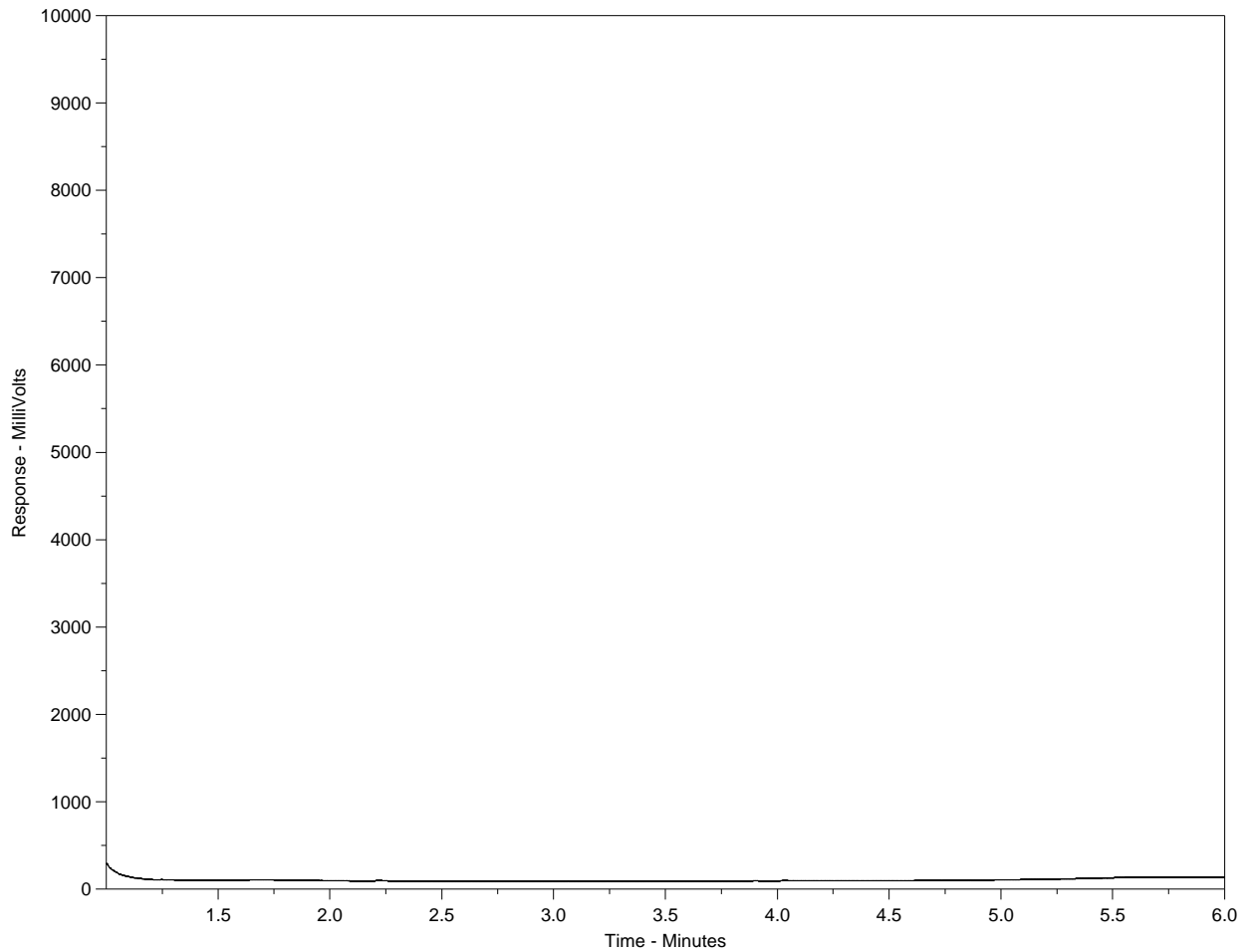
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-8
 Client ID: MW28A



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

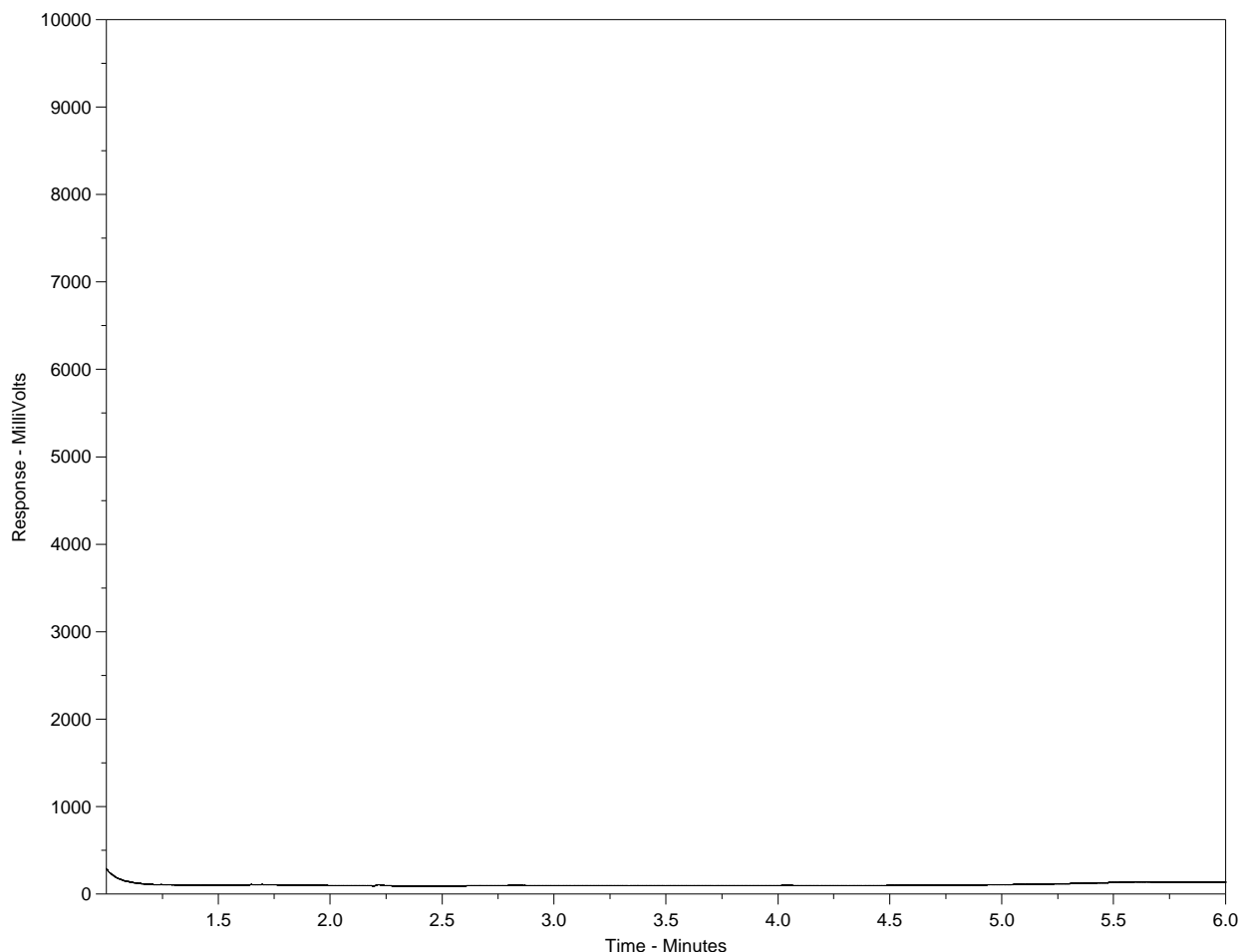
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-9
 Client ID: MW35B



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →				← Motor Oils/ Lube Oils/ Grease →	

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

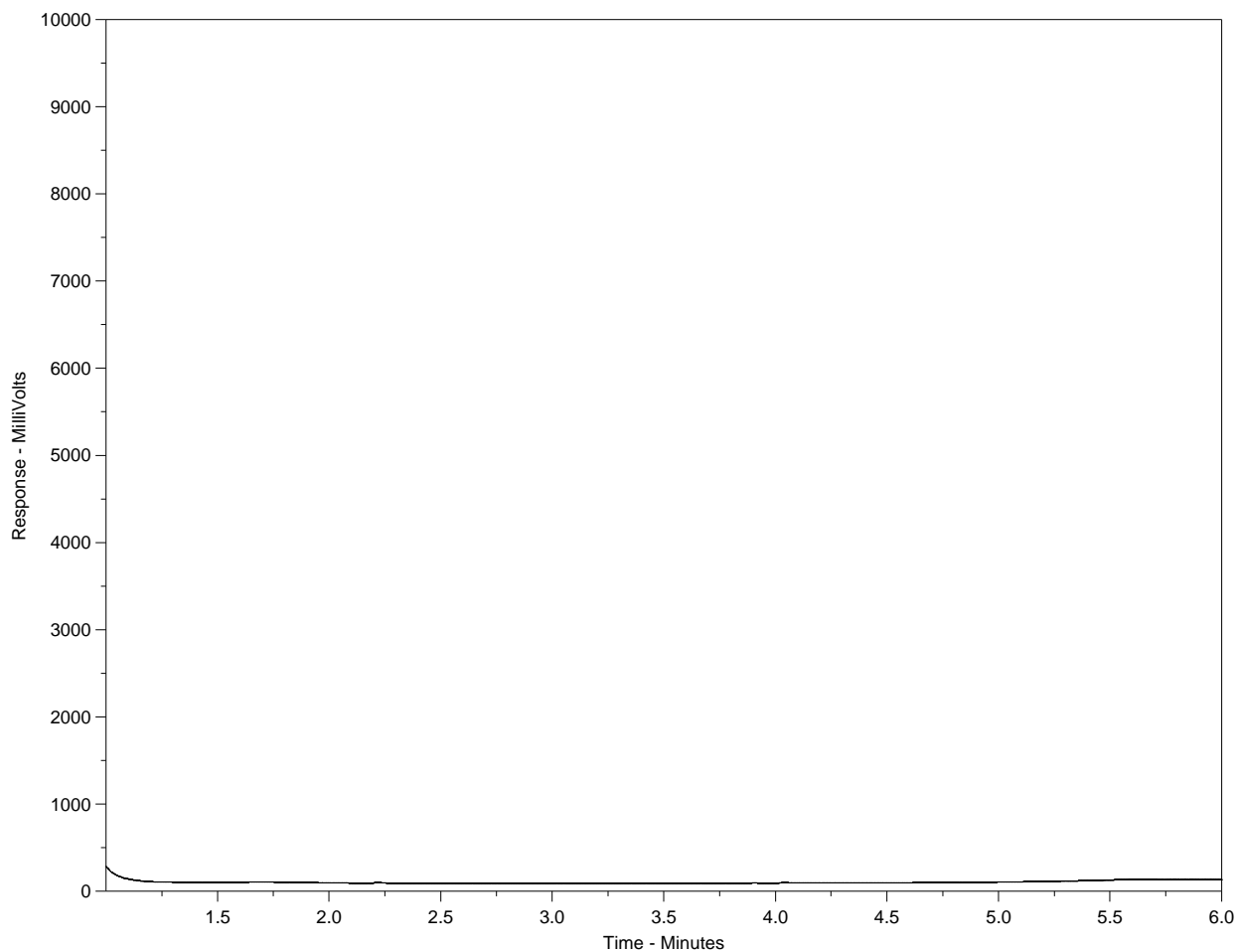
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2595874-10
Client ID: DUP-1




← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

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TETRA TECH CANADA INC..
ATTN: Michele Crawford
14940 123 Ave NW
North Bldg.
Edmonton AB T5V 1B4


Date Received: 03-JUN-21
Report Date: 15-JUL-21 09:23 (MT)
Version: FINAL REV. 3

Client Phone: 780-451-2121

Certificate of Analysis

Lab Work Order #: L2596515
Project P.O. #: SWOP04401
Job Reference:
C of C Numbers: 20-903131, 20-903132
Legal Site Desc:

Comments: ADDITIONAL 05-JUL-21 16:09


Kieran Tordoff
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 9450 17 Avenue NW, Edmonton, AB T6N 1M9 Canada | Phone: +1 780 413 5227 | Fax: +1 780 437 2311
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-1 31A							
Sampled By: CLIENT on 03-JUN-21 @ 16:15							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	116.4		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	96.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	100.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	91.7		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.338		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	38		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	10.8		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	0.0049		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	1.07		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-1 31A							
Sampled By: CLIENT on 03-JUN-21 @ 16:15							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	109.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	103.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	113.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	116.4		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	96.5		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	100.2		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	3.22		0.50	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					08-JUN-21	R5480432
Aluminum (Al)-Dissolved	0.0703		0.0010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	0.00065		0.00010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00336		0.00010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0678		0.00010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.781		0.010	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-1 31A							
Sampled By: CLIENT on 03-JUN-21 @ 16:15							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	0.0000106		0.0000050	mg/L		09-JUN-21	R5480590
Cesium (Cs)-Dissolved	0.000027		0.000010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	0.00048		0.00010	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.00270		0.00020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	0.035		0.010	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	0.000082		0.000050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.0868		0.0010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.0298		0.00010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.0100		0.000050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	0.00380		0.00050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	0.068		0.050	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.00277		0.00020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	0.000309		0.000050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	2.83		0.050	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.0833		0.00020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	14.9		0.50	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	0.00026		0.00010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	0.00120		0.00030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00239		0.000010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	0.00071		0.00050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0216		0.0010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	0.00190		0.00020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.957		0.020	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	99.8			%		09-JUN-21	
TDS (Calculated)	1070			mg/L		09-JUN-21	
Hardness (as CaCO3)	12.4			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	1.87		0.020	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	1.96		0.022	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	0.087		0.010	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	39.0		0.30	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.55		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	1470		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1110		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	20.8		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	943		2.0	mg/L		07-JUN-21	R5480549

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-2 31B							
Sampled By: CLIENT on 03-JUN-21 @ 16:24							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	110.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	108.1		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	110.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	91.2		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	24		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	8.2		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.30		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-2 31B							
Sampled By: CLIENT on 03-JUN-21 @ 16:24							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	107.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	101.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	114.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	110.3		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	108.1		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	110.0		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<2.5	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00120		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0179		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.218		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000025		0.000025	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-2 31B							
Sampled By: CLIENT on 03-JUN-21 @ 16:24							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.0016		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.168		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.00280		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00103		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0023		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	3.82		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.283		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	338		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.000809		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0200		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.47	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	99.0			%		09-JUN-21	
TDS (Calculated)	1900			mg/L		09-JUN-21	
Hardness (as CaCO3)	71.6			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.23	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.23		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	916	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.60		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	2300		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	607		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	15.4		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	523		2.0	mg/L		07-JUN-21	R5480549
L2596515-3 22A							
Sampled By: CLIENT on 03-JUN-21 @ 13:15							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-3 22A							
Sampled By: CLIENT on 03-JUN-21 @ 13:15							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	97.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	109.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	108.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	90.4		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.084		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	47		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	6.3		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	1.40		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-3 22A							
Sampled By: CLIENT on 03-JUN-21 @ 13:15							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	114.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	102.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	110.4		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	97.0		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	109.3		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	108.9		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	10.7	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0087		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.00976		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.815		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	0.000193		0.00025	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-3 22A							
Sampled By: CLIENT on 03-JUN-21 @ 13:15							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000076		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	0.00055		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.0022		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.318		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.00599		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00519		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	0.0026		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0066		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	3.03		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.874		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	736		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00394		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0197		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.31	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	101			%		09-JUN-21	
TDS (Calculated)	3880			mg/L		09-JUN-21	
Hardness (as CaCO3)	106			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	12.9	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	12.9		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	2000	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.45		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	4380		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	921		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	14.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	778		2.0	mg/L		07-JUN-21	R5480549
L2596515-4 22B							
Sampled By: CLIENT on 03-JUN-21 @ 13:28							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-4 22B							
Sampled By: CLIENT on 03-JUN-21 @ 13:28							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	109.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	101.1		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	85.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	90.1		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.055		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	47		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	5.9		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.32		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	NA					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-4 22B							
Sampled By: CLIENT on 03-JUN-21 @ 13:28							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	116.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	97.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	112.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	109.9		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	101.1		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	85.0		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<5.0	DLDS	5.0	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0062		0.0010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.26		0.10	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-4 22B							
Sampled By: CLIENT on 03-JUN-21 @ 13:28							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.10		0.10	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.711		0.010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00087		0.00050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.50		0.50	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0120		0.0020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	5.04		0.50	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	2.31		0.0020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	1320		5.0	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0030		0.0030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00764		0.00010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.021		0.010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.30	DLDS	0.20	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	90.7			%		09-JUN-21	
TDS (Calculated)	6680			mg/L		09-JUN-21	
Hardness (as CaCO3)	487			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.20	DLDS	0.20	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.22		0.22	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	4000	DLDS	3.0	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.26		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	6660		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1210		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	990		2.0	mg/L		07-JUN-21	R5480549
L2596515-5 23A							
Sampled By: CLIENT on 03-JUN-21 @ 13:48							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-5 23A							
Sampled By: CLIENT on 03-JUN-21 @ 13:48							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	95.4		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	109.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	93.1		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	92.5		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.829		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	45		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	14.9		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	1.38		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-5 23A							
Sampled By: CLIENT on 03-JUN-21 @ 13:48							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	112.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	97.1		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	115.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	95.4		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	109.0		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	93.1		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	16.7	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0247		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00470		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0495		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.801		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000025		0.000025	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-5 23A							
Sampled By: CLIENT on 03-JUN-21 @ 13:48							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.113		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.00219		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00335		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0027		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	0.00058		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	4.37		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.105		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	40.2		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	0.00093		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00138		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0202		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	0.0016		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	1.13	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	98.4			%		09-JUN-21	
TDS (Calculated)	1360			mg/L		09-JUN-21	
Hardness (as CaCO3)	8.7			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.11		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	102	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.95		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	1860		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1220		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	74.4		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	1120		2.0	mg/L		07-JUN-21	R5480549
L2596515-6 23B							
Sampled By: CLIENT on 03-JUN-21 @ 13:40							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-6 23B							
Sampled By: CLIENT on 03-JUN-21 @ 13:40							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	96.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	91.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	95.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	92.3		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.415		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	20		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	7.6		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.60		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-6 23B							
Sampled By: CLIENT on 03-JUN-21 @ 13:40							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	109.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	97.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	107.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	96.0		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	91.8		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	95.8		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<5.0	DLDS	5.0	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0064		0.0010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.35		0.10	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	0.000125		0.000050	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-6 23B							
Sampled By: CLIENT on 03-JUN-21 @ 13:40							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.00015		0.00010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.10		0.10	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.934		0.010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.126		0.0010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.50		0.50	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0171		0.0020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	5.67		0.50	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	4.25		0.0020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	1940		5.0	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0030		0.0030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00302		0.00010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.020		0.010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	<0.20	DLDS	0.20	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	96.2			%		09-JUN-21	
TDS (Calculated)	8530			mg/L		09-JUN-21	
Hardness (as CaCO3)	772			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.20	DLDS	0.20	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.22		0.22	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	5300	DLDS	3.0	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.29		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	8410		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1030		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	841		2.0	mg/L		07-JUN-21	R5480549
L2596515-7 25A							
Sampled By: CLIENT on 03-JUN-21 @ 15:22							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-7 25A							
Sampled By: CLIENT on 03-JUN-21 @ 15:22							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	102.1		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	111.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	93.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	91.1		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.786		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	22		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	8.8		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.91		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-7 25A							
Sampled By: CLIENT on 03-JUN-21 @ 15:22							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	111.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	99.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	113.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	102.1		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	111.7		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	93.7		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	7.80		0.50	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00288		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.100		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.970		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000025		0.000025	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-7 25A							
Sampled By: CLIENT on 03-JUN-21 @ 15:22							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.0011		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.129		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.112		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00674		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0035		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	4.55		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.137		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	<2.5		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.000452		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	0.0026		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.925		0.020	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	114	BL:INT		%		09-JUN-21	
TDS (Calculated)	1400			mg/L		09-JUN-21	
Hardness (as CaCO3)	17.1			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.123		0.020	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.134		0.022	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	0.011		0.010	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	1.49		0.30	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.77		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	1760		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1390		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	52.7		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	1230		2.0	mg/L		07-JUN-21	R5480549
L2596515-8 25B							
Sampled By: CLIENT on 03-JUN-21 @ 15:11							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-8 25B							
Sampled By: CLIENT on 03-JUN-21 @ 15:11							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	94.4		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	102.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	100.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	90.5		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.122		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	23		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	9.3		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	0.0017		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.37		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-8 25B							
Sampled By: CLIENT on 03-JUN-21 @ 15:11							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	117.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	97.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	97.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	94.4		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	102.3		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	100.5		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<5.0	DLDS	5.0	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0110		0.0010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.48		0.10	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-8 25B							
Sampled By: CLIENT on 03-JUN-21 @ 15:11							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.10		0.10	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.739		0.010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.184		0.0010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00064		0.00050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.50		0.50	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0140		0.0020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	4.79		0.50	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	4.21		0.0020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	1770		5.0	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0030		0.0030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00024		0.00010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.020		0.010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	<0.20	DLDS	0.20	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	96.0			%		09-JUN-21	
TDS (Calculated)	8150			mg/L		09-JUN-21	
Hardness (as CaCO3)	718			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.93	DLDS	0.20	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.93		0.22	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	5060	DLDS	3.0	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.18		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	7720		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	970		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	795		2.0	mg/L		07-JUN-21	R5480549
L2596515-9 26A							
Sampled By: CLIENT on 03-JUN-21 @ 15:52							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-9 26A							
Sampled By: CLIENT on 03-JUN-21 @ 15:52							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	95.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	93.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	117.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	96.2		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	25		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	11.5		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	0.0039		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.36		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-9 26A							
Sampled By: CLIENT on 03-JUN-21 @ 15:52							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	108.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	99.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	104.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	95.2		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	93.2		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	117.6		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	4.6	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0147		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00264		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0808		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.953		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	0.000039		0.000025	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-9 26A							
Sampled By: CLIENT on 03-JUN-21 @ 15:52							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.0055		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.179		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.00997		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00236		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	0.0026		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0041		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	5.40		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.271		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	245		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.000662		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0284		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.77	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	123	BL:INT		%		09-JUN-21	
TDS (Calculated)	1910			mg/L		09-JUN-21	
Hardness (as CaCO3)	34.9			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	1.63	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	1.63		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	527	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.72		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	2290		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1030		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	38.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	909		2.0	mg/L		07-JUN-21	R5480549
L2596515-10 26B							
Sampled By: CLIENT on 03-JUN-21 @ 16:00							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-10 26B							
Sampled By: CLIENT on 03-JUN-21 @ 16:00							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	104.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	95.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	102.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	90.4		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.497	RRV	0.050	mg/L		11-JUN-21	R5486924
Chemical Oxygen Demand	23		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	10.2		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	0.0019		0.0010	mg/L		10-JUN-21	R5486958
Total Kjeldahl Nitrogen	0.98		0.20	mg/L	11-JUN-21	11-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-10 26B							
Sampled By: CLIENT on 03-JUN-21 @ 16:00							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	102.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	96.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	127.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	104.9		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	95.3		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	102.8		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	5.6	DLDS	5.0	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0081		0.0010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.31		0.10	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-10 26B							
Sampled By: CLIENT on 03-JUN-21 @ 16:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.10		0.10	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.445		0.010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.184		0.0010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00095		0.00050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.50		0.50	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0085		0.0020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	4.56		0.50	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	2.40		0.0020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	1320		5.0	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0030		0.0030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00095		0.00010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.019		0.010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.32	DLDS	0.20	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	91.7			%		11-JUN-21	
TDS (Calculated)	6430			mg/L		11-JUN-21	
Hardness (as CaCO3)	585			mg/L		11-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.24	DLDS	0.20	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.24		0.22	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	3940	DLDS	3.0	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.35		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	6650		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	973		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	6.6		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	809		2.0	mg/L		07-JUN-21	R5480549
L2596515-11 20A							
Sampled By: CLIENT on 03-JUN-21 @ 14:28							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-11 20A							
Sampled By: CLIENT on 03-JUN-21 @ 14:28							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	98.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	100.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	98.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	92.0		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.418		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	10		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	6.4		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.45		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-11 20A							
Sampled By: CLIENT on 03-JUN-21 @ 14:28							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	108.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	101.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	93.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	98.8		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	100.6		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	98.5		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	4.8	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0284		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.870		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000025		0.000025	mg/L		09-JUN-21	R5480590

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-11 20A							
Sampled By: CLIENT on 03-JUN-21 @ 14:28							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.0014		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.333		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.0185		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00135		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0078		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	3.85		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.676		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	465		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00189		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0279		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.33	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	117	BL:INT		%		09-JUN-21	
TDS (Calculated)	2790			mg/L		09-JUN-21	
Hardness (as CaCO3)	102			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.76	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.76		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	1070	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.57		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	3310		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1140		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	27.8		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	984		2.0	mg/L		07-JUN-21	R5480549
L2596515-12 20B							
Sampled By: CLIENT on 03-JUN-21 @ 14:25							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-12 20B							
Sampled By: CLIENT on 03-JUN-21 @ 14:25							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	101.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	102.1		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	102.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	91.4		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	95		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	23.7		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	0.0015		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.75		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-12 20B							
Sampled By: CLIENT on 03-JUN-21 @ 14:25							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	100.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	99.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	105.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	101.5		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	102.1		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	102.6		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<2.5	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00081		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0181		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.289		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000025		0.000025	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-12 20B							
Sampled By: CLIENT on 03-JUN-21 @ 14:25							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000068		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	0.00148		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.0027		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.930		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00069		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0137		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	0.0973		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	7.45		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	4.85		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	1530		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.0596		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0225		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.34	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	116	BL:INT		%		09-JUN-21	
TDS (Calculated)	6020			mg/L		09-JUN-21	
Hardness (as CaCO3)	1460			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.69	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.69		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	3520	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.03		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	5680		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	755		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	619		2.0	mg/L		07-JUN-21	R5480549
L2596515-13 MW21A							
Sampled By: CLIENT on 03-JUN-21 @ 14:05							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-13 MW21A							
Sampled By: CLIENT on 03-JUN-21 @ 14:05							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	111.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	98.4		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	102.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	89.9		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.389		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	74		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	8.9		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	2.58		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-13 MW21A							
Sampled By: CLIENT on 03-JUN-21 @ 14:05							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	116.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	98.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	103.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	111.0		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	98.4		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	102.3		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	8.2	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0289		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00273		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.117		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.935		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	0.000209		0.00025	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-13 MW21A							
Sampled By: CLIENT on 03-JUN-21 @ 14:05							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	0.00150		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.0033		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.140		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.228		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00652		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	0.0047		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0040		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	3.62		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.127		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	19.8		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00440		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0289		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	0.0031		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.76	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	114	BL:INT		%		09-JUN-21	
TDS (Calculated)	1330			mg/L		09-JUN-21	
Hardness (as CaCO3)	15.6			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.36	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.36		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	39.1	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.63		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	1790		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1290		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	33.8		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	1110		2.0	mg/L		07-JUN-21	R5480549
L2596515-14 MW21B							
Sampled By: CLIENT on 03-JUN-21 @ 14:15							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-14 MW21B							
Sampled By: CLIENT on 03-JUN-21 @ 14:15							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	112.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	101.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	106.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	92.2		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	29		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	6.8		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.27		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-14 MW21B							
Sampled By: CLIENT on 03-JUN-21 @ 14:15							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	112.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	96.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	102.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	112.9		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	101.0		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	106.7		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<2.5	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0051		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00081		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0107		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.267		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000025		0.000025	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-14 MW21B							
Sampled By: CLIENT on 03-JUN-21 @ 14:15							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.336		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.00162		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00135		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0070		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	4.77		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.407		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	331		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00213		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0248		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.35	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	114	BL:INT		%		09-JUN-21	
TDS (Calculated)	2120			mg/L		09-JUN-21	
Hardness (as CaCO3)	92.1			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.14	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.14		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	776	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.54		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	2700		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	961		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	20.6		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	822		2.0	mg/L		07-JUN-21	R5480549
L2596515-15 MW35-DEEP							
Sampled By: CLIENT on 03-JUN-21 @ 12:15							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-15 MW35-DEEP							
Sampled By: CLIENT on 03-JUN-21 @ 12:15							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	103.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	99.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	101.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	90.4		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	1.13		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	88		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	19.4		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	0.0014		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	1.60		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-15 MW35-DEEP							
Sampled By: CLIENT on 03-JUN-21 @ 12:15							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	107.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	98.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	104.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	103.5		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	99.5		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	101.6		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	1480	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0060		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00082		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.469		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.823		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000025		0.000025	mg/L		09-JUN-21	R5480590

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-15 MW35-DEEP							
Sampled By: CLIENT on 03-JUN-21 @ 12:15							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	0.00051		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.216		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.106		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.0216		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0065		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	4.67		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.573		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	15.8		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	0.00050		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	0.00052		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00107		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0223		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.56	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	113	BL:INT		%		09-JUN-21	
TDS (Calculated)	3090			mg/L		09-JUN-21	
Hardness (as CaCO3)	69.4			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.11		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	31.8	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.46		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	4760		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	505		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	9.5		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	430		2.0	mg/L		07-JUN-21	R5480549
L2596515-16 MW35A							
Sampled By: CLIENT on 03-JUN-21 @ 11:35							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-16 MW35A							
Sampled By: CLIENT on 03-JUN-21 @ 11:35							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	110.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	90.4		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	89.1		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486058
Surrogate: 2-Bromobenzotrifluoride	102.3		60-140	%	10-JUN-21	10-JUN-21	R5486058
Miscellaneous Parameters							
Ammonia, Total (as N)	0.437		0.050	mg/L		06-JUN-21	R5479350
Chemical Oxygen Demand	118		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	18.6		5.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	3.97		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	LAB					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-16 MW35A							
Sampled By: CLIENT on 03-JUN-21 @ 11:35							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	100.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	89.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	85.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	95.4		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	103.6		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	93.3		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	38.7		0.50	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0049		0.0010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	0.00046		0.00010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00163		0.00010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0732		0.00010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.762		0.010	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	0.0000056		0.0000050	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-16 MW35A							
Sampled By: CLIENT on 03-JUN-21 @ 11:35							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000034		0.000010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	0.00014		0.00010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	0.00063		0.00010	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.00478		0.00020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	0.058		0.010	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	0.000145		0.000050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.0778		0.0010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.0198		0.00010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.0152		0.000050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	0.00212		0.00050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	0.200		0.050	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.00296		0.00020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	0.000100		0.000050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	4.36		0.050	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.0721		0.00020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	4.64		0.50	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	0.00045		0.00010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	0.00061		0.00030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	0.00172		0.00010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.000734		0.000010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	0.00128		0.00050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0079		0.0010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	0.00158		0.00020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	1.49		0.020	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	96.6			%		09-JUN-21	
TDS (Calculated)	1010			mg/L		09-JUN-21	
Hardness (as CaCO3)	9.1			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.022		0.022	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	11.8		0.30	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.64		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	1510		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1020		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	27.6		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	886		2.0	mg/L		07-JUN-21	R5480549
L2596515-17 MW35C							
Sampled By: CLIENT on 03-JUN-21 @ 12:01							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-17 MW35C							
Sampled By: CLIENT on 03-JUN-21 @ 12:01							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	114.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	101.4		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	82.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	92.6		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050	RRV	0.050	mg/L		11-JUN-21	R5486924
Chemical Oxygen Demand	29		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	10.4		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	0.0029		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.36		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-17 MW35C							
Sampled By: CLIENT on 03-JUN-21 @ 12:01							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	104.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	99.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	101.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	114.7		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	101.1		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	82.5		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<5.0	DLDS	5.0	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0211		0.0010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.17		0.10	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-17 MW35C							
Sampled By: CLIENT on 03-JUN-21 @ 12:01							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.0021		0.0020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.10		0.10	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.732		0.010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00130		0.00050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.50		0.50	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0081		0.0020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	0.0100		0.00050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	5.45		0.50	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	2.78		0.0020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	1630		5.0	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0030		0.0030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.0330		0.00010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	<0.010		0.010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.46	DLDS	0.20	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	94.5			%		11-JUN-21	
TDS (Calculated)	7600			mg/L		11-JUN-21	
Hardness (as CaCO3)	628			mg/L		11-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	1.81	DLDS	0.20	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	1.81		0.22	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	4690	DLDS	3.0	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.49		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	7650		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	968		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	22.1		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	830		2.0	mg/L		07-JUN-21	R5480549
L2596515-18 MW36-DEEP							
Sampled By: CLIENT on 03-JUN-21 @ 11:10							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-18 MW36-DEEP							
Sampled By: CLIENT on 03-JUN-21 @ 11:10							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	102.1		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	104.1		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	87.4		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	92.0		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	1.05		0.050	mg/L		07-JUN-21	R5480173
Chemical Oxygen Demand	121		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	31.4		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	0.0050		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	1.90		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-18 MW36-DEEP							
Sampled By: CLIENT on 03-JUN-21 @ 11:10							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	108.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	93.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	97.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	102.1		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	104.1		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	87.4		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	1100	DLDS	2.5	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0096		0.0050	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00158		0.00050	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.481		0.00050	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	1.15		0.050	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000025		0.000025	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-18 MW36-DEEP							
Sampled By: CLIENT on 03-JUN-21 @ 11:10							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	0.00078		0.00050	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.0016		0.0010	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	0.126		0.050	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00025		0.00025	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.231		0.0050	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.466		0.00050	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.0198		0.00025	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	0.0036		0.0025	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.25		0.25	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0067		0.0010	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	0.00034		0.00025	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	5.29		0.25	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.561		0.0010	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	5.8		2.5	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	0.00115		0.00050	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0015		0.0015	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00209		0.000050	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0025		0.0025	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0054		0.0050	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	0.0018		0.0010	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.38	DLDS	0.10	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	124	BL:INT		%		09-JUN-21	
TDS (Calculated)	2930			mg/L		09-JUN-21	
Hardness (as CaCO3)	64.6			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.11		0.11	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	11.2	DLDS	1.5	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.63		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	4110		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	918		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	28.2		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	799		2.0	mg/L		07-JUN-21	R5480549
L2596515-19 MW36A							
Sampled By: CLIENT on 03-JUN-21 @ 10:05							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-19 MW36A							
Sampled By: CLIENT on 03-JUN-21 @ 10:05							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	97.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	99.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	91.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	91.9		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.622		0.050	mg/L		07-JUN-21	R5480173
Chemical Oxygen Demand	42		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	12.8		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.96		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-19 MW36A							
Sampled By: CLIENT on 03-JUN-21 @ 10:05							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	113.6		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	96.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	109.3		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	97.5		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	99.5		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	91.3		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	6.42		0.50	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0066		0.0010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	0.00085		0.00010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0580		0.00010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.771		0.010	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	0.0000075		0.0000050	mg/L		09-JUN-21	R5480590

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-19 MW36A							
Sampled By: CLIENT on 03-JUN-21 @ 10:05							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	0.00033		0.00010	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	0.00172		0.00020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	0.019		0.010	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	0.000066		0.000050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.0736		0.0010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.190		0.00010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00983		0.000050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	0.00080		0.00050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	0.248		0.050	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.00169		0.00020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	0.000058		0.000050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	3.96		0.050	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	0.0544		0.00020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	<0.50		0.50	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	0.00015		0.00010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	0.00052		0.00010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.000233		0.000010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.0211		0.0010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	0.00063		0.00020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	1.61		0.020	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	98.1			%		09-JUN-21	
TDS (Calculated)	972			mg/L		09-JUN-21	
Hardness (as CaCO3)	8.9			mg/L		09-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.060		0.020	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.060		0.022	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	0.49		0.30	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.78		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	1410		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1030		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	40.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	913		2.0	mg/L		07-JUN-21	R5480549
L2596515-20 DUP-2							
Sampled By: CLIENT on 03-JUN-21							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-20 DUP-2							
Sampled By: CLIENT on 03-JUN-21							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	112.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	89.5		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	85.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	93.4		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.120	RRV	0.050	mg/L		11-JUN-21	R5486924
Chemical Oxygen Demand	22		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	9.5		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	0.0017		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.42		0.20	mg/L	08-JUN-21	09-JUN-21	R5482517
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-20 DUP-2							
Sampled By: CLIENT on 03-JUN-21							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	108.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	89.0		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	97.4		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	112.9		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	89.5		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	85.7		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<5.0	DLDS	5.0	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0105		0.0010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.44		0.10	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-20 DUP-2							
Sampled By: CLIENT on 03-JUN-21							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Copper (Cu)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.10		0.10	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.717		0.010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	0.175		0.0010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00071		0.00050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.50		0.50	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0136		0.0020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	4.61		0.50	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	4.26		0.0020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	1730		5.0	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0030		0.0030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00021		0.00010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.022		0.010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	<0.20	DLDS	0.20	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	97.1			%		11-JUN-21	
TDS (Calculated)	7850			mg/L		11-JUN-21	
Hardness (as CaCO3)	693			mg/L		11-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.88	DLDS	0.20	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.88		0.22	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	4830	DLDS	3.0	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.19		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	8090		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	983		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	806		2.0	mg/L		07-JUN-21	R5480549
L2596515-21 DUP-3							
Sampled By: CLIENT on 03-JUN-21							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-21 DUP-3							
Sampled By: CLIENT on 03-JUN-21							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	15-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	111.8		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	112.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	114.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	08-JUN-21	08-JUN-21	R5481320
Surrogate: 2-Bromobenzotrifluoride	87.5		60-140	%	08-JUN-21	08-JUN-21	R5481320
Miscellaneous Parameters							
Ammonia, Total (as N)	0.167		0.050	mg/L		11-JUN-21	R5486924
Chemical Oxygen Demand	42		10	mg/L		07-JUL-21	R5514171
Dissolved Organic Carbon	5.7		1.0	mg/L		21-JUN-21	R5494537
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5484206
Total Kjeldahl Nitrogen	0.45		0.20	mg/L	11-JUN-21	11-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					08-JUN-21	R5480191
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		08-JUN-21	R5480611
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-21 DUP-3							
Sampled By: CLIENT on 03-JUN-21							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	15-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	15-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	112.9		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	103.2		70-130	%	15-JUN-21	15-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	80.7		70-130	%	15-JUN-21	15-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene	111.8		70-130	%		13-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene	112.9		70-130	%		13-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene	114.2		70-130	%		13-JUN-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<5.0	DLDS	5.0	mg/L		04-JUN-21	R5480690
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		09-JUN-21	R5480590
Antimony (Sb)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Barium (Ba)-Dissolved	0.0065		0.0010	mg/L		09-JUN-21	R5480590
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Bismuth (Bi)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Boron (B)-Dissolved	0.25		0.10	mg/L		09-JUN-21	R5480590
Cadmium (Cd)-Dissolved	0.000061		0.000050	mg/L		09-JUN-21	R5480590
Cesium (Cs)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Chromium (Cr)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Cobalt (Co)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2596515-21 DUP-3							
Sampled By: CLIENT on 03-JUN-21							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Copper (Cu)-Dissolved	0.0022		0.0020	mg/L		09-JUN-21	R5480590
Iron (Fe)-Dissolved	<0.10		0.10	mg/L		09-JUN-21	R5480590
Lead (Pb)-Dissolved	<0.00050		0.00050	mg/L		09-JUN-21	R5480590
Lithium (Li)-Dissolved	0.727		0.010	mg/L		09-JUN-21	R5480590
Manganese (Mn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Molybdenum (Mo)-Dissolved	0.00079		0.00050	mg/L		09-JUN-21	R5480590
Nickel (Ni)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Phosphorus (P)-Dissolved	<0.50		0.50	mg/L		09-JUN-21	R5480590
Rubidium (Rb)-Dissolved	0.0128		0.0020	mg/L		09-JUN-21	R5480590
Selenium (Se)-Dissolved	0.00052		0.00050	mg/L		09-JUN-21	R5480590
Silicon (Si)-Dissolved	5.16		0.50	mg/L		09-JUN-21	R5480590
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Strontium (Sr)-Dissolved	2.40		0.0020	mg/L		09-JUN-21	R5480590
Sulfur (S)-Dissolved	1320		5.0	mg/L		09-JUN-21	R5480590
Tellurium (Te)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Thallium (Tl)-Dissolved	<0.00010		0.00010	mg/L		09-JUN-21	R5480590
Thorium (Th)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Titanium (Ti)-Dissolved	<0.0030		0.0030	mg/L		09-JUN-21	R5480590
Tungsten (W)-Dissolved	<0.0010		0.0010	mg/L		09-JUN-21	R5480590
Uranium (U)-Dissolved	0.00787		0.00010	mg/L		09-JUN-21	R5480590
Vanadium (V)-Dissolved	<0.0050		0.0050	mg/L		09-JUN-21	R5480590
Zinc (Zn)-Dissolved	0.021		0.010	mg/L		09-JUN-21	R5480590
Zirconium (Zr)-Dissolved	<0.0020		0.0020	mg/L		09-JUN-21	R5480590
Fluoride in Water by IC							
Fluoride (F)	0.30	DLDS	0.20	mg/L		04-JUN-21	R5480690
Ion Balance Calculation							
Ion Balance	92.0			%		11-JUN-21	
TDS (Calculated)	6650			mg/L		11-JUN-21	
Hardness (as CaCO3)	487			mg/L		11-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.20	DLDS	0.20	mg/L		04-JUN-21	R5480690
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.22		0.22	mg/L		09-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		04-JUN-21	R5480690
Sulfate in Water by IC							
Sulfate (SO4)	3950	DLDS	3.0	mg/L		04-JUN-21	R5480690
pH, Conductivity and Total Alkalinity							
pH	8.22		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	6840		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1210		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	996		2.0	mg/L		07-JUN-21	R5480549

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
BL:INT	Balance Reviewed: Interference Or Non-Measured Component
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-ED	Water	BTEX, Styrene and F1 (C6-C10)	EPA 5021/8015&8260 GC-MS & FID
The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTEX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method.			
C-DIS-ORG-CL	Water	Dissolved Organic Carbon	APHA 5310 B-Instrumental
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
CL-IC-N-ED	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
COD-T-COL-ED	Water	Chemical Oxygen Demand	APHA 5220 D-Micro Colorimetry
This analysis is carried out using procedures adapted from APHA Method 5220 "Chemical Oxygen Demand (COD)". Chemical oxygen demand is determined using the closed reflux colourimetric method.			
F-IC-N-ED	Water	Fluoride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
F2-ED	Water	F2 (>C10-C16)	EPA 3510/CCME PHC CWS-GC-FID
HG-D-CVAA-ED	Water	Dissolved Mercury in Water by CVAAS	APHA 3030B/EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
IONBALANCE-ED	Water	Ion Balance Calculation	APHA 1030E
MET-D-CCMS-ED	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
MTBE-ADD-ED	Water	MTBE	EPA 5030/8021B-P&T GC-PID/FID
NH3-COL-ED	Water	Ammonia in Water by Colour	APHA 4500 NH3-NITROGEN (AMMONIA)
This analysis is carried out using procedures adapted from APHA Method 4500 NH3 "NITROGEN (AMMONIA)". Ammonia is determined using the automated phenate colourimetric method.			
NO2+NO3-CALC-ED	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-ED	Water	Nitrite in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
NO3-IC-N-ED	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
PH/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320
All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed). pH measurement is determined from the activity of the hydrogen ions using a hydrogen electrode and a reference electrode. Alkalinity measurement is based on the sample's capacity to neutralize acid. Auto-titration to pH 4.5 using 0.02N H2SO4 is performed. Conductivity measurement is based on the sample's capacity to convey an electric current, and is measured with a conductivity meter.			
PHENOLS-4AAP-ED	Water	Phenols (4AAP)	EPA 9066 AUTO-DISTILL-COLORIMETRIC

This automated method is based on the distillation of phenol and subsequent reaction of the distillate with an oxidizing agent (alkaline potassium ferricyanide), and 4-aminoantipyrine to form a red complex which is measured at 505 nm. The method will include ortho and meta-substituted phenols, and is collectively named 4AAP phenols.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
SO4-IC-N-ED	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
TKN-F-ED	Water	TKN (as N) by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.			
VOC-HS-8260-ED	Water	EPA 8260 Volatile Organics	SW 846 8260-GC-MS
The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

20-903131 20-903132

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

*mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.*

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 1 of 26

Client: TETRA TECH CANADA INC.
 14940 123 Ave NW North Bldg.
 Edmonton AB T5V 1B4

Contact: Michele Crawford

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-ED		Water						
Batch	R5459439							
WG3553329-4	DUP	L2596515-1						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
EthylBenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
m+p-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
F1(C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	15-JUN-21
WG3553329-2	LCS							
Benzene			99.4		%		70-130	15-JUN-21
Toluene			105.3		%		70-130	15-JUN-21
EthylBenzene			106.4		%		70-130	15-JUN-21
m+p-Xylene			105.8		%		70-130	15-JUN-21
o-Xylene			114.1		%		70-130	15-JUN-21
WG3553329-3	LCS							
F1(C6-C10)			70.9		%		70-130	15-JUN-21
WG3553329-1	MB							
Benzene			<0.00050		mg/L		0.0005	15-JUN-21
Toluene			<0.00050		mg/L		0.0005	15-JUN-21
EthylBenzene			<0.00050		mg/L		0.0005	15-JUN-21
m+p-Xylene			<0.00050		mg/L		0.0005	15-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	15-JUN-21
F1(C6-C10)			<0.10		mg/L		0.1	15-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			108.3		%		70-130	15-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			87.5		%		70-130	15-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			106.6		%		70-130	15-JUN-21
WG3553329-5	MS	L2596515-20						
Benzene			99.0		%		50-140	15-JUN-21
Toluene			91.9		%		50-140	15-JUN-21
EthylBenzene			101.3		%		50-140	15-JUN-21
m+p-Xylene			82.7		%		50-140	15-JUN-21
o-Xylene			104.5		%		50-140	15-JUN-21
C-DIS-ORG-CL		Water						
Batch	R5494537							
WG3559804-13	DUP	L2596515-21						
Dissolved Organic Carbon		5.7	5.7		mg/L	0.6	20	21-JUN-21
WG3559804-9	DUP	L2596515-1						



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 2 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-DIS-ORG-CL								
	Water							
Batch	R5494537							
WG3559804-9	DUP	L2596515-1						
Dissolved Organic Carbon		10.8	11.2		mg/L	3.4	20	21-JUN-21
WG3559804-12	LCS							
Dissolved Organic Carbon			92.9		%		80-120	21-JUN-21
WG3559804-2	LCS							
Dissolved Organic Carbon			106.6		%		80-120	21-JUN-21
WG3559804-1	MB							
Dissolved Organic Carbon			<1.0		mg/L		1	21-JUN-21
WG3559804-11	MB							
Dissolved Organic Carbon			<1.0		mg/L		1	21-JUN-21
WG3559804-10	MS	L2596515-1						
Dissolved Organic Carbon			89.7		%		70-130	21-JUN-21
WG3559804-14	MS	L2596515-21						
Dissolved Organic Carbon			84.8		%		70-130	21-JUN-21
CL-IC-N-ED								
	Water							
Batch	R5480690							
WG3548155-15	DUP	L2596515-19						
Chloride (Cl)		6.42	6.39		mg/L	0.4	20	04-JUN-21
WG3548155-17	LCS							
Chloride (Cl)			101.6		%		90-110	04-JUN-21
WG3548155-19	LCS							
Chloride (Cl)			102.2		%		90-110	04-JUN-21
WG3548155-2	LCS							
Chloride (Cl)			101.9		%		90-110	04-JUN-21
WG3548155-21	LCS							
Chloride (Cl)			103.0		%		90-110	04-JUN-21
WG3548155-23	LCS							
Chloride (Cl)			102.0		%		90-110	04-JUN-21
WG3548155-25	LCS							
Chloride (Cl)			102.6		%		90-110	04-JUN-21
WG3548155-27	LCS							
Chloride (Cl)			102.4		%		90-110	04-JUN-21
WG3548155-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JUN-21
WG3548155-18	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JUN-21
WG3548155-20	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JUN-21
WG3548155-22	MB							



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 3 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-ED								
Water								
Batch	R5480690							
WG3548155-22	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JUN-21
WG3548155-24	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JUN-21
WG3548155-26	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JUN-21
WG3548155-28	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JUN-21
WG3548155-16	MS	L2596515-19						
Chloride (Cl)			100.2		%		75-125	04-JUN-21
COD-T-COL-ED								
Water								
Batch	R5514171							
WG3570821-3	DUP	L2596515-1						
Chemical Oxygen Demand		38	42		mg/L	10	20	07-JUL-21
WG3570821-2	LCS							
Chemical Oxygen Demand			93.4		mg/L			07-JUL-21
WG3570821-6	LCS							
Chemical Oxygen Demand			94.5		mg/L			07-JUL-21
WG3570821-1	MB							
Chemical Oxygen Demand			<10		mg/L		10	07-JUL-21
WG3570821-17	MB							
Chemical Oxygen Demand			<10		mg/L		10	08-JUL-21
WG3570821-18	MB							
Chemical Oxygen Demand			<10		mg/L		10	08-JUL-21
WG3570821-5	MB							
Chemical Oxygen Demand			<10		mg/L		10	07-JUL-21
WG3570821-4	MS	L2596515-1						
Chemical Oxygen Demand			94.0		%		75-125	07-JUL-21
F-IC-N-ED								
Water								
Batch	R5480690							
WG3548155-15	DUP	L2596515-19						
Fluoride (F)		1.61	1.61		mg/L	0.4	20	04-JUN-21
WG3548155-17	LCS							
Fluoride (F)			96.3		%		90-110	04-JUN-21
WG3548155-19	LCS							
Fluoride (F)			94.0		%		90-110	04-JUN-21
WG3548155-2	LCS							
Fluoride (F)			93.5		%		90-110	04-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 4 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F-IC-N-ED								
Water								
Batch	R5480690							
WG3548155-21	LCS							
Fluoride (F)			93.0		%		90-110	04-JUN-21
WG3548155-23	LCS							
Fluoride (F)			97.1		%		90-110	04-JUN-21
WG3548155-25	LCS							
Fluoride (F)			95.8		%		90-110	04-JUN-21
WG3548155-27	LCS							
Fluoride (F)			97.2		%		90-110	04-JUN-21
WG3548155-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-18	MB							
Fluoride (F)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-20	MB							
Fluoride (F)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-22	MB							
Fluoride (F)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-24	MB							
Fluoride (F)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-26	MB							
Fluoride (F)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-28	MB							
Fluoride (F)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-16	MS	L2596515-19						
Fluoride (F)			N/A	MS-B	%		-	04-JUN-21
F2-ED								
Water								
Batch	R5481320							
WG3548994-2	LCS	DIESEL / MOTOR OIL						
F2 (C10-C16)			95.2		%		70-130	08-JUN-21
WG3548996-2	LCS	DIESEL / MOTOR OIL						
F2 (C10-C16)			95.9		%		70-130	08-JUN-21
WG3548994-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	08-JUN-21
Surrogate: 2-Bromobenzotrifluoride			91.9		%		60-140	08-JUN-21
WG3548996-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	08-JUN-21
Surrogate: 2-Bromobenzotrifluoride			91.1		%		60-140	08-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 5 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-ED		Water						
Batch	R5486058							
WG3551170-2	LCS	DIESEL/MOTOR OIL						
F2 (C10-C16)			106.7		%		70-130	10-JUN-21
WG3551170-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	10-JUN-21
Surrogate: 2-Bromobenzotrifluoride			95.6		%		60-140	10-JUN-21
HG-D-CVAA-ED		Water						
Batch	R5480611							
WG3550109-11	DUP	L2596515-4						
Mercury (Hg)-Dissolved		<0.0000050	<0.0000050C	RPD-NA	mg/L	N/A	20	08-JUN-21
WG3550109-7	DUP	L2596515-1						
Mercury (Hg)-Dissolved		<0.0000050	<0.0000050C	RPD-NA	mg/L	N/A	20	08-JUN-21
WG3550109-10	LCS							
Mercury (Hg)-Dissolved			99.9		%		80-120	08-JUN-21
WG3550109-6	LCS							
Mercury (Hg)-Dissolved			99.2		%		80-120	08-JUN-21
WG3550109-5	MB							
Mercury (Hg)-Dissolved			<0.0000050C		mg/L		0.000005	08-JUN-21
WG3550109-9	MB							
Mercury (Hg)-Dissolved			<0.0000050C		mg/L		0.000005	08-JUN-21
WG3550109-12	MS	L2596515-5						
Mercury (Hg)-Dissolved			103.0		%		70-130	08-JUN-21
WG3550109-8	MS	L2596515-2						
Mercury (Hg)-Dissolved			110.0		%		70-130	08-JUN-21
MET-D-CCMS-ED		Water						
Batch	R5480590							
WG3550310-3	DUP	L2596515-1						
Aluminum (Al)-Dissolved		0.0703	0.0737		mg/L	4.8	20	09-JUN-21
Antimony (Sb)-Dissolved		0.00065	0.00063		mg/L	4.5	20	09-JUN-21
Arsenic (As)-Dissolved		0.00336	0.00336		mg/L	0.0	20	09-JUN-21
Barium (Ba)-Dissolved		0.0678	0.0670		mg/L	1.3	20	09-JUN-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	09-JUN-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	09-JUN-21
Boron (B)-Dissolved		0.781	0.799		mg/L	2.3	20	09-JUN-21
Cadmium (Cd)-Dissolved		0.0000106	0.0000108		mg/L	1.7	20	09-JUN-21
Cesium (Cs)-Dissolved		0.000027	0.000022		mg/L	19	20	09-JUN-21
Chromium (Cr)-Dissolved		<0.00010	0.00010	RPD-NA	mg/L	N/A	20	09-JUN-21
Cobalt (Co)-Dissolved		0.00048	0.00049		mg/L	0.9	20	09-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 6 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5480590							
WG3550310-3	DUP	L2596515-1						
Copper (Cu)-Dissolved		0.00270	0.00272		mg/L	0.6	20	09-JUN-21
Iron (Fe)-Dissolved		0.035	0.034		mg/L	5.0	20	09-JUN-21
Lead (Pb)-Dissolved		0.000082	0.000081		mg/L	0.7	20	09-JUN-21
Lithium (Li)-Dissolved		0.0868	0.0876		mg/L	1.0	20	09-JUN-21
Manganese (Mn)-Dissolved		0.0298	0.0302		mg/L	1.5	20	09-JUN-21
Molybdenum (Mo)-Dissolved		0.0100	0.0102		mg/L	2.1	20	09-JUN-21
Nickel (Ni)-Dissolved		0.00380	0.00382		mg/L	0.4	20	09-JUN-21
Phosphorus (P)-Dissolved		0.068	0.070		mg/L	2.3	20	09-JUN-21
Rubidium (Rb)-Dissolved		0.00277	0.00273		mg/L	1.4	20	09-JUN-21
Selenium (Se)-Dissolved		0.000309	0.000360		mg/L	15	20	09-JUN-21
Silicon (Si)-Dissolved		2.83	2.86		mg/L	1.2	20	09-JUN-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	09-JUN-21
Strontium (Sr)-Dissolved		0.0833	0.0833		mg/L	0.0	20	09-JUN-21
Sulfur (S)-Dissolved		14.9	15.7		mg/L	4.9	20	09-JUN-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	09-JUN-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	09-JUN-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	09-JUN-21
Tin (Sn)-Dissolved		0.00026	0.00027		mg/L	4.0	20	09-JUN-21
Titanium (Ti)-Dissolved		0.00120	0.00113		mg/L	5.6	20	09-JUN-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	09-JUN-21
Uranium (U)-Dissolved		0.00239	0.00240		mg/L	0.5	20	09-JUN-21
Vanadium (V)-Dissolved		0.00071	0.00071		mg/L	0.4	20	09-JUN-21
Zinc (Zn)-Dissolved		0.0216	0.0218		mg/L	1.1	20	09-JUN-21
Zirconium (Zr)-Dissolved		0.00190	0.00191		mg/L	0.6	20	09-JUN-21
WG3550310-2								
	LCS							
Aluminum (Al)-Dissolved			94.7		%		80-120	09-JUN-21
Antimony (Sb)-Dissolved			94.7		%		80-120	09-JUN-21
Arsenic (As)-Dissolved			94.2		%		80-120	09-JUN-21
Barium (Ba)-Dissolved			97.3		%		80-120	09-JUN-21
Beryllium (Be)-Dissolved			95.7		%		80-120	09-JUN-21
Bismuth (Bi)-Dissolved			85.3		%		80-120	09-JUN-21
Boron (B)-Dissolved			87.9		%		80-120	09-JUN-21
Cadmium (Cd)-Dissolved			95.8		%		80-120	09-JUN-21
Cesium (Cs)-Dissolved			91.1		%		80-120	09-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 7 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5480590							
WG3550310-2	LCS							
Chromium (Cr)-Dissolved			95.0		%		80-120	09-JUN-21
Cobalt (Co)-Dissolved			92.7		%		80-120	09-JUN-21
Copper (Cu)-Dissolved			92.8		%		80-120	09-JUN-21
Iron (Fe)-Dissolved			91.1		%		80-120	09-JUN-21
Lead (Pb)-Dissolved			94.1		%		80-120	09-JUN-21
Lithium (Li)-Dissolved			91.9		%		80-120	09-JUN-21
Manganese (Mn)-Dissolved			93.8		%		80-120	09-JUN-21
Molybdenum (Mo)-Dissolved			93.4		%		80-120	09-JUN-21
Nickel (Ni)-Dissolved			93.2		%		80-120	09-JUN-21
Phosphorus (P)-Dissolved			100.0		%		80-120	09-JUN-21
Rubidium (Rb)-Dissolved			94.8		%		80-120	09-JUN-21
Selenium (Se)-Dissolved			103.5		%		80-120	09-JUN-21
Silicon (Si)-Dissolved			100.9		%		80-120	09-JUN-21
Silver (Ag)-Dissolved			94.1		%		80-120	09-JUN-21
Strontium (Sr)-Dissolved			92.7		%		80-120	09-JUN-21
Sulfur (S)-Dissolved			90.3		%		80-120	09-JUN-21
Tellurium (Te)-Dissolved			90.3		%		80-120	09-JUN-21
Thallium (Tl)-Dissolved			93.7		%		80-120	09-JUN-21
Thorium (Th)-Dissolved			88.4		%		80-120	09-JUN-21
Tin (Sn)-Dissolved			90.2		%		80-120	09-JUN-21
Titanium (Ti)-Dissolved			94.5		%		80-120	09-JUN-21
Tungsten (W)-Dissolved			96.4		%		80-120	09-JUN-21
Uranium (U)-Dissolved			93.9		%		80-120	09-JUN-21
Vanadium (V)-Dissolved			95.9		%		80-120	09-JUN-21
Zinc (Zn)-Dissolved			91.4		%		80-120	09-JUN-21
Zirconium (Zr)-Dissolved			88.8		%		80-120	09-JUN-21
WG3550310-6	LCS							
Aluminum (Al)-Dissolved			117.3		%		80-120	09-JUN-21
Arsenic (As)-Dissolved			116.4		%		80-120	09-JUN-21
Beryllium (Be)-Dissolved			118.7		%		80-120	09-JUN-21
Bismuth (Bi)-Dissolved			111.3		%		80-120	09-JUN-21
Boron (B)-Dissolved			111.8		%		80-120	09-JUN-21
Cadmium (Cd)-Dissolved			118.6		%		80-120	09-JUN-21
Cesium (Cs)-Dissolved			115.9		%		80-120	09-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 8 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5480590							
WG3550310-6	LCS							
Chromium (Cr)-Dissolved			117.6		%		80-120	09-JUN-21
Cobalt (Co)-Dissolved			116.0		%		80-120	09-JUN-21
Copper (Cu)-Dissolved			115.3		%		80-120	09-JUN-21
Iron (Fe)-Dissolved			113.2		%		80-120	09-JUN-21
Lead (Pb)-Dissolved			119.4		%		80-120	09-JUN-21
Lithium (Li)-Dissolved			117.0		%		80-120	09-JUN-21
Manganese (Mn)-Dissolved			114.8		%		80-120	09-JUN-21
Molybdenum (Mo)-Dissolved			118.7		%		80-120	09-JUN-21
Nickel (Ni)-Dissolved			115.8		%		80-120	09-JUN-21
Rubidium (Rb)-Dissolved			115.9		%		80-120	09-JUN-21
Silver (Ag)-Dissolved			119.1		%		80-120	09-JUN-21
Strontium (Sr)-Dissolved			117.8		%		80-120	09-JUN-21
Sulfur (S)-Dissolved			118.9		%		80-120	09-JUN-21
Tellurium (Te)-Dissolved			109.5		%		80-120	09-JUN-21
Thallium (Tl)-Dissolved			118.7		%		80-120	09-JUN-21
Tin (Sn)-Dissolved			116.7		%		80-120	09-JUN-21
Titanium (Ti)-Dissolved			115.0		%		80-120	09-JUN-21
Tungsten (W)-Dissolved			118.3		%		80-120	09-JUN-21
Uranium (U)-Dissolved			116.9		%		80-120	09-JUN-21
Vanadium (V)-Dissolved			119.2		%		80-120	09-JUN-21
Zinc (Zn)-Dissolved			111.8		%		80-120	09-JUN-21
Zirconium (Zr)-Dissolved			117.4		%		80-120	09-JUN-21
WG3550310-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	09-JUN-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	09-JUN-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	09-JUN-21
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	09-JUN-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	09-JUN-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 9 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5480590							
WG3550310-1	MB							
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	09-JUN-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	09-JUN-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	09-JUN-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	09-JUN-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	09-JUN-21
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	09-JUN-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	09-JUN-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	09-JUN-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	09-JUN-21
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	09-JUN-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	09-JUN-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	09-JUN-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	09-JUN-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	09-JUN-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	09-JUN-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
WG3550310-5	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	09-JUN-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	09-JUN-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	09-JUN-21
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	09-JUN-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	09-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 10 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5480590							
WG3550310-5	MB							
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	09-JUN-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	09-JUN-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	09-JUN-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	09-JUN-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	09-JUN-21
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	09-JUN-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	09-JUN-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	09-JUN-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	09-JUN-21
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	09-JUN-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	09-JUN-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	09-JUN-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	09-JUN-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	09-JUN-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	09-JUN-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	09-JUN-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	09-JUN-21
WG3550310-4	MS	L2596515-2						
Aluminum (Al)-Dissolved			109.7		%		70-130	09-JUN-21
Antimony (Sb)-Dissolved			102.5		%		70-130	09-JUN-21
Arsenic (As)-Dissolved			106.2		%		70-130	09-JUN-21
Barium (Ba)-Dissolved			108.6		%		70-130	09-JUN-21
Beryllium (Be)-Dissolved			107.5		%		70-130	09-JUN-21
Bismuth (Bi)-Dissolved			77.9		%		70-130	09-JUN-21
Boron (B)-Dissolved			N/A	MS-B	%		-	09-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 11 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5480590							
WG3550310-4	MS	L2596515-2						
Cadmium (Cd)-Dissolved			104.2		%		70-130	09-JUN-21
Cesium (Cs)-Dissolved			99.0		%		70-130	09-JUN-21
Chromium (Cr)-Dissolved			105.5		%		70-130	09-JUN-21
Cobalt (Co)-Dissolved			100.8		%		70-130	09-JUN-21
Copper (Cu)-Dissolved			100.7		%		70-130	09-JUN-21
Iron (Fe)-Dissolved			100.4		%		70-130	09-JUN-21
Lead (Pb)-Dissolved			96.5		%		70-130	09-JUN-21
Lithium (Li)-Dissolved			N/A	MS-B	%		-	09-JUN-21
Manganese (Mn)-Dissolved			103.0		%		70-130	09-JUN-21
Molybdenum (Mo)-Dissolved			102.7		%		70-130	09-JUN-21
Nickel (Ni)-Dissolved			102.7		%		70-130	09-JUN-21
Phosphorus (P)-Dissolved			115.2		%		70-130	09-JUN-21
Rubidium (Rb)-Dissolved			100.5		%		70-130	09-JUN-21
Selenium (Se)-Dissolved			110.6		%		70-130	09-JUN-21
Silicon (Si)-Dissolved			112.1		%		70-130	09-JUN-21
Silver (Ag)-Dissolved			99.0		%		70-130	09-JUN-21
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	09-JUN-21
Sulfur (S)-Dissolved			N/A	MS-B	%		-	09-JUN-21
Tellurium (Te)-Dissolved			98.5		%		70-130	09-JUN-21
Thallium (Tl)-Dissolved			94.8		%		70-130	09-JUN-21
Thorium (Th)-Dissolved			103.0		%		70-130	09-JUN-21
Tin (Sn)-Dissolved			99.8		%		70-130	09-JUN-21
Titanium (Ti)-Dissolved			109.8		%		70-130	09-JUN-21
Tungsten (W)-Dissolved			99.9		%		70-130	09-JUN-21
Uranium (U)-Dissolved			99.7		%		70-130	09-JUN-21
Vanadium (V)-Dissolved			109.6		%		70-130	09-JUN-21
Zinc (Zn)-Dissolved			99.7		%		70-130	09-JUN-21
Zirconium (Zr)-Dissolved			106.6		%		70-130	09-JUN-21
Batch	R5481327							
WG3550310-6	LCS							
Antimony (Sb)-Dissolved			90.3		%		80-120	09-JUN-21
Barium (Ba)-Dissolved			95.7		%		80-120	09-JUN-21
Phosphorus (P)-Dissolved			96.2		%		80-120	09-JUN-21
Selenium (Se)-Dissolved			92.9		%		80-120	09-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 12 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
Water								
Batch	R5481327							
WG3550310-6	LCS							
	Silicon (Si)-Dissolved		95.2		%		80-120	09-JUN-21
	Thorium (Th)-Dissolved		98.2		%		80-120	09-JUN-21
MTBE-ADD-ED								
Water								
Batch	R5459439							
WG3553329-4	DUP	L2596515-1						
	Methyl-t-butyl ether	<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	13-JUN-21
WG3553329-2	LCS							
	Methyl-t-butyl ether		122.0		%		70-130	13-JUN-21
WG3553329-1	MB							
	Methyl-t-butyl ether		<0.00050		mg/L		0.0005	13-JUN-21
	Surrogate: 1,4-Difluorobenzene		108.3		%		70-130	13-JUN-21
	Surrogate: 4-Bromofluorobenzene		87.5		%		70-130	13-JUN-21
	Surrogate: 3,4-Dichlorotoluene		106.6		%		70-130	13-JUN-21
WG3553329-5	MS	L2596515-20						
	Methyl-t-butyl ether		108.0		%		50-150	13-JUN-21
NH3-COL-ED								
Water								
Batch	R5479350							
WG3548971-11	DUP	L2596515-16						
	Ammonia, Total (as N)	0.437	0.450		mg/L	2.8	20	06-JUN-21
WG3548971-10	LCS							
	Ammonia, Total (as N)		112.2		%		85-115	06-JUN-21
WG3548971-2	LCS							
	Ammonia, Total (as N)		102.8		%		85-115	06-JUN-21
WG3548971-6	LCS							
	Ammonia, Total (as N)		106.5		%		85-115	06-JUN-21
WG3548971-1	MB							
	Ammonia, Total (as N)		<0.050		mg/L		0.05	06-JUN-21
WG3548971-5	MB							
	Ammonia, Total (as N)		<0.050		mg/L		0.05	06-JUN-21
WG3548971-9	MB							
	Ammonia, Total (as N)		<0.050		mg/L		0.05	06-JUN-21
WG3548971-12	MS	L2596515-16						
	Ammonia, Total (as N)		99.0		%		75-125	06-JUN-21
Batch	R5480173							
WG3549730-10	LCS							
	Ammonia, Total (as N)		90.3		%		85-115	07-JUN-21
WG3549730-2	LCS							



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 13 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-ED								
Water								
Batch	R5480173							
WG3549730-2	LCS							
Ammonia, Total (as N)			100.6		%		85-115	07-JUN-21
WG3549730-6	LCS							
Ammonia, Total (as N)			99.0		%		85-115	07-JUN-21
WG3549730-1	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	07-JUN-21
WG3549730-5	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	07-JUN-21
WG3549730-9	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	07-JUN-21
Batch	R5486924							
WG3553436-2	LCS							
Ammonia, Total (as N)			110.9		%		85-115	11-JUN-21
WG3553436-6	LCS							
Ammonia, Total (as N)			104.8		%		85-115	11-JUN-21
WG3553436-1	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	11-JUN-21
WG3553436-5	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	11-JUN-21
NO2-IC-N-ED								
Water								
Batch	R5480690							
WG3548155-15	DUP	L2596515-19						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	04-JUN-21
WG3548155-17	LCS							
Nitrite (as N)			100.8		%		90-110	04-JUN-21
WG3548155-19	LCS							
Nitrite (as N)			101.1		%		90-110	04-JUN-21
WG3548155-2	LCS							
Nitrite (as N)			100.9		%		90-110	04-JUN-21
WG3548155-21	LCS							
Nitrite (as N)			102.3		%		90-110	04-JUN-21
WG3548155-23	LCS							
Nitrite (as N)			101.9		%		90-110	04-JUN-21
WG3548155-25	LCS							
Nitrite (as N)			101.7		%		90-110	04-JUN-21
WG3548155-27	LCS							
Nitrite (as N)			102.0		%		90-110	04-JUN-21
WG3548155-1	MB							



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 14 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO2-IC-N-ED								
	Water							
Batch	R5480690							
WG3548155-1	MB							
Nitrite (as N)			<0.010		mg/L		0.01	04-JUN-21
WG3548155-18	MB							
Nitrite (as N)			<0.010		mg/L		0.01	04-JUN-21
WG3548155-20	MB							
Nitrite (as N)			<0.010		mg/L		0.01	04-JUN-21
WG3548155-22	MB							
Nitrite (as N)			<0.010		mg/L		0.01	04-JUN-21
WG3548155-24	MB							
Nitrite (as N)			<0.010		mg/L		0.01	04-JUN-21
WG3548155-26	MB							
Nitrite (as N)			<0.010		mg/L		0.01	04-JUN-21
WG3548155-16	MS	L2596515-19						
Nitrite (as N)			96.7		%		75-125	04-JUN-21
NO3-IC-N-ED								
	Water							
Batch	R5480690							
WG3548155-15	DUP	L2596515-19						
Nitrate (as N)		0.060	0.039	J	mg/L	0.021	0.04	04-JUN-21
WG3548155-17	LCS							
Nitrate (as N)			100.9		%		90-110	04-JUN-21
WG3548155-19	LCS							
Nitrate (as N)			101.0		%		90-110	04-JUN-21
WG3548155-2	LCS							
Nitrate (as N)			101.4		%		90-110	04-JUN-21
WG3548155-21	LCS							
Nitrate (as N)			101.9		%		90-110	04-JUN-21
WG3548155-23	LCS							
Nitrate (as N)			101.3		%		90-110	04-JUN-21
WG3548155-25	LCS							
Nitrate (as N)			101.6		%		90-110	04-JUN-21
WG3548155-27	LCS							
Nitrate (as N)			101.0		%		90-110	04-JUN-21
WG3548155-1	MB							
Nitrate (as N)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-18	MB							
Nitrate (as N)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-20	MB							
Nitrate (as N)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-22	MB							



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 15 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-N-ED								
Water								
Batch	R5480690							
WG3548155-22	MB							
Nitrate (as N)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-24	MB							
Nitrate (as N)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-26	MB							
Nitrate (as N)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-28	MB							
Nitrate (as N)			<0.020		mg/L		0.02	04-JUN-21
WG3548155-16	MS	L2596515-19						
Nitrate (as N)			100.0		%		75-125	04-JUN-21
PH/EC/ALK-ED								
Water								
Batch	R5480549							
WG3549402-5	DUP	L2596515-5						
pH		8.95	8.94	J	pH	0.01	0.3	07-JUN-21
Conductivity (EC)		1860	1870		uS/cm	0.3	10	07-JUN-21
Bicarbonate (HCO3)		1220	1220		mg/L	0.1	25	07-JUN-21
Carbonate (CO3)		74.4	71.6		mg/L	3.8	25	07-JUN-21
Hydroxide (OH)		<5.0	<5.0	RPD-NA	mg/L	N/A	25	07-JUN-21
Alkalinity, Total (as CaCO3)		1120	1120		mg/L	0.5	20	07-JUN-21
WG3549402-12	LCS	ED-PH6						
pH			6.05		pH		5.8-6.2	07-JUN-21
WG3549402-13	LCS	MID_1412						
Conductivity (EC)			98.4		%		90-110	07-JUN-21
WG3549402-14	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.2		%		85-115	07-JUN-21
WG3549402-17	LCS	ED-PH6						
pH			6.02		pH		5.8-6.2	07-JUN-21
WG3549402-18	LCS	MID_1412						
Conductivity (EC)			96.3		%		90-110	07-JUN-21
WG3549402-19	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			99.1		%		85-115	07-JUN-21
WG3549402-2	LCS	ED-PH6						
pH			6.03		pH		5.8-6.2	07-JUN-21
WG3549402-22	LCS	ED-PH6						
pH			6.06		pH		5.8-6.2	07-JUN-21
WG3549402-23	LCS	MID_1412						
Conductivity (EC)			102.3		%		90-110	07-JUN-21
WG3549402-24	LCS	PCTITRATE_LCS						



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 16 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH/EC/ALK-ED		Water						
Batch	R5480549							
WG3549402-24	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.4		%		85-115	07-JUN-21
WG3549402-27	LCS	ED-PH6						
pH			6.05		pH		5.8-6.2	07-JUN-21
WG3549402-28	LCS	MID_1412						
Conductivity (EC)			93.8		%		90-110	07-JUN-21
WG3549402-29	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.7		%		85-115	07-JUN-21
WG3549402-3	LCS	MID_1412						
Conductivity (EC)			95.4		%		90-110	07-JUN-21
WG3549402-4	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.8		%		85-115	07-JUN-21
WG3549402-7	LCS	ED-PH6						
pH			6.04		pH		5.8-6.2	07-JUN-21
WG3549402-8	LCS	MID_1412						
Conductivity (EC)			91.9		%		90-110	07-JUN-21
WG3549402-9	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			101.1		%		85-115	07-JUN-21
WG3549402-1	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-11	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-16	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-21	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 17 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH/EC/ALK-ED								
	Water							
Batch	R5480549							
WG3549402-21 MB								
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-26 MB								
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-6 MB								
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
PHENOLS-4AAP-ED								
	Water							
Batch	R5484206							
WG3552521-3 DUP		L2596515-1						
Phenols (4AAP)		0.0049	0.0032	J	mg/L	0.0016	0.002	09-JUN-21
WG3552521-7 DUP		L2596515-21						
Phenols (4AAP)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	09-JUN-21
WG3552521-10 LCS								
Phenols (4AAP)			102.4		%		85-115	09-JUN-21
WG3552521-2 LCS								
Phenols (4AAP)			92.0		%		85-115	09-JUN-21
WG3552521-6 LCS								
Phenols (4AAP)			92.0		%		85-115	09-JUN-21
WG3552521-1 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	09-JUN-21
WG3552521-5 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	09-JUN-21
WG3552521-9 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	09-JUN-21
WG3552521-4 MS		L2596515-1						
Phenols (4AAP)			82.1		%		75-125	09-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 18 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PHENOLS-4AAP-ED								
Water								
Batch	R5484206							
WG3552521-8	MS	L2596515-21						
Phenols (4AAP)			98.2		%		75-125	09-JUN-21
Batch	R5486958							
WG3553052-19	DUP	L2596515-10						
Phenols (4AAP)		0.0019	0.0017		mg/L	13	20	10-JUN-21
WG3553052-18	LCS							
Phenols (4AAP)			92.1		%		85-115	11-JUN-21
WG3553052-17	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	11-JUN-21
WG3553052-20	MS	L2596515-10						
Phenols (4AAP)			92.1		%		75-125	10-JUN-21
SO4-IC-N-ED								
Water								
Batch	R5480690							
WG3548155-15	DUP	L2596515-19						
Sulfate (SO4)		0.49	0.53		mg/L	6.7	20	04-JUN-21
WG3548155-17	LCS							
Sulfate (SO4)			103.2		%		90-110	04-JUN-21
WG3548155-19	LCS							
Sulfate (SO4)			102.6		%		90-110	04-JUN-21
WG3548155-2	LCS							
Sulfate (SO4)			101.0		%		90-110	04-JUN-21
WG3548155-21	LCS							
Sulfate (SO4)			103.0		%		90-110	04-JUN-21
WG3548155-23	LCS							
Sulfate (SO4)			102.1		%		90-110	04-JUN-21
WG3548155-25	LCS							
Sulfate (SO4)			102.6		%		90-110	04-JUN-21
WG3548155-27	LCS							
Sulfate (SO4)			102.1		%		90-110	04-JUN-21
WG3548155-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	04-JUN-21
WG3548155-18	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	04-JUN-21
WG3548155-20	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	04-JUN-21
WG3548155-22	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	04-JUN-21
WG3548155-24	MB							



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 19 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-ED								
Batch R5480690								
WG3548155-24 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	04-JUN-21
WG3548155-26 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	04-JUN-21
WG3548155-16 MS		L2596515-19						
Sulfate (SO4)			96.9		%		75-125	04-JUN-21
TKN-F-ED								
Batch R5482517								
WG3550557-7 DUP		L2596515-1						
Total Kjeldahl Nitrogen		1.07	1.07		mg/L	0.1	20	09-JUN-21
WG3550557-2 LCS								
Total Kjeldahl Nitrogen			103		%		75-125	09-JUN-21
WG3550557-6 LCS								
Total Kjeldahl Nitrogen			101		%		75-125	09-JUN-21
WG3550557-1 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	09-JUN-21
WG3550557-5 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	09-JUN-21
WG3550557-8 MS		L2596515-1						
Total Kjeldahl Nitrogen			109		%		70-130	09-JUN-21
Batch R5487237								
WG3552964-2 LCS								
Total Kjeldahl Nitrogen			105		%		75-125	11-JUN-21
WG3552964-1 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	11-JUN-21
VOC-HS-8260-ED								
Batch R5459439								
WG3553329-4 DUP		L2596515-1						
Dichlorodifluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	15-JUN-21
Chloromethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	15-JUN-21
Vinyl chloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	15-JUN-21
Bromomethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	15-JUN-21
Chloroethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	15-JUN-21
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	15-JUN-21
1,1-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Methylene chloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
trans-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 20 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3553329-4	DUP	L2596515-1						
1,1-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
2,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
cis-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Chloroform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,1,1-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Bromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,1-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Carbon tetrachloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
1,2-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Trichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Dibromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Bromodichloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
cis-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
Tetrachloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
trans-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,3-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,1,2-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,2-Dibromoethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
Dibromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Chlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
m+p-Xylenes		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
1,1,1,2-Tetrachloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
Styrene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
Isopropylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
n-Propylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Bromobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
2-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,3,5-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Bromoform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 21 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3553329-4	DUP	L2596515-1						
4-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
tert-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,2,3-Trichloropropane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	15-JUN-21
1,2,4-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
sec-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,1,2,2-Tetrachloroethane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	15-JUN-21
p-Isopropyltoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,3-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
n-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,4-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,2-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	15-JUN-21
1,2-Dibromo-3-chloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,2,4-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
1,2,3-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	15-JUN-21
WG3553329-2	LCS							
Dichlorodifluoromethane			114.1		%		60-140	15-JUN-21
Chloromethane			83.9		%		60-140	15-JUN-21
Vinyl chloride			90.8		%		60-140	15-JUN-21
Bromomethane			74.4		%		60-140	15-JUN-21
Chloroethane			76.7		%		60-140	15-JUN-21
Trichlorofluoromethane			112.1		%		60-140	15-JUN-21
1,1-Dichloroethene			108.9		%		70-130	15-JUN-21
Methylene chloride			95.0		%		70-130	15-JUN-21
trans-1,2-Dichloroethene			99.1		%		70-130	15-JUN-21
1,1-Dichloroethane			117.9		%		70-130	15-JUN-21
2,2-Dichloropropane			118.8		%		70-130	15-JUN-21
cis-1,2-Dichloroethene			84.5		%		70-130	15-JUN-21
Chloroform			122.8		%		70-130	15-JUN-21
1,1,1-Trichloroethane			120.2		%		70-130	15-JUN-21
Bromochloromethane			113.8		%		70-130	15-JUN-21
1,1-Dichloropropene			117.6		%		70-130	15-JUN-21
Carbon tetrachloride			115.2		%		70-130	15-JUN-21
Benzene			110.3		%		70-130	15-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 22 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3553329-2	LCS							
1,2-Dichloroethane			109.2		%		70-130	15-JUN-21
Trichloroethene			112.2		%		70-130	15-JUN-21
1,2-Dichloropropane			115.2		%		70-130	15-JUN-21
Dibromomethane			107.3		%		70-130	15-JUN-21
Bromodichloromethane			98.8		%		70-130	15-JUN-21
cis-1,3-Dichloropropene			105.9		%		70-130	15-JUN-21
Toluene			98.3		%		70-130	15-JUN-21
Tetrachloroethene			114.7		%		70-130	15-JUN-21
trans-1,3-Dichloropropene			94.7		%		70-130	15-JUN-21
1,3-Dichloropropane			117.2		%		70-130	15-JUN-21
1,1,2-Trichloroethane			105.1		%		70-130	15-JUN-21
1,2-Dibromoethane			109.0		%		70-130	15-JUN-21
Ethylbenzene			107.9		%		70-130	15-JUN-21
Dibromochloromethane			119.8		%		70-130	15-JUN-21
Chlorobenzene			117.7		%		70-130	15-JUN-21
m+p-Xylenes			110.2		%		70-130	15-JUN-21
1,1,1,2-Tetrachloroethane			112.5		%		70-130	15-JUN-21
o-Xylene			114.3		%		70-130	15-JUN-21
Styrene			117.6		%		70-130	15-JUN-21
Isopropylbenzene			106.8		%		70-130	15-JUN-21
n-Propylbenzene			117.5		%		70-130	15-JUN-21
Bromobenzene			100.5		%		70-130	15-JUN-21
2-Chlorotoluene			102.7		%		70-130	15-JUN-21
1,3,5-Trimethylbenzene			97.4		%		70-130	15-JUN-21
Bromoform			113.4		%		70-130	15-JUN-21
4-Chlorotoluene			102.7		%		70-130	15-JUN-21
tert-Butylbenzene			108.2		%		70-130	15-JUN-21
1,2,3-Trichloropropane			109.1		%		70-130	15-JUN-21
1,2,4-Trimethylbenzene			101.6		%		70-130	15-JUN-21
sec-Butylbenzene			108.0		%		70-130	15-JUN-21
1,1,2,2-Tetrachloroethane			102.4		%		70-130	15-JUN-21
p-Isopropyltoluene			100.5		%		70-130	15-JUN-21
1,3-Dichlorobenzene			102.1		%		70-130	15-JUN-21
n-Butylbenzene			100.9		%		70-130	15-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 23 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3553329-2	LCS							
1,4-Dichlorobenzene			101.0		%		70-130	15-JUN-21
1,2-Dichlorobenzene			109.0		%		70-130	15-JUN-21
1,2-Dibromo-3-chloropropane			109.6		%		70-130	15-JUN-21
Hexachlorobutadiene			115.8		%		70-130	15-JUN-21
1,2,4-Trichlorobenzene			120.6		%		70-130	15-JUN-21
1,2,3-Trichlorobenzene			119.2		%		70-130	15-JUN-21
WG3553329-1	MB							
Dichlorodifluoromethane			<0.0010		mg/L		0.001	15-JUN-21
Chloromethane			<0.010		mg/L		0.01	15-JUN-21
Vinyl chloride			<0.0010		mg/L		0.001	15-JUN-21
Bromomethane			<0.010		mg/L		0.01	15-JUN-21
Chloroethane			<0.010		mg/L		0.01	15-JUN-21
Trichlorofluoromethane			<0.0010		mg/L		0.001	15-JUN-21
1,1-Dichloroethene			<0.0010		mg/L		0.001	15-JUN-21
Methylene chloride			<0.0010		mg/L		0.001	15-JUN-21
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	15-JUN-21
1,1-Dichloroethane			<0.0010		mg/L		0.001	15-JUN-21
2,2-Dichloropropane			<0.0010		mg/L		0.001	15-JUN-21
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	15-JUN-21
Chloroform			<0.0010		mg/L		0.001	15-JUN-21
1,1,1-Trichloroethane			<0.0010		mg/L		0.001	15-JUN-21
Bromochloromethane			<0.0010		mg/L		0.001	15-JUN-21
1,1-Dichloropropene			<0.0010		mg/L		0.001	15-JUN-21
Carbon tetrachloride			<0.00050		mg/L		0.0005	15-JUN-21
Benzene			<0.00050		mg/L		0.0005	15-JUN-21
1,2-Dichloroethane			<0.0010		mg/L		0.001	15-JUN-21
Trichloroethene			<0.0010		mg/L		0.001	15-JUN-21
1,2-Dichloropropane			<0.0010		mg/L		0.001	15-JUN-21
Dibromomethane			<0.0010		mg/L		0.001	15-JUN-21
Bromodichloromethane			<0.0010		mg/L		0.001	15-JUN-21
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	15-JUN-21
Toluene			<0.00050		mg/L		0.0005	15-JUN-21
Tetrachloroethene			<0.0010		mg/L		0.001	15-JUN-21
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	15-JUN-21



Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 24 of 26

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3553329-1	MB							
1,3-Dichloropropane			<0.0010		mg/L		0.001	15-JUN-21
1,1,2-Trichloroethane			<0.0010		mg/L		0.001	15-JUN-21
1,2-Dibromoethane			<0.0010		mg/L		0.001	15-JUN-21
Ethylbenzene			<0.00050		mg/L		0.0005	15-JUN-21
Dibromochloromethane			<0.0010		mg/L		0.001	15-JUN-21
Chlorobenzene			<0.0010		mg/L		0.001	15-JUN-21
m+p-Xylenes			<0.00050		mg/L		0.0005	15-JUN-21
1,1,1,2-Tetrachloroethane			<0.0010		mg/L		0.001	15-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	15-JUN-21
Styrene			<0.00050		mg/L		0.0005	15-JUN-21
Isopropylbenzene			<0.0010		mg/L		0.001	15-JUN-21
n-Propylbenzene			<0.0010		mg/L		0.001	15-JUN-21
Bromobenzene			<0.0010		mg/L		0.001	15-JUN-21
2-Chlorotoluene			<0.0010		mg/L		0.001	15-JUN-21
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	15-JUN-21
Bromoform			<0.0010		mg/L		0.001	15-JUN-21
4-Chlorotoluene			<0.0010		mg/L		0.001	15-JUN-21
tert-Butylbenzene			<0.0010		mg/L		0.001	15-JUN-21
1,2,3-Trichloropropane			<0.0020		mg/L		0.002	15-JUN-21
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	15-JUN-21
sec-Butylbenzene			<0.0010		mg/L		0.001	15-JUN-21
1,1,2,2-Tetrachloroethane			<0.0020		mg/L		0.002	15-JUN-21
p-Isopropyltoluene			<0.0010		mg/L		0.001	15-JUN-21
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	15-JUN-21
n-Butylbenzene			<0.0010		mg/L		0.001	15-JUN-21
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	15-JUN-21
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	15-JUN-21
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	15-JUN-21
Hexachlorobutadiene			<0.0010		mg/L		0.001	15-JUN-21
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	15-JUN-21
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	15-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			113.0		%		70-130	15-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			102.5		%		70-130	15-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			99.3		%		70-130	15-JUN-21

Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 25 of 26

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2596515

Report Date: 15-JUL-21

Page 26 of 26

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Aggregate Organics							
Chemical Oxygen Demand							
	1	03-JUN-21 16:15	07-JUL-21 13:00	28	34	days	EHT
	2	03-JUN-21 16:24	07-JUL-21 13:00	28	34	days	EHT
	3	03-JUN-21 13:15	07-JUL-21 13:00	28	34	days	EHT
	4	03-JUN-21 13:28	07-JUL-21 13:00	28	34	days	EHT
	5	03-JUN-21 13:48	07-JUL-21 13:00	28	34	days	EHT
	6	03-JUN-21 13:40	07-JUL-21 13:00	28	34	days	EHT
	7	03-JUN-21 15:22	07-JUL-21 13:00	28	34	days	EHT
	8	03-JUN-21 15:11	07-JUL-21 13:00	28	34	days	EHT
	9	03-JUN-21 15:52	07-JUL-21 13:00	28	34	days	EHT
	10	03-JUN-21 16:00	07-JUL-21 13:00	28	34	days	EHT
	11	03-JUN-21 14:28	07-JUL-21 13:00	28	34	days	EHT
	12	03-JUN-21 14:25	07-JUL-21 13:00	28	34	days	EHT
	13	03-JUN-21 14:05	07-JUL-21 13:00	28	34	days	EHT
	14	03-JUN-21 14:15	07-JUL-21 13:00	28	34	days	EHT
	15	03-JUN-21 12:15	07-JUL-21 13:00	28	34	days	EHT
	16	03-JUN-21 11:35	07-JUL-21 13:00	28	34	days	EHT
	17	03-JUN-21 12:01	07-JUL-21 13:00	28	34	days	EHT
	18	03-JUN-21 11:10	07-JUL-21 13:00	28	34	days	EHT
	19	03-JUN-21 10:05	07-JUL-21 13:00	28	34	days	EHT
	20	03-JUN-21	07-JUL-21 13:00	28	34	days	EHT
	21	03-JUN-21	07-JUL-21 13:00	28	34	days	EHT

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2596515 were received on 03-JUN-21 17:49.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

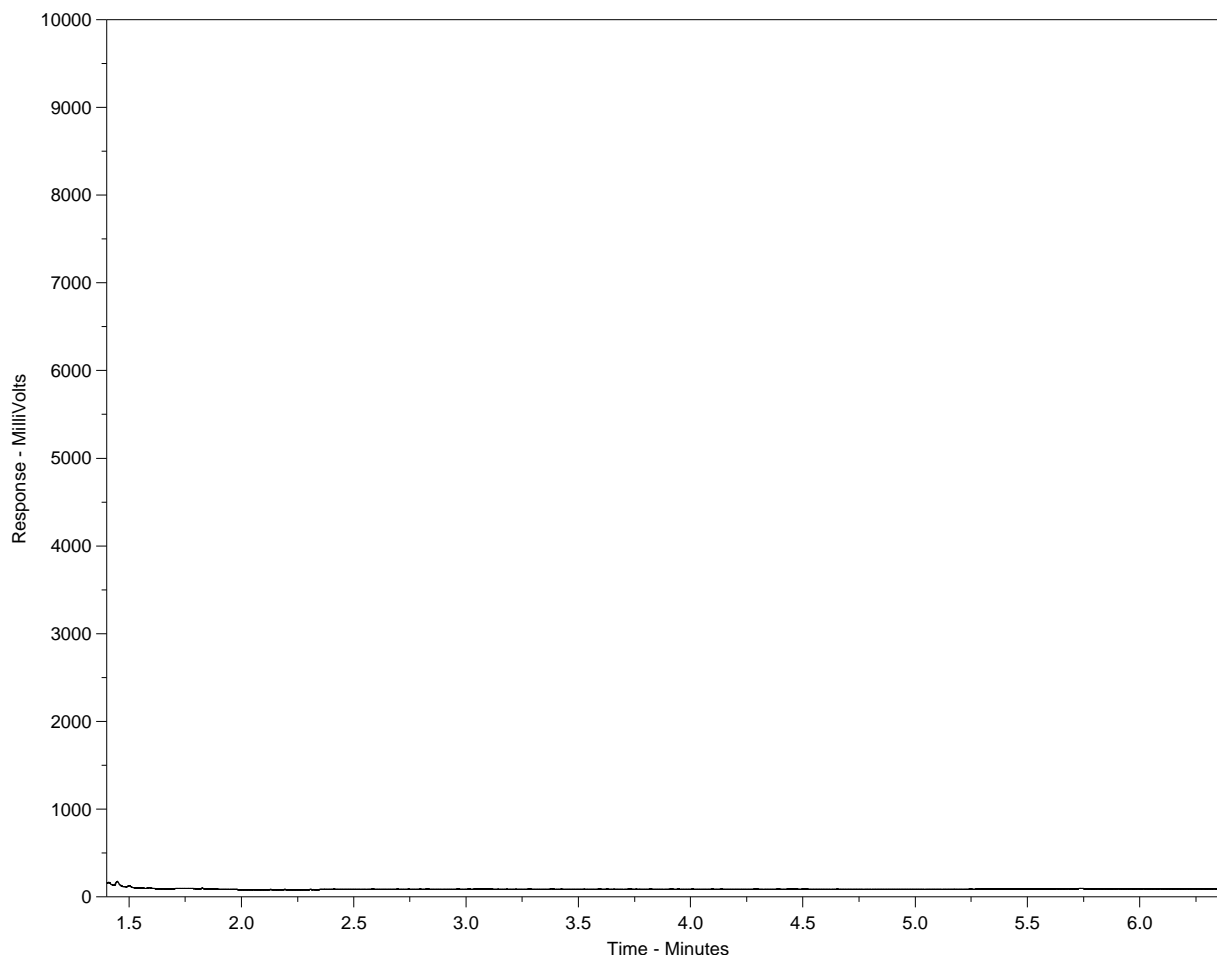
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-1
Client ID: 31A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

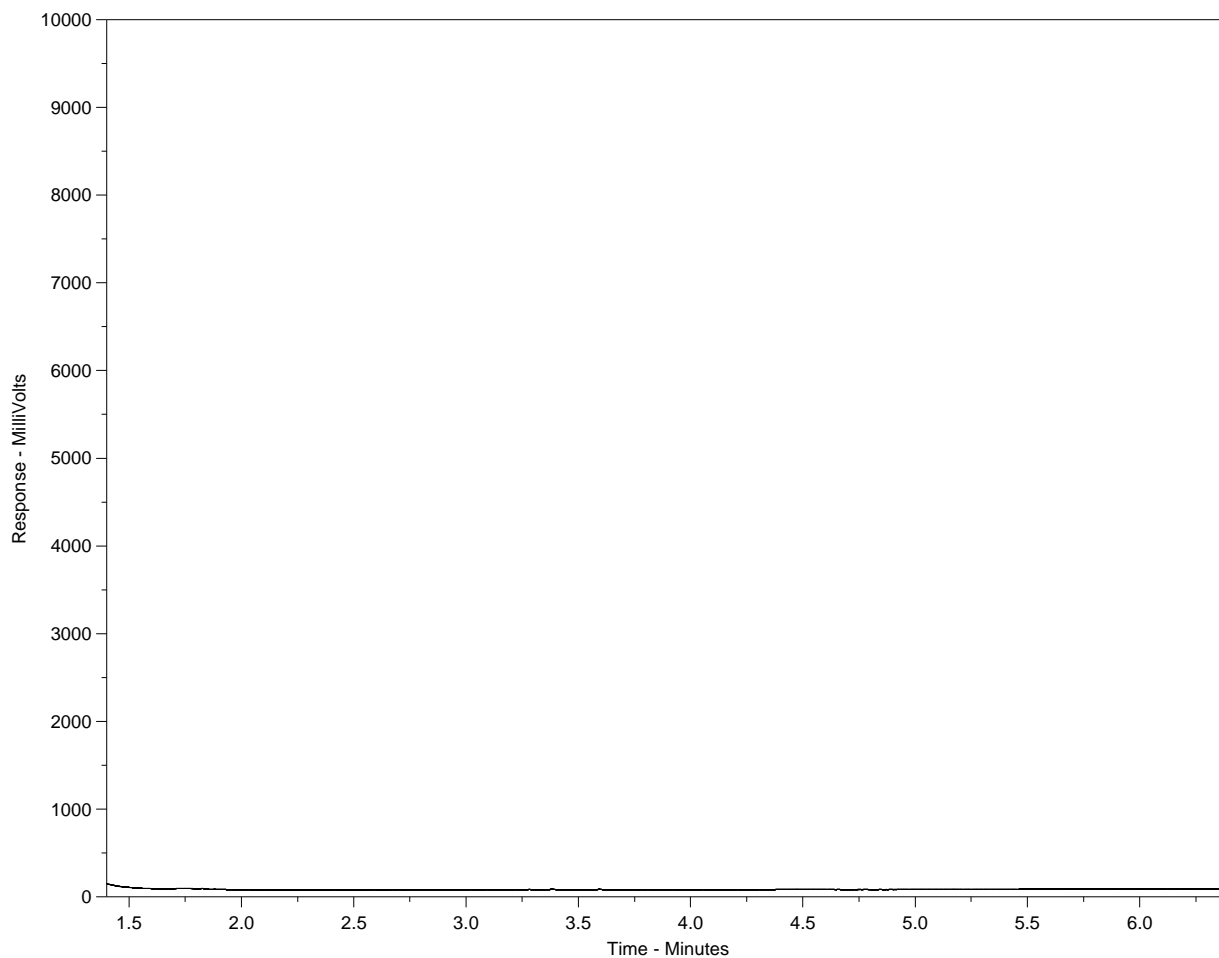
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-2
Client ID: 31B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

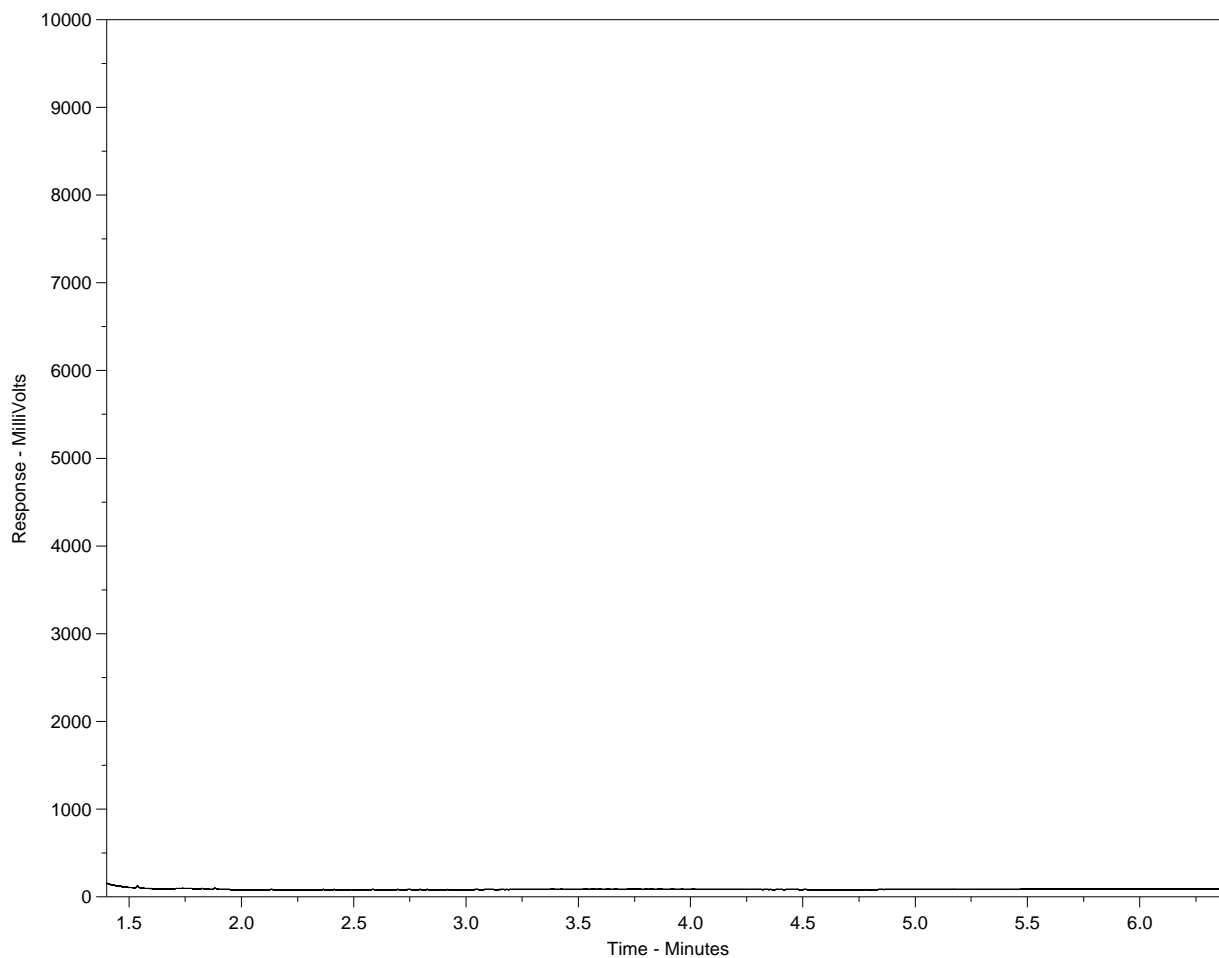
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-3
Client ID: 22A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

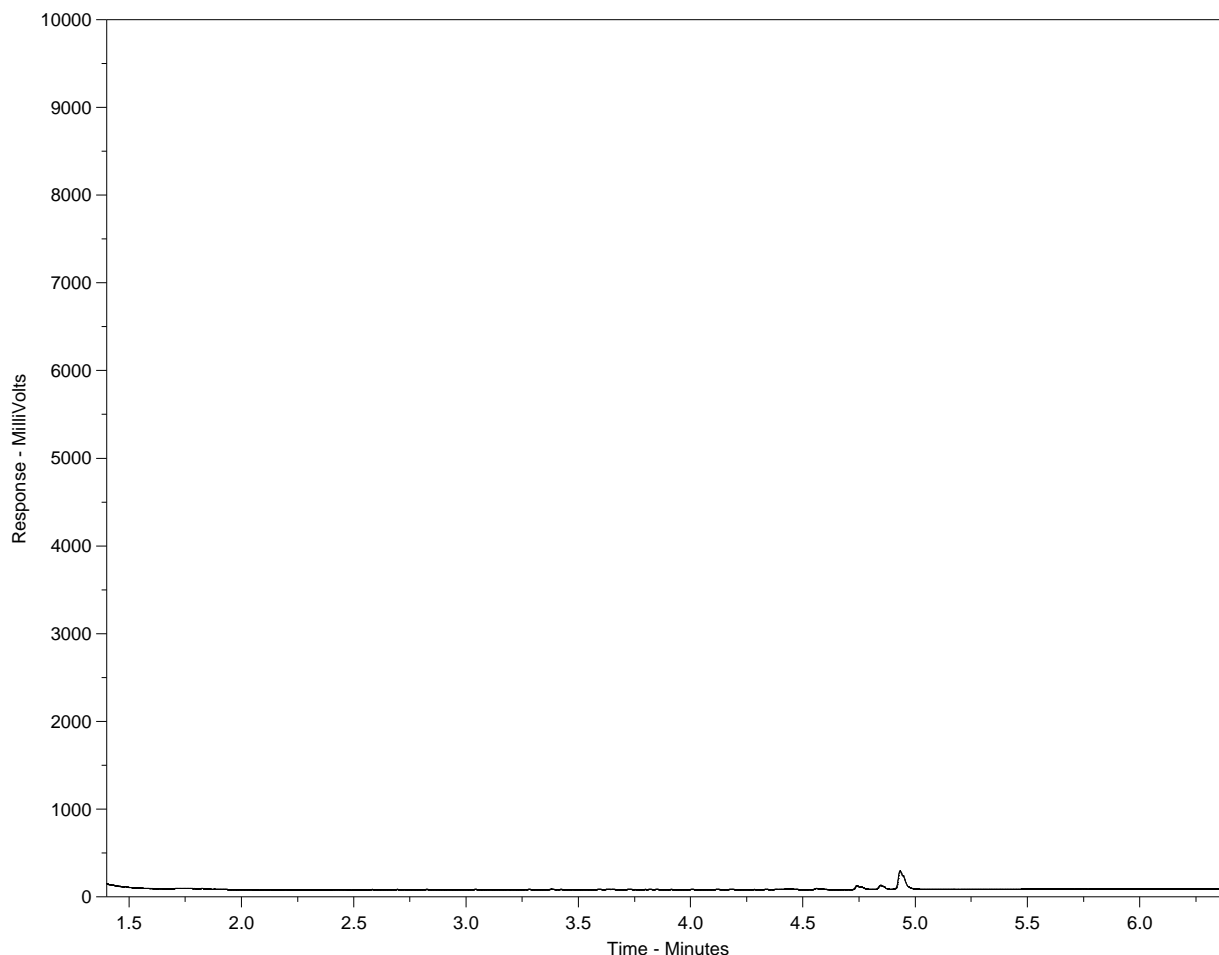
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-4
Client ID: 22B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

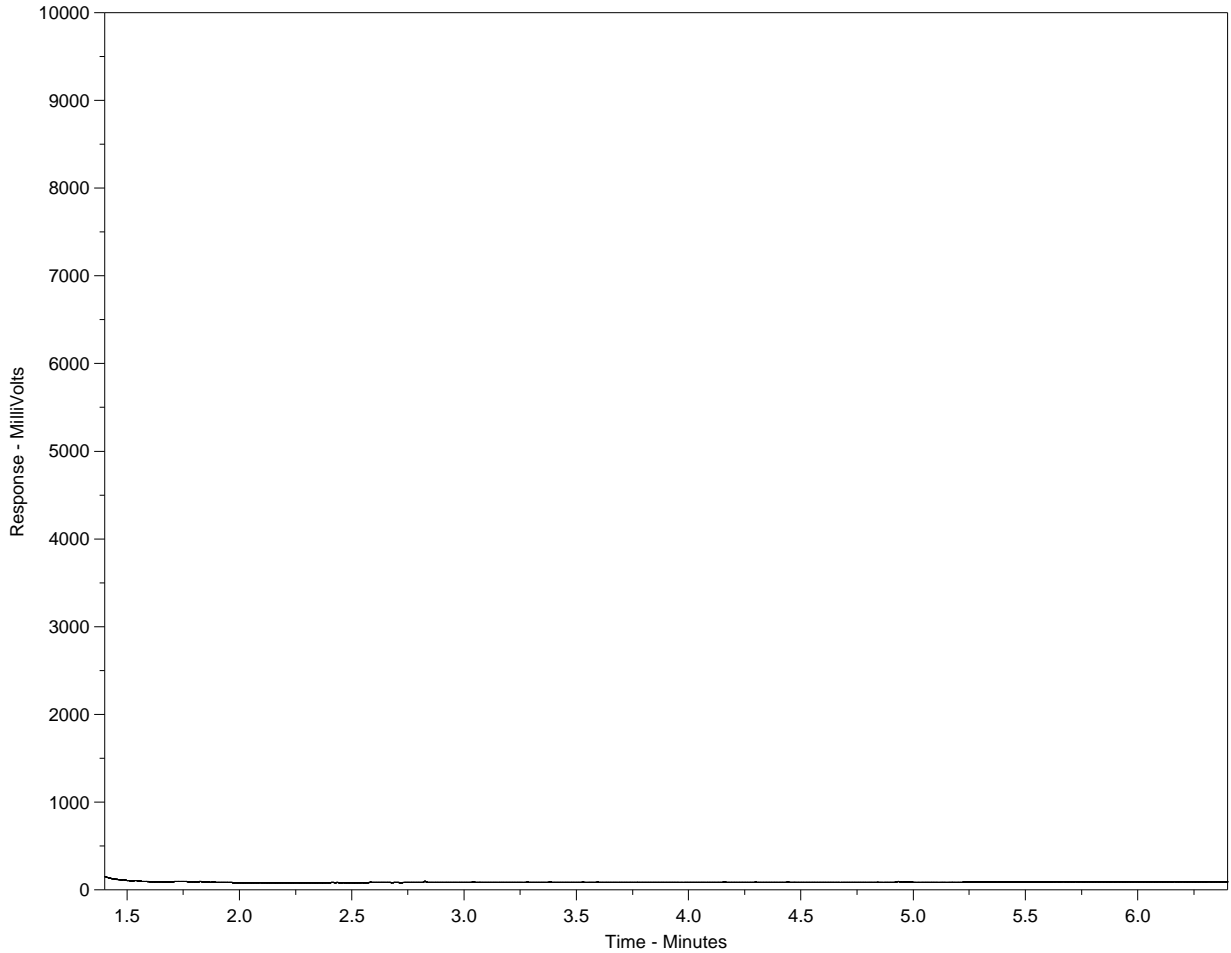
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-5
 Client ID: 23A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

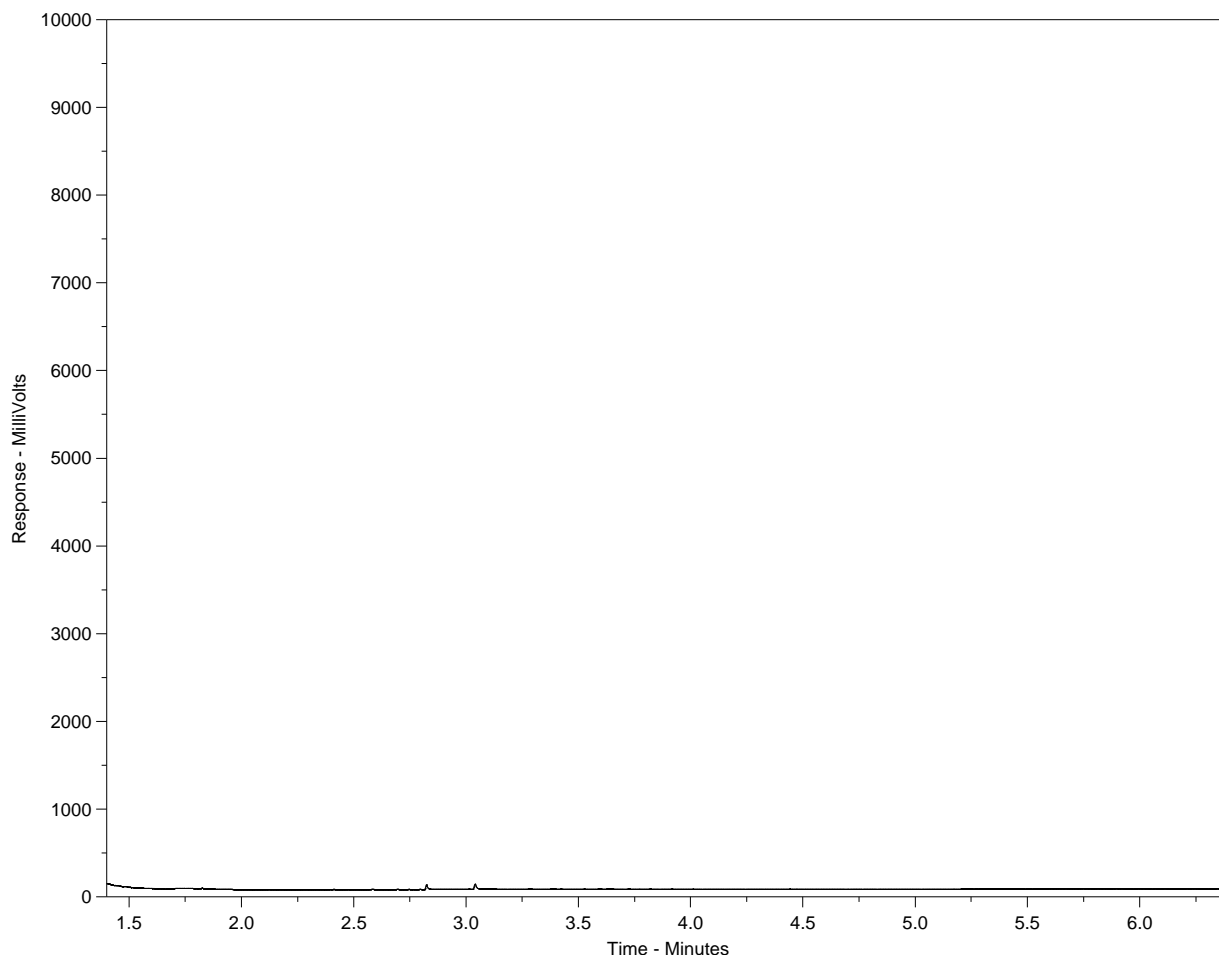
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-6
Client ID: 23B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

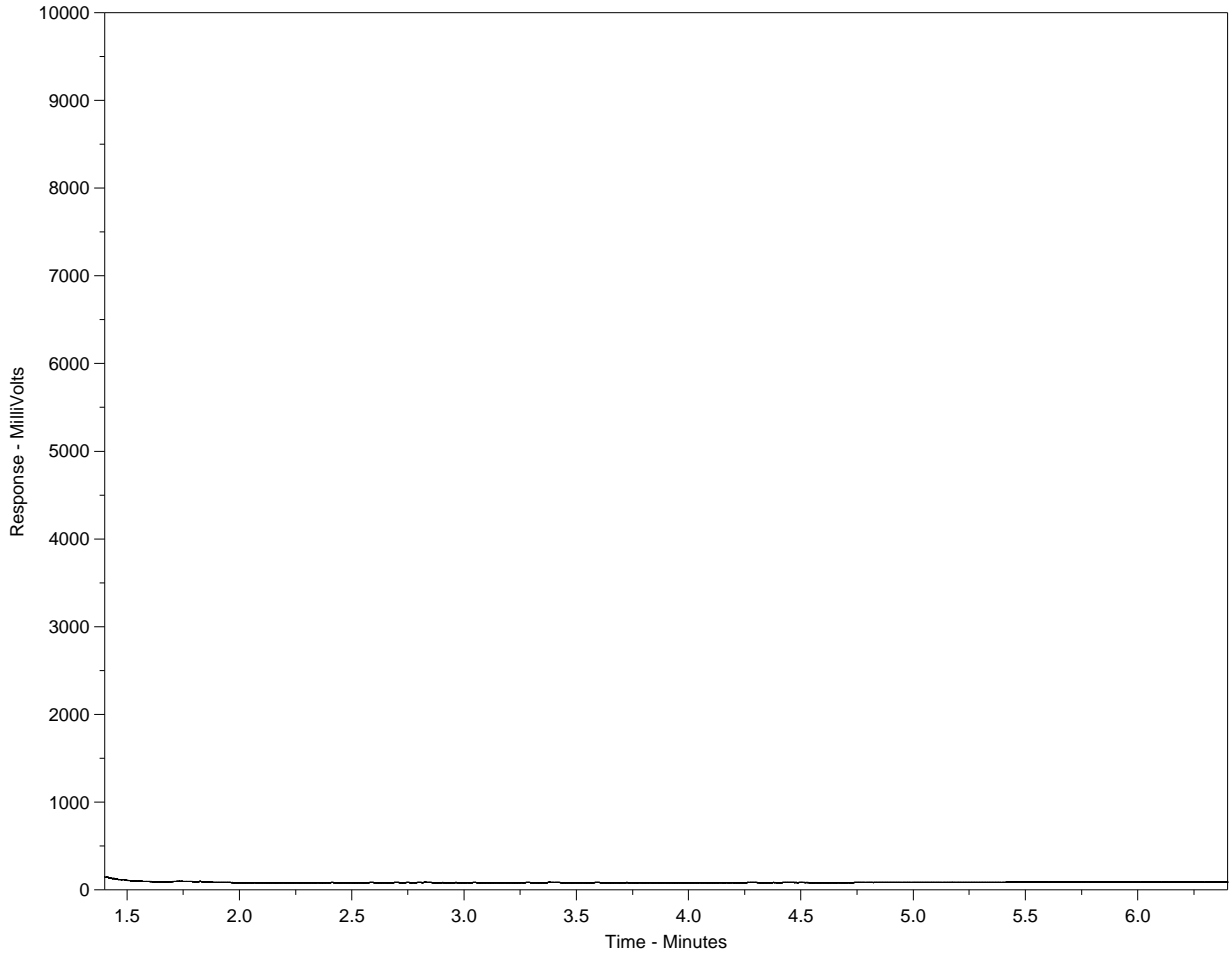
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-7
 Client ID: 25A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16			nC34		nC50	
174°C	287°C			481°C		575°C	
346°F	549°F			898°F		1067°F	
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

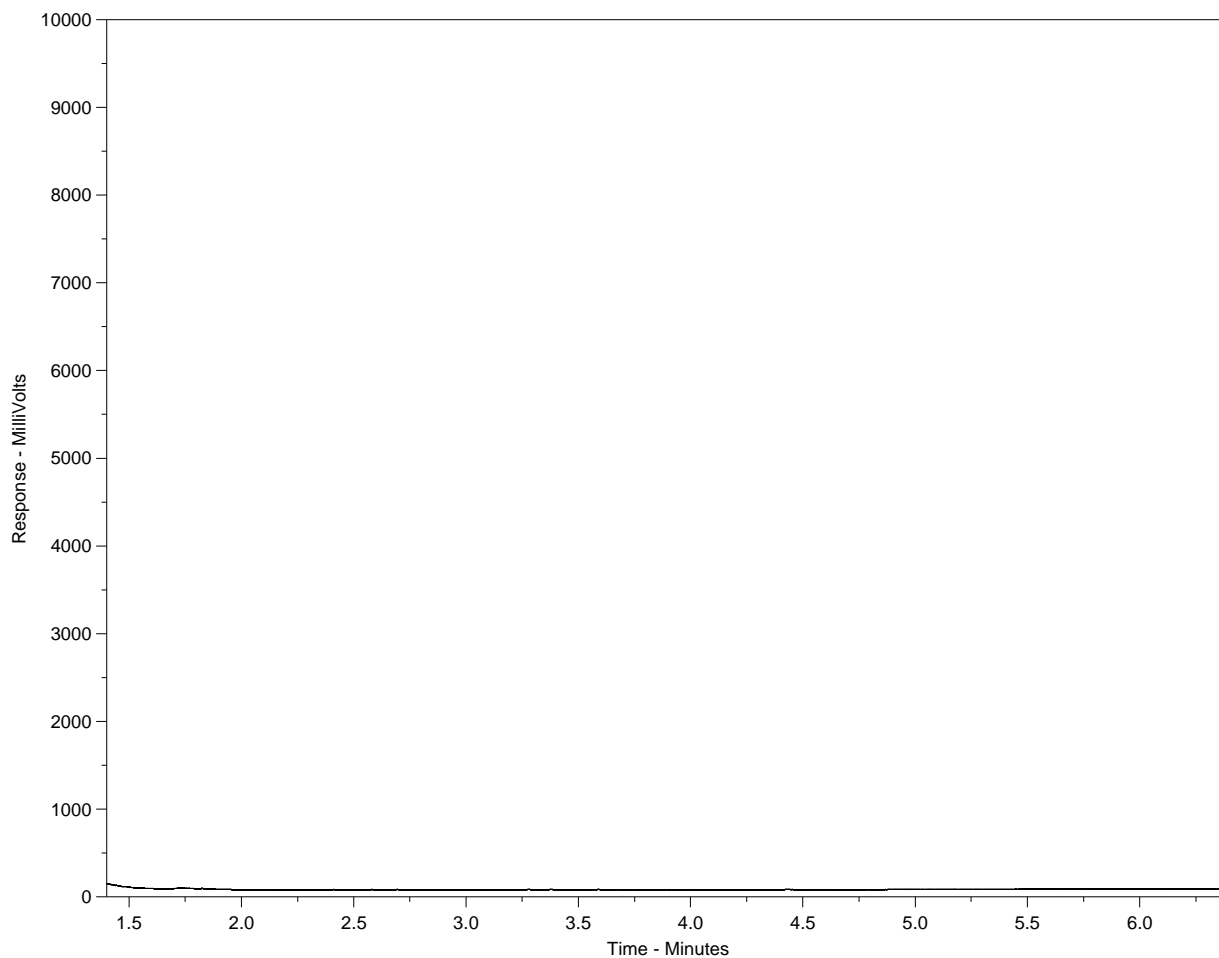
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-8
Client ID: 25B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

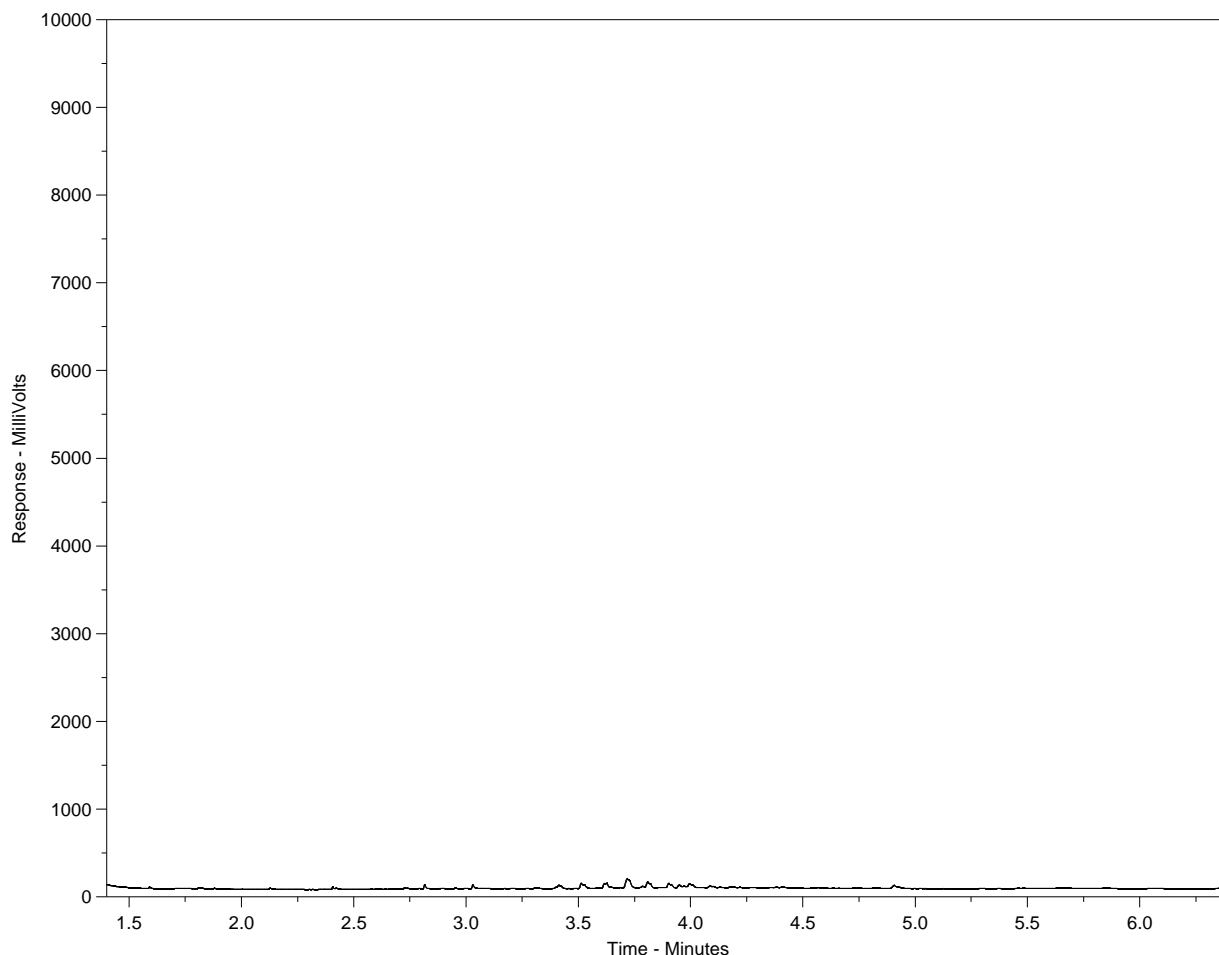
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-9
 Client ID: 26A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

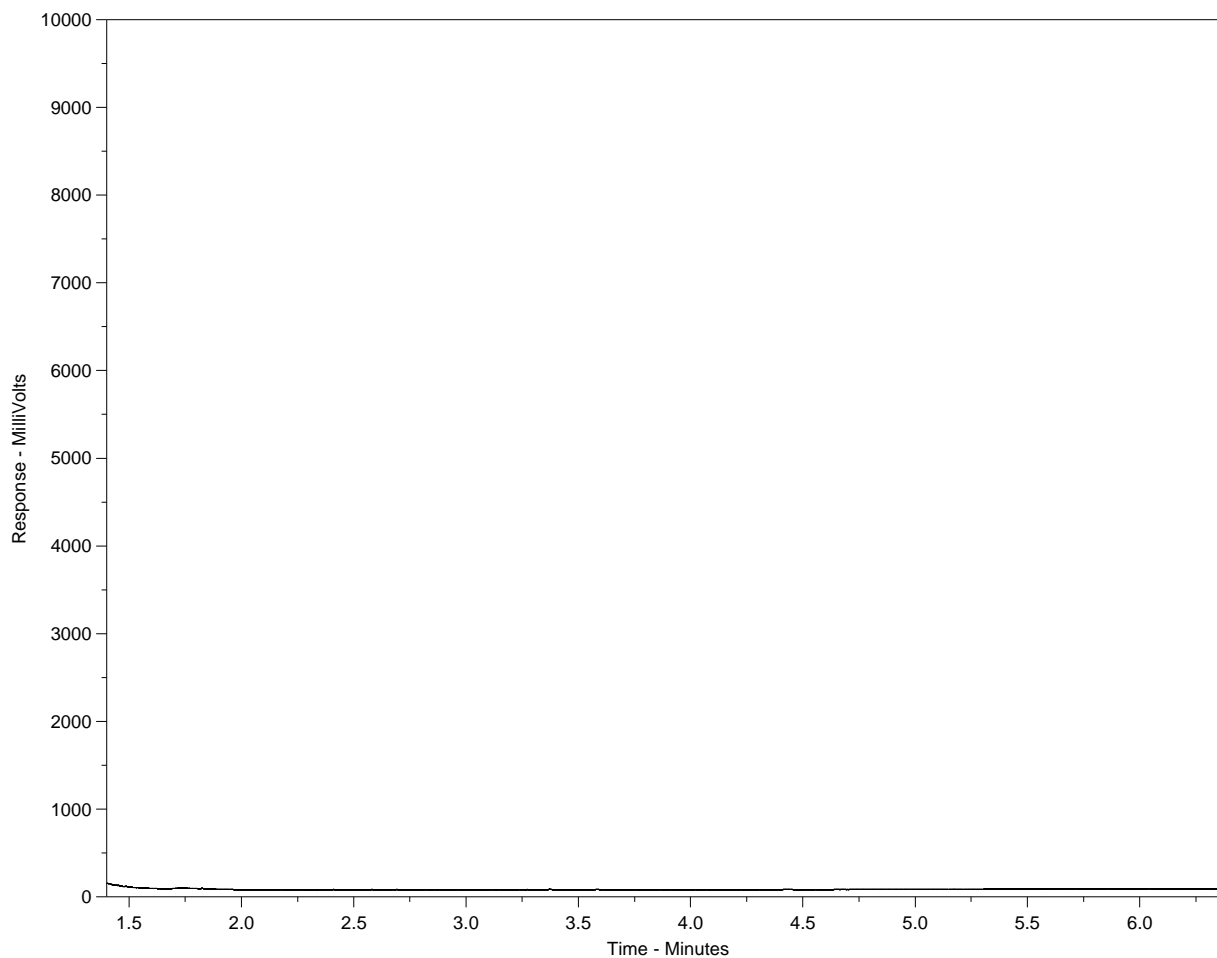
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-10
Client ID: 26B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

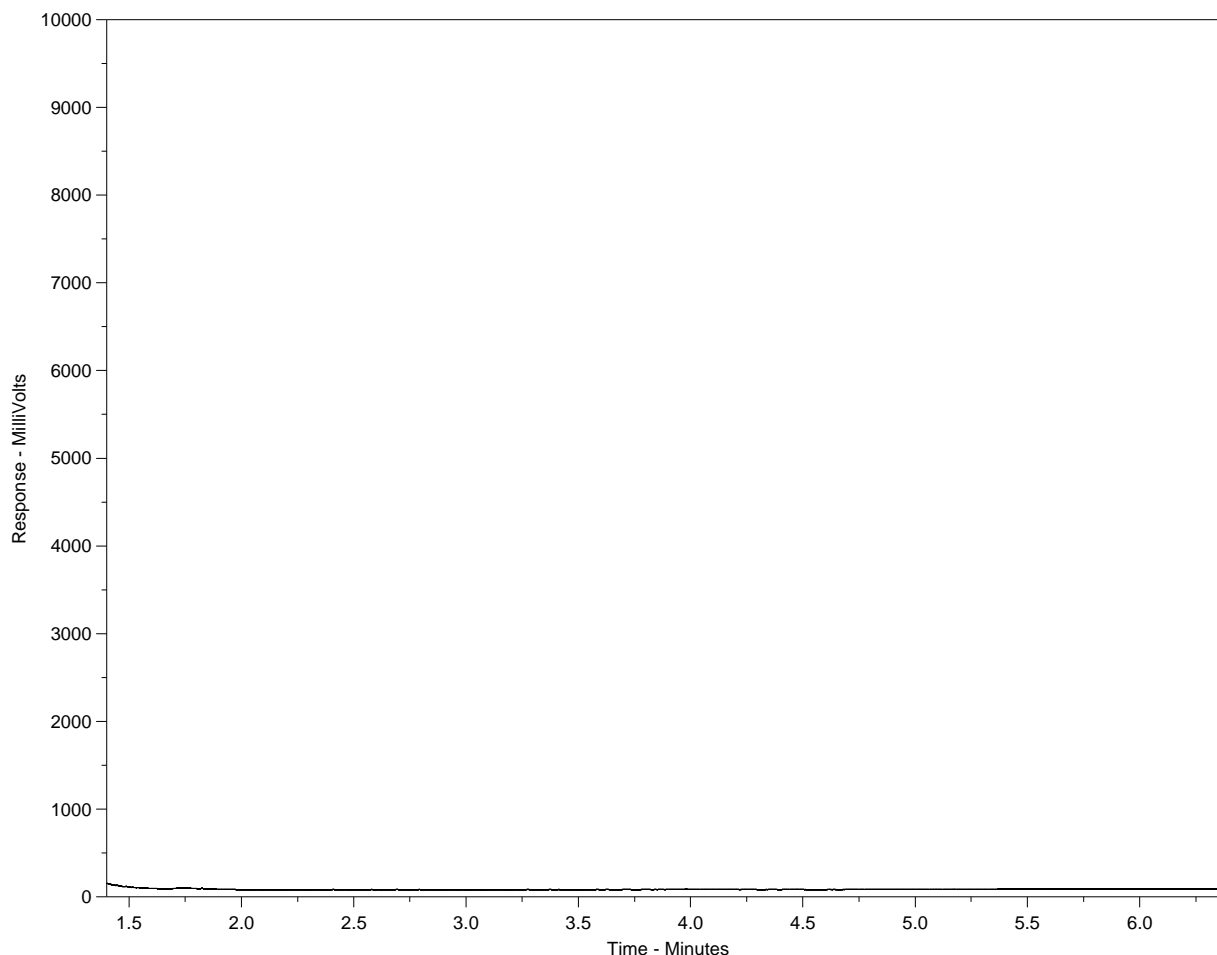
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-11
Client ID: 20A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

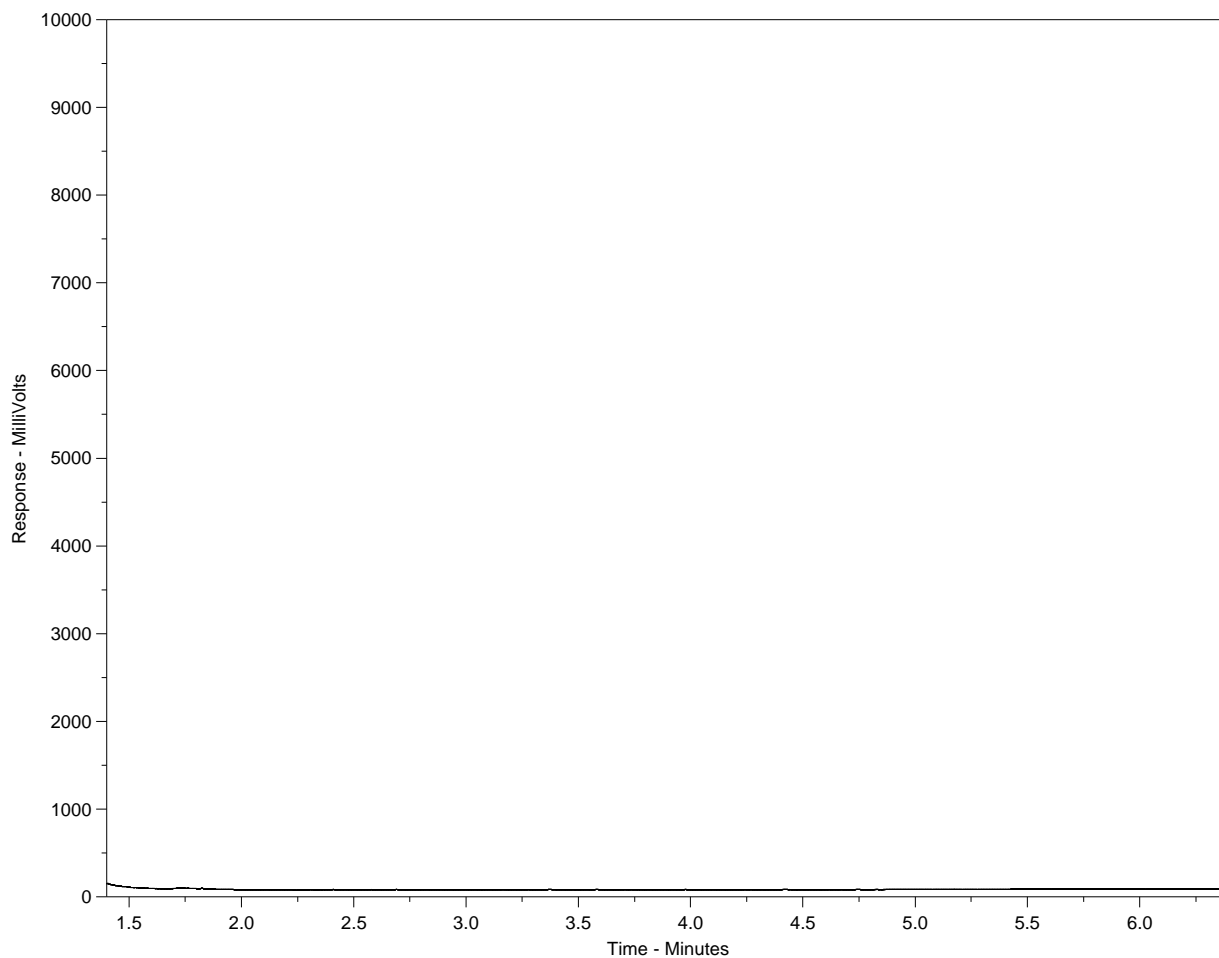
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-12
Client ID: 20B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

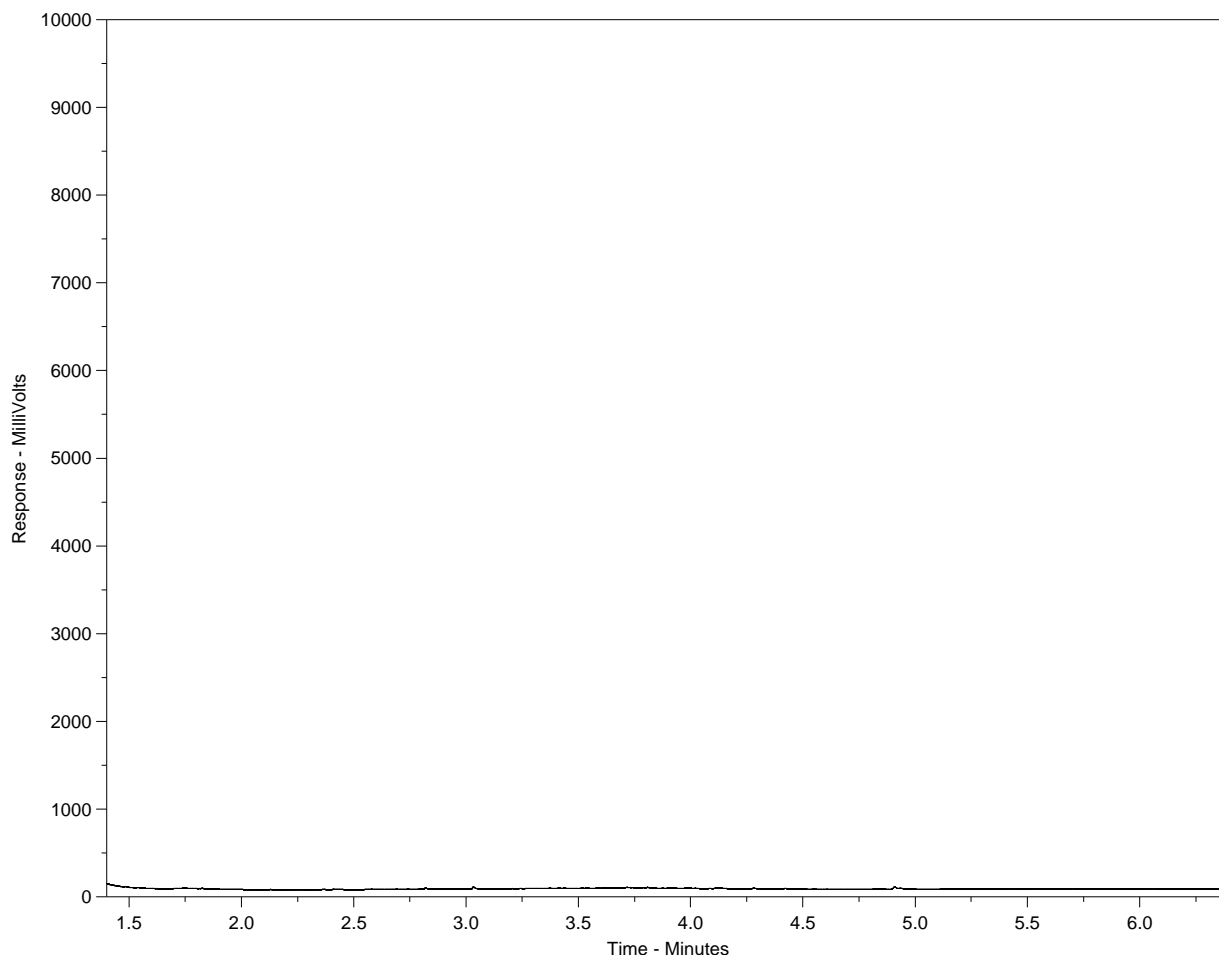
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-13
Client ID: MW21A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

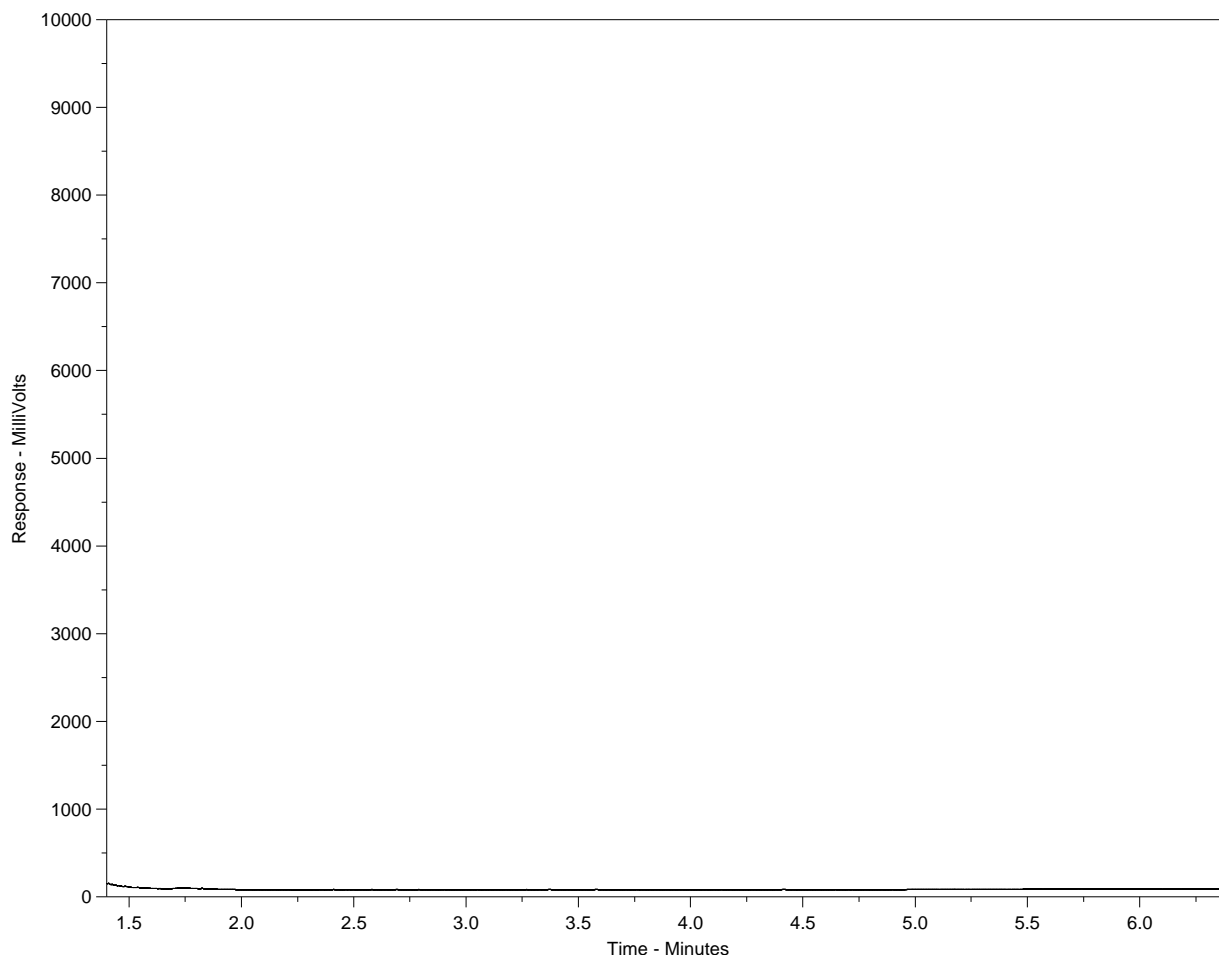
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-14
 Client ID: MW21B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16			nC34		nC50	
174°C	287°C			481°C		575°C	
346°F	549°F			898°F		1067°F	
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

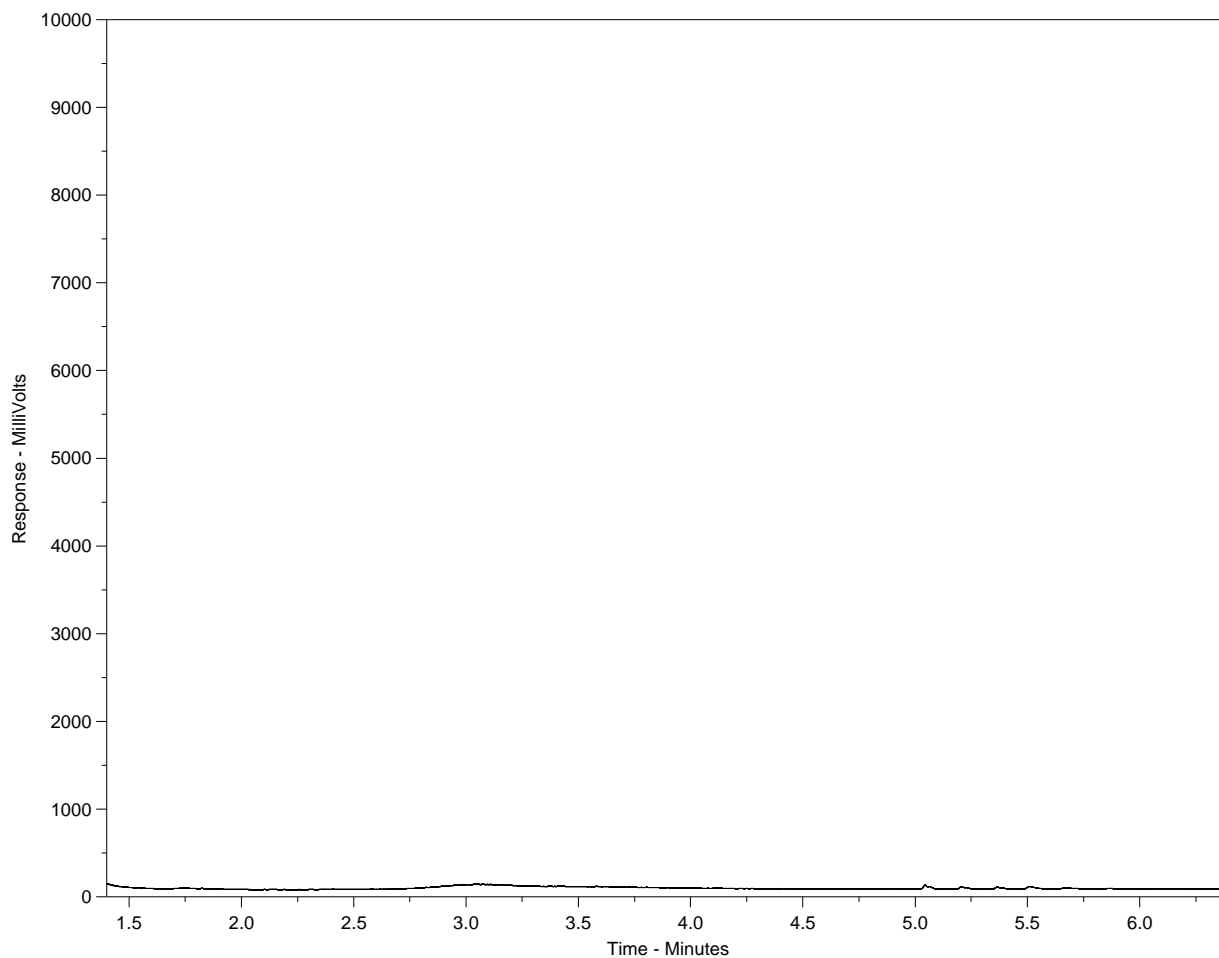
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-15
Client ID: MW35-DEEP



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

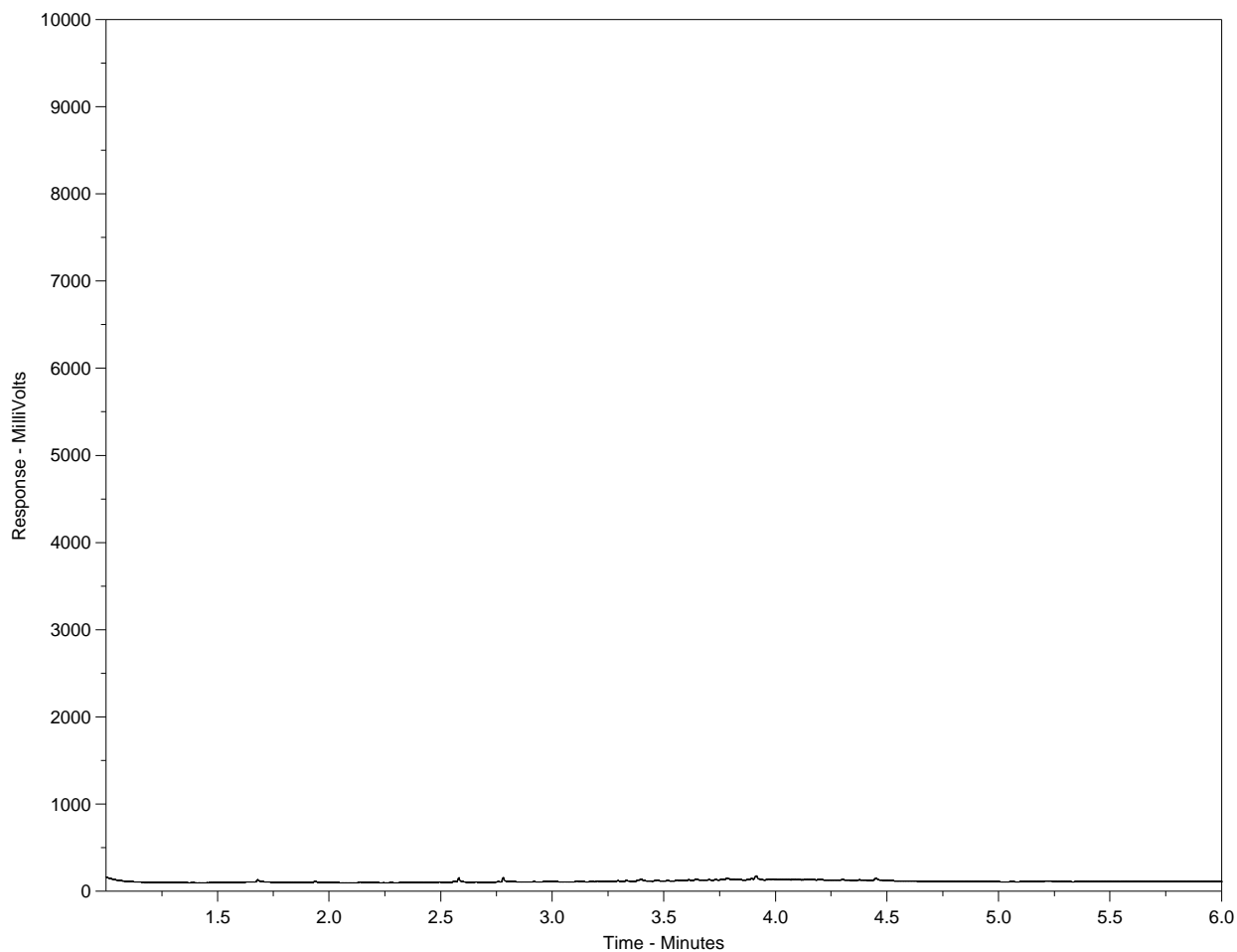
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-16
Client ID: MW35A



← F2 →		← F3 →		← F4 →		← >F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

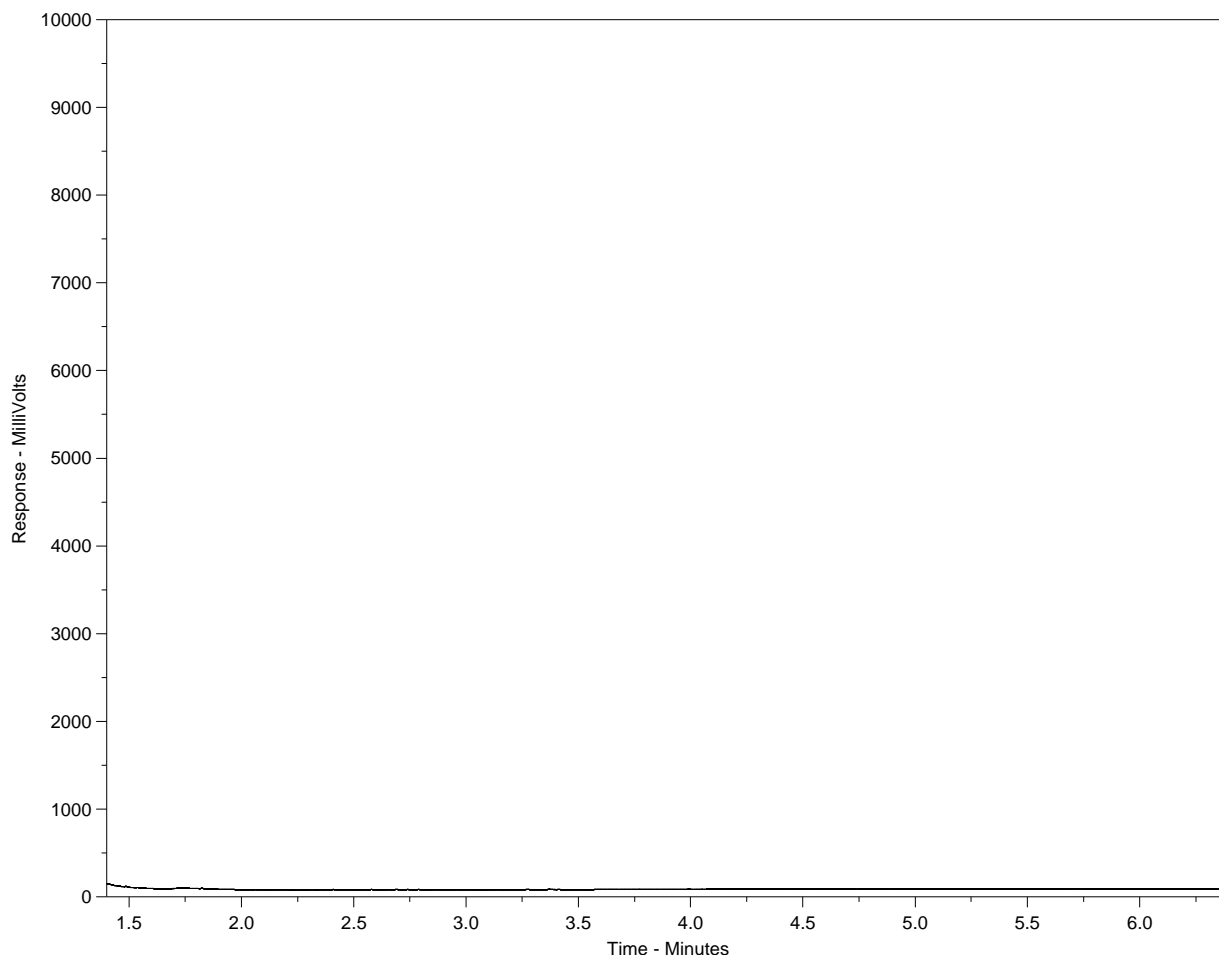
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-17
Client ID: MW35C



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

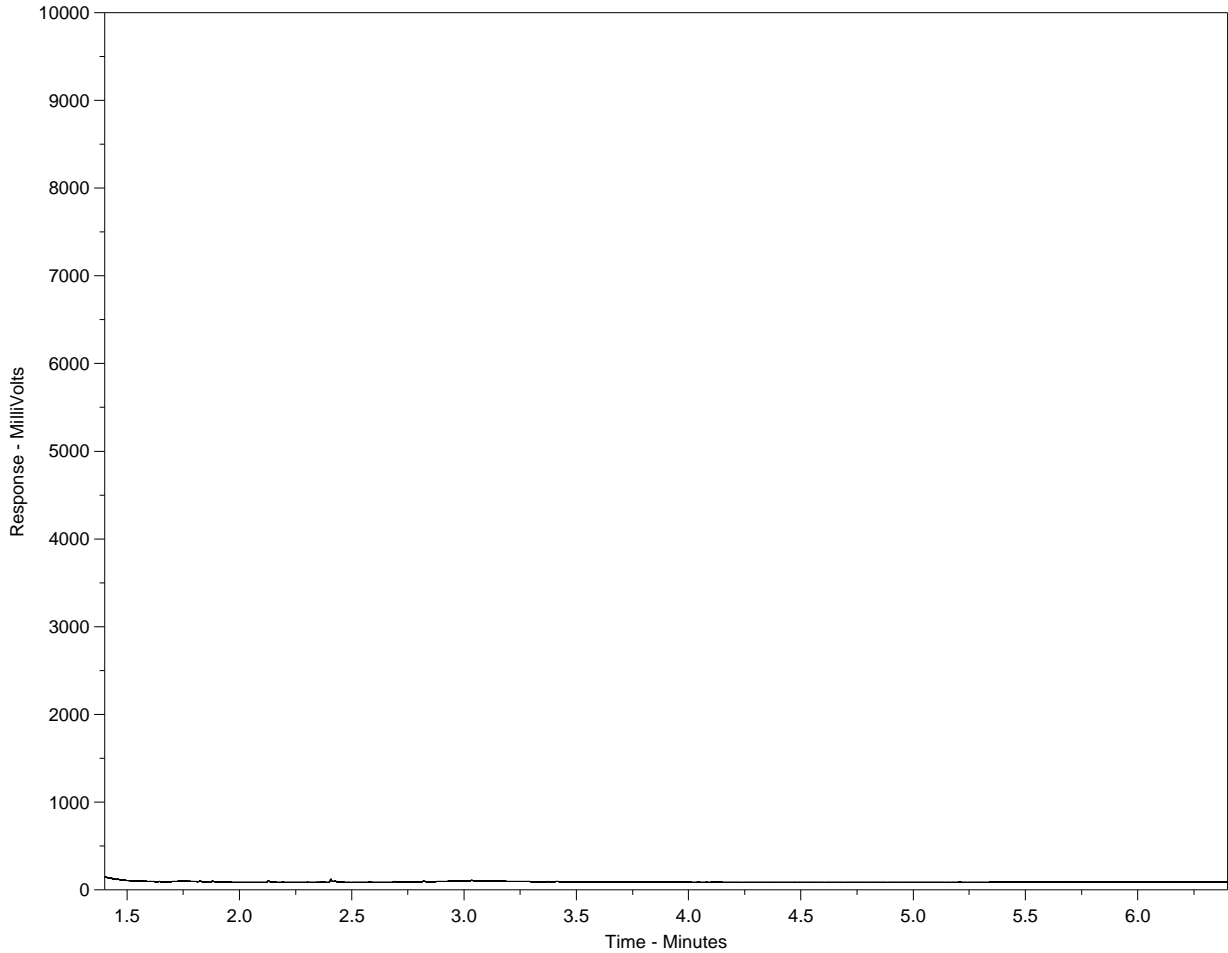
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-18
 Client ID: MW36-DEEP



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

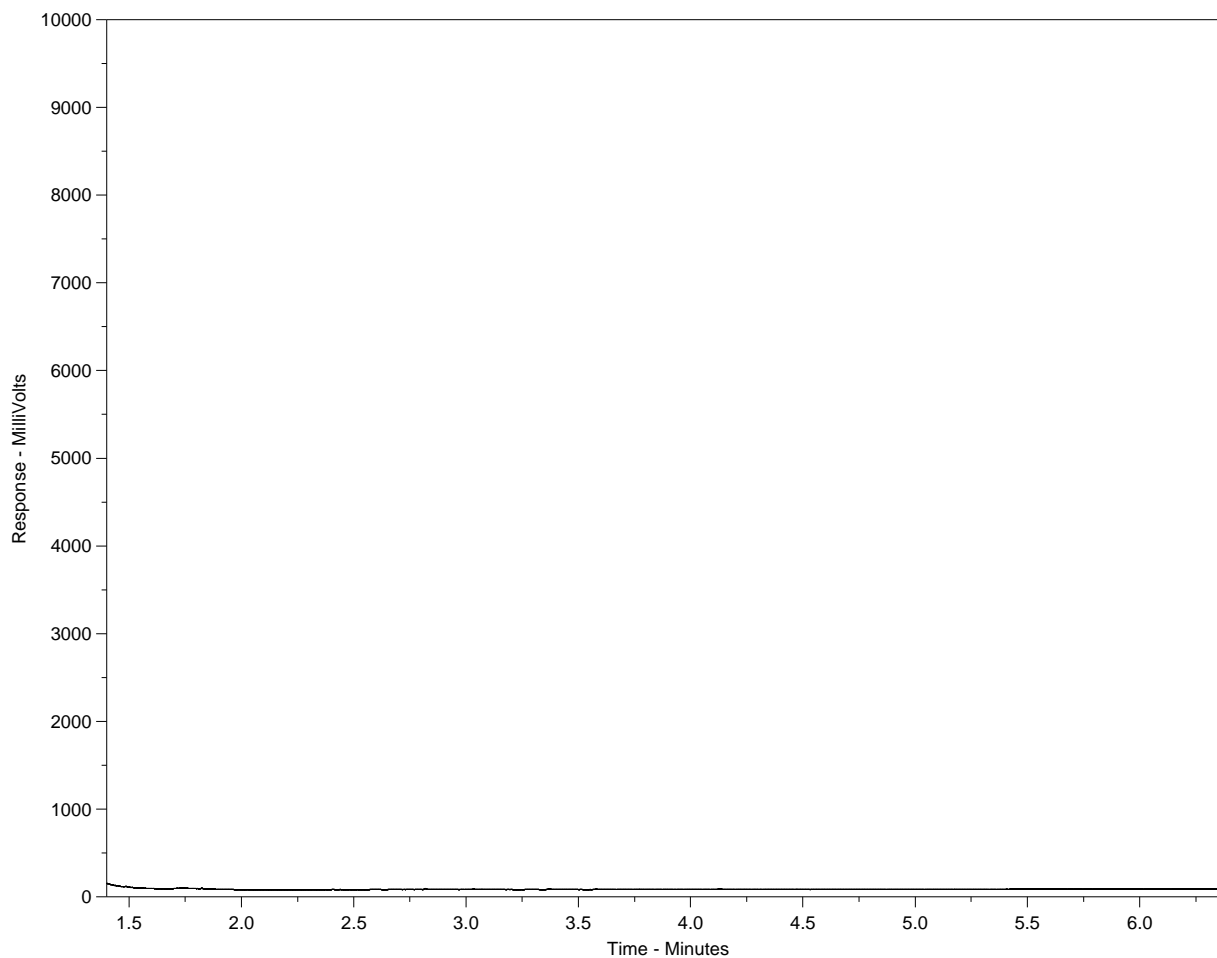
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-19
Client ID: MW36A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

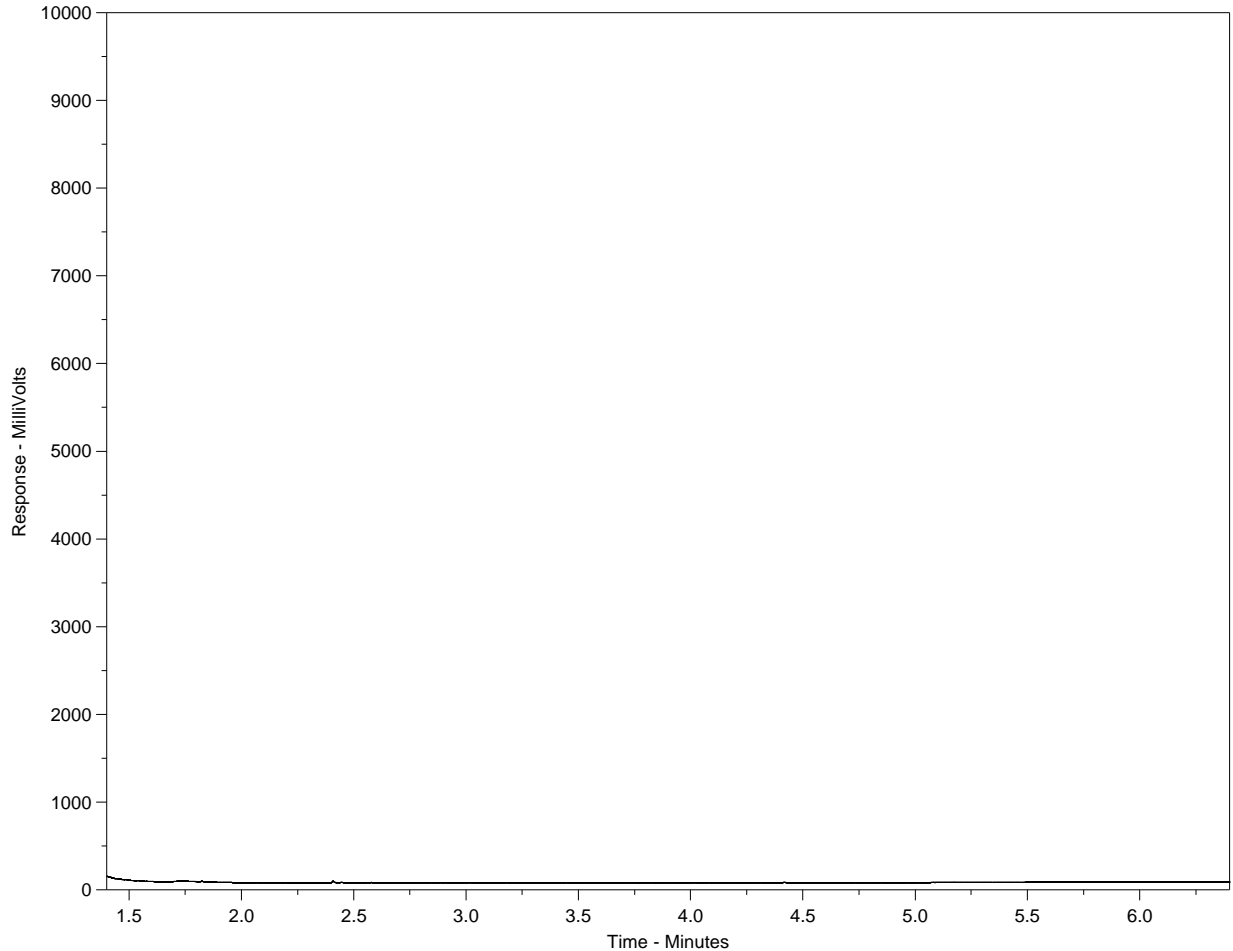
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-20
 Client ID: DUP-2



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16		nC34		nC50		
174°C	287°C		481°C		575°C		
346°F	549°F		898°F		1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

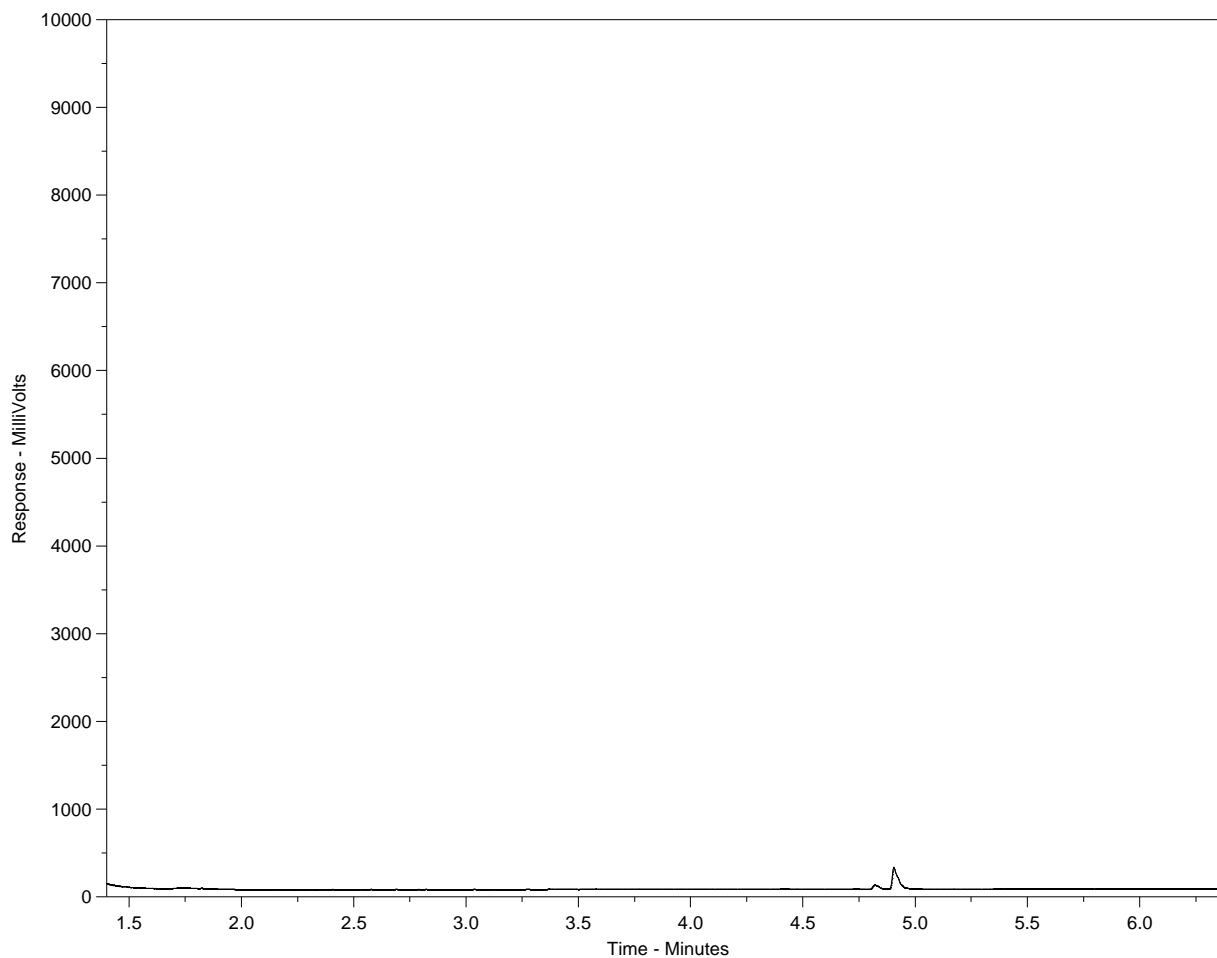
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2596515-21
Client ID: DUP-3



F2		F3		F4		F4	
nC10	nC16			nC34		nC50	
174°C	287°C			481°C		575°C	
346°F	549°F			898°F		1067°F	
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.



TETRA TECH CANADA INC..
ATTN: Michele Crawford
14940 123 Ave NW
North Bldg.
Edmonton AB T5V 1B4


Date Received: 04-JUN-21
Report Date: 13-JUL-21 21:25 (MT)
Version: FINAL REV. 2

Client Phone: 780-451-2121

Certificate of Analysis

Lab Work Order #: L2597121
Project P.O. #: SWOP04401
Job Reference:
C of C Numbers: 20-903129, 20-903133
Legal Site Desc:

Comments: ADDITIONAL 12-JUL-21 09:23
13-JUL-2021 .


Kieran Tordoff
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-1 MW32A							
Sampled By: CLIENT on 04-JUN-21 @ 10:02							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	20-JUN-21	21-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	20-JUN-21	21-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	20-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	110.9		70-130	%	20-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	108.2		70-130	%	20-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	94.7		70-130	%	20-JUN-21	21-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	102.8		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	2.43		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	34		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	10.7		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0015		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	2.86		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					09-JUN-21	R5480960
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		09-JUN-21	R5481335
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	20-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	20-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	20-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-1 MW32A							
Sampled By: CLIENT on 04-JUN-21 @ 10:02							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	20-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	20-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	20-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	20-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	104.7		70-130	%	20-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	81.8		70-130	%	20-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	97.6		70-130	%	20-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	110.9		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	108.2		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	94.7		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	3.7	DLDS	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0051		0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00050		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0139		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.916		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-1 MW32A							
Sampled By: CLIENT on 04-JUN-21 @ 10:02							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000108		0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.0011		0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.403		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.151		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00112		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0125		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.17		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	2.41		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	1320		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000300		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0182		0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.31	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	92.0			%		12-JUN-21	
TDS (Calculated)	6420			mg/L		12-JUN-21	
Hardness (as CaCO3)	304			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.34	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.34		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	3990	DLDS	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.49		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	6950		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	792		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	17.2		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	678		2.0	mg/L		07-JUN-21	R5480549
L2597121-2 MW32B							
Sampled By: CLIENT on 04-JUN-21 @ 10:13							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-2 MW32B							
Sampled By: CLIENT on 04-JUN-21 @ 10:13							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	125.0		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	108.1		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	115.1		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	100.1		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	0.931		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	81		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	15.5		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0011		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	2.69		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					09-JUN-21	R5480960
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		09-JUN-21	R5481335
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-2 MW32B							
Sampled By: CLIENT on 04-JUN-21 @ 10:13							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	99.5		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	86.4		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	104.0		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	99.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	86.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	104.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	146	DLDS	10	mg/L		07-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0082		0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00069		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0147		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.429		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	0.000034		0.000025	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-2 MW32B							
Sampled By: CLIENT on 04-JUN-21 @ 10:13							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000063		0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00282		0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.0025		0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.554		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.679		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00079		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0052		0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0134		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.62		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	5.28		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	2600		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000499		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0212		0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.0020		0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	<0.40	DLDS	0.40	mg/L		07-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	93.4			%		15-JUN-21	
TDS (Calculated)	12300			mg/L		15-JUN-21	
Hardness (as CaCO3)	1120			mg/L		15-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.66	DLDS	0.40	mg/L		07-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.66		0.45	mg/L		15-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.20	DLDS	0.20	mg/L		07-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	7720	DLDS	6.0	mg/L		07-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.10	RRV	0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	10800	RRV	2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1200	RRV	5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	981	RRV	2.0	mg/L		07-JUN-21	R5480549
L2597121-3 MW33A							
Sampled By: CLIENT on 04-JUN-21 @ 14:27							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-3 MW33A							
Sampled By: CLIENT on 04-JUN-21 @ 14:27							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	128.9		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	112.6		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	120.9		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	101.9		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	0.412		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	146		10	mg/L		12-JUL-21	R5517744
Dissolved Organic Carbon	24.0		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0022		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	2.72		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-3 MW33A							
Sampled By: CLIENT on 04-JUN-21 @ 14:27							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	103.1		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	86.6		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	100.1		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	103.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	87.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	100.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	18.4		0.50	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0332		0.0010	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	0.00030		0.00010	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00276		0.00010	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0862		0.00010	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.636		0.010	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	0.0000051		0.0000050	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-3 MW33A							
Sampled By: CLIENT on 04-JUN-21 @ 14:27							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000075		0.000010	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00053		0.00010	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.00053		0.00020	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	0.028		0.010	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	0.000085		0.000050	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.0731		0.0010	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0249		0.00010	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.0205		0.000050	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.00234		0.00050	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	0.109		0.050	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00359		0.00020	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	0.000142		0.000050	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	3.10		0.050	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	0.0789		0.00020	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	17.3		0.50	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	0.00013		0.00010	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	0.00072		0.00030	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	0.00037		0.00010	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000829		0.000010	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	0.00179		0.00050	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0197		0.0010	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.00070		0.00020	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	1.88		0.020	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	110			%		12-JUN-21	
TDS (Calculated)	937			mg/L		12-JUN-21	
Hardness (as CaCO3)	10.9			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.091		0.020	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.091		0.022	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	49.7		0.30	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.76		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	1410		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	841		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	34.3		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	747		2.0	mg/L		07-JUN-21	R5480549
L2597121-4 MW33B							
Sampled By: CLIENT on 04-JUN-21 @ 14:31							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-4 MW33B							
Sampled By: CLIENT on 04-JUN-21 @ 14:31							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	127.0		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	110.6		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	119.9		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	102.5		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	0.678		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	129		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	45.4		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0014		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	2.55		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-4 MW33B							
Sampled By: CLIENT on 04-JUN-21 @ 14:31							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	104.4		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	87.4		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	103.9		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	104.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	87.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	104.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	18.5	DLDS	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050	DLDS	0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00106		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0218		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.362		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-4 MW33B							
Sampled By: CLIENT on 04-JUN-21 @ 14:31							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00129		0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.363		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.181		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00164		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0083		0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0079		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	0.00037		0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	5.10		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	2.09		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	768		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000076		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	<0.0050	DLDS	0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.0016		0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.36	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	97.4			%		12-JUN-21	
TDS (Calculated)	4350			mg/L		12-JUN-21	
Hardness (as CaCO3)	446			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.10	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.11		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	2300	DLDS	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.17		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	4850		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1160		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	948		2.0	mg/L		07-JUN-21	R5480549
L2597121-5 MW8A							
Sampled By: CLIENT on 04-JUN-21 @ 14:09							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-5 MW8A							
Sampled By: CLIENT on 04-JUN-21 @ 14:09							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	0.00092	RRV	0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	104.9		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	101.5		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	110.8		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	103.0		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	0.726		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	51		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	13.3		1.0	mg/L		22-JUN-21	R5495052
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5482645
Total Kjeldahl Nitrogen	1.28		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	0.00103		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-5 MW8A							
Sampled By: CLIENT on 04-JUN-21 @ 14:09							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	94.0		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	90.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	104.3		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	94.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	91.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	104.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	6.09		0.50	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0170		0.0020	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00435		0.00020	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0455		0.00020	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.635		0.020	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000010	DLDS	0.000010	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-5 MW8A							
Sampled By: CLIENT on 04-JUN-21 @ 14:09							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000046		0.000020	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00030		0.00020	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.00056		0.00040	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.020	DLDS	0.020	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.105		0.0020	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0852		0.00020	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00772		0.00010	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	0.16		0.10	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00282		0.00040	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	3.36		0.10	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	0.150		0.00040	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	77.9		1.0	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.00060	DLDS	0.00060	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	0.00027		0.00020	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000451		0.000020	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0164		0.0020	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.00146		0.00040	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	1.17		0.020	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	91.0			%		12-JUN-21	
TDS (Calculated)	1500			mg/L		12-JUN-21	
Hardness (as CaCO3)	20.8			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.022		0.020	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.022		0.022	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	246		0.30	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.79		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	2190		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1260		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	54.5		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	1120		2.0	mg/L		07-JUN-21	R5480549
L2597121-6 MW8B							
Sampled By: CLIENT on 04-JUN-21 @ 14:14							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-6 MW8B							
Sampled By: CLIENT on 04-JUN-21 @ 14:14							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	123.8		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	102.0		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	119.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	100.0		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	0.403		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	63		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	19.8		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0050		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	1.35		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-6 MW8B							
Sampled By: CLIENT on 04-JUN-21 @ 14:14							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	96.4		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	81.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	98.5		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	96.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	82.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	99.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	53.4	DLDS	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0102		0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00153		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0119		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.425		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-6 MW8B							
Sampled By: CLIENT on 04-JUN-21 @ 14:14							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000057		0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00093		0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.0011		0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.286		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.119		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00147		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0045		0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0063		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.28		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	1.56		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	1130		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.00293		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0182		0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.0014		0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.81	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	95.7			%		12-JUN-21	
TDS (Calculated)	6060			mg/L		12-JUN-21	
Hardness (as CaCO3)	338			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.20	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.20		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	3350	DLDS	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.41		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	6810		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1300		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	15.2		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	1090		2.0	mg/L		07-JUN-21	R5480549
L2597121-7 MW12B							
Sampled By: CLIENT on 04-JUN-21 @ 12:21							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-7 MW12B							
Sampled By: CLIENT on 04-JUN-21 @ 12:21							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	118.2		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	113.5		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	113.5		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	102.3		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	1.94		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	237		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	22.2		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-JUN-21	R5482645
Total Kjeldahl Nitrogen	7.11		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-7 MW12B							
Sampled By: CLIENT on 04-JUN-21 @ 12:21							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	96.1		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	86.6		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	105.2		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	96.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	87.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	105.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<5.0	DLDS	5.0	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.216		0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00068		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0200		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.623		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-7 MW12B							
Sampled By: CLIENT on 04-JUN-21 @ 12:21							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000155		0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.0024		0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	0.196		0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.566		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.146		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00152		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0059		0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0153		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.25		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	4.42		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	1950		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	0.0051		0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.0186		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0190		0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.24	DLDS	0.20	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	94.2			%		12-JUN-21	
TDS (Calculated)	9060			mg/L		12-JUN-21	
Hardness (as CaCO3)	625			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	1.78	DLDS	0.20	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	2.64		0.22	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	0.86	DLDS	0.10	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	5810	DLDS	3.0	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.16		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	8890		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	792		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	649		2.0	mg/L		07-JUN-21	R5480549
L2597121-8 MW12A							
Sampled By: CLIENT on 04-JUN-21 @ 12:30							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-8 MW12A							
Sampled By: CLIENT on 04-JUN-21 @ 12:30							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	117.5		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	113.5		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	108.5		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	99.6		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	0.179		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	43		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	17.0		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0016		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	0.68		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-8 MW12A							
Sampled By: CLIENT on 04-JUN-21 @ 12:30							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	108.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	87.1		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	112.1		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	109.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	87.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	112.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<5.0	DLDS	5.0	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050	DLDS	0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00051		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.00754		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.418		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-8 MW12A							
Sampled By: CLIENT on 04-JUN-21 @ 12:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000100		0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.0022		0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.692		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0190		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00033		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0032		0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0119		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.62		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	3.46		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	2430		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.00357		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0214		0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.26	DLDS	0.20	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	92.1			%		12-JUN-21	
TDS (Calculated)	11200			mg/L		12-JUN-21	
Hardness (as CaCO3)	840			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.20	DLDS	0.20	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.22		0.22	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	7280	DLDS	3.0	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.37		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	10600		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	963		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	10.6		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	807		2.0	mg/L		07-JUN-21	R5480549
L2597121-9 MW18A							
Sampled By: CLIENT on 04-JUN-21 @ 11:00							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-9 MW18A							
Sampled By: CLIENT on 04-JUN-21 @ 11:00							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	121.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	102.9		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	123.9		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	99.9		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	0.633		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	31		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	10.6		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	<0.0010		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	0.90		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-9 MW18A							
Sampled By: CLIENT on 04-JUN-21 @ 11:00							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	104.5		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	83.3		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	97.8		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	104.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	83.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	98.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	6.38		0.50	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0030		0.0010	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00137		0.00010	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0987		0.00010	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.779		0.010	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-9 MW18A							
Sampled By: CLIENT on 04-JUN-21 @ 11:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000018		0.000010	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00013		0.00010	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	0.027		0.010	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.0836		0.0010	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0368		0.00010	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00522		0.000050	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.00113		0.00050	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	0.093		0.050	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00210		0.00020	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	3.62		0.050	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	0.0658		0.00020	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	<0.50		0.50	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	0.00036		0.00010	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000194		0.000010	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0190		0.0010	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.00068		0.00020	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	1.79		0.020	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	106			%		12-JUN-21	
TDS (Calculated)	957			mg/L		12-JUN-21	
Hardness (as CaCO3)	9.0			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.022		0.022	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	<0.30		0.30	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.70		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	1380		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	994		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	32.5		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	869		2.0	mg/L		07-JUN-21	R5480549
L2597121-10 MW18B							
Sampled By: CLIENT on 04-JUN-21 @ 10:53							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-10 MW18B							
Sampled By: CLIENT on 04-JUN-21 @ 10:53							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	118.2		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	112.6		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	118.2		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	98.8		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	0.164		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	43		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	14.5		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0013		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	0.92		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-10 MW18B							
Sampled By: CLIENT on 04-JUN-21 @ 10:53							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	101.3		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	80.3		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	102.9		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	101.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	80.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	103.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	74.6	DLDS	1.0	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0026		0.0020	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00033		0.00020	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0133		0.00020	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.054		0.020	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	0.000012		0.000010	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-10 MW18B							
Sampled By: CLIENT on 04-JUN-21 @ 10:53							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000031		0.000020	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.00208		0.00040	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.020	DLDS	0.020	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.128		0.0020	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0550		0.00020	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00036		0.00010	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0036		0.0010	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.10	DLDS	0.10	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00526		0.00040	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	0.00012		0.00010	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.79		0.10	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	1.33		0.00040	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	280		1.0	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.00060	DLDS	0.00060	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.00607		0.000020	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0179		0.0020	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.00040	DLDS	0.00040	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.252	DLDS	0.040	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	91.8			%		12-JUN-21	
TDS (Calculated)	1920			mg/L		12-JUN-21	
Hardness (as CaCO3)	601			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.093	DLDS	0.040	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.093		0.045	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLDS	0.020	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	892	DLDS	0.60	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.03		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	2390		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	696		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	571		2.0	mg/L		07-JUN-21	R5480549
L2597121-11 MW11							
Sampled By: CLIENT on 04-JUN-21 @ 13:50							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-11 MW11							
Sampled By: CLIENT on 04-JUN-21 @ 13:50							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	101.0		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	108.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	121.6		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	11-JUN-21	11-JUN-21	R5488578
Surrogate: 2-Bromobenzotrifluoride	101.0		60-140	%	11-JUN-21	11-JUN-21	R5488578
Miscellaneous Parameters							
Ammonia, Total (as N)	0.237		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	92		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	36.1		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	<0.0010		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	1.38	RRV	0.20	mg/L	15-JUN-21	16-JUN-21	R5492277
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-11 MW11							
Sampled By: CLIENT on 04-JUN-21 @ 13:50							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	99.6		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	84.5		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	114.9		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	85.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	115.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	48.3	DLDS	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050	DLDS	0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00108		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.00620		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.202		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-11 MW11							
Sampled By: CLIENT on 04-JUN-21 @ 13:50							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000082		0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.0017		0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.558		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0115		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00114		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0053		0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0106		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	0.00053		0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.71		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	3.60		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	1630		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.0259		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0198		0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.53	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	96.5			%		12-JUN-21	
TDS (Calculated)	7910			mg/L		12-JUN-21	
Hardness (as CaCO3)	963			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.24	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.24		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	4860	DLDS	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.15		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	8320		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	992		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	813		2.0	mg/L		07-JUN-21	R5480549
L2597121-12 19MW37A							
Sampled By: CLIENT on 04-JUN-21 @ 12:48							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-12 19MW37A							
Sampled By: CLIENT on 04-JUN-21 @ 12:48							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	117.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	116.8		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	122.9		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	96.6		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	1.37		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	39		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	10.9		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0127		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	1.45		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-12 19MW37A							
Sampled By: CLIENT on 04-JUN-21 @ 12:48							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	98.9		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	82.2		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	109.3		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	99.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	82.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	109.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	5.1	DLDS	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0027		0.0020	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00046		0.00020	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.00713		0.00020	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.652		0.020	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000010	DLDS	0.000010	mg/L		11-JUN-21	R5486077

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-12 19MW37A							
Sampled By: CLIENT on 04-JUN-21 @ 12:48							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000046		0.000020	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00045		0.00020	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.00133		0.00040	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.020	DLDS	0.020	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.188		0.0020	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.221		0.00020	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00115		0.00010	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0012		0.0010	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.10	DLDS	0.10	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00468		0.00040	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	3.29		0.10	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	0.321		0.00040	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	402		1.0	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	0.00042		0.00020	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.00060	DLDS	0.00060	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.00300		0.000020	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0166		0.0020	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.00043		0.00040	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.80	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	86.6	BL:INT		%		12-JUN-21	
TDS (Calculated)	2690			mg/L		12-JUN-21	
Hardness (as CaCO3)	61.8			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.10	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.11		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	1360	DLDS	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.66		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	3520		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	873		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	30.4		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	766		2.0	mg/L		07-JUN-21	R5480549
L2597121-13 FIELD BLANK							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-13 FIELD BLANK							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	127.6		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	106.9		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	123.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	98.3		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		11-JUN-21	R5486924
Chemical Oxygen Demand	<10		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	6.0	RRV	1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	<0.0010		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-13 FIELD BLANK							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	99.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	87.3		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	121.2		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	87.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	121.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<0.50		0.50	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0014		0.0010	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.00040		0.00010	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.011		0.010	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-13 FIELD BLANK							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	0.00108		0.00010	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.00017		0.00010	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.00060		0.00050	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	<0.050		0.050	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	<0.50		0.50	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0184		0.0010	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	<0.020		0.020	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	Low TDS			%		13-JUN-21	
TDS (Calculated)	<1.0			mg/L		13-JUN-21	
Hardness (as CaCO3)	<1.0			mg/L		13-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.022		0.022	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	<0.30		0.30	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	5.76		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	<2.0		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	<2.0		2.0	mg/L		07-JUN-21	R5480549
L2597121-14 19MW37B							
Sampled By: CLIENT on 04-JUN-21 @ 12:54							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-14 19MW37B							
Sampled By: CLIENT on 04-JUN-21 @ 12:54							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	113.5		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	99.2		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	108.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	98.1		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	0.818		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	38		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	9.5		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0086		0.0010	mg/L		12-JUN-21	R5490074
Total Kjeldahl Nitrogen	1.11		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-14 19MW37B							
Sampled By: CLIENT on 04-JUN-21 @ 12:54							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	96.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	82.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	115.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	97.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	83.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	116.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	2.49		0.50	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00060		0.00010	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0177		0.00010	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.160		0.010	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-14 19MW37B							
Sampled By: CLIENT on 04-JUN-21 @ 12:54							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000052		0.000010	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00043		0.00010	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.00052		0.00020	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	0.011		0.010	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.160		0.0010	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.145		0.00010	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00227		0.000050	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.00064		0.00050	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00684		0.00020	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	0.000109		0.000050	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	5.03		0.050	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	0.627		0.00020	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	88.6		0.50	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	0.00018		0.00010	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	0.00027		0.00010	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	0.00021		0.00010	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000285		0.000010	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.00113		0.00020	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.230		0.020	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	108			%		12-JUN-21	
TDS (Calculated)	1270			mg/L		12-JUN-21	
Hardness (as CaCO3)	222			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.022		0.022	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	250		0.30	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.19		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	1750		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1010		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	831		2.0	mg/L		07-JUN-21	R5480549
L2597121-15 MW10							
Sampled By: CLIENT on 04-JUN-21 @ 14:00							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-15 MW10							
Sampled By: CLIENT on 04-JUN-21 @ 14:00							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	127.8		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	116.1		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	94.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	95.9		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	0.210		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	36		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	10.8		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	<0.0010		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	0.72		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-15 MW10							
Sampled By: CLIENT on 04-JUN-21 @ 14:00							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	95.6		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	82.2		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	105.6		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	96.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	82.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	106.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	68.1	DLDS	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0039		0.0020	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00068		0.00020	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0134		0.00020	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.121		0.020	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000010	DLDS	0.000010	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-15 MW10							
Sampled By: CLIENT on 04-JUN-21 @ 14:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000036		0.000020	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	0.00065		0.00020	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00044		0.00020	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.00168		0.00040	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.020	DLDS	0.020	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.241		0.0020	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0914		0.00020	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00130		0.00010	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0111		0.0010	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.10	DLDS	0.10	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00460		0.00040	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	0.00019		0.00010	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.22		0.10	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	0.922		0.00040	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	573		1.0	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	0.000038		0.000020	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.00060	DLDS	0.00060	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.00514		0.000020	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0180		0.0020	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.00040	DLDS	0.00040	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.57	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	92.1			%		12-JUN-21	
TDS (Calculated)	3160			mg/L		12-JUN-21	
Hardness (as CaCO3)	280			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.10	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.11		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	1760	DLDS	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.34		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	3800		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	648		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	538		2.0	mg/L		07-JUN-21	R5480549
L2597121-16 MW1B							
Sampled By: CLIENT on 04-JUN-21 @ 11:30							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-16 MW1B							
Sampled By: CLIENT on 04-JUN-21 @ 11:30							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	123.7		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	109.0		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	112.2		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	96.1		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	0.322		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	42		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	8.6		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	<0.0010		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	1.10		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-16 MW1B							
Sampled By: CLIENT on 04-JUN-21 @ 11:30							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	95.4		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	82.2		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	115.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	95.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	82.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	116.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	5.2	DLDS	1.0	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0366		0.0020	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00099		0.00020	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0356		0.00020	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.588		0.020	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	0.000021		0.00010	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-16 MW1B							
Sampled By: CLIENT on 04-JUN-21 @ 11:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000058		0.000020	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.00234		0.00040	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	0.025		0.020	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.114		0.0020	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0462		0.00020	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00477		0.00010	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0038		0.0010	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.10	DLDS	0.10	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00339		0.00040	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	2.65		0.10	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	0.165		0.00040	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	118		1.0	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	0.00064		0.00060	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.00124		0.000020	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0209		0.0020	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.00074		0.00040	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	1.07	DLDS	0.040	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	91.9			%		12-JUN-21	
TDS (Calculated)	1520			mg/L		12-JUN-21	
Hardness (as CaCO3)	22.5			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.278	DLDS	0.040	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.320		0.045	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	0.043	DLDS	0.020	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	383	DLDS	0.60	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.65		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	2210		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1080		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	32.3		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	943		2.0	mg/L		07-JUN-21	R5480549
L2597121-17 MW1C							
Sampled By: CLIENT on 04-JUN-21 @ 11:20							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-17 MW1C							
Sampled By: CLIENT on 04-JUN-21 @ 11:20							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	109.7		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	103.9		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	121.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	95.9		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	0.416		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	35		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	12.4		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0028		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	1.11		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-17 MW1C							
Sampled By: CLIENT on 04-JUN-21 @ 11:20							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	94.9		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	85.5		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	103.5		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	95.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	86.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	103.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<2.5	DLDS	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050	DLDS	0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00052		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0144		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.238		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		11-JUN-21	R5486077

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-17 MW1C							
Sampled By: CLIENT on 04-JUN-21 @ 11:20							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00068		0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.288		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.168		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00052		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0070		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	3.97		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	1.93		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	872		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000099		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0204		0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.24	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	89.2	BL:INT		%		12-JUN-21	
TDS (Calculated)	4480			mg/L		12-JUN-21	
Hardness (as CaCO3)	411			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.22	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.22		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	2770	DLDS	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.25		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	5180		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	684		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	561		2.0	mg/L		07-JUN-21	R5480549
L2597121-18 MW19A							
Sampled By: CLIENT on 04-JUN-21 @ 10:39							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-18 MW19A							
Sampled By: CLIENT on 04-JUN-21 @ 10:39							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	122.8		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	109.8		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	114.1		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	96.9		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	0.935		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	32		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	10.0		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0025		0.0010	mg/L		12-JUN-21	R5490074
Total Kjeldahl Nitrogen	1.58		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-18 MW19A							
Sampled By: CLIENT on 04-JUN-21 @ 10:39							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	106.0		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	85.9		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	104.1		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	106.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	86.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	104.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	10.6	DLDS	5.0	mg/L		07-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0020		0.0010	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	0.00057		0.00010	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00082		0.00010	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0167		0.00010	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.411		0.010	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-18 MW19A							
Sampled By: CLIENT on 04-JUN-21 @ 10:39							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000047		0.000010	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00049		0.00010	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.580		0.0010	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.299		0.00010	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00280		0.000050	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.00276		0.00050	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00819		0.00020	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	0.000098		0.000050	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.68		0.050	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	1.51		0.00020	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	1270		0.50	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	0.000014		0.000010	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.00818		0.000010	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0181		0.0010	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.00101		0.00020	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.39	DLDS	0.20	mg/L		07-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	104			%		16-JUN-21	
TDS (Calculated)	5960			mg/L		16-JUN-21	
Hardness (as CaCO3)	303			mg/L		16-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.69	DLDS	0.20	mg/L		07-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.69		0.22	mg/L		15-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLDS	0.10	mg/L		07-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	3250	DLDS	3.0	mg/L		07-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.41		0.10	pH		15-JUN-21	R5491315
Conductivity (EC)	6810		2.0	uS/cm		15-JUN-21	R5491315
Bicarbonate (HCO3)	1210		5.0	mg/L		15-JUN-21	R5491315
Carbonate (CO3)	16.4		5.0	mg/L		15-JUN-21	R5491315
Hydroxide (OH)	<5.0		5.0	mg/L		15-JUN-21	R5491315
Alkalinity, Total (as CaCO3)	1020		2.0	mg/L		15-JUN-21	R5491315
L2597121-19 MW19B							
Sampled By: CLIENT on 04-JUN-21 @ 10:30							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-19 MW19B							
Sampled By: CLIENT on 04-JUN-21 @ 10:30							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	126.0		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	121.8		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	108.0		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	99.0		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	0.740		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	26		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	7.5		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0021		0.0010	mg/L		12-JUN-21	R5490074
Total Kjeldahl Nitrogen	0.87		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-19 MW19B							
Sampled By: CLIENT on 04-JUN-21 @ 10:30							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	94.1		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	87.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	101.3		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	94.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	88.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	101.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	3.8	DLDS	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050	DLDS	0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00261		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0206		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.498		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-19 MW19B							
Sampled By: CLIENT on 04-JUN-21 @ 10:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.570		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0887		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00172		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0072		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	5.04		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	1.19		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	973		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000431		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	<0.0050	DLDS	0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.15	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	99.9			%		12-JUN-21	
TDS (Calculated)	4940			mg/L		12-JUN-21	
Hardness (as CaCO3)	160			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.10	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.11		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	2700	DLDS	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.69		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	5790		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1020		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	42.8		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	910		2.0	mg/L		07-JUN-21	R5480549
L2597121-20 19MW38A							
Sampled By: CLIENT on 04-JUN-21 @ 13:07							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-20 19MW38A							
Sampled By: CLIENT on 04-JUN-21 @ 13:07							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	119.7		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	105.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	103.4		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	99.8		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	0.869		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	80		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	18.6		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0025		0.0010	mg/L		12-JUN-21	R5490074
Total Kjeldahl Nitrogen	1.72		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-20 19MW38A							
Sampled By: CLIENT on 04-JUN-21 @ 13:07							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	113.0		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	84.9		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	105.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	113.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	85.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	106.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	12.6		0.50	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0509		0.0020	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00226		0.00020	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0148		0.00020	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.687		0.020	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000010	DLDS	0.000010	mg/L		11-JUN-21	R5486077

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-20 19MW38A							
Sampled By: CLIENT on 04-JUN-21 @ 13:07							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000032		0.000020	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	0.00033		0.00020	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.00199		0.00040	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	0.032		0.020	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.108		0.0020	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.0190		0.00020	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00576		0.00010	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	0.0019		0.0010	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.10	DLDS	0.10	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.00271		0.00040	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	0.00026		0.00010	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	3.78		0.10	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	0.121		0.00040	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	103		1.0	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000020	DLDS	0.000020	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00020	DLDS	0.00020	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	0.00121		0.00060	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	0.00023		0.00020	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.00156		0.000020	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	0.0039		0.0020	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.00087		0.00040	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	1.30		0.020	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	90.5			%		12-JUN-21	
TDS (Calculated)	1470			mg/L		12-JUN-21	
Hardness (as CaCO3)	23.1			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.085		0.020	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.085		0.022	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	314		0.30	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.77		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	2170		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1110		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	46.2		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	986		2.0	mg/L		07-JUN-21	R5480549
L2597121-21 19MW38B							
Sampled By: CLIENT on 04-JUN-21 @ 13:19							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-21 19MW38B							
Sampled By: CLIENT on 04-JUN-21 @ 13:19							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	16-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	15-JUN-21	16-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	15-JUN-21	16-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	104.1		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	101.7		70-130	%	15-JUN-21	16-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	113.6		70-130	%	15-JUN-21	16-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	98.3		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	0.164		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	45		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	13.4		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	<0.0010		0.0010	mg/L		19-JUN-21	R5494207
Total Kjeldahl Nitrogen	0.59		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-21 19MW38B							
Sampled By: CLIENT on 04-JUN-21 @ 13:19							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	15-JUN-21	21-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	15-JUN-21	21-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	101.7		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	82.9		70-130	%	15-JUN-21	21-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	106.6		70-130	%	15-JUN-21	21-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	102.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	83.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	107.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<2.5	RRV	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	0.0061		0.0020	mg/L		15-JUN-21	R5490977
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		15-JUN-21	R5490977
Arsenic (As)-Dissolved	0.00139		0.00020	mg/L		15-JUN-21	R5490977
Barium (Ba)-Dissolved	0.0196		0.00020	mg/L		15-JUN-21	R5490977
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		15-JUN-21	R5490977
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		15-JUN-21	R5490977
Boron (B)-Dissolved	0.284		0.020	mg/L		15-JUN-21	R5490977
Cadmium (Cd)-Dissolved	<0.000010	DLDS	0.000010	mg/L		15-JUN-21	R5490977

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-21 19MW38B							
Sampled By: CLIENT on 04-JUN-21 @ 13:19							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000020	DLDS	0.000020	mg/L		15-JUN-21	R5490977
Chromium (Cr)-Dissolved	<0.00020	DLDS	0.00020	mg/L		15-JUN-21	R5490977
Cobalt (Co)-Dissolved	0.00066		0.00020	mg/L		15-JUN-21	R5490977
Copper (Cu)-Dissolved	0.00276		0.00040	mg/L		15-JUN-21	R5490977
Iron (Fe)-Dissolved	<0.020	DLDS	0.020	mg/L		15-JUN-21	R5490977
Lead (Pb)-Dissolved	0.00017		0.00010	mg/L		15-JUN-21	R5490977
Lithium (Li)-Dissolved	0.131		0.0020	mg/L		15-JUN-21	R5490977
Manganese (Mn)-Dissolved	0.111		0.00020	mg/L		15-JUN-21	R5490977
Molybdenum (Mo)-Dissolved	0.00147		0.00010	mg/L		15-JUN-21	R5490977
Nickel (Ni)-Dissolved	0.0027		0.0010	mg/L		15-JUN-21	R5490977
Phosphorus (P)-Dissolved	<0.10	DLDS	0.10	mg/L		15-JUN-21	R5490977
Rubidium (Rb)-Dissolved	0.00317		0.00040	mg/L		15-JUN-21	R5490977
Selenium (Se)-Dissolved	0.00016		0.00010	mg/L		15-JUN-21	R5490977
Silicon (Si)-Dissolved	4.77		0.10	mg/L		15-JUN-21	R5490977
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		15-JUN-21	R5490977
Strontium (Sr)-Dissolved	0.293		0.00040	mg/L		15-JUN-21	R5490977
Sulfur (S)-Dissolved	284		1.0	mg/L		15-JUN-21	R5490977
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		15-JUN-21	R5490977
Thallium (Tl)-Dissolved	<0.000020	DLDS	0.000020	mg/L		15-JUN-21	R5490977
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		15-JUN-21	R5490977
Tin (Sn)-Dissolved	0.00035		0.00020	mg/L		15-JUN-21	R5490977
Titanium (Ti)-Dissolved	<0.00060	DLDS	0.00060	mg/L		15-JUN-21	R5490977
Tungsten (W)-Dissolved	<0.00020	DLDS	0.00020	mg/L		15-JUN-21	R5490977
Uranium (U)-Dissolved	0.00413		0.000020	mg/L		15-JUN-21	R5490977
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		15-JUN-21	R5490977
Zinc (Zn)-Dissolved	0.0226		0.0020	mg/L		15-JUN-21	R5490977
Zirconium (Zr)-Dissolved	0.00216		0.00040	mg/L		15-JUN-21	R5490977
Fluoride in Water by IC							
Fluoride (F)	0.68	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	93.3			%		15-JUN-21	
TDS (Calculated)	2730			mg/L		15-JUN-21	
Hardness (as CaCO3)	109			mg/L		15-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.22	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.22		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	875	RRV	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.69	RRV	0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	3560	RRV	2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	1630	RRV	5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	58.8		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	1440	RRV	2.0	mg/L		07-JUN-21	R5480549
L2597121-22 TRIP BLANK							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-22 TRIP BLANK							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	21-JUN-21	22-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	21-JUN-21	22-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	21-JUN-21	22-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	102.1		70-130	%	21-JUN-21	22-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	90.4		70-130	%	21-JUN-21	22-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	105.7		70-130	%	21-JUN-21	22-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	97.5		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	<10		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	<1.0		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	<0.0010		0.0010	mg/L		14-JUN-21	R5490074
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	09-JUN-21	10-JUN-21	R5487237
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	22-JUN-21	22-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	22-JUN-21	22-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	22-JUN-21	22-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-22 TRIP BLANK							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	22-JUN-21	22-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	99.3		70-130	%	22-JUN-21	22-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	85.5		70-130	%	22-JUN-21	22-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	112.3		70-130	%	22-JUN-21	22-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	103.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	83.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	114.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	<0.50		0.50	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	<0.010		0.010	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-22 TRIP BLANK							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	<0.050		0.050	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	<0.50		0.50	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	<0.020		0.020	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	Low TDS			%		12-JUN-21	
TDS (Calculated)	<1.0			mg/L		12-JUN-21	
Hardness (as CaCO3)	<1.0			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.022		0.022	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	<0.30		0.30	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	5.53		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	<2.0		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	<2.0		2.0	mg/L		07-JUN-21	R5480549
L2597121-23 DUP-4							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-23 DUP-4							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							
BTEX, F1 (C6-C10) & F2 (>C10-C16), no S							
BTEX, Styrene and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
EthylBenzene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
m+p-Xylene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	21-JUN-21	22-JUN-21	R5459439
F1(C6-C10)	<0.10		0.10	mg/L	21-JUN-21	22-JUN-21	R5459439
F1-BTEX	<0.10		0.10	mg/L	21-JUN-21	22-JUN-21	R5459439
Xylenes	<0.00071		0.00071	mg/L	21-JUN-21	22-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	103.8		70-130	%	21-JUN-21	22-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	103.6		70-130	%	21-JUN-21	22-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	121.2		70-130	%	21-JUN-21	22-JUN-21	R5459439
F2 (>C10-C16)							
F2 (C10-C16)	<0.10		0.10	mg/L	10-JUN-21	10-JUN-21	R5486956
Surrogate: 2-Bromobenzotrifluoride	97.5		60-140	%	10-JUN-21	10-JUN-21	R5486956
Miscellaneous Parameters							
Ammonia, Total (as N)	2.46		0.050	mg/L		08-JUN-21	R5481191
Chemical Oxygen Demand	33		10	mg/L		13-JUL-21	R5520157
Dissolved Organic Carbon	10.9		1.0	mg/L		21-JUN-21	R5495052
Phenols (4AAP)	0.0014		0.0010	mg/L		12-JUN-21	R5490074
Total Kjeldahl Nitrogen	2.90	RRV	0.20	mg/L	15-JUN-21	16-JUN-21	R5492277
Dissolved Mercury in Water by CVAAS							
Dissolved Mercury Filtration Location	FIELD					10-JUN-21	R5482163
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L		10-JUN-21	R5483336
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Chloromethane	<0.010		0.010	mg/L	22-JUN-21	22-JUN-21	R5459439
Vinyl chloride	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromomethane	<0.010		0.010	mg/L	22-JUN-21	22-JUN-21	R5459439
Chloroethane	<0.010		0.010	mg/L	22-JUN-21	22-JUN-21	R5459439
Trichlorofluoromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1-Dichloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Methylene chloride	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1-Dichloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
2,2-Dichloropropane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Chloroform	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromochloromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1-Dichloropropene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Carbon tetrachloride	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Benzene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dichloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Trichloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dichloropropane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Dibromomethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromodichloromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Toluene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Tetrachloroethene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-23 DUP-4							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							
EPA 8260 Volatile Organics							
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,3-Dichloropropane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dibromoethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Ethylbenzene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Dibromochloromethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Chlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
m+p-Xylenes	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
o-Xylene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Styrene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
Isopropylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
n-Propylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
2-Chlorotoluene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Bromoform	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
4-Chlorotoluene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
tert-Butylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
sec-Butylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,1,2,2-Tetrachloroethane	<0.0020		0.0020	mg/L	22-JUN-21	22-JUN-21	R5459439
p-Isopropyltoluene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
n-Butylbenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dichlorobenzene	<0.00050		0.00050	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Hexachlorobutadiene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	22-JUN-21	22-JUN-21	R5459439
Surrogate: 1,4-Difluorobenzene (SS)	100.2		70-130	%	22-JUN-21	22-JUN-21	R5459439
Surrogate: 4-Bromofluorobenzene (SS)	81.7		70-130	%	22-JUN-21	22-JUN-21	R5459439
Surrogate: 3,4-Dichlorotoluene (SS)	110.1		70-130	%	22-JUN-21	22-JUN-21	R5459439
MTBE							
Methyl-t-butyl ether	<0.00050		0.00050	mg/L		13-JUL-21	R5459439
Surrogate: 1,4-Difluorobenzene	100.0		70-130	%		13-JUL-21	R5459439
Surrogate: 4-Bromofluorobenzene	82.0		70-130	%		13-JUL-21	R5459439
Surrogate: 3,4-Dichlorotoluene	110.0		70-130	%		13-JUL-21	R5459439
Routine Water Analysis							
Chloride in Water by IC							
Chloride (Cl)	3.7	DLDS	2.5	mg/L		06-JUN-21	R5481493
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	<0.0050	DLDS	0.0050	mg/L		11-JUN-21	R5486077
Antimony (Sb)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Arsenic (As)-Dissolved	0.00050		0.00050	mg/L		11-JUN-21	R5486077
Barium (Ba)-Dissolved	0.0141		0.00050	mg/L		11-JUN-21	R5486077
Beryllium (Be)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Bismuth (Bi)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Boron (B)-Dissolved	0.935		0.050	mg/L		11-JUN-21	R5486077
Cadmium (Cd)-Dissolved	<0.000025	DLDS	0.000025	mg/L		11-JUN-21	R5486077

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2597121-23 DUP-4							
Sampled By: CLIENT on 04-JUN-21							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.000146		0.000050	mg/L		11-JUN-21	R5486077
Chromium (Cr)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Cobalt (Co)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Copper (Cu)-Dissolved	0.0016		0.0010	mg/L		11-JUN-21	R5486077
Iron (Fe)-Dissolved	<0.050	DLDS	0.050	mg/L		11-JUN-21	R5486077
Lead (Pb)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Lithium (Li)-Dissolved	0.408		0.0050	mg/L		11-JUN-21	R5486077
Manganese (Mn)-Dissolved	0.156		0.00050	mg/L		11-JUN-21	R5486077
Molybdenum (Mo)-Dissolved	0.00123		0.00025	mg/L		11-JUN-21	R5486077
Nickel (Ni)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Phosphorus (P)-Dissolved	<0.25	DLDS	0.25	mg/L		11-JUN-21	R5486077
Rubidium (Rb)-Dissolved	0.0122		0.0010	mg/L		11-JUN-21	R5486077
Selenium (Se)-Dissolved	<0.00025	DLDS	0.00025	mg/L		11-JUN-21	R5486077
Silicon (Si)-Dissolved	4.47		0.25	mg/L		11-JUN-21	R5486077
Silver (Ag)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Strontium (Sr)-Dissolved	2.34		0.0010	mg/L		11-JUN-21	R5486077
Sulfur (S)-Dissolved	1420		2.5	mg/L		11-JUN-21	R5486077
Tellurium (Te)-Dissolved	<0.0010	DLDS	0.0010	mg/L		11-JUN-21	R5486077
Thallium (Tl)-Dissolved	<0.000050	DLDS	0.000050	mg/L		11-JUN-21	R5486077
Thorium (Th)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Tin (Sn)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Titanium (Ti)-Dissolved	<0.0015	DLDS	0.0015	mg/L		11-JUN-21	R5486077
Tungsten (W)-Dissolved	<0.00050	DLDS	0.00050	mg/L		11-JUN-21	R5486077
Uranium (U)-Dissolved	0.000312		0.000050	mg/L		11-JUN-21	R5486077
Vanadium (V)-Dissolved	<0.0025	DLDS	0.0025	mg/L		11-JUN-21	R5486077
Zinc (Zn)-Dissolved	<0.0050	DLDS	0.0050	mg/L		11-JUN-21	R5486077
Zirconium (Zr)-Dissolved	0.0024		0.0010	mg/L		11-JUN-21	R5486077
Fluoride in Water by IC							
Fluoride (F)	0.29	DLDS	0.10	mg/L		06-JUN-21	R5481493
Ion Balance Calculation							
Ion Balance	95.5			%		12-JUN-21	
TDS (Calculated)	6690			mg/L		12-JUN-21	
Hardness (as CaCO3)	313			mg/L		12-JUN-21	
Nitrate in Water by IC							
Nitrate (as N)	0.34	DLDS	0.10	mg/L		06-JUN-21	R5481493
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.34		0.11	mg/L		10-JUN-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLDS	0.050	mg/L		06-JUN-21	R5481493
Sulfate in Water by IC							
Sulfate (SO4)	4140	DLDS	1.5	mg/L		06-JUN-21	R5481493
pH, Conductivity and Total Alkalinity							
pH	8.38		0.10	pH		07-JUN-21	R5480549
Conductivity (EC)	7120		2.0	uS/cm		07-JUN-21	R5480549
Bicarbonate (HCO3)	779		5.0	mg/L		07-JUN-21	R5480549
Carbonate (CO3)	8.4		5.0	mg/L		07-JUN-21	R5480549
Hydroxide (OH)	<5.0		5.0	mg/L		07-JUN-21	R5480549
Alkalinity, Total (as CaCO3)	653		2.0	mg/L		07-JUN-21	R5480549

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
BL:INT	Balance Reviewed: Interference Or Non-Measured Component
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-ED	Water	BTEX, Styrene and F1 (C6-C10)	EPA 5021/8015&8260 GC-MS & FID
The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTEX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method.			
C-DIS-ORG-CL	Water	Dissolved Organic Carbon	APHA 5310 B-Instrumental
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
CL-IC-N-ED	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
COD-T-COL-ED	Water	Chemical Oxygen Demand	APHA 5220 D-Micro Colorimetry
This analysis is carried out using procedures adapted from APHA Method 5220 "Chemical Oxygen Demand (COD)". Chemical oxygen demand is determined using the closed reflux colourimetric method.			
F-IC-N-ED	Water	Fluoride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
F2-ED	Water	F2 (>C10-C16)	EPA 3510/CCME PHC CWS-GC-FID
HG-D-CVAA-ED	Water	Dissolved Mercury in Water by CVAAS	APHA 3030B/EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
IONBALANCE-ED	Water	Ion Balance Calculation	APHA 1030E
MET-D-CCMS-ED	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
MTBE-ADD-ED	Water	MTBE	EPA 5030/8021B-P&T GC-PID/FID
NH3-COL-ED	Water	Ammonia in Water by Colour	APHA 4500 NH3-NITROGEN (AMMONIA)
This analysis is carried out using procedures adapted from APHA Method 4500 NH3 "NITROGEN (AMMONIA)". Ammonia is determined using the automated phenate colourimetric method.			
NO2+NO3-CALC-ED	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-ED	Water	Nitrite in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
NO3-IC-N-ED	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
PH/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320
All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed). pH measurement is determined from the activity of the hydrogen ions using a hydrogen electrode and a reference electrode. Alkalinity measurement is based on the sample's capacity to neutralize acid. Auto-titration to pH 4.5 using 0.02N H2SO4 is performed. Conductivity measurement is based on the sample's capacity to convey an electric current, and is measured with a conductivity meter.			
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
SO4-IC-N-ED	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
TKN-F-ED	Water	TKN (as N) by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.			
VOC-HS-8260-ED	Water	EPA 8260 Volatile Organics	SW 846 8260-GC-MS
The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

20-903129 20-903133

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 1 of 39

Client: TETRA TECH CANADA INC.
14940 123 Ave NW North Bldg.
Edmonton AB T5V 1B4

Contact: Michele Crawford

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-ED		Water						
Batch	R5459439							
WG3555697-4	DUP	L2597121-1						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
EthylBenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
m+p-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
F1(C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	21-JUN-21
WG3555702-4	DUP	L2597121-2						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	16-JUN-21
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	16-JUN-21
EthylBenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	16-JUN-21
m+p-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	16-JUN-21
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	16-JUN-21
F1(C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	16-JUN-21
WG3556754-4	DUP	L2597121-22						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
EthylBenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
m+p-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
F1(C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	22-JUN-21
WG3555697-2	LCS							
Benzene			94.2		%		70-130	21-JUN-21
Toluene			101.7		%		70-130	21-JUN-21
EthylBenzene			101.1		%		70-130	21-JUN-21
m+p-Xylene			102.1		%		70-130	21-JUN-21
o-Xylene			110.2		%		70-130	21-JUN-21
WG3555697-3	LCS							
F1(C6-C10)			77.7		%		70-130	21-JUN-21
WG3555702-2	LCS							
Benzene			92.5		%		70-130	16-JUN-21
Toluene			106.0		%		70-130	16-JUN-21
EthylBenzene			114.3		%		70-130	16-JUN-21
m+p-Xylene			102.0		%		70-130	16-JUN-21
o-Xylene			114.5		%		70-130	16-JUN-21
WG3555702-3	LCS							



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 2 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-ED		Water						
Batch	R5459439							
WG3555702-3	LCS							
F1(C6-C10)			81.2		%		70-130	16-JUN-21
WG3556754-2	LCS							
Benzene			88.3		%		70-130	22-JUN-21
Toluene			94.5		%		70-130	22-JUN-21
EthylBenzene			92.2		%		70-130	22-JUN-21
m+p-Xylene			93.6		%		70-130	22-JUN-21
o-Xylene			103.2		%		70-130	22-JUN-21
WG3556754-3	LCS							
F1(C6-C10)			92.4		%		70-130	22-JUN-21
WG3555697-1	MB							
Benzene			<0.00050		mg/L		0.0005	21-JUN-21
Toluene			<0.00050		mg/L		0.0005	21-JUN-21
EthylBenzene			<0.00050		mg/L		0.0005	21-JUN-21
m+p-Xylene			<0.00050		mg/L		0.0005	21-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	21-JUN-21
F1(C6-C10)			<0.10		mg/L		0.1	21-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			113.1		%		70-130	21-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			100.3		%		70-130	21-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			83.9		%		70-130	21-JUN-21
WG3555702-1	MB							
Benzene			<0.00050		mg/L		0.0005	16-JUN-21
Toluene			<0.00050		mg/L		0.0005	16-JUN-21
EthylBenzene			<0.00050		mg/L		0.0005	16-JUN-21
m+p-Xylene			<0.00050		mg/L		0.0005	16-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	16-JUN-21
F1(C6-C10)			<0.10		mg/L		0.1	16-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			118.2		%		70-130	16-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			119.3		%		70-130	16-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			101.4		%		70-130	16-JUN-21
WG3556754-1	MB							
Benzene			<0.00050		mg/L		0.0005	22-JUN-21
Toluene			<0.00050		mg/L		0.0005	22-JUN-21
EthylBenzene			<0.00050		mg/L		0.0005	22-JUN-21
m+p-Xylene			<0.00050		mg/L		0.0005	22-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	22-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 3 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-ED								
	Water							
Batch	R5459439							
WG3556754-1	MB							
F1(C6-C10)			<0.10		mg/L		0.1	22-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			117.4		%		70-130	22-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			112.2		%		70-130	22-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			113.1		%		70-130	22-JUN-21
WG3555702-5	MS	L2597121-21						
Benzene			104.0		%		50-140	16-JUN-21
Toluene			100.6		%		50-140	16-JUN-21
EthylBenzene			93.5		%		50-140	16-JUN-21
m+p-Xylene			91.0		%		50-140	16-JUN-21
o-Xylene			105.8		%		50-140	16-JUN-21
WG3556754-5	MS	L2597121-23						
Benzene			97.1		%		50-140	22-JUN-21
Toluene			96.8		%		50-140	22-JUN-21
EthylBenzene			96.9		%		50-140	22-JUN-21
m+p-Xylene			95.9		%		50-140	22-JUN-21
o-Xylene			110.7		%		50-140	22-JUN-21
C-DIS-ORG-CL								
	Water							
Batch	R5495052							
WG3560402-24	DUP	L2597121-13						
Dissolved Organic Carbon		6.0	6.5		mg/L	8.0	20	21-JUN-21
WG3560402-14	LCS							
Dissolved Organic Carbon			106.3		%		80-120	21-JUN-21
WG3560402-18	LCS							
Dissolved Organic Carbon			100.8		%		80-120	21-JUN-21
WG3560402-22	LCS							
Dissolved Organic Carbon			105.5		%		80-120	21-JUN-21
WG3560402-13	MB							
Dissolved Organic Carbon			<1.0		mg/L		1	21-JUN-21
WG3560402-17	MB							
Dissolved Organic Carbon			<1.0		mg/L		1	21-JUN-21
WG3560402-21	MB							
Dissolved Organic Carbon			<1.0		mg/L		1	21-JUN-21
WG3560402-23	MS	L2597121-13						
Dissolved Organic Carbon			103.8		%		70-130	21-JUN-21
CL-IC-N-ED								
	Water							



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 4 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-ED		Water						
Batch	R5481493							
WG3548959-5	DUP	L2597121-13						
Chloride (Cl)		<0.50	<0.50	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-7	DUP	L2597121-22						
Chloride (Cl)		<0.50	<0.50	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-2	LCS							
Chloride (Cl)			100.7		%		90-110	06-JUN-21
WG3548959-9	LCS							
Chloride (Cl)			100.8		%		90-110	06-JUN-21
WG3548959-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	06-JUN-21
WG3548959-10	MB							
Chloride (Cl)			<0.50		mg/L		0.5	06-JUN-21
WG3548959-6	MS	L2597121-13						
Chloride (Cl)			101.3		%		75-125	06-JUN-21
WG3548959-8	MS	L2597121-22						
Chloride (Cl)			99.9		%		75-125	06-JUN-21
COD-T-COL-ED		Water						
Batch	R5517744							
WG3573762-2	LCS							
Chemical Oxygen Demand			101.94		mg/L			12-JUL-21
WG3573762-1	MB							
Chemical Oxygen Demand			<10		mg/L		10	12-JUL-21
Batch	R5520157							
WG3574545-3	DUP	L2597121-4						
Chemical Oxygen Demand		129	133		mg/L	2.9	20	13-JUL-21
WG3574545-2	LCS							
Chemical Oxygen Demand			105.06		mg/L			13-JUL-21
WG3574545-1	MB							
Chemical Oxygen Demand			<10		mg/L		10	13-JUL-21
WG3574545-4	MS	L2597121-4						
Chemical Oxygen Demand			N/A	MS-B	%		-	13-JUL-21
F-IC-N-ED		Water						
Batch	R5481493							
WG3548959-5	DUP	L2597121-13						
Fluoride (F)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-7	DUP	L2597121-22						
Fluoride (F)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-2	LCS							



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 5 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F-IC-N-ED		Water						
Batch	R5481493							
WG3548959-2	LCS							
Fluoride (F)			94.5		%		90-110	06-JUN-21
WG3548959-9	LCS							
Fluoride (F)			107.1		%		90-110	06-JUN-21
WG3548959-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	06-JUN-21
WG3548959-10	MB							
Fluoride (F)			<0.020		mg/L		0.02	06-JUN-21
WG3548959-6	MS	L2597121-13						
Fluoride (F)			103.3		%		75-125	06-JUN-21
WG3548959-8	MS	L2597121-22						
Fluoride (F)			101.6		%		75-125	06-JUN-21
F2-ED		Water						
Batch	R5486956							
WG3551184-2	LCS	DIESEL/MOTOR OIL						
F2 (C10-C16)			101.7		%		70-130	10-JUN-21
WG3551184-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	10-JUN-21
Surrogate: 2-Bromobenzotrifluoride			95.6		%		60-140	10-JUN-21
Batch	R5488578							
WG3551177-2	LCS	DIESEL / MOTOR OIL						
F2 (C10-C16)			104.5		%		70-130	10-JUN-21
WG3551177-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	10-JUN-21
Surrogate: 2-Bromobenzotrifluoride			94.5		%		60-140	10-JUN-21
HG-D-CVAA-ED		Water						
Batch	R5481335							
WG3551062-2	LCS							
Mercury (Hg)-Dissolved			96.6		%		80-120	09-JUN-21
WG3551062-1	MB							
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	09-JUN-21
Batch	R5483336							
WG3551998-3	DUP	L2597121-3						
Mercury (Hg)-Dissolved		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	10-JUN-21
WG3551998-2	LCS							
Mercury (Hg)-Dissolved			97.8		%		80-120	10-JUN-21
WG3551998-6	LCS							
Mercury (Hg)-Dissolved			100.0		%		80-120	10-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 6 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-CVAA-ED								
	Water							
Batch	R5483336							
WG3551998-1 MB								
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	10-JUN-21
WG3551998-5 MB								
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	10-JUN-21
WG3551998-4 MS		L2597121-4						
Mercury (Hg)-Dissolved			92.4		%		70-130	10-JUN-21
MET-D-CCMS-ED								
	Water							
Batch	R5486077							
WG3553302-3 DUP		L2597121-3						
Aluminum (Al)-Dissolved		0.0332	0.0346		mg/L	4.2	20	11-JUN-21
Antimony (Sb)-Dissolved		0.00030	0.00028		mg/L	4.6	20	11-JUN-21
Arsenic (As)-Dissolved		0.00276	0.00278		mg/L	0.8	20	11-JUN-21
Barium (Ba)-Dissolved		0.0862	0.0865		mg/L	0.3	20	11-JUN-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-JUN-21
Boron (B)-Dissolved		0.636	0.660		mg/L	3.6	20	11-JUN-21
Cadmium (Cd)-Dissolved		0.0000051	<0.000005C	RPD-NA	mg/L	N/A	20	11-JUN-21
Cesium (Cs)-Dissolved		0.000075	0.000072		mg/L	3.9	20	11-JUN-21
Chromium (Cr)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Cobalt (Co)-Dissolved		0.00053	0.00055		mg/L	3.7	20	11-JUN-21
Copper (Cu)-Dissolved		0.00053	0.00055		mg/L	3.9	20	11-JUN-21
Iron (Fe)-Dissolved		0.028	0.027		mg/L	1.7	20	11-JUN-21
Lead (Pb)-Dissolved		0.000085	0.000085		mg/L	0.2	20	11-JUN-21
Lithium (Li)-Dissolved		0.0731	0.0741		mg/L	1.4	20	11-JUN-21
Manganese (Mn)-Dissolved		0.0249	0.0248		mg/L	0.7	20	11-JUN-21
Molybdenum (Mo)-Dissolved		0.0205	0.0208		mg/L	1.7	20	11-JUN-21
Nickel (Ni)-Dissolved		0.00234	0.00228		mg/L	2.5	20	11-JUN-21
Phosphorus (P)-Dissolved		0.109	0.109		mg/L	0.0	20	11-JUN-21
Rubidium (Rb)-Dissolved		0.00359	0.00376		mg/L	4.6	20	11-JUN-21
Selenium (Se)-Dissolved		0.000142	0.000139		mg/L	2.4	20	11-JUN-21
Silicon (Si)-Dissolved		3.10	3.16		mg/L	1.8	20	11-JUN-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-JUN-21
Strontium (Sr)-Dissolved		0.0789	0.0785		mg/L	0.5	20	11-JUN-21
Sulfur (S)-Dissolved		17.3	17.5		mg/L	1.1	20	11-JUN-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	11-JUN-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 7 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5486077							
WG3553302-3	DUP	L2597121-3						
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Tin (Sn)-Dissolved		0.00013	0.00013		mg/L	0.9	20	11-JUN-21
Titanium (Ti)-Dissolved		0.00072	0.00095	J	mg/L	0.00023	0.0006	11-JUN-21
Tungsten (W)-Dissolved		0.00037	0.00037		mg/L	0.1	20	11-JUN-21
Uranium (U)-Dissolved		0.000829	0.000852		mg/L	2.7	20	11-JUN-21
Vanadium (V)-Dissolved		0.00179	0.00184		mg/L	2.8	20	11-JUN-21
Zinc (Zn)-Dissolved		0.0197	0.0203		mg/L	2.7	20	11-JUN-21
Zirconium (Zr)-Dissolved		0.00070	0.00070		mg/L	0.6	20	11-JUN-21
WG3553302-7	DUP	L2597121-22						
Aluminum (Al)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	11-JUN-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Arsenic (As)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Barium (Ba)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-JUN-21
Boron (B)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	11-JUN-21
Cadmium (Cd)-Dissolved		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	11-JUN-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-JUN-21
Chromium (Cr)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Cobalt (Co)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Copper (Cu)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	11-JUN-21
Iron (Fe)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	11-JUN-21
Lead (Pb)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-JUN-21
Lithium (Li)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	11-JUN-21
Manganese (Mn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Molybdenum (Mo)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-JUN-21
Nickel (Ni)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	11-JUN-21
Phosphorus (P)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	11-JUN-21
Rubidium (Rb)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	11-JUN-21
Selenium (Se)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-JUN-21
Silicon (Si)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	11-JUN-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-JUN-21
Strontium (Sr)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	11-JUN-21
Sulfur (S)-Dissolved		<0.50	<0.50	RPD-NA	mg/L	N/A	20	11-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 8 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5486077							
WG3553302-7	DUP	L2597121-22						
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	11-JUN-21
Thallium (Tl)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Titanium (Ti)-Dissolved		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	11-JUN-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Uranium (U)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-JUN-21
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	11-JUN-21
Zinc (Zn)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	11-JUN-21
Zirconium (Zr)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	11-JUN-21
WG3553302-2	LCS							
Aluminum (Al)-Dissolved			104.2		%		80-120	11-JUN-21
Antimony (Sb)-Dissolved			101.2		%		80-120	11-JUN-21
Arsenic (As)-Dissolved			97.7		%		80-120	11-JUN-21
Barium (Ba)-Dissolved			101.2		%		80-120	11-JUN-21
Beryllium (Be)-Dissolved			100.2		%		80-120	11-JUN-21
Bismuth (Bi)-Dissolved			98.6		%		80-120	11-JUN-21
Boron (B)-Dissolved			99.1		%		80-120	11-JUN-21
Cadmium (Cd)-Dissolved			97.6		%		80-120	11-JUN-21
Cesium (Cs)-Dissolved			97.3		%		80-120	11-JUN-21
Chromium (Cr)-Dissolved			102.6		%		80-120	11-JUN-21
Cobalt (Co)-Dissolved			102.1		%		80-120	11-JUN-21
Copper (Cu)-Dissolved			99.4		%		80-120	11-JUN-21
Iron (Fe)-Dissolved			102.5		%		80-120	11-JUN-21
Lead (Pb)-Dissolved			95.6		%		80-120	11-JUN-21
Lithium (Li)-Dissolved			99.1		%		80-120	11-JUN-21
Manganese (Mn)-Dissolved			99.0		%		80-120	11-JUN-21
Molybdenum (Mo)-Dissolved			102.9		%		80-120	11-JUN-21
Nickel (Ni)-Dissolved			97.1		%		80-120	11-JUN-21
Phosphorus (P)-Dissolved			103.3		%		80-120	11-JUN-21
Rubidium (Rb)-Dissolved			103.6		%		80-120	11-JUN-21
Selenium (Se)-Dissolved			92.6		%		80-120	11-JUN-21
Silicon (Si)-Dissolved			101.9		%		80-120	11-JUN-21
Silver (Ag)-Dissolved			100.5		%		80-120	11-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 9 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5486077							
WG3553302-2	LCS							
Strontium (Sr)-Dissolved			98.1		%		80-120	11-JUN-21
Sulfur (S)-Dissolved			97.7		%		80-120	11-JUN-21
Tellurium (Te)-Dissolved			94.5		%		80-120	11-JUN-21
Thallium (Tl)-Dissolved			96.6		%		80-120	11-JUN-21
Thorium (Th)-Dissolved			97.4		%		80-120	11-JUN-21
Tin (Sn)-Dissolved			97.6		%		80-120	11-JUN-21
Titanium (Ti)-Dissolved			103.8		%		80-120	11-JUN-21
Tungsten (W)-Dissolved			98.4		%		80-120	11-JUN-21
Uranium (U)-Dissolved			97.9		%		80-120	11-JUN-21
Vanadium (V)-Dissolved			102.4		%		80-120	11-JUN-21
Zinc (Zn)-Dissolved			92.2		%		80-120	11-JUN-21
Zirconium (Zr)-Dissolved			104.3		%		80-120	11-JUN-21
WG3553302-6	LCS							
Aluminum (Al)-Dissolved			99.8		%		80-120	11-JUN-21
Antimony (Sb)-Dissolved			99.5		%		80-120	11-JUN-21
Arsenic (As)-Dissolved			96.4		%		80-120	11-JUN-21
Barium (Ba)-Dissolved			99.0		%		80-120	11-JUN-21
Beryllium (Be)-Dissolved			98.4		%		80-120	11-JUN-21
Bismuth (Bi)-Dissolved			97.6		%		80-120	11-JUN-21
Boron (B)-Dissolved			97.6		%		80-120	11-JUN-21
Cadmium (Cd)-Dissolved			95.5		%		80-120	11-JUN-21
Cesium (Cs)-Dissolved			96.1		%		80-120	11-JUN-21
Chromium (Cr)-Dissolved			98.9		%		80-120	11-JUN-21
Cobalt (Co)-Dissolved			99.96		%		80-120	11-JUN-21
Copper (Cu)-Dissolved			96.9		%		80-120	11-JUN-21
Iron (Fe)-Dissolved			102.1		%		80-120	11-JUN-21
Lead (Pb)-Dissolved			94.9		%		80-120	11-JUN-21
Lithium (Li)-Dissolved			96.2		%		80-120	11-JUN-21
Manganese (Mn)-Dissolved			96.8		%		80-120	11-JUN-21
Molybdenum (Mo)-Dissolved			102.3		%		80-120	11-JUN-21
Nickel (Ni)-Dissolved			96.0		%		80-120	11-JUN-21
Phosphorus (P)-Dissolved			97.4		%		80-120	11-JUN-21
Rubidium (Rb)-Dissolved			103.4		%		80-120	11-JUN-21
Selenium (Se)-Dissolved			93.4		%		80-120	11-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 10 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5486077							
WG3553302-6	LCS							
Silicon (Si)-Dissolved			97.8		%		80-120	11-JUN-21
Silver (Ag)-Dissolved			97.3		%		80-120	11-JUN-21
Strontium (Sr)-Dissolved			97.7		%		80-120	11-JUN-21
Sulfur (S)-Dissolved			89.8		%		80-120	11-JUN-21
Tellurium (Te)-Dissolved			91.5		%		80-120	11-JUN-21
Thallium (Tl)-Dissolved			94.3		%		80-120	11-JUN-21
Thorium (Th)-Dissolved			97.2		%		80-120	11-JUN-21
Tin (Sn)-Dissolved			96.3		%		80-120	11-JUN-21
Titanium (Ti)-Dissolved			101.2		%		80-120	11-JUN-21
Tungsten (W)-Dissolved			98.1		%		80-120	11-JUN-21
Uranium (U)-Dissolved			96.3		%		80-120	11-JUN-21
Vanadium (V)-Dissolved			99.1		%		80-120	11-JUN-21
Zinc (Zn)-Dissolved			85.6		%		80-120	11-JUN-21
Zirconium (Zr)-Dissolved			103.2		%		80-120	11-JUN-21
WG3553302-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	11-JUN-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	11-JUN-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	11-JUN-21
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	11-JUN-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	11-JUN-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	11-JUN-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	11-JUN-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	11-JUN-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	11-JUN-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	11-JUN-21
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	11-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 11 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED		Water						
Batch	R5486077							
WG3553302-1 MB								
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	11-JUN-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	11-JUN-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	11-JUN-21
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	11-JUN-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	11-JUN-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	11-JUN-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	11-JUN-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	11-JUN-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	11-JUN-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
WG3553302-5 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	11-JUN-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	11-JUN-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	11-JUN-21
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	11-JUN-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	11-JUN-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	11-JUN-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	11-JUN-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	11-JUN-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	11-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 12 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-ED								
	Water							
Batch	R5486077							
WG3553302-5	MB							
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	11-JUN-21
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	11-JUN-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	11-JUN-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	11-JUN-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	11-JUN-21
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	11-JUN-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	11-JUN-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	11-JUN-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	11-JUN-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	11-JUN-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	11-JUN-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	11-JUN-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	11-JUN-21
WG3553302-4	MS	L2597121-9						
Aluminum (Al)-Dissolved			106.0		%		70-130	11-JUN-21
Antimony (Sb)-Dissolved			99.6		%		70-130	11-JUN-21
Arsenic (As)-Dissolved			107.5		%		70-130	11-JUN-21
Barium (Ba)-Dissolved			N/A	MS-B	%		-	11-JUN-21
Beryllium (Be)-Dissolved			107.9		%		70-130	11-JUN-21
Bismuth (Bi)-Dissolved			96.6		%		70-130	11-JUN-21
Boron (B)-Dissolved			N/A	MS-B	%		-	11-JUN-21
Cadmium (Cd)-Dissolved			98.6		%		70-130	11-JUN-21
Cesium (Cs)-Dissolved			96.3		%		70-130	11-JUN-21
Chromium (Cr)-Dissolved			100.3		%		70-130	11-JUN-21
Cobalt (Co)-Dissolved			98.5		%		70-130	11-JUN-21
Copper (Cu)-Dissolved			96.9		%		70-130	11-JUN-21
Iron (Fe)-Dissolved			95.8		%		70-130	11-JUN-21
Lead (Pb)-Dissolved			93.9		%		70-130	11-JUN-21
Lithium (Li)-Dissolved			105.4		%		70-130	11-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 14 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MTBE-ADD-ED								
	Water							
Batch	R5459439							
WG3555697-1	MB							
Methyl-t-butyl ether			<0.00050		mg/L		0.0005	13-JUL-21
Surrogate: 1,4-Difluorobenzene			113.1		%		70-130	13-JUL-21
Surrogate: 4-Bromofluorobenzene			100.3		%		70-130	13-JUL-21
Surrogate: 3,4-Dichlorotoluene			83.9		%		70-130	13-JUL-21
WG3555702-1	MB							
Methyl-t-butyl ether			<0.00050		mg/L		0.0005	13-JUL-21
Surrogate: 1,4-Difluorobenzene			118.2		%		70-130	13-JUL-21
Surrogate: 4-Bromofluorobenzene			119.3		%		70-130	13-JUL-21
Surrogate: 3,4-Dichlorotoluene			101.4		%		70-130	13-JUL-21
WG3556751-1	MB							
Methyl-t-butyl ether			<0.00050		mg/L		0.0005	13-JUL-21
Surrogate: 1,4-Difluorobenzene			105.0		%		70-130	13-JUL-21
Surrogate: 4-Bromofluorobenzene			85.0		%		70-130	13-JUL-21
Surrogate: 3,4-Dichlorotoluene			113.0		%		70-130	13-JUL-21
NH3-COL-ED								
	Water							
Batch	R5481191							
WG3551028-11	DUP	L2597121-23						
Ammonia, Total (as N)		2.46	2.39		mg/L	2.7	20	08-JUN-21
WG3551028-10	LCS							
Ammonia, Total (as N)			114.4		%		85-115	08-JUN-21
WG3551028-6	LCS							
Ammonia, Total (as N)			106.9		%		85-115	08-JUN-21
WG3551028-5	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	08-JUN-21
WG3551028-9	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	08-JUN-21
WG3551028-12	MS	L2597121-23						
Ammonia, Total (as N)			N/A	MS-B	%		-	08-JUN-21
Batch	R5486924							
WG3553436-2	LCS							
Ammonia, Total (as N)			110.9		%		85-115	11-JUN-21
WG3553436-6	LCS							
Ammonia, Total (as N)			104.8		%		85-115	11-JUN-21
WG3553436-1	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	11-JUN-21
WG3553436-5	MB							



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 15 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-ED		Water						
Batch	R5486924							
WG3553436-5	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	11-JUN-21
NO2-IC-N-ED		Water						
Batch	R5481493							
WG3548959-5	DUP	L2597121-13						
Nitrite (as N)			<0.010	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-7	DUP	L2597121-22						
Nitrite (as N)			<0.010	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-2	LCS							
Nitrite (as N)			103.5		%		90-110	06-JUN-21
WG3548959-9	LCS							
Nitrite (as N)			103.0		%		90-110	06-JUN-21
WG3548959-1	MB							
Nitrite (as N)			<0.010		mg/L		0.01	06-JUN-21
WG3548959-10	MB							
Nitrite (as N)			<0.010		mg/L		0.01	06-JUN-21
WG3548959-6	MS	L2597121-13						
Nitrite (as N)			102.5		%		75-125	06-JUN-21
WG3548959-8	MS	L2597121-22						
Nitrite (as N)			101.0		%		75-125	06-JUN-21
NO3-IC-N-ED		Water						
Batch	R5481493							
WG3548959-5	DUP	L2597121-13						
Nitrate (as N)			<0.020	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-7	DUP	L2597121-22						
Nitrate (as N)			<0.020	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-2	LCS							
Nitrate (as N)			100.7		%		90-110	06-JUN-21
WG3548959-9	LCS							
Nitrate (as N)			100.8		%		90-110	06-JUN-21
WG3548959-1	MB							
Nitrate (as N)			<0.020		mg/L		0.02	06-JUN-21
WG3548959-10	MB							
Nitrate (as N)			<0.020		mg/L		0.02	06-JUN-21
WG3548959-6	MS	L2597121-13						
Nitrate (as N)			101.9		%		75-125	06-JUN-21
WG3548959-8	MS	L2597121-22						



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 16 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-N-ED								
Water								
Batch	R5481493							
WG3548959-8	MS	L2597121-22						
Nitrate (as N)			99.9		%		75-125	06-JUN-21
PH/EC/ALK-ED								
Water								
Batch	R5480549							
WG3549402-20	DUP	L2597121-13						
pH			5.76	J	pH	0.00	0.3	07-JUN-21
Conductivity (EC)			<2.0	RPD-NA	uS/cm	N/A	10	07-JUN-21
Bicarbonate (HCO3)			<5.0	RPD-NA	mg/L	N/A	25	07-JUN-21
Carbonate (CO3)			<5.0	RPD-NA	mg/L	N/A	25	07-JUN-21
Hydroxide (OH)			<5.0	RPD-NA	mg/L	N/A	25	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0	RPD-NA	mg/L	N/A	20	07-JUN-21
WG3549402-12	LCS	ED-PH6						
pH			6.05		pH		5.8-6.2	07-JUN-21
WG3549402-13	LCS	MID_1412						
Conductivity (EC)			98.4		%		90-110	07-JUN-21
WG3549402-14	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.2		%		85-115	07-JUN-21
WG3549402-17	LCS	ED-PH6						
pH			6.02		pH		5.8-6.2	07-JUN-21
WG3549402-18	LCS	MID_1412						
Conductivity (EC)			96.3		%		90-110	07-JUN-21
WG3549402-19	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			99.1		%		85-115	07-JUN-21
WG3549402-2	LCS	ED-PH6						
pH			6.03		pH		5.8-6.2	07-JUN-21
WG3549402-22	LCS	ED-PH6						
pH			6.06		pH		5.8-6.2	07-JUN-21
WG3549402-23	LCS	MID_1412						
Conductivity (EC)			102.3		%		90-110	07-JUN-21
WG3549402-24	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.4		%		85-115	07-JUN-21
WG3549402-27	LCS	ED-PH6						
pH			6.05		pH		5.8-6.2	07-JUN-21
WG3549402-28	LCS	MID_1412						
Conductivity (EC)			93.8		%		90-110	07-JUN-21
WG3549402-29	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.7		%		85-115	07-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 17 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH/EC/ALK-ED		Water						
Batch	R5480549							
WG3549402-3	LCS	MID_1412						
Conductivity (EC)			95.4		%		90-110	07-JUN-21
WG3549402-4	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.8		%		85-115	07-JUN-21
WG3549402-7	LCS	ED-PH6						
pH			6.04		pH		5.8-6.2	07-JUN-21
WG3549402-8	LCS	MID_1412						
Conductivity (EC)			91.9		%		90-110	07-JUN-21
WG3549402-9	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			101.1		%		85-115	07-JUN-21
WG3549402-1	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-11	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-16	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-21	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-26	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 18 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH/EC/ALK-ED		Water						
Batch	R5480549							
WG3549402-26	MB							
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
WG3549402-6	MB							
Conductivity (EC)			<2.0		uS/cm		2	07-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	07-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	07-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	07-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	07-JUN-21
Batch	R5491315							
WG3555243-12	LCS	ED-PH6						
pH			6.01		pH		5.8-6.2	15-JUN-21
WG3555243-13	LCS	MID_1412						
Conductivity (EC)			98.3		%		90-110	15-JUN-21
WG3555243-14	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			99.9		%		85-115	15-JUN-21
WG3555243-17	LCS	ED-PH6						
pH			6.03		pH		5.8-6.2	15-JUN-21
WG3555243-18	LCS	MID_1412						
Conductivity (EC)			98.9		%		90-110	15-JUN-21
WG3555243-19	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.3		%		85-115	15-JUN-21
WG3555243-2	LCS	ED-PH6						
pH			6.04		pH		5.8-6.2	15-JUN-21
WG3555243-22	LCS	ED-PH6						
pH			6.05		pH		5.8-6.2	15-JUN-21
WG3555243-23	LCS	MID_1412						
Conductivity (EC)			96.3		%		90-110	15-JUN-21
WG3555243-24	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.7		%		85-115	15-JUN-21
WG3555243-3	LCS	MID_1412						
Conductivity (EC)			96.2		%		90-110	15-JUN-21
WG3555243-4	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.6		%		85-115	15-JUN-21
WG3555243-7	LCS	ED-PH6						
pH			6.02		pH		5.8-6.2	15-JUN-21
WG3555243-8	LCS	MID_1412						



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 19 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH/EC/ALK-ED								
	Water							
Batch	R5491315							
WG3555243-8	LCS	MID_1412						
Conductivity (EC)			96.5		%		90-110	15-JUN-21
WG3555243-9	LCS	PCTITRATE_LCS						
Alkalinity, Total (as CaCO3)			100.9		%		85-115	15-JUN-21
WG3555243-1	MB							
Conductivity (EC)			<2.0		uS/cm		2	15-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	15-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	15-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	15-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	15-JUN-21
WG3555243-11	MB							
Conductivity (EC)			<2.0		uS/cm		2	15-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	15-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	15-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	15-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	15-JUN-21
WG3555243-16	MB							
Conductivity (EC)			<2.0		uS/cm		2	15-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	15-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	15-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	15-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	15-JUN-21
WG3555243-21	MB							
Conductivity (EC)			<2.0		uS/cm		2	15-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	15-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	15-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	15-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	15-JUN-21
WG3555243-6	MB							
Conductivity (EC)			<2.0		uS/cm		2	15-JUN-21
Bicarbonate (HCO3)			<5.0		mg/L		5	15-JUN-21
Carbonate (CO3)			<5.0		mg/L		5	15-JUN-21
Hydroxide (OH)			<5.0		mg/L		5	15-JUN-21
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	15-JUN-21
PHENOLS-4AAP-WT								
	Water							



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 20 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PHENOLS-4AAP-WT								
Batch R5482645								
WG3551014-2	LCS							
Phenols (4AAP)			100.9		%		85-115	09-JUN-21
WG3551014-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	09-JUN-21
Batch R5490074								
WG3551160-2	LCS							
Phenols (4AAP)			96.3		%		85-115	12-JUN-21
WG3551160-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	12-JUN-21
Batch R5494207								
WG3558512-2	LCS							
Phenols (4AAP)			94.2		%		85-115	19-JUN-21
WG3558560-2	LCS							
Phenols (4AAP)			95.9		%		85-115	19-JUN-21
WG3558512-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	19-JUN-21
WG3558560-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	19-JUN-21
SO4-IC-N-ED								
Batch R5481493								
WG3548959-5	DUP	L2597121-13						
Sulfate (SO4)		<0.30	<0.30	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-7	DUP	L2597121-22						
Sulfate (SO4)		<0.30	<0.30	RPD-NA	mg/L	N/A	20	06-JUN-21
WG3548959-2	LCS							
Sulfate (SO4)			97.9		%		90-110	06-JUN-21
WG3548959-9	LCS							
Sulfate (SO4)			104.2		%		90-110	06-JUN-21
WG3548959-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	06-JUN-21
WG3548959-10	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	06-JUN-21
WG3548959-6	MS	L2597121-13						
Sulfate (SO4)			103.8		%		75-125	06-JUN-21
WG3548959-8	MS	L2597121-22						
Sulfate (SO4)			101.7		%		75-125	06-JUN-21
TKN-F-ED								
Water								



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 21 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TKN-F-ED								
Batch R5487237								
WG3551604-3 DUP		L2597121-13						
Total Kjeldahl Nitrogen		<0.20	<0.20	RPD-NA	mg/L	N/A	20	10-JUN-21
WG3551221-2 LCS								
Total Kjeldahl Nitrogen			103		%		75-125	10-JUN-21
WG3551221-6 LCS								
Total Kjeldahl Nitrogen			104		%		75-125	10-JUN-21
WG3551604-2 LCS								
Total Kjeldahl Nitrogen			100		%		75-125	10-JUN-21
WG3551221-1 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	10-JUN-21
WG3551221-5 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	10-JUN-21
WG3551604-1 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	10-JUN-21
WG3551604-4 MS		L2597121-13						
Total Kjeldahl Nitrogen			113		%		70-130	10-JUN-21
Batch R5492277								
WG3555721-2 LCS								
Total Kjeldahl Nitrogen			102		%		75-125	16-JUN-21
WG3555721-1 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	16-JUN-21
VOC-HS-8260-ED								
Batch R5459439								
WG3555697-4 DUP		L2597121-1						
Dichlorodifluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	21-JUN-21
Chloromethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	21-JUN-21
Vinyl chloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	21-JUN-21
Bromomethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	21-JUN-21
Chloroethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	21-JUN-21
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	21-JUN-21
1,1-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Methylene chloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
trans-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
2,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
cis-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Chloroform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 22 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555697-4	DUP	L2597121-1						
1,1,1-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Bromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Carbon tetrachloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Trichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Dibromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Bromodichloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
cis-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Tetrachloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
trans-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,3-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1,2-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dibromoethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Dibromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Chlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
m+p-Xylenes		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1,1,2-Tetrachloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Styrene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Isopropylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
n-Propylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Bromobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
2-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,3,5-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Bromoform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
4-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
tert-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2,3-Trichloropropane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2,4-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21

Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 23 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555697-4	DUP	L2597121-1						
sec-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1,2,2-Tetrachloroethane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	21-JUN-21
p-Isopropyltoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,3-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
n-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,4-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dibromo-3-chloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2,4-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2,3-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
WG3555702-4	DUP	L2597121-2						
Dichlorodifluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	21-JUN-21
Chloromethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	21-JUN-21
Vinyl chloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	21-JUN-21
Bromomethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	21-JUN-21
Chloroethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	21-JUN-21
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	21-JUN-21
1,1-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Methylene chloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
trans-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
2,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
cis-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Chloroform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1,1-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Bromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Carbon tetrachloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Trichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Dibromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 24 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555702-4	DUP	L2597121-2						
Bromodichloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
cis-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Tetrachloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
trans-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,3-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1,2-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dibromoethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Dibromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Chlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
m+p-Xylenes		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1,1,2-Tetrachloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Styrene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
Isopropylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
n-Propylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Bromobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
2-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,3,5-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Bromoform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
4-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
tert-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2,3-Trichloropropane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2,4-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
sec-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,1,2,2-Tetrachloroethane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	21-JUN-21
p-Isopropyltoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,3-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
n-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,4-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2-Dibromo-3-chloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 25 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555702-4	DUP	L2597121-2						
1,2,4-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
1,2,3-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUN-21
WG3556751-4	DUP	L2597121-22						
Dichlorodifluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	22-JUN-21
Chloromethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	22-JUN-21
Vinyl chloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	22-JUN-21
Bromomethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	22-JUN-21
Chloroethane		<0.010	<0.010	RPD-NA	mg/L	N/A	50	22-JUN-21
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	22-JUN-21
1,1-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Methylene chloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
trans-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,1-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
2,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
cis-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Chloroform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,1,1-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Bromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,1-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Carbon tetrachloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
1,2-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Trichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Dibromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Bromodichloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
cis-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
Tetrachloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
trans-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,3-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,1,2-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,2-Dibromoethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 26 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3556751-4	DUP	L2597121-22						
Dibromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Chlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
m+p-Xylenes		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
1,1,1,2-Tetrachloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
Styrene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
Isopropylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
n-Propylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Bromobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
2-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,3,5-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Bromoform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
4-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
tert-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,2,3-Trichloropropane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	22-JUN-21
1,2,4-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
sec-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,1,1,2-Tetrachloroethane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	22-JUN-21
p-Isopropyltoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,3-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
n-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,4-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,2-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	22-JUN-21
1,2-Dibromo-3-chloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,2,4-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
1,2,3-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	22-JUN-21
WG355697-2	LCS							
Dichlorodifluoromethane			99.1		%		60-140	21-JUN-21
Chloromethane			77.2		%		60-140	21-JUN-21
Vinyl chloride			76.2		%		60-140	21-JUN-21
Bromomethane			77.9		%		60-140	21-JUN-21
Chloroethane			93.2		%		60-140	21-JUN-21
Trichlorofluoromethane			96.4		%		60-140	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 27 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555697-2	LCS							
1,1-Dichloroethene			107.8		%		70-130	21-JUN-21
Methylene chloride			129.0		%		70-130	21-JUN-21
trans-1,2-Dichloroethene			121.6		%		70-130	21-JUN-21
1,1-Dichloroethane			109.7		%		70-130	21-JUN-21
2,2-Dichloropropane			122.2		%		70-130	21-JUN-21
cis-1,2-Dichloroethene			113.2		%		70-130	21-JUN-21
Chloroform			103.9		%		70-130	21-JUN-21
1,1,1-Trichloroethane			115.5		%		70-130	21-JUN-21
Bromochloromethane			105.9		%		70-130	21-JUN-21
1,1-Dichloropropene			107.0		%		70-130	21-JUN-21
Carbon tetrachloride			120.2		%		70-130	21-JUN-21
Benzene			111.6		%		70-130	21-JUN-21
1,2-Dichloroethane			108.3		%		70-130	21-JUN-21
Trichloroethene			104.3		%		70-130	21-JUN-21
1,2-Dichloropropane			115.3		%		70-130	21-JUN-21
Dibromomethane			100.8		%		70-130	21-JUN-21
Bromodichloromethane			113.7		%		70-130	21-JUN-21
cis-1,3-Dichloropropene			114.3		%		70-130	21-JUN-21
Toluene			91.5		%		70-130	21-JUN-21
Tetrachloroethene			109.3		%		70-130	21-JUN-21
trans-1,3-Dichloropropene			93.0		%		70-130	21-JUN-21
1,3-Dichloropropane			114.1		%		70-130	21-JUN-21
1,1,2-Trichloroethane			107.6		%		70-130	21-JUN-21
1,2-Dibromoethane			105.0		%		70-130	21-JUN-21
Ethylbenzene			86.7		%		70-130	21-JUN-21
Dibromochloromethane			108.8		%		70-130	21-JUN-21
Chlorobenzene			108.6		%		70-130	21-JUN-21
m+p-Xylenes			109.2		%		70-130	21-JUN-21
1,1,1,2-Tetrachloroethane			121.4		%		70-130	21-JUN-21
o-Xylene			97.9		%		70-130	21-JUN-21
Styrene			102.4		%		70-130	21-JUN-21
Isopropylbenzene			115.7		%		70-130	21-JUN-21
n-Propylbenzene			101.4		%		70-130	21-JUN-21
Bromobenzene			98.7		%		70-130	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 28 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555697-2	LCS							
2-Chlorotoluene			101.6		%		70-130	21-JUN-21
1,3,5-Trimethylbenzene			105.5		%		70-130	21-JUN-21
Bromoform			112.6		%		70-130	21-JUN-21
4-Chlorotoluene			101.6		%		70-130	21-JUN-21
tert-Butylbenzene			113.4		%		70-130	21-JUN-21
1,2,3-Trichloropropane			117.7		%		70-130	21-JUN-21
1,2,4-Trimethylbenzene			106.4		%		70-130	21-JUN-21
sec-Butylbenzene			114.6		%		70-130	21-JUN-21
1,1,2,2-Tetrachloroethane			120.1		%		70-130	21-JUN-21
p-Isopropyltoluene			103.8		%		70-130	21-JUN-21
1,3-Dichlorobenzene			101.5		%		70-130	21-JUN-21
n-Butylbenzene			105.5		%		70-130	21-JUN-21
1,4-Dichlorobenzene			106.4		%		70-130	21-JUN-21
1,2-Dichlorobenzene			103.1		%		70-130	21-JUN-21
1,2-Dibromo-3-chloropropane			94.8		%		70-130	21-JUN-21
Hexachlorobutadiene			123.7		%		70-130	21-JUN-21
1,2,4-Trichlorobenzene			107.8		%		70-130	21-JUN-21
1,2,3-Trichlorobenzene			100.9		%		70-130	21-JUN-21
WG3555702-2	LCS							
Dichlorodifluoromethane			94.1		%		60-140	21-JUN-21
Chloromethane			77.3		%		60-140	21-JUN-21
Vinyl chloride			76.6		%		60-140	21-JUN-21
Bromomethane			75.6		%		60-140	21-JUN-21
Chloroethane			93.2		%		60-140	21-JUN-21
Trichlorofluoromethane			115.0		%		60-140	21-JUN-21
1,1-Dichloroethene			108.2		%		70-130	21-JUN-21
Methylene chloride			101.5		%		70-130	21-JUN-21
trans-1,2-Dichloroethene			102.6		%		70-130	21-JUN-21
1,1-Dichloroethane			111.7		%		70-130	21-JUN-21
2,2-Dichloropropane			114.9		%		70-130	21-JUN-21
cis-1,2-Dichloroethene			100.2		%		70-130	21-JUN-21
Chloroform			118.4		%		70-130	21-JUN-21
1,1,1-Trichloroethane			118.0		%		70-130	21-JUN-21
Bromochloromethane			113.0		%		70-130	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 29 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555702-2	LCS							
1,1-Dichloropropene			106.8		%		70-130	21-JUN-21
Carbon tetrachloride			113.2		%		70-130	21-JUN-21
Benzene			112.8		%		70-130	21-JUN-21
1,2-Dichloroethane			114.6		%		70-130	21-JUN-21
Trichloroethene			117.6		%		70-130	21-JUN-21
1,2-Dichloropropane			101.7		%		70-130	21-JUN-21
Dibromomethane			114.2		%		70-130	21-JUN-21
Bromodichloromethane			116.3		%		70-130	21-JUN-21
cis-1,3-Dichloropropene			97.2		%		70-130	21-JUN-21
Toluene			101.1		%		70-130	21-JUN-21
Tetrachloroethene			102.1		%		70-130	21-JUN-21
trans-1,3-Dichloropropene			103.6		%		70-130	21-JUN-21
1,3-Dichloropropane			94.6		%		70-130	21-JUN-21
1,1,2-Trichloroethane			95.6		%		70-130	21-JUN-21
1,2-Dibromoethane			110.0		%		70-130	21-JUN-21
Ethylbenzene			96.1		%		70-130	21-JUN-21
Dibromochloromethane			104.7		%		70-130	21-JUN-21
Chlorobenzene			111.4		%		70-130	21-JUN-21
m+p-Xylenes			95.5		%		70-130	21-JUN-21
1,1,1,2-Tetrachloroethane			120.4		%		70-130	21-JUN-21
o-Xylene			105.4		%		70-130	21-JUN-21
Styrene			106.8		%		70-130	21-JUN-21
Isopropylbenzene			119.2		%		70-130	21-JUN-21
n-Propylbenzene			105.2		%		70-130	21-JUN-21
Bromobenzene			106.1		%		70-130	21-JUN-21
2-Chlorotoluene			111.0		%		70-130	21-JUN-21
1,3,5-Trimethylbenzene			112.9		%		70-130	21-JUN-21
Bromoform			107.9		%		70-130	21-JUN-21
4-Chlorotoluene			98.4		%		70-130	21-JUN-21
tert-Butylbenzene			107.0		%		70-130	21-JUN-21
1,2,3-Trichloropropane			92.7		%		70-130	21-JUN-21
1,2,4-Trimethylbenzene			112.4		%		70-130	21-JUN-21
sec-Butylbenzene			112.9		%		70-130	21-JUN-21
1,1,2,2-Tetrachloroethane			104.6		%		70-130	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 30 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555702-2	LCS							
p-Isopropyltoluene			110.7		%		70-130	21-JUN-21
1,3-Dichlorobenzene			104.6		%		70-130	21-JUN-21
n-Butylbenzene			108.1		%		70-130	21-JUN-21
1,4-Dichlorobenzene			107.9		%		70-130	21-JUN-21
1,2-Dichlorobenzene			107.7		%		70-130	21-JUN-21
1,2-Dibromo-3-chloropropane			97.5		%		70-130	21-JUN-21
Hexachlorobutadiene			118.7		%		70-130	21-JUN-21
1,2,4-Trichlorobenzene			106.3		%		70-130	21-JUN-21
1,2,3-Trichlorobenzene			103.2		%		70-130	21-JUN-21
WG3556751-2	LCS							
Dichlorodifluoromethane			105.0		%		60-140	22-JUN-21
Chloromethane			115.4		%		60-140	22-JUN-21
Vinyl chloride			91.0		%		60-140	22-JUN-21
Bromomethane			90.6		%		60-140	22-JUN-21
Chloroethane			101.5		%		60-140	22-JUN-21
Trichlorofluoromethane			126.6		%		60-140	22-JUN-21
1,1-Dichloroethene			124.4		%		70-130	22-JUN-21
Methylene chloride			123.1		%		70-130	22-JUN-21
trans-1,2-Dichloroethene			98.0		%		70-130	22-JUN-21
1,1-Dichloroethane			123.0		%		70-130	22-JUN-21
2,2-Dichloropropane			125.6		%		70-130	22-JUN-21
cis-1,2-Dichloroethene			100.9		%		70-130	22-JUN-21
Chloroform			119.9		%		70-130	22-JUN-21
1,1,1-Trichloroethane			111.3		%		70-130	22-JUN-21
Bromochloromethane			107.7		%		70-130	22-JUN-21
1,1-Dichloropropene			111.1		%		70-130	22-JUN-21
Carbon tetrachloride			120.4		%		70-130	22-JUN-21
Benzene			120.0		%		70-130	22-JUN-21
Trichloroethene			103.3		%		70-130	22-JUN-21
1,2-Dichloropropane			115.8		%		70-130	22-JUN-21
Dibromomethane			107.4		%		70-130	22-JUN-21
Bromodichloromethane			117.2		%		70-130	22-JUN-21
cis-1,3-Dichloropropene			113.8		%		70-130	22-JUN-21
Toluene			99.0		%		70-130	22-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 31 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3556751-2	LCS							
Tetrachloroethene			100.0		%		70-130	22-JUN-21
trans-1,3-Dichloropropene			105.7		%		70-130	22-JUN-21
1,3-Dichloropropane			106.2		%		70-130	22-JUN-21
1,1,2-Trichloroethane			97.0		%		70-130	22-JUN-21
1,2-Dibromoethane			96.6		%		70-130	22-JUN-21
Ethylbenzene			89.3		%		70-130	22-JUN-21
Dibromochloromethane			104.2		%		70-130	22-JUN-21
Chlorobenzene			92.5		%		70-130	22-JUN-21
m+p-Xylenes			103.4		%		70-130	22-JUN-21
1,1,1,2-Tetrachloroethane			110.4		%		70-130	22-JUN-21
o-Xylene			98.5		%		70-130	22-JUN-21
Styrene			105.7		%		70-130	22-JUN-21
Isopropylbenzene			101.5		%		70-130	22-JUN-21
n-Propylbenzene			99.7		%		70-130	22-JUN-21
Bromobenzene			115.9		%		70-130	22-JUN-21
2-Chlorotoluene			117.9		%		70-130	22-JUN-21
1,3,5-Trimethylbenzene			106.5		%		70-130	22-JUN-21
Bromoform			113.3		%		70-130	22-JUN-21
4-Chlorotoluene			117.9		%		70-130	22-JUN-21
tert-Butylbenzene			119.8		%		70-130	22-JUN-21
1,2,3-Trichloropropane			111.0		%		70-130	22-JUN-21
1,2,4-Trimethylbenzene			99.1		%		70-130	22-JUN-21
sec-Butylbenzene			120.6		%		70-130	22-JUN-21
1,1,2,2-Tetrachloroethane			120.7		%		70-130	22-JUN-21
p-Isopropyltoluene			113.4		%		70-130	22-JUN-21
1,3-Dichlorobenzene			113.6		%		70-130	22-JUN-21
n-Butylbenzene			118.7		%		70-130	22-JUN-21
1,4-Dichlorobenzene			98.1		%		70-130	22-JUN-21
1,2-Dichlorobenzene			113.7		%		70-130	22-JUN-21
1,2-Dibromo-3-chloropropane			97.9		%		70-130	22-JUN-21
Hexachlorobutadiene			125.3		%		70-130	22-JUN-21
1,2,4-Trichlorobenzene			115.8		%		70-130	22-JUN-21
1,2,3-Trichlorobenzene			110.4		%		70-130	22-JUN-21
WG3555697-1	MB							



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 32 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555697-1	MB							
Dichlorodifluoromethane			<0.0010		mg/L		0.001	21-JUN-21
Chloromethane			<0.010		mg/L		0.01	21-JUN-21
Vinyl chloride			<0.0010		mg/L		0.001	21-JUN-21
Bromomethane			<0.010		mg/L		0.01	21-JUN-21
Chloroethane			<0.010		mg/L		0.01	21-JUN-21
Trichlorofluoromethane			<0.0010		mg/L		0.001	21-JUN-21
1,1-Dichloroethene			<0.0010		mg/L		0.001	21-JUN-21
Methylene chloride			<0.0010		mg/L		0.001	21-JUN-21
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	21-JUN-21
1,1-Dichloroethane			<0.0010		mg/L		0.001	21-JUN-21
2,2-Dichloropropane			<0.0010		mg/L		0.001	21-JUN-21
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	21-JUN-21
Chloroform			<0.0010		mg/L		0.001	21-JUN-21
1,1,1-Trichloroethane			<0.0010		mg/L		0.001	21-JUN-21
Bromochloromethane			<0.0010		mg/L		0.001	21-JUN-21
1,1-Dichloropropene			<0.0010		mg/L		0.001	21-JUN-21
Carbon tetrachloride			<0.00050		mg/L		0.0005	21-JUN-21
Benzene			<0.00050		mg/L		0.0005	21-JUN-21
1,2-Dichloroethane			<0.0010		mg/L		0.001	21-JUN-21
Trichloroethene			<0.0010		mg/L		0.001	21-JUN-21
1,2-Dichloropropane			<0.0010		mg/L		0.001	21-JUN-21
Dibromomethane			<0.0010		mg/L		0.001	21-JUN-21
Bromodichloromethane			<0.0010		mg/L		0.001	21-JUN-21
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	21-JUN-21
Toluene			<0.00050		mg/L		0.0005	21-JUN-21
Tetrachloroethene			<0.0010		mg/L		0.001	21-JUN-21
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	21-JUN-21
1,3-Dichloropropane			<0.0010		mg/L		0.001	21-JUN-21
1,1,2-Trichloroethane			<0.0010		mg/L		0.001	21-JUN-21
1,2-Dibromoethane			<0.0010		mg/L		0.001	21-JUN-21
Ethylbenzene			<0.00050		mg/L		0.0005	21-JUN-21
Dibromochloromethane			<0.0010		mg/L		0.001	21-JUN-21
Chlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
m+p-Xylenes			<0.00050		mg/L		0.0005	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 33 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555697-1	MB							
1,1,1,2-Tetrachloroethane			<0.0010		mg/L		0.001	21-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	21-JUN-21
Styrene			<0.00050		mg/L		0.0005	21-JUN-21
Isopropylbenzene			<0.0010		mg/L		0.001	21-JUN-21
n-Propylbenzene			<0.0010		mg/L		0.001	21-JUN-21
Bromobenzene			<0.0010		mg/L		0.001	21-JUN-21
2-Chlorotoluene			<0.0010		mg/L		0.001	21-JUN-21
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	21-JUN-21
Bromoform			<0.0010		mg/L		0.001	21-JUN-21
4-Chlorotoluene			<0.0010		mg/L		0.001	21-JUN-21
tert-Butylbenzene			<0.0010		mg/L		0.001	21-JUN-21
1,2,3-Trichloropropane			<0.0020		mg/L		0.002	21-JUN-21
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	21-JUN-21
sec-Butylbenzene			<0.0010		mg/L		0.001	21-JUN-21
1,1,1,2-Tetrachloroethane			<0.0020		mg/L		0.002	21-JUN-21
p-Isopropyltoluene			<0.0010		mg/L		0.001	21-JUN-21
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
n-Butylbenzene			<0.0010		mg/L		0.001	21-JUN-21
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	21-JUN-21
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	21-JUN-21
Hexachlorobutadiene			<0.0010		mg/L		0.001	21-JUN-21
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			105.2		%		70-130	21-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			78.1		%		70-130	21-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			102.8		%		70-130	21-JUN-21
WG3555702-1	MB							
Dichlorodifluoromethane			<0.0010		mg/L		0.001	21-JUN-21
Chloromethane			<0.010		mg/L		0.01	21-JUN-21
Vinyl chloride			<0.0010		mg/L		0.001	21-JUN-21
Bromomethane			<0.010		mg/L		0.01	21-JUN-21
Chloroethane			<0.010		mg/L		0.01	21-JUN-21
Trichlorofluoromethane			<0.0010		mg/L		0.001	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 34 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3555702-1	MB							
1,1-Dichloroethene			<0.0010		mg/L		0.001	21-JUN-21
Methylene chloride			<0.0010		mg/L		0.001	21-JUN-21
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	21-JUN-21
1,1-Dichloroethane			<0.0010		mg/L		0.001	21-JUN-21
2,2-Dichloropropane			<0.0010		mg/L		0.001	21-JUN-21
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	21-JUN-21
Chloroform			<0.0010		mg/L		0.001	21-JUN-21
1,1,1-Trichloroethane			<0.0010		mg/L		0.001	21-JUN-21
Bromochloromethane			<0.0010		mg/L		0.001	21-JUN-21
1,1-Dichloropropene			<0.0010		mg/L		0.001	21-JUN-21
Carbon tetrachloride			<0.00050		mg/L		0.0005	21-JUN-21
Benzene			<0.00050		mg/L		0.0005	21-JUN-21
1,2-Dichloroethane			<0.0010		mg/L		0.001	21-JUN-21
Trichloroethene			<0.0010		mg/L		0.001	21-JUN-21
1,2-Dichloropropane			<0.0010		mg/L		0.001	21-JUN-21
Dibromomethane			<0.0010		mg/L		0.001	21-JUN-21
Bromodichloromethane			<0.0010		mg/L		0.001	21-JUN-21
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	21-JUN-21
Toluene			<0.00050		mg/L		0.0005	21-JUN-21
Tetrachloroethene			<0.0010		mg/L		0.001	21-JUN-21
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	21-JUN-21
1,3-Dichloropropane			<0.0010		mg/L		0.001	21-JUN-21
1,1,2-Trichloroethane			<0.0010		mg/L		0.001	21-JUN-21
1,2-Dibromoethane			<0.0010		mg/L		0.001	21-JUN-21
Ethylbenzene			<0.00050		mg/L		0.0005	21-JUN-21
Dibromochloromethane			<0.0010		mg/L		0.001	21-JUN-21
Chlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
m+p-Xylenes			<0.00050		mg/L		0.0005	21-JUN-21
1,1,1,2-Tetrachloroethane			<0.0010		mg/L		0.001	21-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	21-JUN-21
Styrene			<0.00050		mg/L		0.0005	21-JUN-21
Isopropylbenzene			<0.0010		mg/L		0.001	21-JUN-21
n-Propylbenzene			<0.0010		mg/L		0.001	21-JUN-21
Bromobenzene			<0.0010		mg/L		0.001	21-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 35 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED		Water						
Batch	R5459439							
WG3555702-1	MB							
2-Chlorotoluene			<0.0010		mg/L		0.001	21-JUN-21
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	21-JUN-21
Bromoform			<0.0010		mg/L		0.001	21-JUN-21
4-Chlorotoluene			<0.0010		mg/L		0.001	21-JUN-21
tert-Butylbenzene			<0.0010		mg/L		0.001	21-JUN-21
1,2,3-Trichloropropane			<0.0020		mg/L		0.002	21-JUN-21
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	21-JUN-21
sec-Butylbenzene			<0.0010		mg/L		0.001	21-JUN-21
1,1,1,2-Tetrachloroethane			<0.0020		mg/L		0.002	21-JUN-21
p-Isopropyltoluene			<0.0010		mg/L		0.001	21-JUN-21
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
n-Butylbenzene			<0.0010		mg/L		0.001	21-JUN-21
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	21-JUN-21
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	21-JUN-21
Hexachlorobutadiene			<0.0010		mg/L		0.001	21-JUN-21
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	21-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			105.2		%		70-130	21-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			82.5		%		70-130	21-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			111.7		%		70-130	21-JUN-21
WG3556751-1	MB							
Dichlorodifluoromethane			<0.0010		mg/L		0.001	22-JUN-21
Chloromethane			<0.010		mg/L		0.01	22-JUN-21
Vinyl chloride			<0.0010		mg/L		0.001	22-JUN-21
Bromomethane			<0.010		mg/L		0.01	22-JUN-21
Chloroethane			<0.010		mg/L		0.01	22-JUN-21
Trichlorofluoromethane			<0.0010		mg/L		0.001	22-JUN-21
1,1-Dichloroethene			<0.0010		mg/L		0.001	22-JUN-21
Methylene chloride			<0.0010		mg/L		0.001	22-JUN-21
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	22-JUN-21
1,1-Dichloroethane			<0.0010		mg/L		0.001	22-JUN-21
2,2-Dichloropropane			<0.0010		mg/L		0.001	22-JUN-21
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	22-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 36 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3556751-1	MB							
Chloroform			<0.0010		mg/L		0.001	22-JUN-21
1,1,1-Trichloroethane			<0.0010		mg/L		0.001	22-JUN-21
Bromochloromethane			<0.0010		mg/L		0.001	22-JUN-21
1,1-Dichloropropene			<0.0010		mg/L		0.001	22-JUN-21
Carbon tetrachloride			<0.00050		mg/L		0.0005	22-JUN-21
Benzene			<0.00050		mg/L		0.0005	22-JUN-21
1,2-Dichloroethane			<0.0010		mg/L		0.001	22-JUN-21
Trichloroethene			<0.0010		mg/L		0.001	22-JUN-21
1,2-Dichloropropane			<0.0010		mg/L		0.001	22-JUN-21
Dibromomethane			<0.0010		mg/L		0.001	22-JUN-21
Bromodichloromethane			<0.0010		mg/L		0.001	22-JUN-21
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	22-JUN-21
Toluene			<0.00050		mg/L		0.0005	22-JUN-21
Tetrachloroethene			<0.0010		mg/L		0.001	22-JUN-21
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	22-JUN-21
1,3-Dichloropropane			<0.0010		mg/L		0.001	22-JUN-21
1,1,2-Trichloroethane			<0.0010		mg/L		0.001	22-JUN-21
1,2-Dibromoethane			<0.0010		mg/L		0.001	22-JUN-21
Ethylbenzene			<0.00050		mg/L		0.0005	22-JUN-21
Dibromochloromethane			<0.0010		mg/L		0.001	22-JUN-21
Chlorobenzene			<0.0010		mg/L		0.001	22-JUN-21
m+p-Xylenes			<0.00050		mg/L		0.0005	22-JUN-21
1,1,1,2-Tetrachloroethane			<0.0010		mg/L		0.001	22-JUN-21
o-Xylene			<0.00050		mg/L		0.0005	22-JUN-21
Styrene			<0.00050		mg/L		0.0005	22-JUN-21
Isopropylbenzene			<0.0010		mg/L		0.001	22-JUN-21
n-Propylbenzene			<0.0010		mg/L		0.001	22-JUN-21
Bromobenzene			<0.0010		mg/L		0.001	22-JUN-21
2-Chlorotoluene			<0.0010		mg/L		0.001	22-JUN-21
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	22-JUN-21
Bromoform			<0.0010		mg/L		0.001	22-JUN-21
4-Chlorotoluene			<0.0010		mg/L		0.001	22-JUN-21
tert-Butylbenzene			<0.0010		mg/L		0.001	22-JUN-21
1,2,3-Trichloropropane			<0.0020		mg/L		0.002	22-JUN-21



Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 37 of 39

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-HS-8260-ED								
	Water							
Batch	R5459439							
WG3556751-1	MB							
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	22-JUN-21
sec-Butylbenzene			<0.0010		mg/L		0.001	22-JUN-21
1,1,2,2-Tetrachloroethane			<0.0020		mg/L		0.002	22-JUN-21
p-Isopropyltoluene			<0.0010		mg/L		0.001	22-JUN-21
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	22-JUN-21
n-Butylbenzene			<0.0010		mg/L		0.001	22-JUN-21
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	22-JUN-21
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	22-JUN-21
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	22-JUN-21
Hexachlorobutadiene			<0.0010		mg/L		0.001	22-JUN-21
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	22-JUN-21
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	22-JUN-21
Surrogate: 1,4-Difluorobenzene (SS)			104.5		%		70-130	22-JUN-21
Surrogate: 4-Bromofluorobenzene (SS)			84.6		%		70-130	22-JUN-21
Surrogate: 3,4-Dichlorotoluene (SS)			113.2		%		70-130	22-JUN-21

Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 38 of 39

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2597121

Report Date: 13-JUL-21

Page 39 of 39

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Aggregate Organics							
Chemical Oxygen Demand							
	1	04-JUN-21 10:02	12-JUL-21 10:00	28	38	days	EHT
	2	04-JUN-21 10:13	12-JUL-21 10:00	28	38	days	EHT
	3	04-JUN-21 14:27	12-JUL-21 10:00	28	38	days	EHT
	4	04-JUN-21 14:31	13-JUL-21 08:00	28	39	days	EHT
	5	04-JUN-21 14:09	13-JUL-21 08:00	28	39	days	EHT
	6	04-JUN-21 14:14	13-JUL-21 08:00	28	39	days	EHT
	7	04-JUN-21 12:21	13-JUL-21 08:00	28	39	days	EHT
	8	04-JUN-21 12:30	13-JUL-21 08:00	28	39	days	EHT
	9	04-JUN-21 11:00	13-JUL-21 08:00	28	39	days	EHT
	10	04-JUN-21 10:53	13-JUL-21 08:00	28	39	days	EHT
	11	04-JUN-21 13:50	13-JUL-21 08:00	28	39	days	EHT
	12	04-JUN-21 12:48	13-JUL-21 08:00	28	39	days	EHT
	13	04-JUN-21	13-JUL-21 08:00	28	39	days	EHT
	14	04-JUN-21 12:54	13-JUL-21 08:00	28	39	days	EHT
	15	04-JUN-21 14:00	13-JUL-21 08:00	28	39	days	EHT
	16	04-JUN-21 11:30	13-JUL-21 08:00	28	39	days	EHT
	17	04-JUN-21 11:20	13-JUL-21 08:00	28	39	days	EHT
	18	04-JUN-21 10:39	13-JUL-21 08:00	28	39	days	EHT
	19	04-JUN-21 10:30	13-JUL-21 08:00	28	39	days	EHT
	20	04-JUN-21 13:07	13-JUL-21 08:00	28	39	days	EHT
	21	04-JUN-21 13:19	13-JUL-21 08:00	28	39	days	EHT
	22	04-JUN-21	13-JUL-21 08:00	28	39	days	EHT
	23	04-JUN-21	13-JUL-21 08:00	28	39	days	EHT
Volatile Organic Compounds							
BTEX, Styrene and F1 (C6-C10)							
	1	04-JUN-21 10:02	20-JUN-21 00:00	14	16	days	EHT
	22	04-JUN-21	21-JUN-21 00:00	14	17	days	EHT
	23	04-JUN-21	21-JUN-21 00:00	14	17	days	EHT
EPA 8260 Volatile Organics							
	1	04-JUN-21 10:02	20-JUN-21 00:00	14	16	days	EHT
	22	04-JUN-21	22-JUN-21 00:00	14	18	days	EHT
	23	04-JUN-21	22-JUN-21 00:00	14	18	days	EHT

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).

Notes*:
 Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
 Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2597121 were received on 04-JUN-21 16:04.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

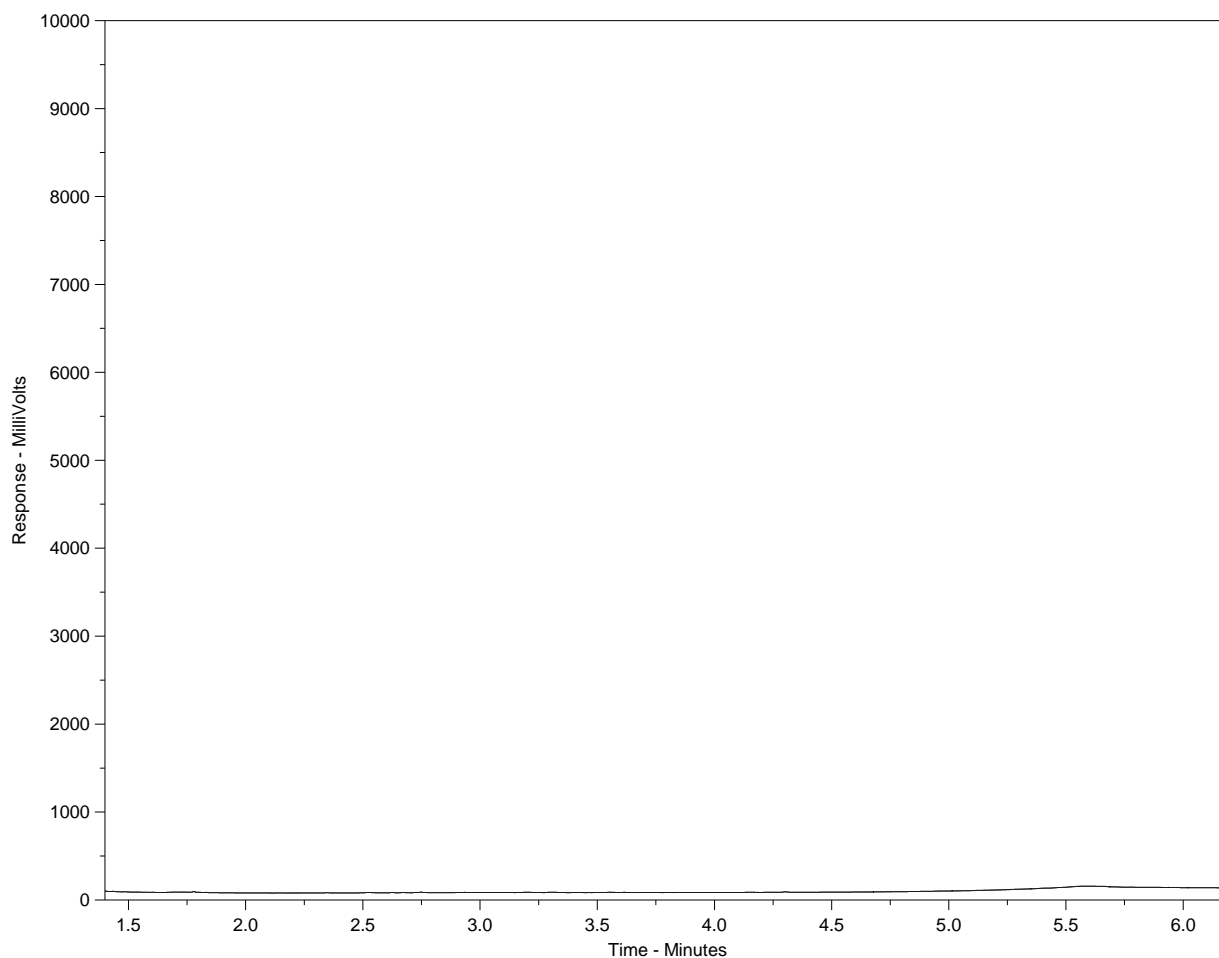
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-1
 Client ID: MW32A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

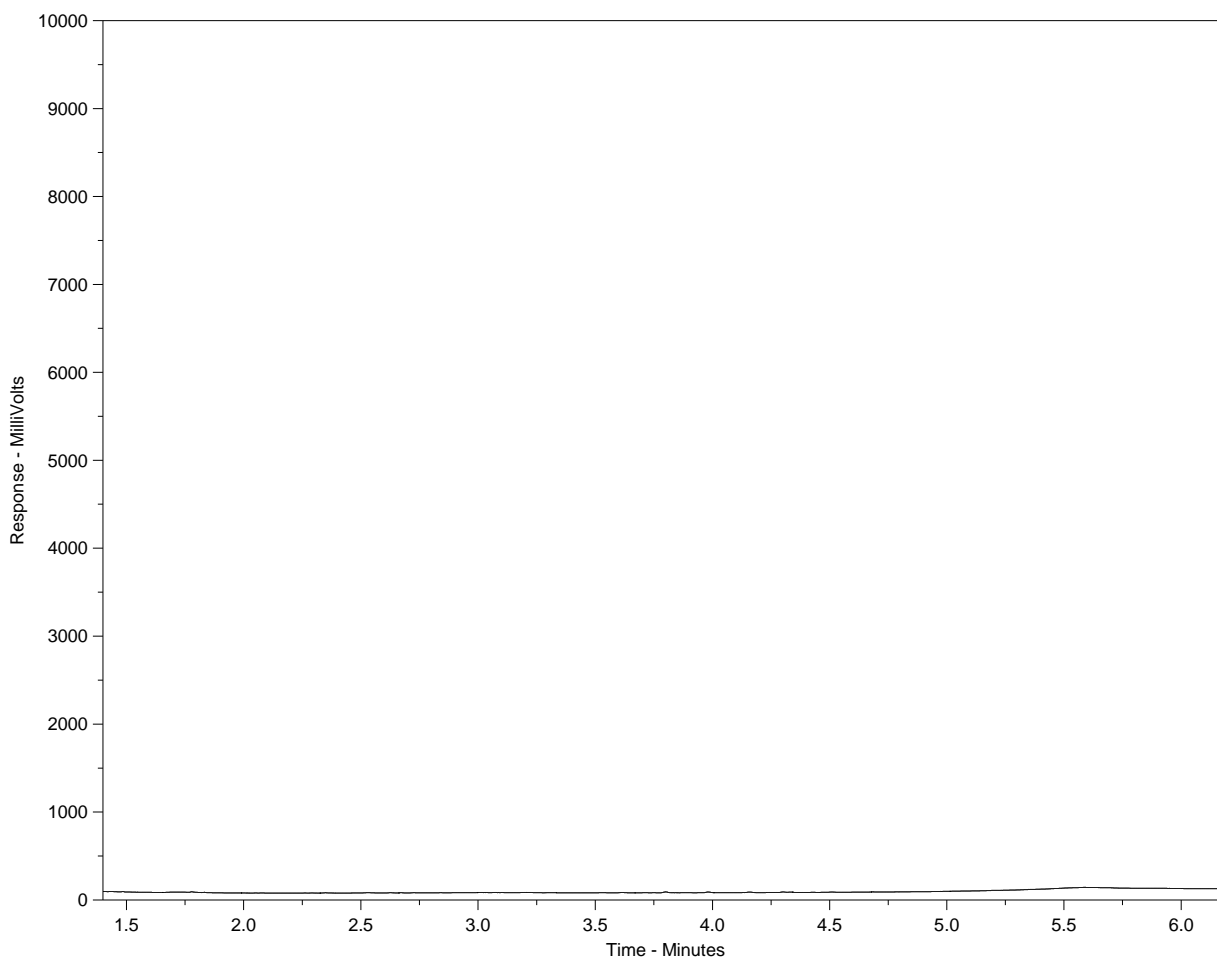
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-2
 Client ID: MW32B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

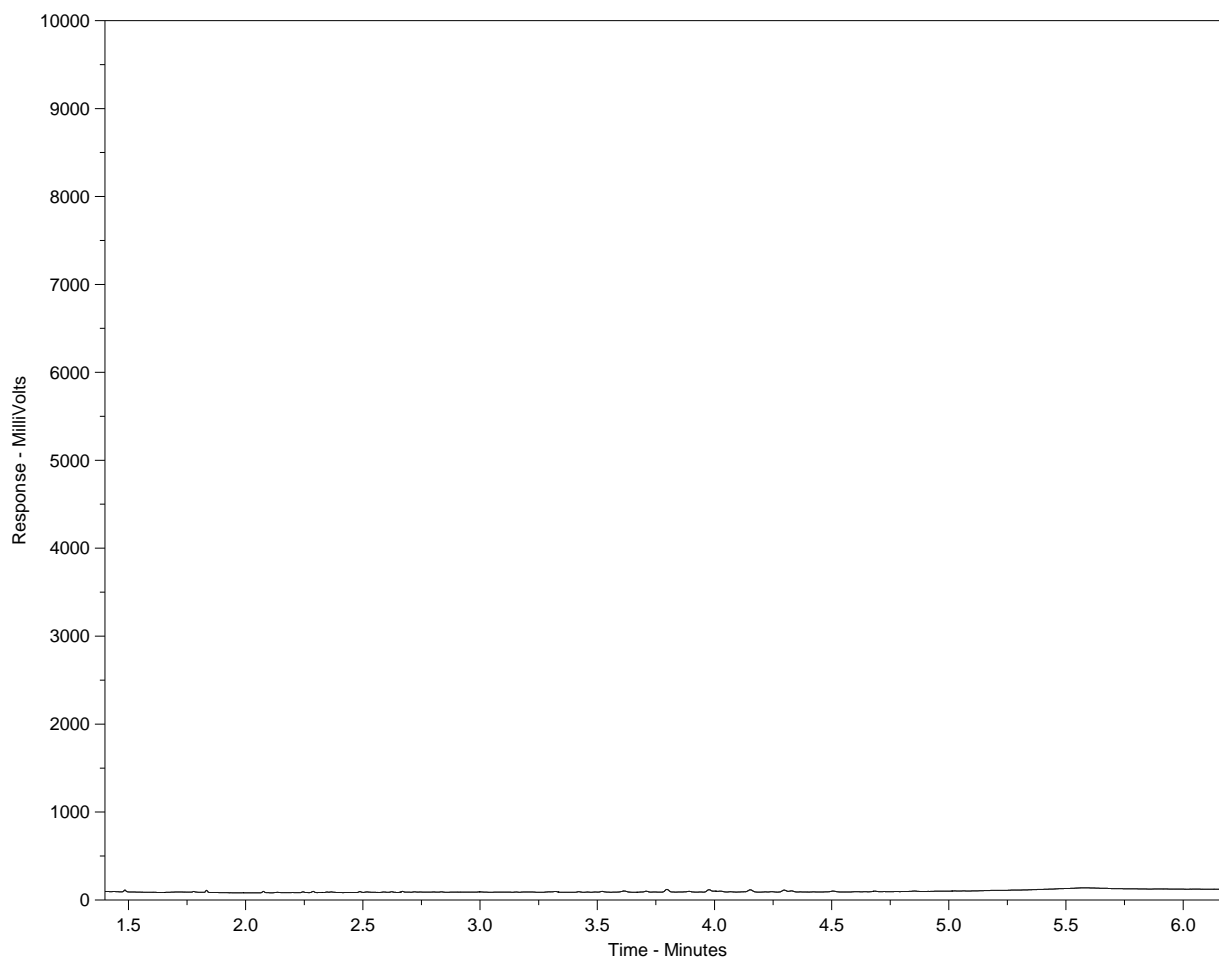
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-3
 Client ID: MW33A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

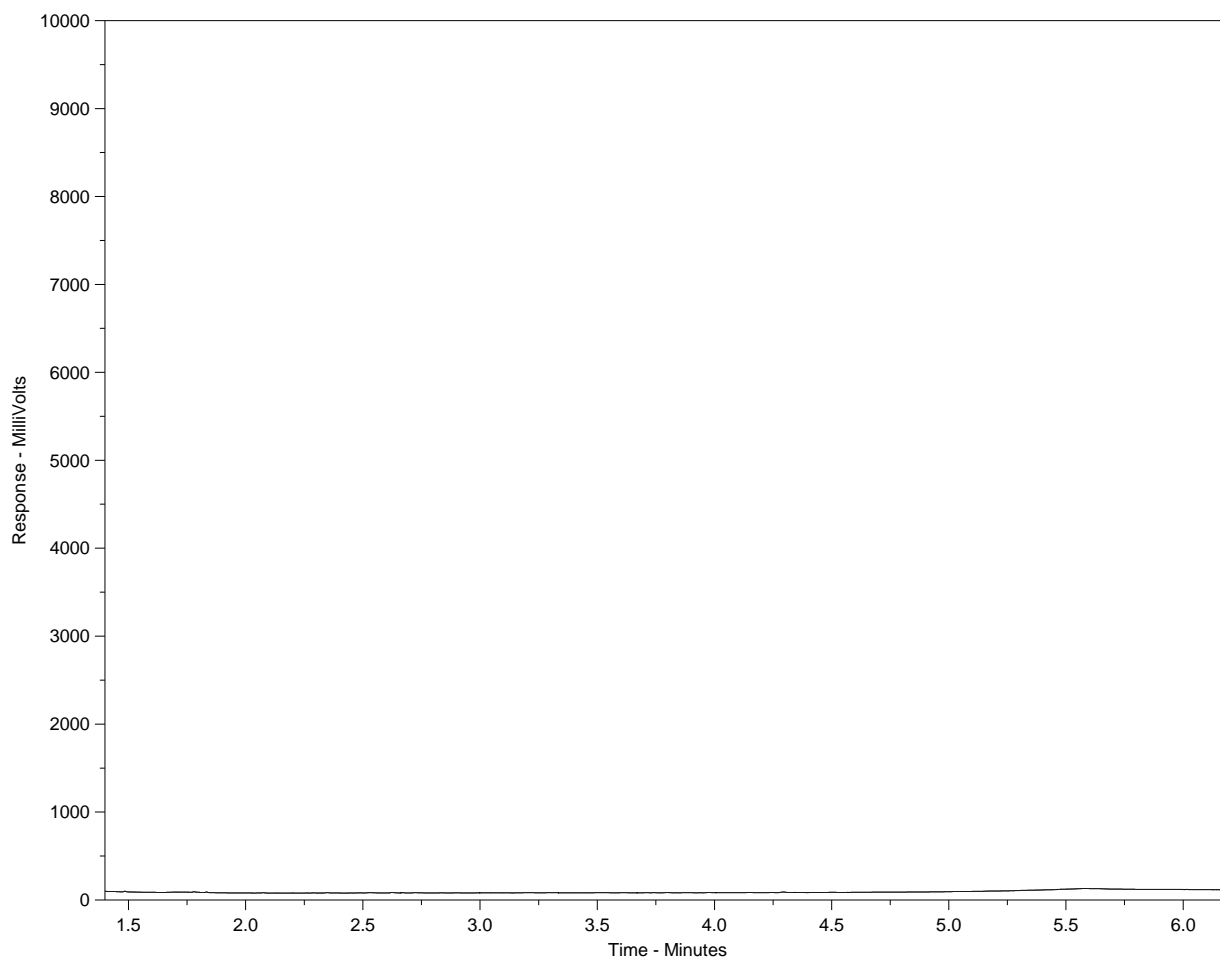
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-4
Client ID: MW33B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

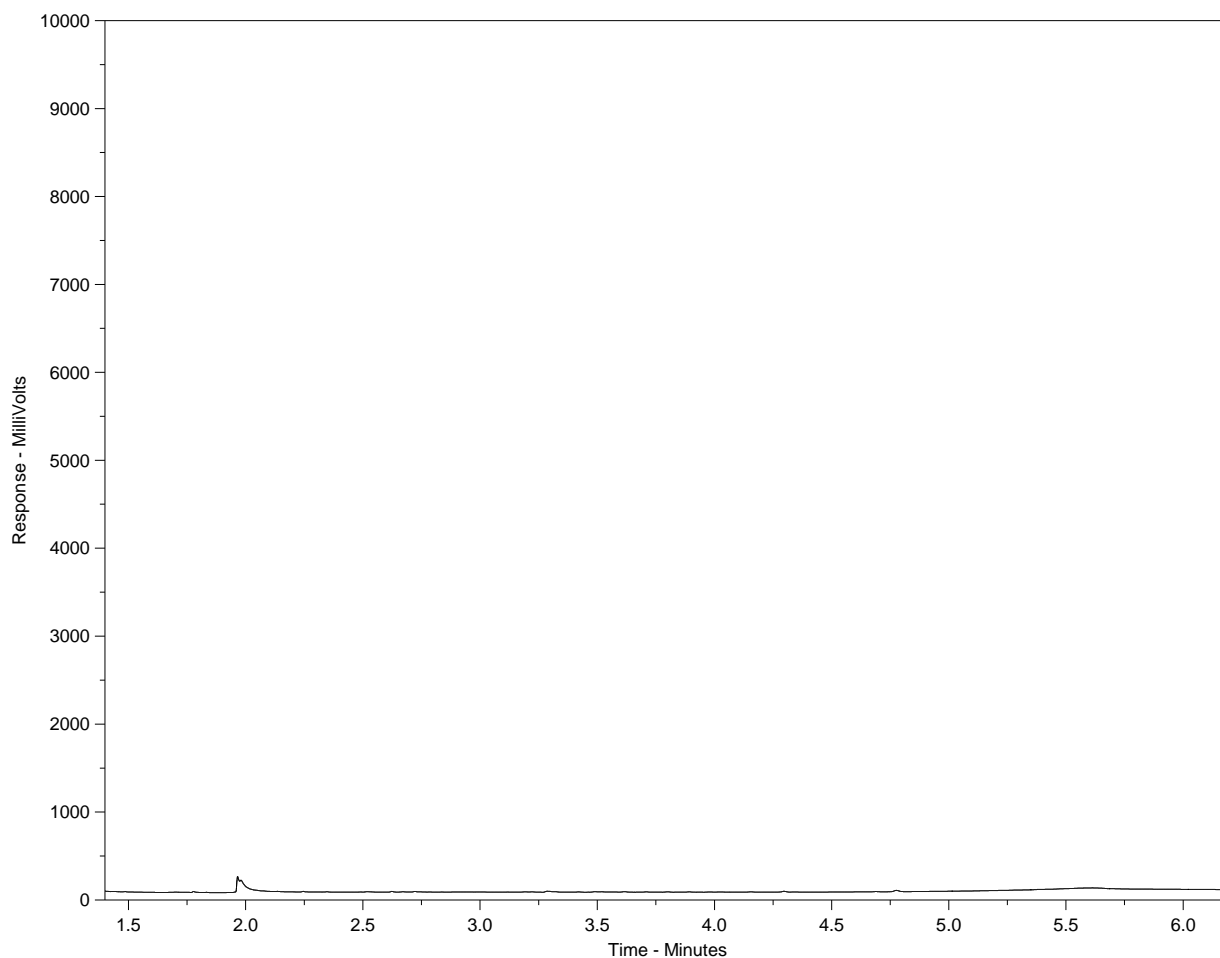
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-5
Client ID: MW8A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

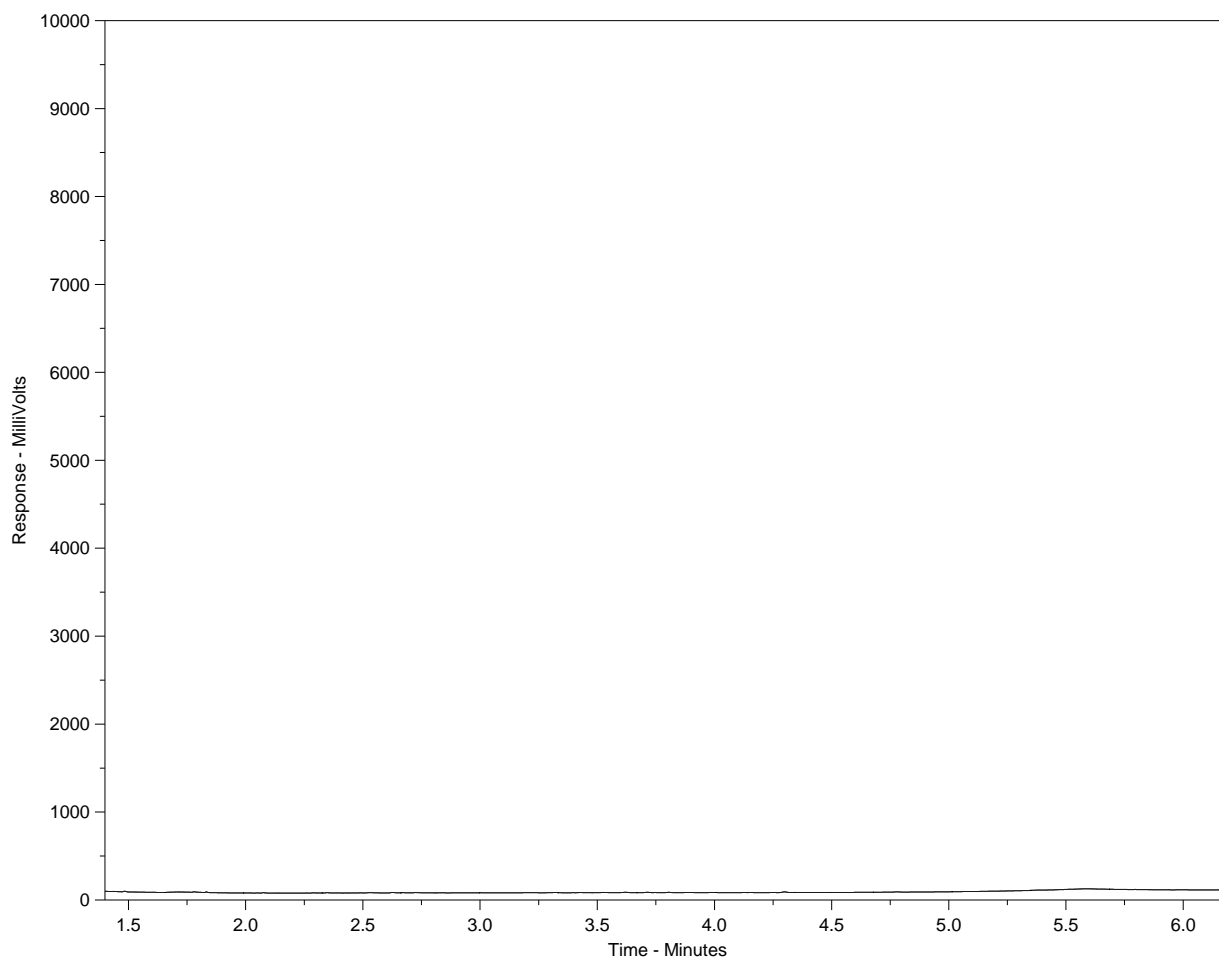
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-6
 Client ID: MW8B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

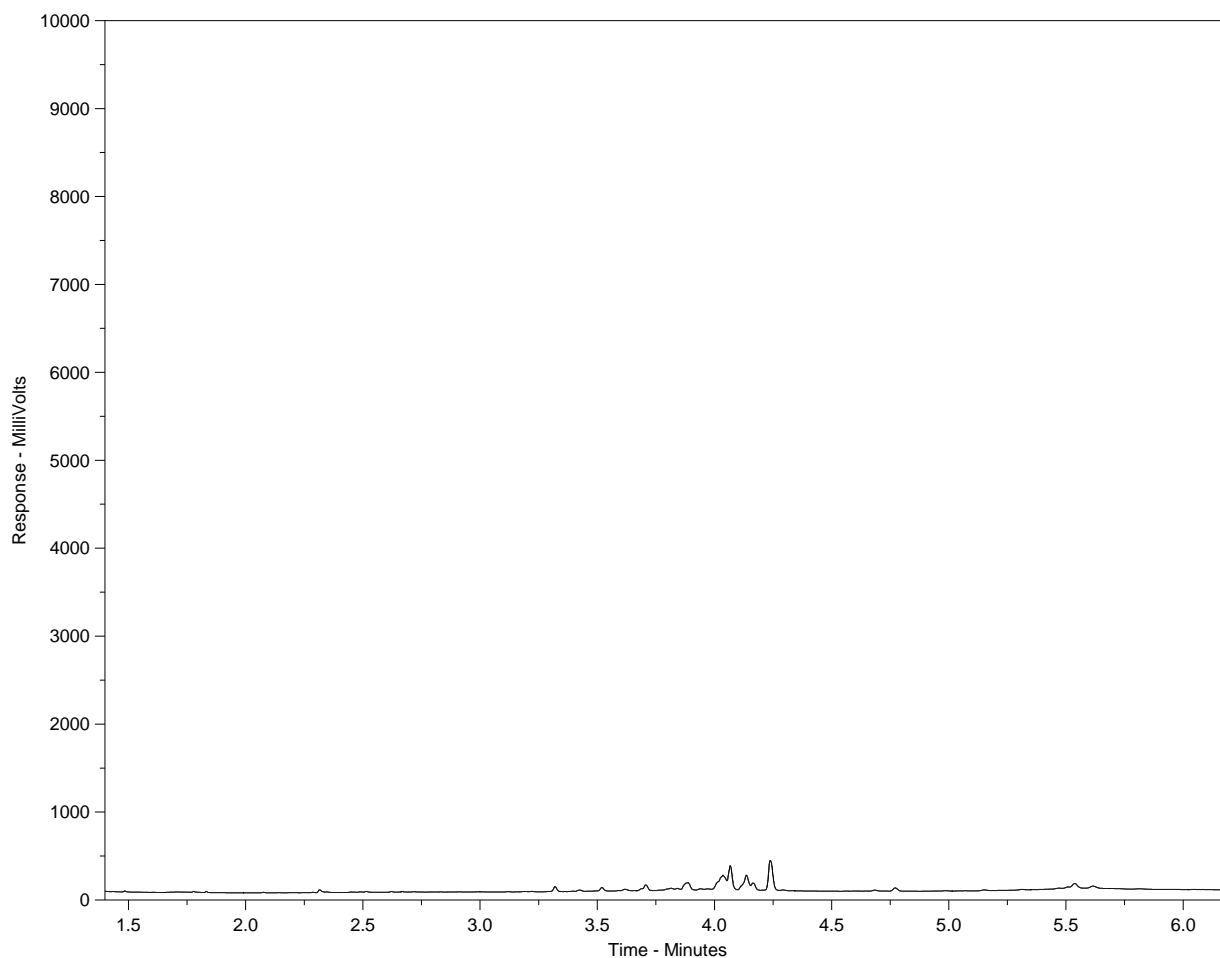
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-7
Client ID: MW12B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

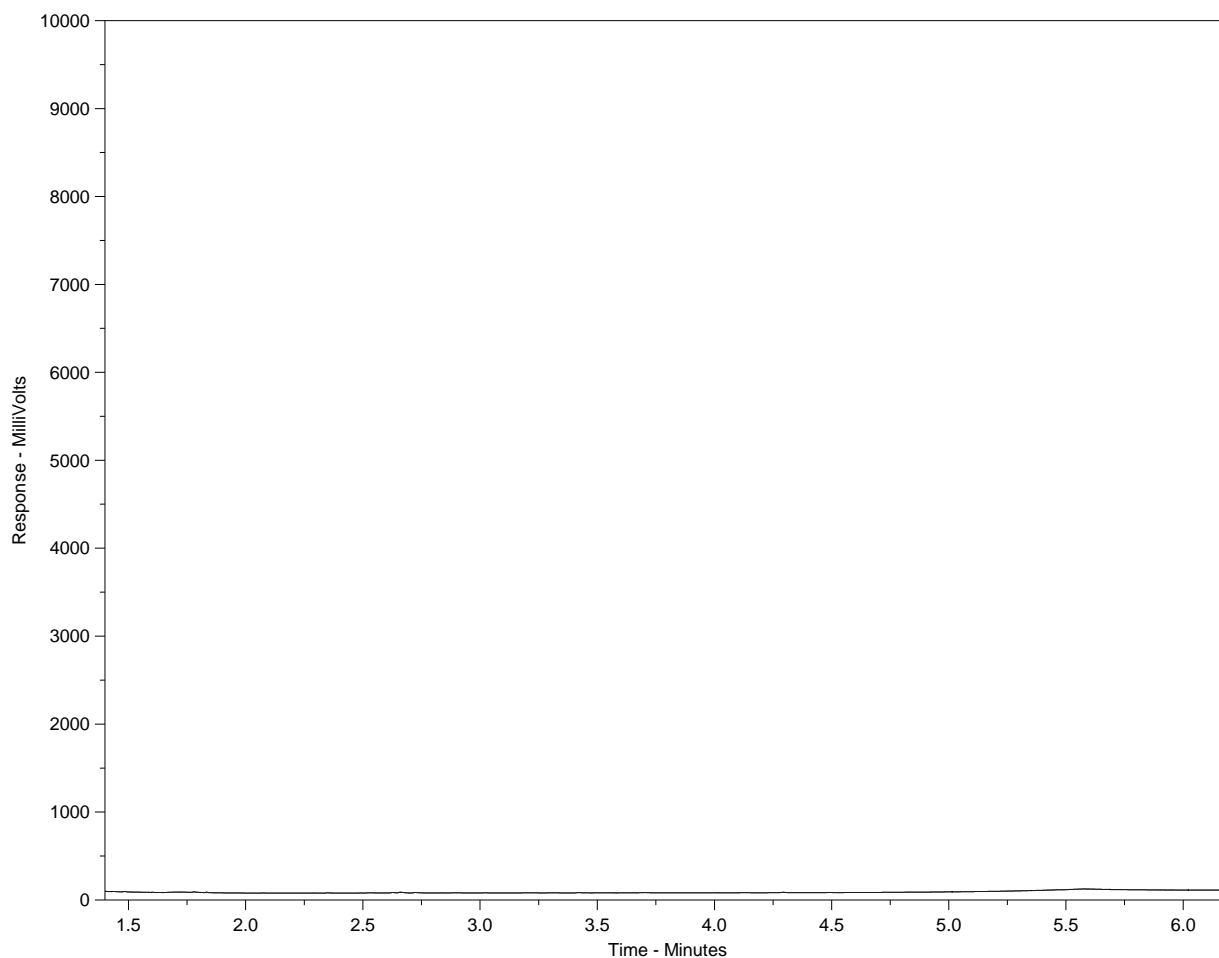
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-8
Client ID: MW12A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

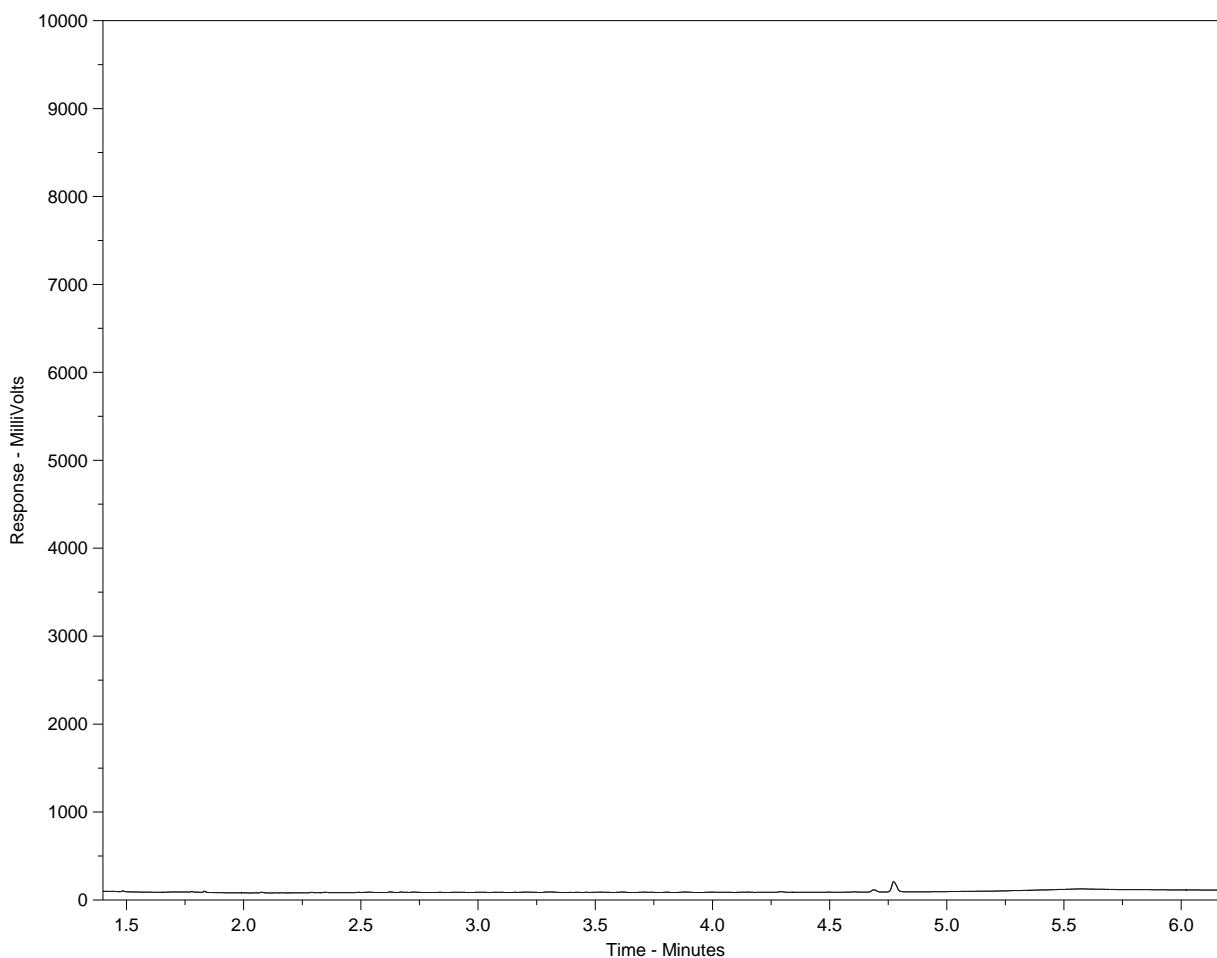
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-9
 Client ID: MW18A



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

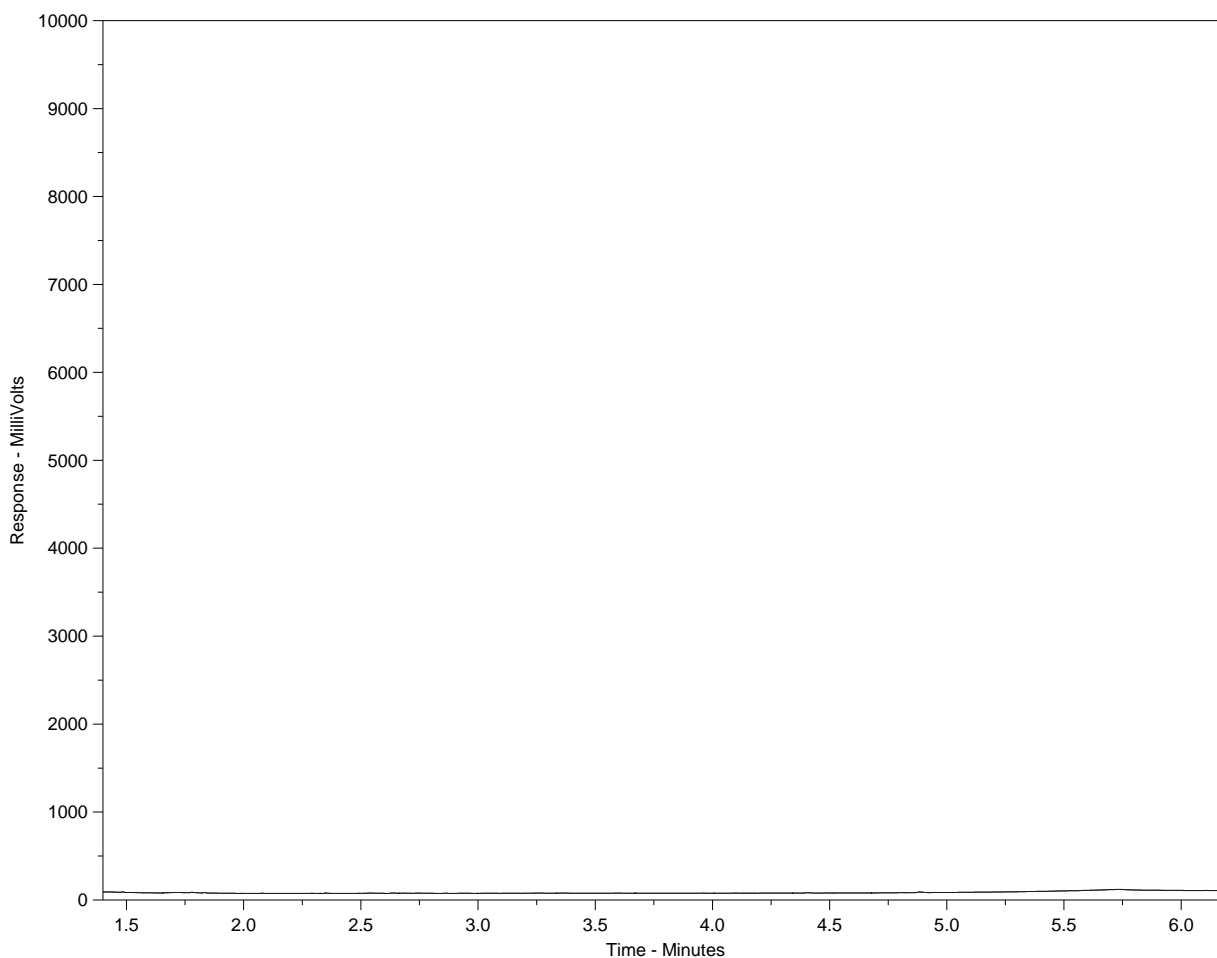
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-10
 Client ID: MW18B



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →		← Motor Oils/ Lube Oils/ Grease →			

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

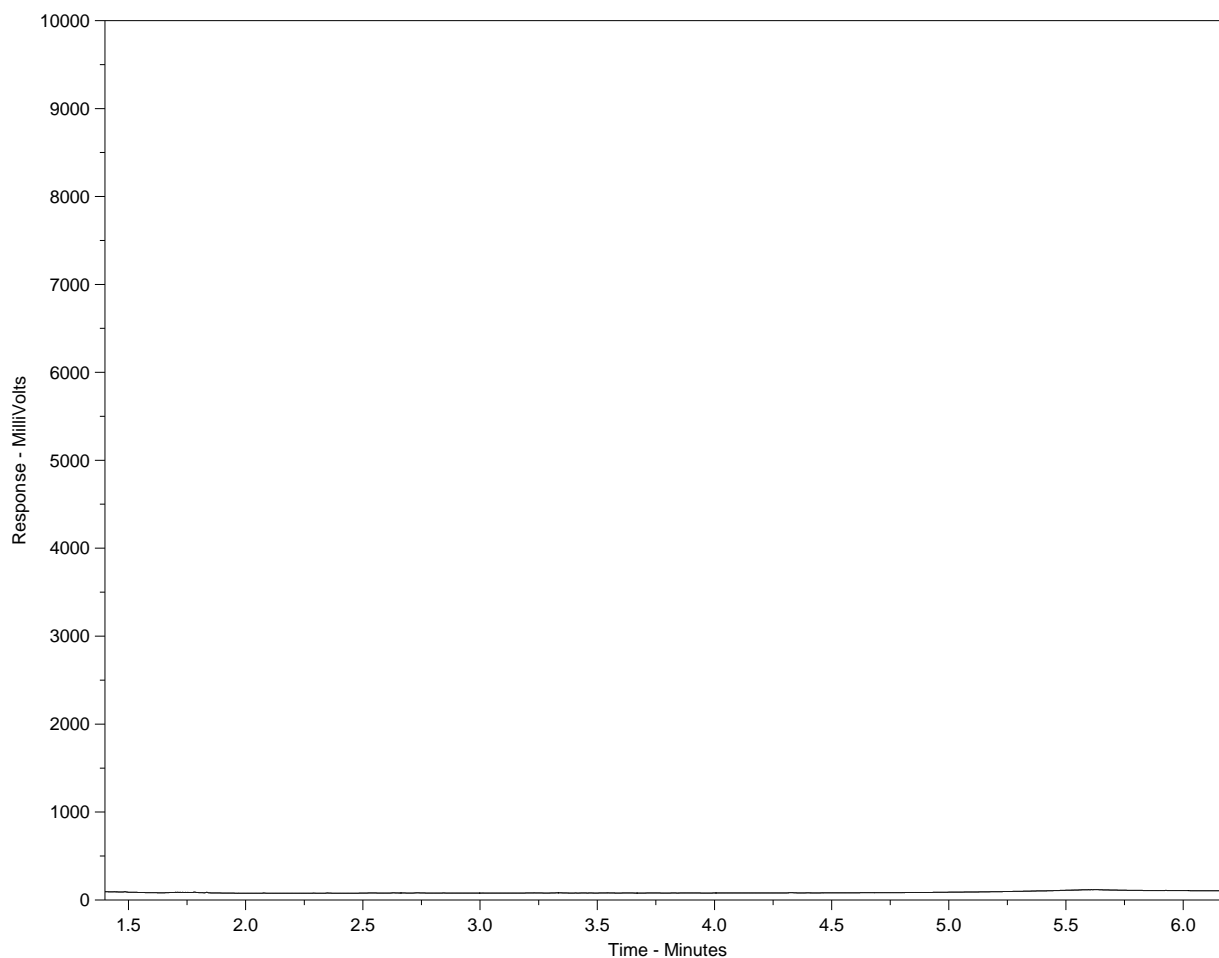
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-11
 Client ID: MW11



← F2 →		← F3 →		← F4 →		← F4 →	
nC10	nC16	nC34	nC50				
174°C	287°C	481°C	575°C				
346°F	549°F	898°F	1067°F				
← Gasoline →		← Diesel/ Jet Fuels →				← Motor Oils/ Lube Oils/ Grease →	

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

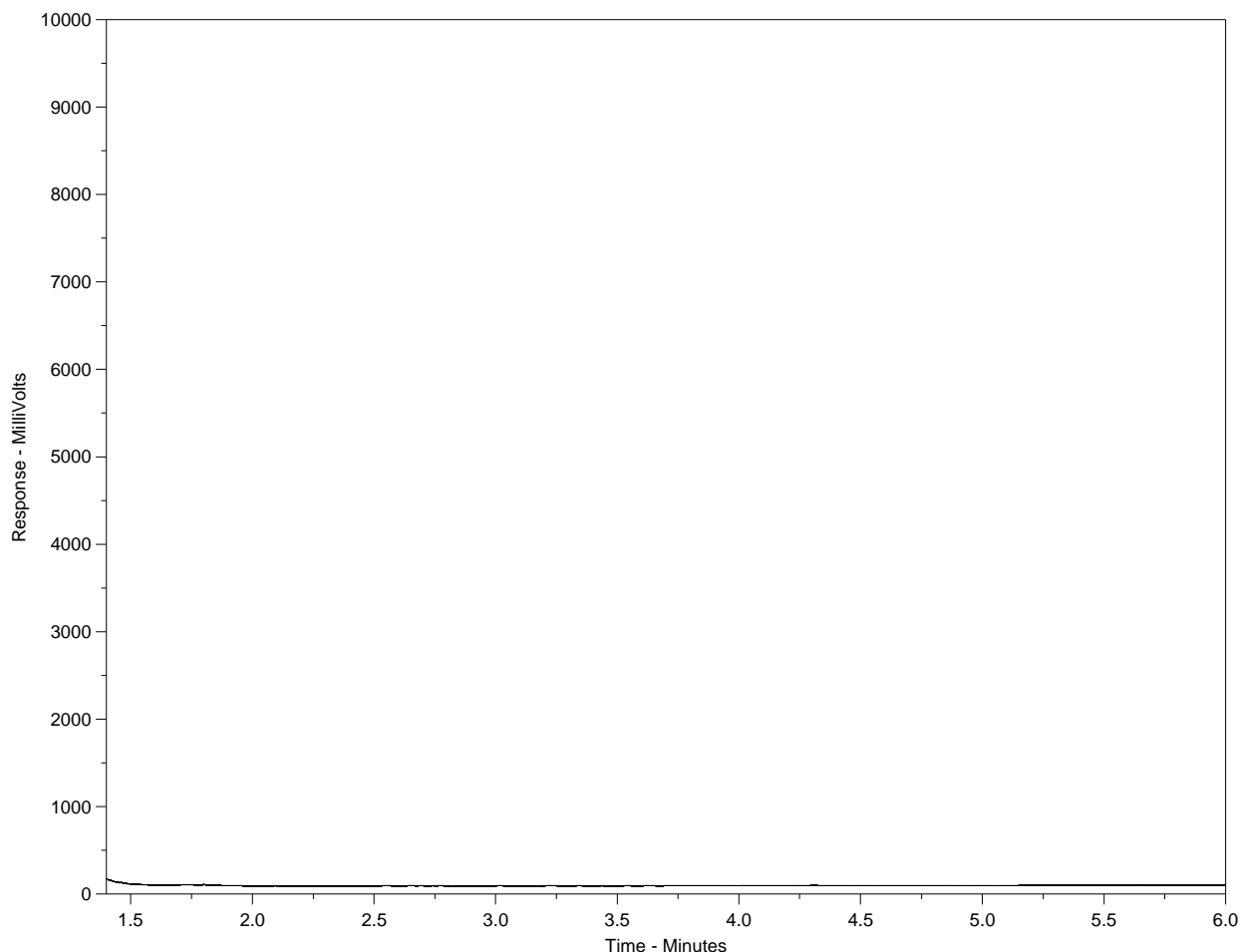
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-12
Client ID: 19MW37A



F2		F3		F4		F4	
nC10	nC16			nC34	nC50		
174°C	287°C			481°C	575°C		
346°F	549°F			898°F	1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

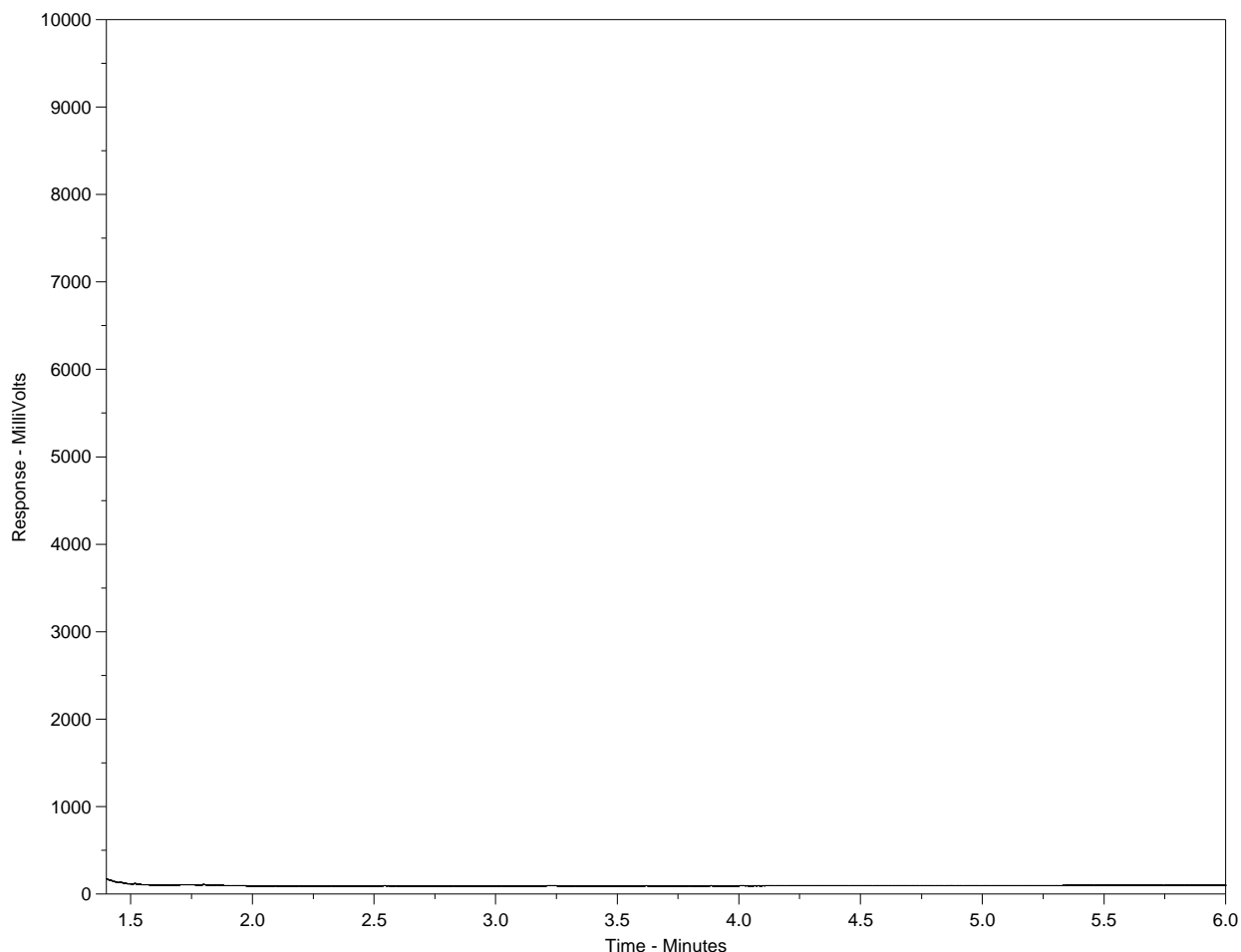
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-13
Client ID: FIELD BLANK



F2		F3		F4		F4	
nC10	nC16			nC34	nC50		
174°C	287°C			481°C	575°C		
346°F	549°F			898°F	1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

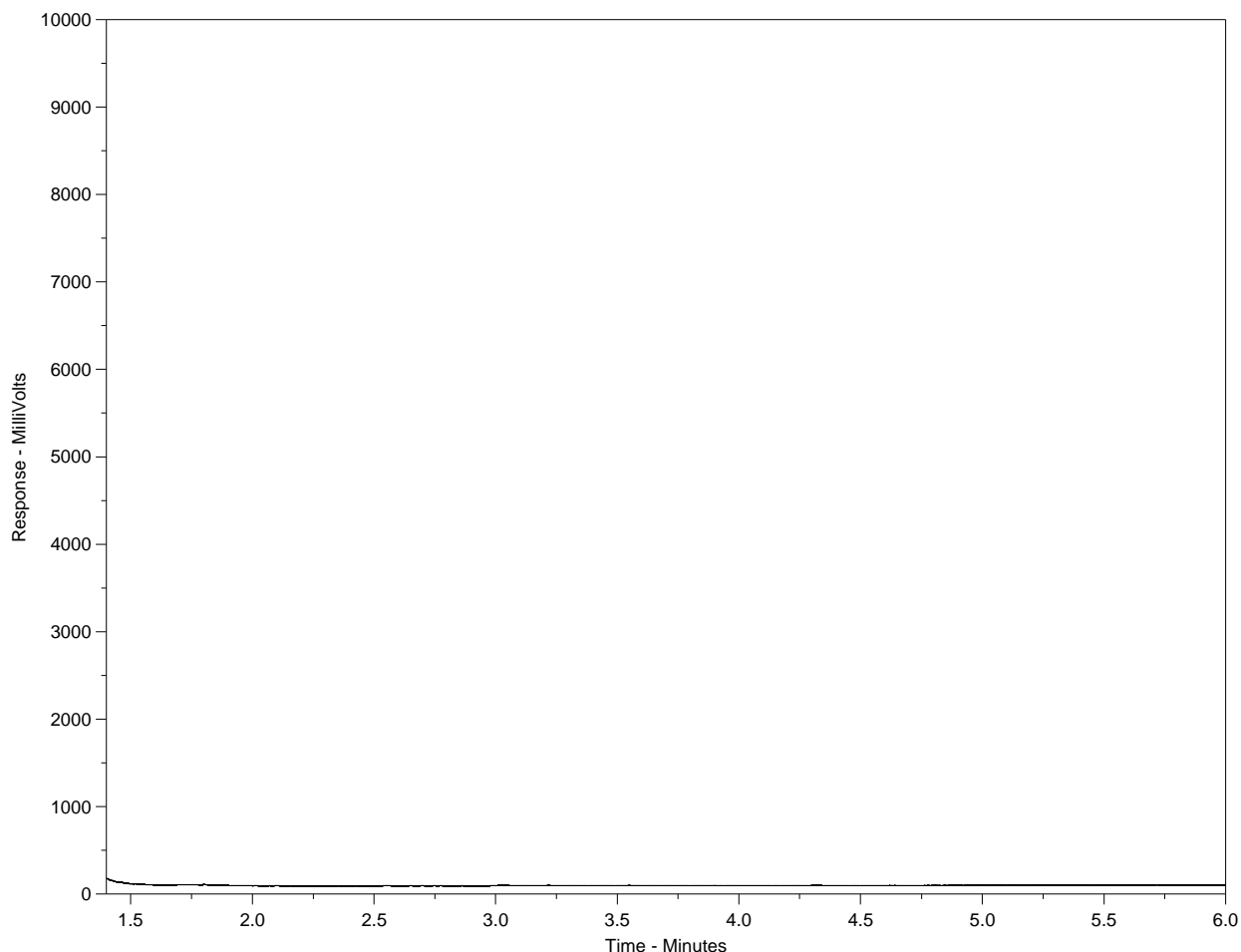
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-14
 Client ID: 19MW37B



← F2 →		← F3 →		← F4 →		← F4 →
nC10	nC16			nC34	nC50	
174°C	287°C			481°C	575°C	
346°F	549°F			898°F	1067°F	
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →				
← Diesel/ Jet Fuels →						

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

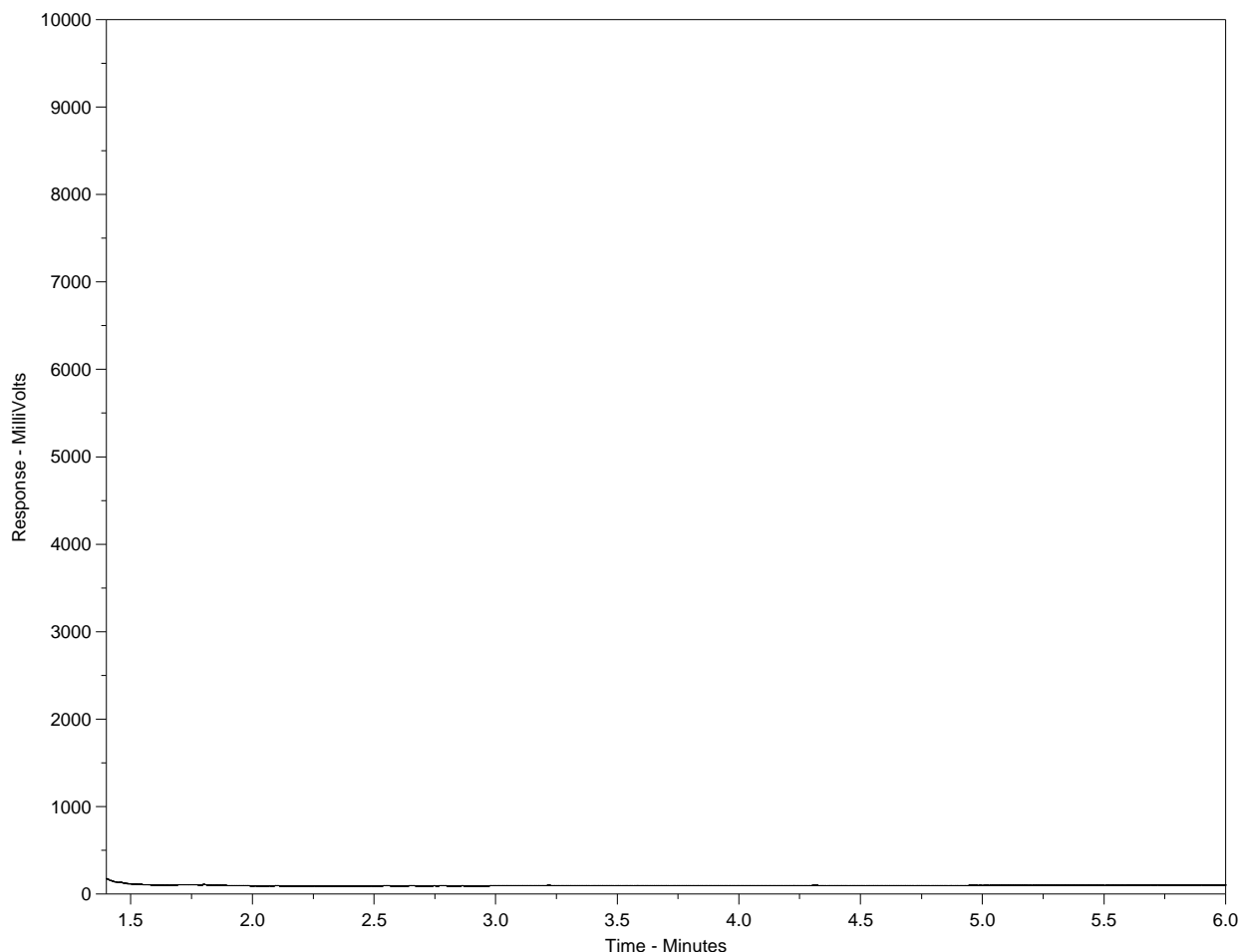
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-15
Client ID: MW10



F2		F3		F4		F4	
nC10	nC16			nC34	nC50		
174°C	287°C			481°C	575°C		
346°F	549°F			898°F	1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

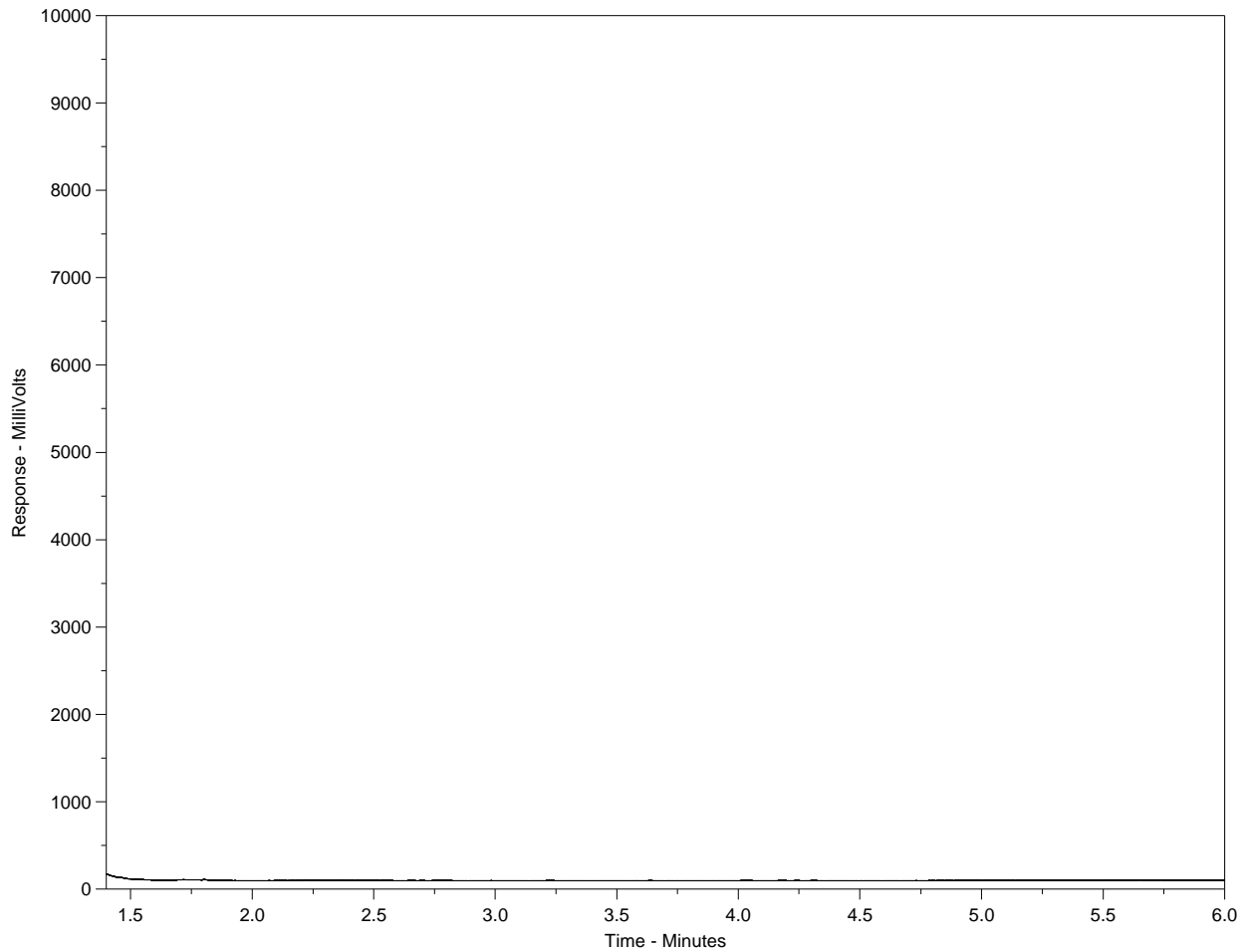
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-16
 Client ID: MW1B



← F2 →		← F3 →		← F4 →		← F4 →
nC10	nC16			nC34	nC50	
174°C	287°C			481°C	575°C	
346°F	549°F			898°F	1067°F	
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →				
← Diesel/ Jet Fuels →						

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

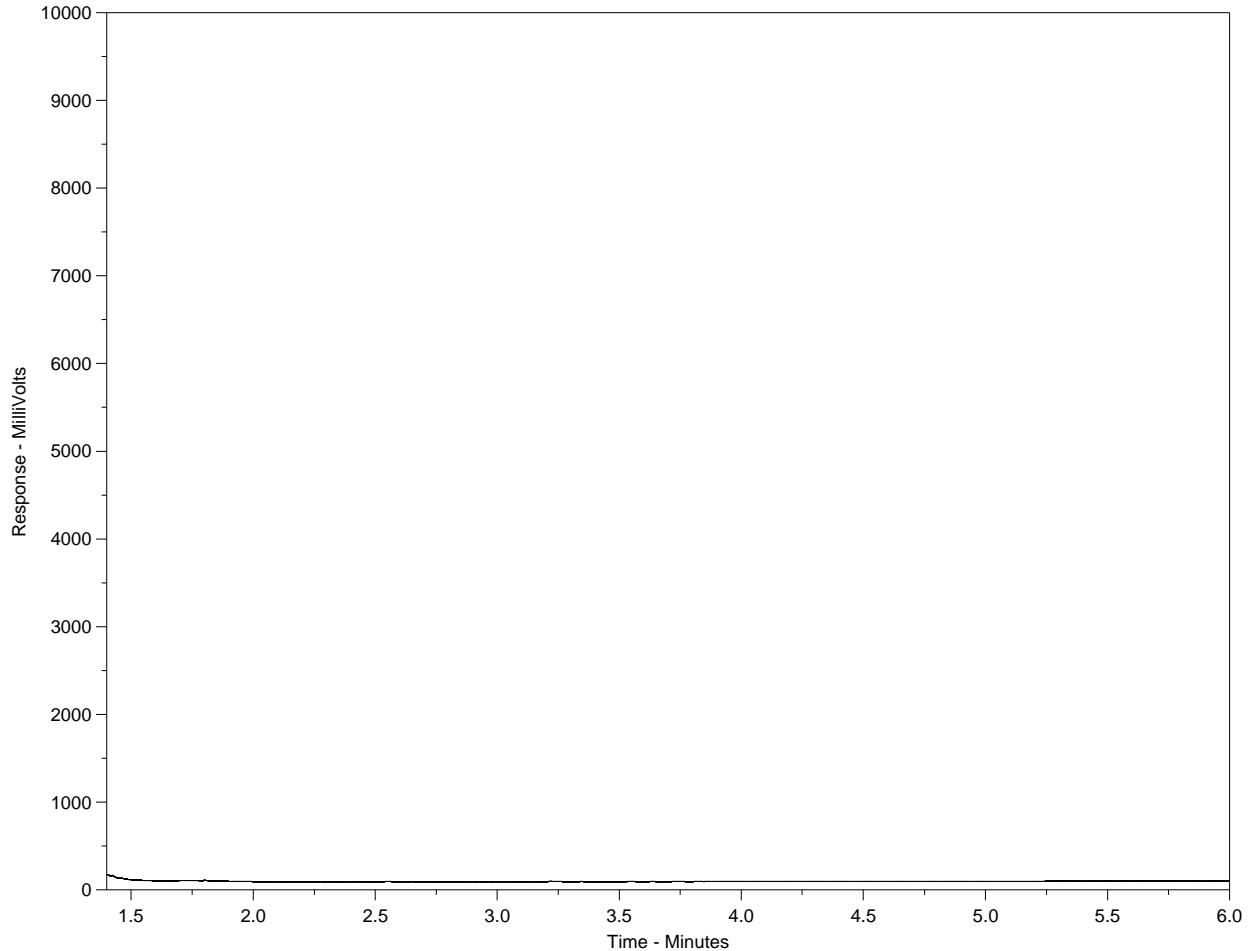
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-17
 Client ID: MW1C



← F2 →		← F3 →		← F4 →		← F4 →
nC10	nC16			nC34	nC50	
174°C	287°C			481°C	575°C	
346°F	549°F			898°F	1067°F	
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →				
← Diesel/ Jet Fuels →						

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

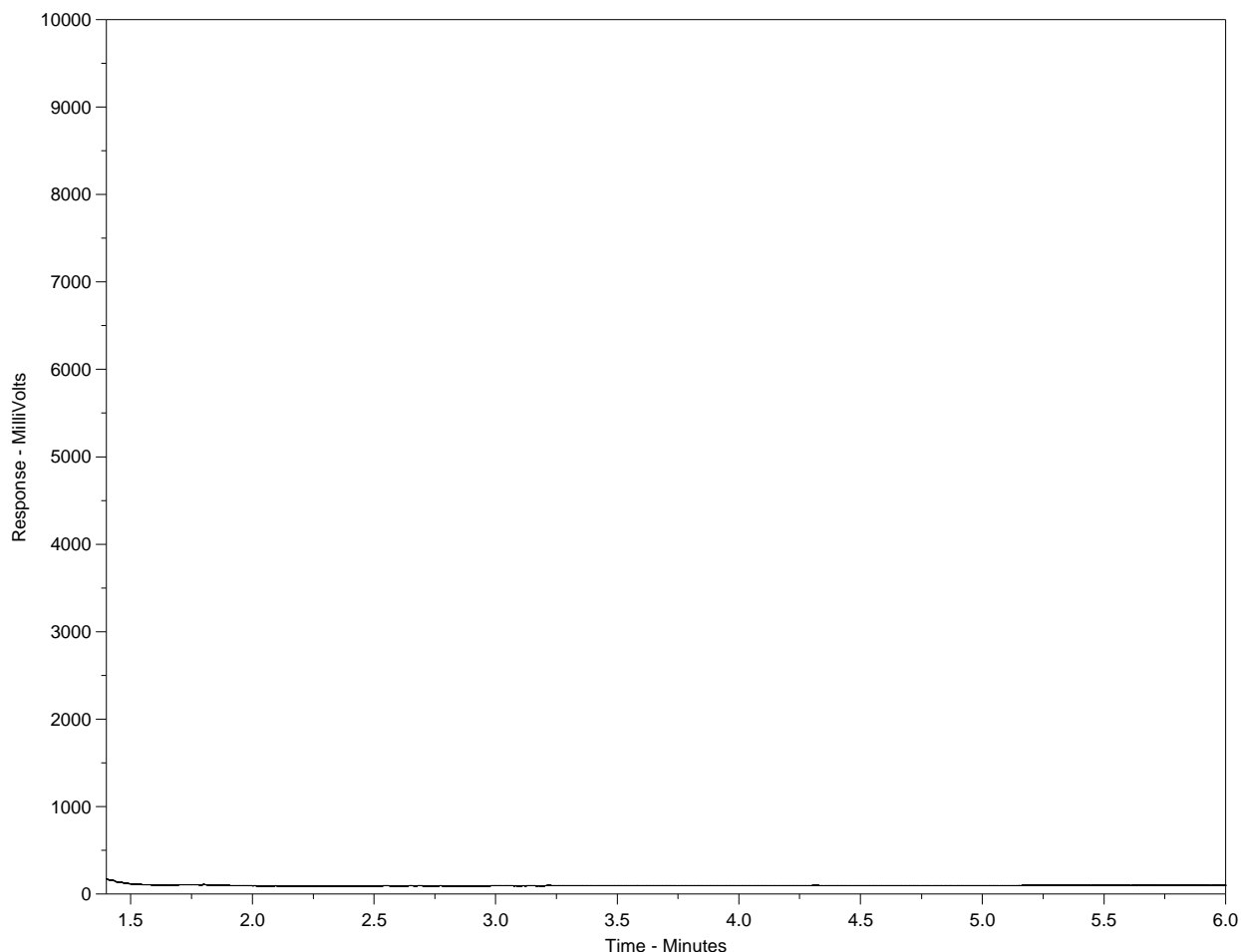
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-18
 Client ID: MW19A



← F2 →		← F3 →		← F4 →		← F4 →
nC10	nC16			nC34	nC50	
174°C	287°C			481°C	575°C	
346°F	549°F			898°F	1067°F	
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →				
← Diesel/ Jet Fuels →						

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

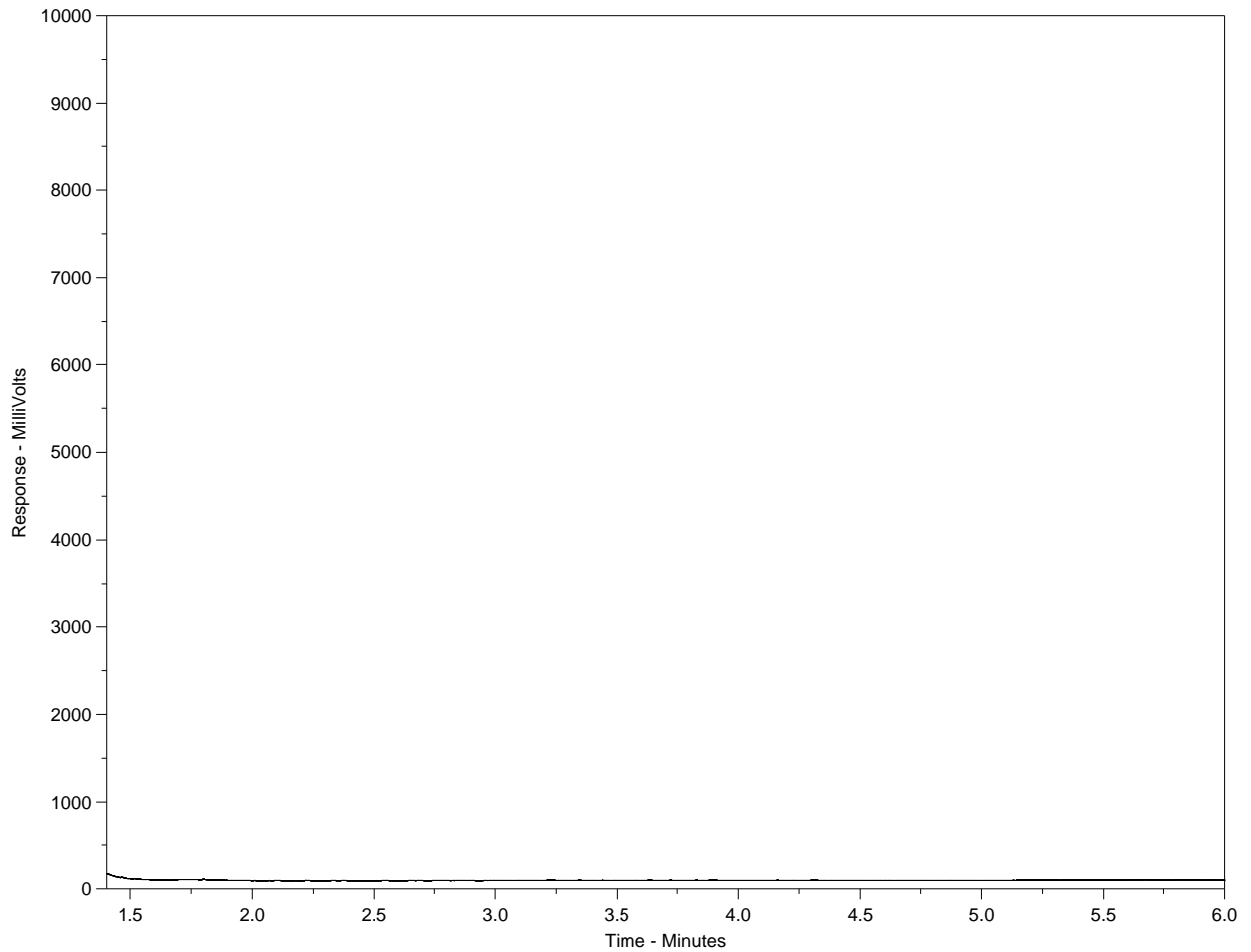
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-19
 Client ID: MW19B



← F2 →		← F3 →		← F4 →		← F4 →
nC10	nC16			nC34	nC50	
174°C	287°C			481°C	575°C	
346°F	549°F			898°F	1067°F	
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →				
← Diesel/ Jet Fuels →						

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

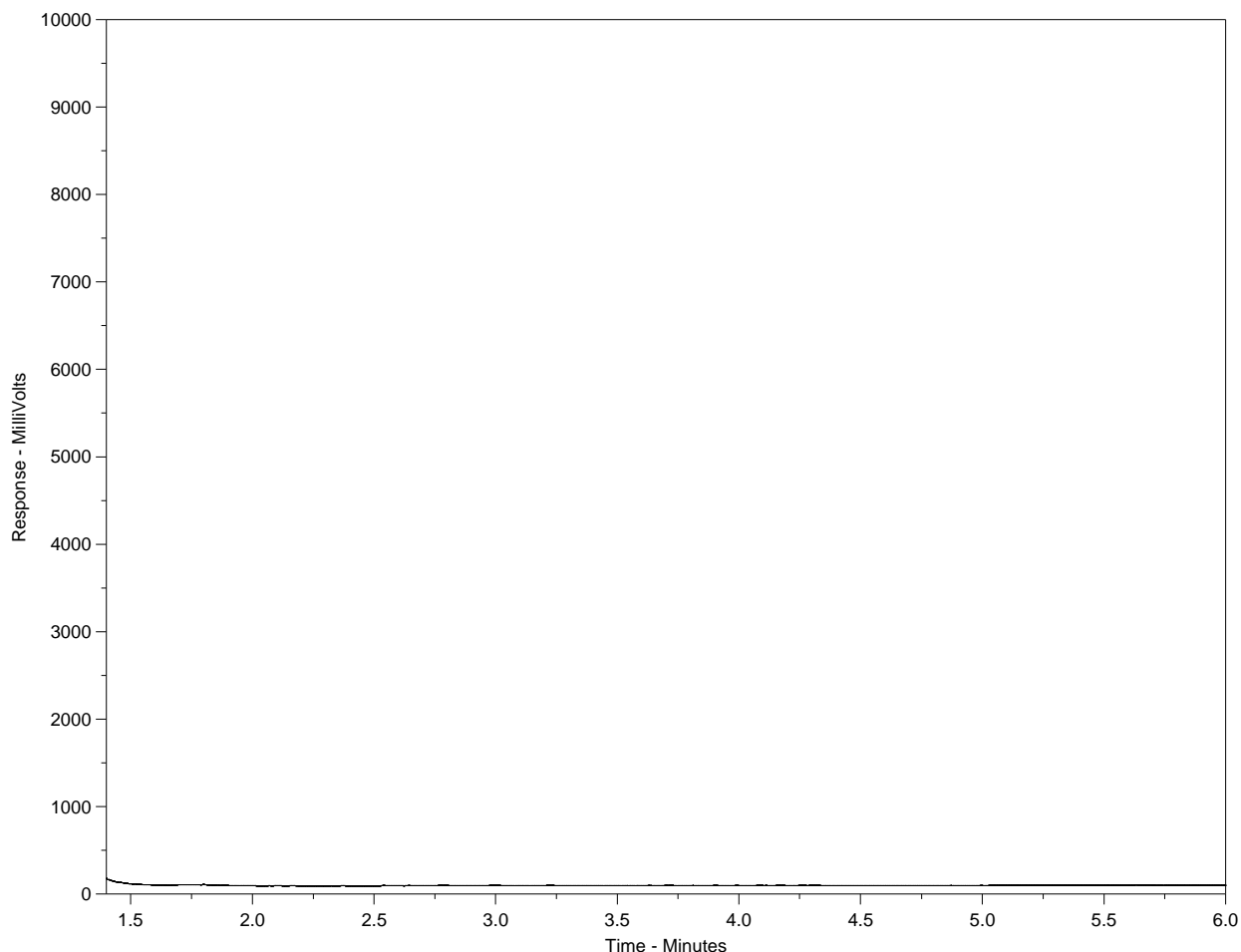
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-20
 Client ID: 19MW38A



← F2 →		← F3 →		← F4 →		← F4 →
nC10	nC16			nC34	nC50	
174°C	287°C			481°C	575°C	
346°F	549°F			898°F	1067°F	
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →				
← Diesel/ Jet Fuels →						

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

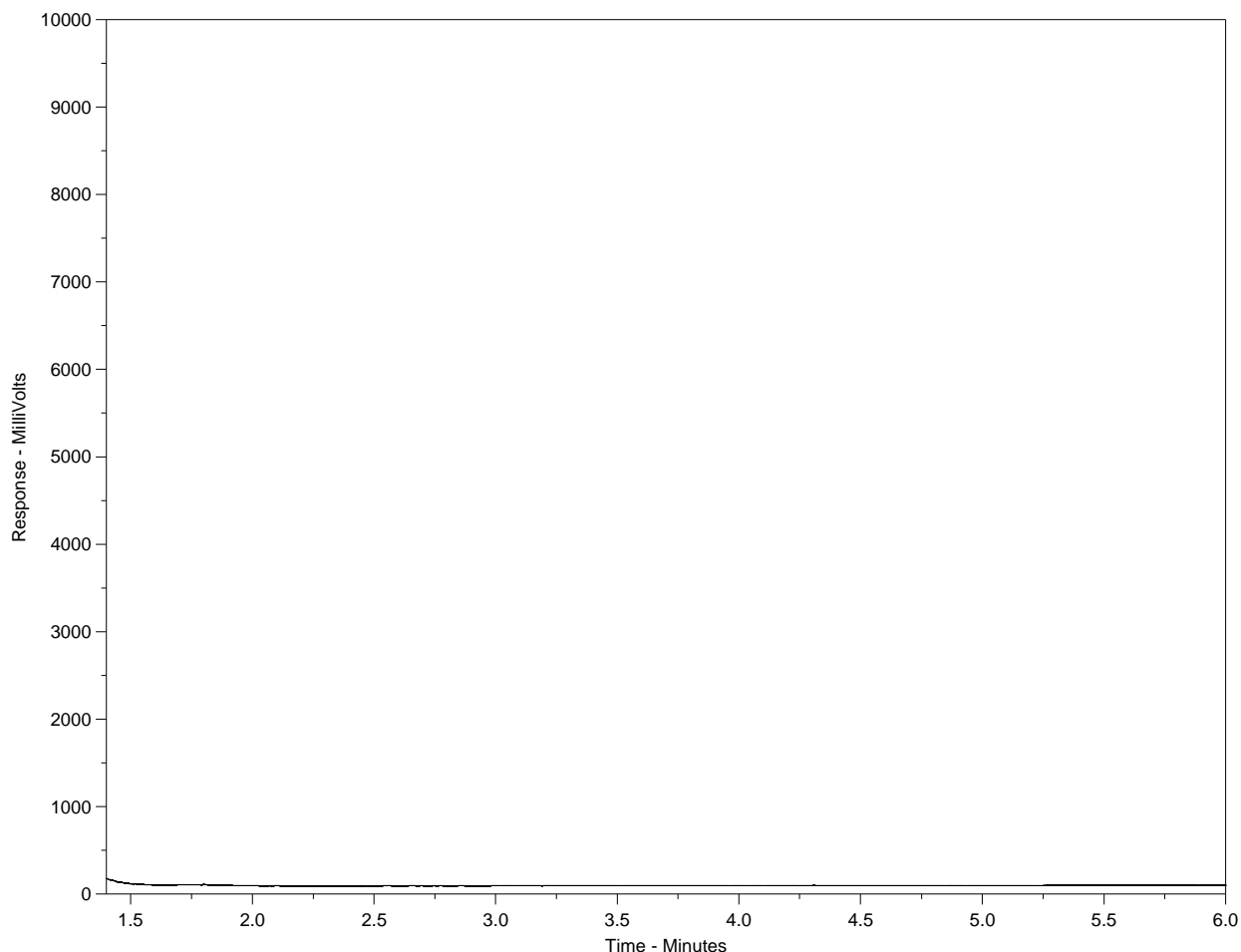
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-21
Client ID: 19MW38B



F2		F3		F4		F4	
nC10	nC16			nC34	nC50		
174°C	287°C			481°C	575°C		
346°F	549°F			898°F	1067°F		
← Gasoline →				← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →							

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

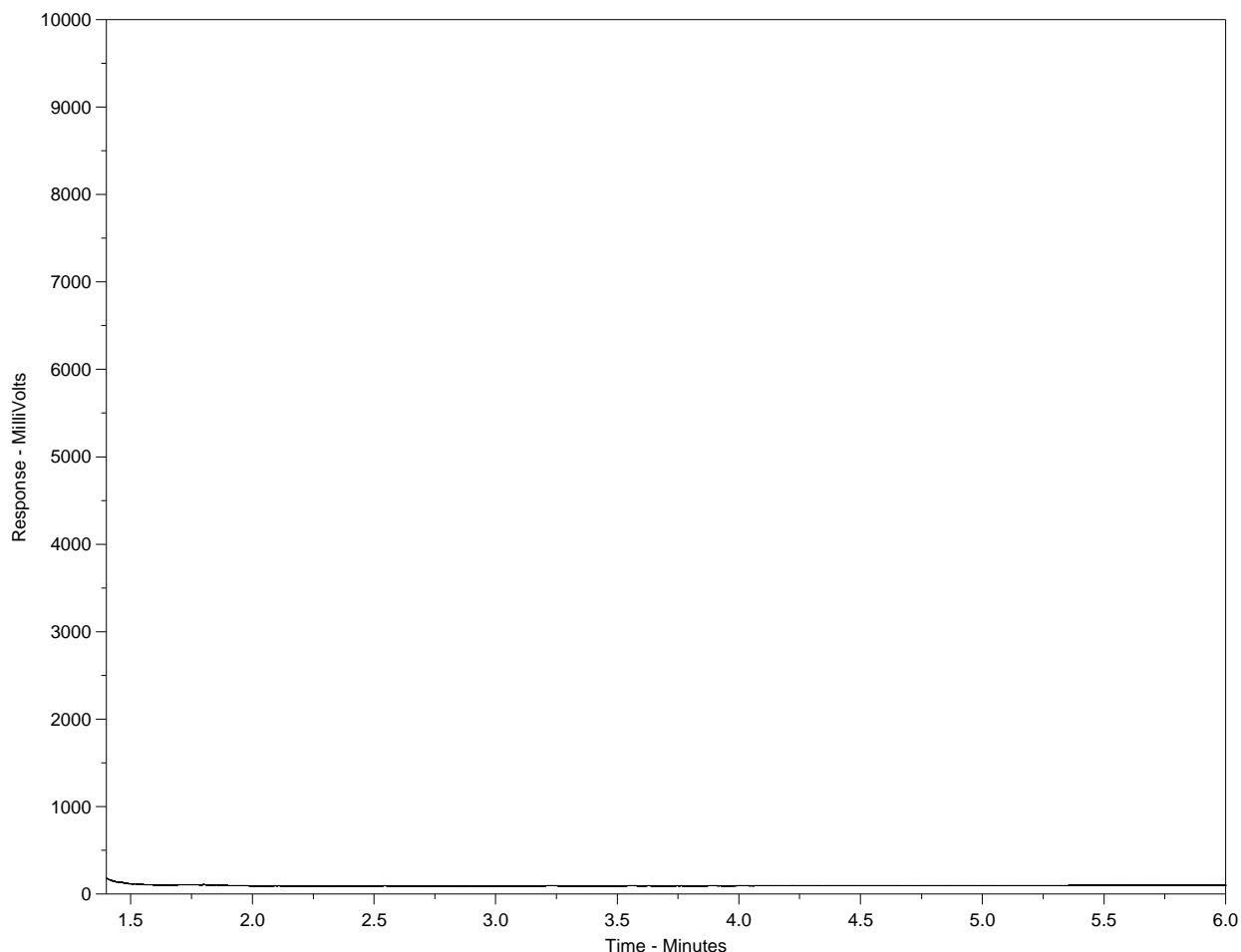
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-22
 Client ID: TRIP BLANK



← F2 →		← F3 →		← F4 →		← F4 →
nC10	nC16			nC34	nC50	
174°C	287°C			481°C	575°C	
346°F	549°F			898°F	1067°F	
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →				
← Diesel/ Jet Fuels →						

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

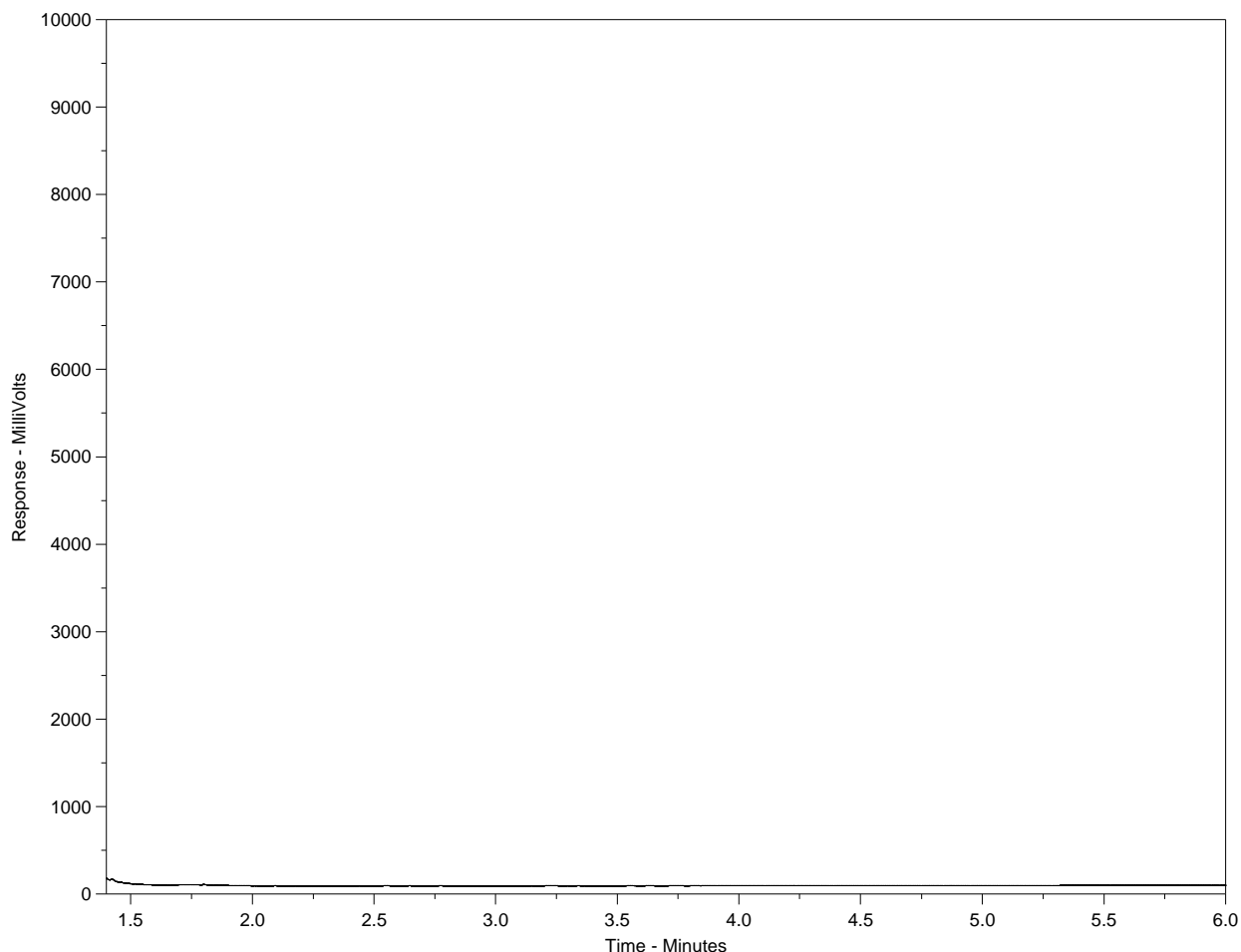
Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Hydrocarbon Distribution Report



ALS Sample ID: L2597121-23
 Client ID: DUP-4



← F2 →		← F3 →		← F4 →		← F4 →
nC10	nC16			nC34	nC50	
174°C	287°C			481°C	575°C	
346°F	549°F			898°F	1067°F	
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →				
← Diesel/ Jet Fuels →						

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:
 This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.




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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20 - 903129

Page 1 of 2

Report To Contact and company name below will appear on the final report		Reports / Recipients			Turnaround Time (TAT) Requested																																																																																																																										
Company: <u>TECH TECH</u>		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)			<input checked="" type="checkbox"/> Routine [R] if received by 3pm M-F - no surchar <input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush <input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush <input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush <input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush <input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% r may apply to rush requests on weekends, statutory.																																																																																																																										
Contact: <u>Nichelle Crawford</u>		Merge QC/QCI Reports with COA <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A			 L2597121-COFC																																																																																																																										
Phone: <u>7802932091</u>		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																																																																																													
Street: <u>14940 123 Ave</u>		Email 1 or Fax: <u>nichelle.crawford@techtech.com</u>			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm																																																																																																																										
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Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			<table border="1"> <thead> <tr> <th rowspan="2">NUMBER OF CONTAINERS</th> <th colspan="8">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</th> <th rowspan="2">SAMPLES ON HOLD</th> <th rowspan="2">EXTENDED STORAGE REQUIRED</th> <th rowspan="2">SUSPECTED HAZARD (see notes)</th> </tr> <tr> <th>P</th><th>P</th><th>P</th><th>F</th><th>P</th><th>P</th><th>P</th><th>P</th> </tr> </thead> <tbody> <tr> <td>routine</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td></td><td></td><td></td> </tr> <tr> <td>drss nut.</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td></td><td></td><td></td> </tr> <tr> <td>drss metals</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td></td><td></td><td></td> </tr> <tr> <td>drss Hg</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td></td><td></td><td></td> </tr> <tr> <td>total nut.</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td></td><td></td><td></td> </tr> <tr> <td>phthalates</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td></td><td></td><td></td> </tr> <tr> <td>PTEX F1-F2</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td></td><td></td><td></td> </tr> <tr> <td>VOCS</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td></td><td></td><td></td> </tr> </tbody> </table>							NUMBER OF CONTAINERS	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below								SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)	P	P	P	F	P	P	P	P	routine	X	X	X	X	X	X	X	X				drss nut.	X	X	X	X	X	X	X	X				drss metals	X	X	X	X	X	X	X	X				drss Hg	X	X	X	X	X	X	X	X				total nut.	X	X	X	X	X	X	X	X				phthalates	X	X	X	X	X	X	X	X				PTEX F1-F2	X	X	X	X	X	X	X	X				VOCS	X	X	X	X	X	X	X	X			
NUMBER OF CONTAINERS	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below								SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)																																																																																																																				
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PTEX F1-F2	X	X	X	X	X	X	X	X																																																																																																																							
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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION. Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy. 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20 - 903133

Page 2 of 2

Report To Contact and company name below will appear on the final report		Reports / Recipients			Turnaround Time (TAT) Request																										
Company: <i>same as page 1</i>		Select Report Format: <input type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			<input type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharge																										
Contact:		Merge QC/QCI Reports with COA <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A			<input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush s																										
Phone:		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			<input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush s																										
Company address below will appear on the final report		Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			<input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush s																										
Street:		Email 1 or Fax			<input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush s																										
City/Province:		Email 2			<input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% ru may apply to rush requests on weekends, statutory holidays																										
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Invoice To		Invoice Recipients			For all tests with rush TATs requested, please contact your AM to confirm availability.																										
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Analysis Request																										
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																										
Company:		Email 2			<table border="1"> <tr> <td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td colspan="10" rowspan="5" style="text-align: center; vertical-align: middle;"><i>same as page 1</i></td> <td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLES ON HOLD</td> <td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">EXTENDED STORAGE REQUIRED</td> <td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">SUSPECTED HAZARD (see notes)</td> </tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>			NUMBER OF CONTAINERS	<i>same as page 1</i>										SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)										
NUMBER OF CONTAINERS	<i>same as page 1</i>																					SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)							
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Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

APPENDIX E

HISTORICAL ANALYTICAL RESULTS

Table E1A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 1A																			
			Apr-91	Oct-91	Apr-92	Oct-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95	Oct-95	Apr-96	Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00
Field Measurements																						
Field pH	-	-	7.71	8.4	7.7	8.1	8.4	7.7	8.4	8.29	7.9	7.7	7.7	7.6	7.5	7.7	7.6	7.03	7.58	7.03	7.52	7.2
Routine Water																						
pH	-	6.5 - 8.5	8.0	7.8	7.9	7.5	7.7	7.6	8.2	8.0	7.9	7.7	7.86	7.92	7.68	7.94	7.79	7.72	7.66	7.76	7.80	7.71
Conductivity (EC)	µS/cm	1000	4420	4500	5050	5450	5300	5630	5420	5840	5530	5960	5540	5710	5550	5240	5590	6230	5610	6520	6740	5790
Calcium	mg/L	-	96	104	97	115	108	114	109	131	120	134	121	127	101	122	122	75	141	132	169	389
Magnesium	mg/L	-	25	33	27	33.4	31.3	33.7	31.8	37.5	34.1	41	34.8	36.6	30.2	32.8	29.3	40.7	42.4	44.1	47.2	94.1
Sodium	mg/L	200	1150	1160	1140	1260	1240	1360	1260	1230	1360	1394	1350	1330	1360	1460	1360	1590	1360	1590	1570	1520
Potassium	mg/L	-	8.9	8.7	9.9	8.34	7.71	7.74	8.46	7.61	7.94	8	6.73	6.88	5.71	7.26	5.87	8.26	7.56	10.8	7.9	17.9
Iron	mg/L	0.3	0.02	<0.02	0.33	11.3	0.07	2.71	< 0.04	0.04	< 0.04	0.028	0.5	0.07	0.06	0.037	0.134	0.216	0.514	0.024	0.044	< 0.003
Sulphate	mg/L	128-429 ²	2171	2030	2400	2460	2460	2450	2350	2420	2590	2681	2670	2570	2830	3010	2510	3330	2950	3460	3330	3490
Chloride	mg/L	100	1	10	3	0.6	0.5	0.9	0.8	<0.1	0.6	3	1.4	4.9	0.4	1.4	1.1	<0.5	1.4	0.7	<0.5	<0.5
Bicarbonate	mg/L	-	706	776	788	806	797	802	809	815	814	812	811	820	794	793	792	774	767	768	760	781
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6
Nitrate	mg/L	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	0.16	0.213	<0.04
Total Dissolved Solids (TDS)	mg/L	500	3704	3760	4330	4270	4240	4360	4160	4220	4500	5075	4590	4480	4720	5020	4410	5430	4880	5620	5510	5700
Water Nutrients																						
Ammonia-N	mg/L	0.018-190 ³	3	<1	<1	0.755	0.808	0.85	0.58	0.503	0.58	0.721	0.424	0.538	0.385	0.59	0.58	0.78	0.45	0.54	0.48	0.63
TKN	mg/L	-	3	<1	1.1	1.64	1.1	1.45	1.12	1.13	1.2	1.46	1.81	1.31	2.73	1.12	1.24	1.34	0.97	1.2	1.63	1.16
Organics																						
COD	mg/L	-	18	26	12	64	30	31	26	47	54	26	24	51	22	35	38	63	53	38	36	37
TOC	mg/L	-	9	19	9	11.8	8.3	10.8	9.9	8.5	10.2	8.9	8.9	10.2	12.1	11.4	14.3	14.5	18.2	15.2	14.4	15
Oil & Grease	mg/L	-	<1	<1	<1	<0.2	<0.2	6	0.9	0.4	0.3	<0.2	<0.2	0.4	<0.2	<1	1	1	2	<1	<1	7
Metals																						
Antimony	mg/L	0.006	0.001	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	0.0062	<0.0005	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.006	<0.006
Barium	mg/L	1	0.04	0.022	0.021	0.038	0.005	0.009	<0.004	<0.004	<0.004	0.0102	0.0148	0.0089	0.0093	0.0097	0.0105	0.0097	0.0128	0.0068	0.007	
Cadmium	mg/L	0.00004-0.00037 ²	<0.01	<0.003	<0.003	<0.003	<0.003	<0.005	<0.005	<0.003	<0.003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006
Chromium	mg/L	0.05	0.02	<0.006	<0.006	<0.006	0.012	<0.005	<0.005	<0.006	<0.006	0.0022	0.0015	0.0009	<0.0008	<0.0008	<0.0008	0.0014	<0.0008	<0.0008	<0.0009	<0.0009
Cobalt	mg/L	-	<0.01	<0.01	<0.01	<0.01	0.01	0.03	<0.01	<0.01	<0.01	0.0012	0.0013	0.0009	0.0009	0.0009	<0.0007	0.0035	0.0042	0.0038	0.0056	0.0048
Copper	mg/L	0.007	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.002	0.608	<0.001
Lead	mg/L	0.001-0.007 ²	<0.03	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.007	0.034	<0.002
Mercury	mg/L	0.000005	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/L	-	0.05	0.03	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.001	0.004	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	mg/L	0.007-0.17	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.003	0.002	0.001	0.002	0.001	<0.001	0.003	0.001	0.007	0.006	0.002
Zinc	mg/L	0.03	0.04	0.019	0.04	0.071	0.021	0.014	< 0.005	< 0.005	< 0.005	0.0031	0.008	0.0282	0.001	0.0261	0.0065	0.0054	0.0088	0.0201	0.11	0.0203

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with pH and temperature
 "-" No applicable guideline or not analyzed
 Exceeds Regulatory Limit
Italic - Detection limit greater than Tier 1 Guideline

Table E8A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 8A							
			Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements										
Field pH	-	-	7.14	8.5	8.5	8.51	8.5	7.84	8.15	8.21
Field EC	mS	-	4.92	2.56	2.91	2.51	2.67	2.63	2.82	2480
Field Temperature	°C	-	6.1	5.4	6.0	8.7	8.4	6.9	12.2	9.5
Routine Water										
pH	-	6.5 - 8.5	8.45	8.67	8.32	8.49	8.49	8.48	8.44	8.48
Conductivity (EC)	µS/cm	1000	4100	2400	2700	2400	2500	2400	2800	2400
Calcium	mg/L	-	25	7.7	7.6	7.8	8.3	7.1	10	7.3
Magnesium	mg/L	-	7.3	1.7	1.5	1.3	1.3	1	1.4	0.93
Sodium	mg/L	200	930	610	670	600	630	650	680	630
Potassium	mg/L	-	3.7	2.2	2.1	2.3	2.4	2	2.3	1.7
Iron	mg/L	0.3	<0.060	0.31	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Sulphate	mg/L	128-429 ²	1300	300	450	290	360	270	550	230
Chloride	mg/L	100	9.8	8.0	7.6	7.4	7.1	7.3	7.5	7.7
Bicarbonate	mg/L	-	1200	1300	1300	1200	1300	1300	1300	1200
Carbonate	mg/L	-	26	49	3.0	25	21	27	34	24
Hydroxide	mg/L	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.017	<0.010	<0.010	<0.010	<0.044	<0.020	0.029	0.044
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	0.012	<0.010	<0.033	<0.010	0.027	0.016
Nitrate and Nitrate (N)	mg/L	-	-	-	0.012	<0.020	<0.01	<0.020	0.056	0.06
Total Dissolved Solids (TDS)	mg/L	500	2900	1600	1800	1500	1700	1600	1900	1500
Hardness	mg/L	-	-	-	25	25	26	22	31	22
Alkalinity (total as CaCO ₃)	mg/L	-	-	-	1100	1000	1100	1100	1100	1000
Alkalinity (pp as CaCO ₃)	mg/L	-	-	-	2.5	21	17	28	-	-
Ionic Balance	N/A	-	-	-	0.97	1.0	2.2	1.4	5.1	3.9
Water Nutrients										
Ammonia-N	mg/L	0.018-190 ⁴	1.1	0.89	0.96	0.81	0.63	0.72	0.76	0.83
TKN	mg/L	-	1.9	1.5	1.6	1.1	1.3	1.4	1.3	1.5
Hydrocarbons										
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics										
COD	mg/L	-	79	68	71	36	40	51	46	34
TOC	mg/L	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	11	9	10	11	12	12	14	12
Oil & Grease	mg/L	-	-	-	-	-	-	-	-	-
Metals										
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	0.0043	0.0093	0.0088	0.0079	0.0050	0.0041
Antimony	mg/L	0.006	0.00081	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	-	-	0.0014	0.0021	0.0019	0.0027	0.0032	0.0039
Barium	mg/L	1	0.04	0.041	0.025	0.045	0.049	0.044	0.050	0.04
Beryllium	mg/L	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Boron	mg/L	1	-	-	0.68	0.72	0.77	0.73	0.76	0.67
Cadmium	mg/L	0.00004-0.00037 ²	0.000035	<0.000025	<0.000020	<0.000020	<0.000020	<0.00002	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.0012	0.0014	0.00033	0.00046	0.00032	<0.00030	0.00036	-
Copper	mg/L	0.007	0.0017	0.00047	0.00064	0.00042	<0.00020	0.00055	0.00097	0.00058
Lead	mg/L	0.001-0.007 ²	<0.00020	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	-
Lithium	mg/L	-	-	-	0.12	0.11	-	-	0.12	-
Manganese	mg/L	0.05	-	-	0.017	0.015	0.025	0.042	0.10	0.08
Mercury	mg/L	0.000005	<0.0000050	<0.0000050	<0.0000050	<0.0000020	<0.0000020	0.0000025	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.012	0.00036	0.00057	0.00070	0.0062	0.0067	0.0071	0.0008
Nickel	mg/L	0.007-0.170 ²	0.005	0.0023	0.0020	0.0023	0.0011	0.0012	0.0010	0.0008
Phosphorus	mg/L	-	-	-	0.19	0.10	0.15	-	0.15	-
Selenium	mg/L	0.002	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	-	-	3.4	3.6	-	-	4.0	-
Silver	mg/L	0.0001	-	-	<0.00010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	-	-	0.20	0.17	0.19	-	0.22	-
Sulphur	mg/L	-	-	-	120	100	110	-	150	-
Thallium	mg/L	-	-	-	<0.00020	<0.00020	<0.0002	-	<0.00020	-
Tin	mg/L	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Titanium	mg/L	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Uranium	mg/L	0.01	-	-	0.00071	0.00092	0.00074	0.00056	0.00055	0.0005
Vanadium	mg/L	-	-	-	0.0042	0.0028	0.0022	<0.0030	0.0014	-
Zinc	mg/L	0.03	0.012	0.007	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)										
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropane [cis]	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropane [trans]	mg/L	-	-	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	<0.00050	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 "-" No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit

Table E8B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 8B							
			Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements										
Field pH	-	-	6.57	7.6	8	7.73	7.8	7.5	7.72	7.62
Field EC	mS	-	10.05	8.96	9.28	8.94	9.25	8.88	8.01	7.73
Field Temperature	°C	-	7.4	4.0	6.6	6.8	5.8	7.8	14.0	10.2
Routine Water										
pH	-	6.5 - 8.5	8.31	8.37	7.95	8.19	8.17	8.16	8.14	8.3
Conductivity (EC)	µS/cm	1000	8800	8500	8700	8700	8800	8400	8100	8000
Calcium	mg/L	-	92	110	90	97	97	88	86	74
Magnesium	mg/L	-	48	62	56	54	57	52	41	40
Sodium	mg/L	200	2100	2300	2200	2000	2100	2100	2000	2000
Potassium	mg/L	-	5.8	5.4	6.2	6.7	6.7	6.8	<30	5.1
Iron	mg/L	0.3	<0.060	<0.60	<0.60	<0.060	<0.60	<0.60	<0.60	0.077
Sulphate	mg/L	128-429 ²	4300	4500	4200	3900	3900	3800	3200	2800
Chloride	mg/L	100	23	23	26	28	30	38	43	62
Bicarbonate	mg/L	-	1100	1100	1100	1100	1100	1200	1200	1200
Carbonate	mg/L	-	7.2	18	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.022	0.074	0.12	0.10	1.5	0.17	0.11	0.11
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	<0.010	<0.050	<0.16	0.03	<0.10	0.034
Nitrate and Nitrate (N)	mg/L	-	-	-	0.12	0.10	0.35	0.2	<0.14	0.15
Total Dissolved Solids (TDS)	mg/L	500	7100	7600	7100	6600	6800	6700	6000	5600
Hardness	mg/L	-	-	-	460	460	480	430	380	350
Alkalinity (total as CaCO3)	mg/L	-	-	-	910	870	940	1000	1000	1000
Alkalinity (pp as CaCO3)	mg/L	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Ionic Balance	N/A	-	-	-	1.0	0.97	0.098	0.79	2.8	7.8
Water Nutrients										
Ammonia-N	mg/L	0.018-190 ⁴	0.61	0.57	0.69	0.62	0.38	0.49	0.59	0.48
TKN	mg/L	-	1.7	1.4	1.6	1.3	1.3	1.4	1.4	1.6
Hydrocarbons										
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics										
COD	mg/L	-	75	39	48	47	44	44	51	52
TOC	mg/L	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	13	13	14	15	16	15	17	17
Oil & Grease	mg/L	-	-	-	-	-	-	-	-	-
Metals										
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	<0.030	0.0050	0.0600	0.0045	0.0047	<0.0030
Antimony	mg/L	0.006	<0.006	<0.0060	<0.0060	<0.0060	<0.0060	<0.0072	<0.0060	<0.0060
Arsenic	mg/L	0.005	-	-	0.0021	0.0015	0.0013	0.0012	0.0014	0.0011
Barium	mg/L	1	0.025	<0.10	<0.10	0.013	<0.10	<0.10	<1.0	0.01
Beryllium	mg/L	-	-	-	<0.010	<0.010	<0.001	-	<0.0010	-
Boron	mg/L	1	-	-	0.41	0.41	0.40	0.41	0.48	0.35
Cadmium	mg/L	0.00004-0.00037 ²	0.000096	<0.000050	<0.00020	0.00003	<0.00020	0.000021	<0.00020	<0.00020
Chromium	mg/L	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cobalt	mg/L	-	<0.0030	<0.0030	<0.0030	0.0011	0.00095	0.00087	0.00077	-
Copper	mg/L	0.007	<0.0020	0.0031	<0.0020	0.00034	0.00039	0.001	0.00087	0.00063
Lead	mg/L	0.001-0.007 ²	<0.0020	<0.0020	<0.0020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	-	-	0.34	0.30	-	-	<2.0	-
Manganese	mg/L	0.05	-	-	0.18	0.18	0.180	0.150	0.13	0.21
Mercury	mg/L	0.000005	<0.0000050	<0.0000050	<0.0000050	<0.0000020	<0.0000020	0.0000041	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.0021	0.0023	<0.0020	0.0016	0.0013	0.0016	0.0014	0.00047
Nickel	mg/L	0.007-0.170 ²	0.0052	0.006	<0.0050	0.0035	0.0027	0.0029	0.0027	0.0012
Phosphorus	mg/L	-	-	-	<1.0	<1.0	<1	-	<10	-
Selenium	mg/L	0.002	-	-	<0.0020	<0.00020	0.00025	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	-	-	4.3	4.3	-	-	<10	-
Silver	mg/L	0.0001	-	-	<0.0010	<0.0010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	-	-	2.4	2.1	2.4	-	<2.0	-
Sulphur	mg/L	-	-	-	1300	1400	1400	-	1200	-
Thallium	mg/L	-	-	-	<0.0020	<0.00020	<0.0002	-	<0.00020	-
Tin	mg/L	-	-	-	<0.010	<0.0010	<0.001	-	<0.0010	-
Titanium	mg/L	-	-	-	<0.010	0.0011	<0.001	-	<0.0010	-
Uranium	mg/L	0.01	-	-	0.0022	0.0024	0.0022	0.0018	0.0022	0.00013
Vanadium	mg/L	-	-	-	<0.010	<0.0010	<0.001	<0.0030	<0.0010	<0.0010
Zinc	mg/L	0.03	<0.030	<0.030	<0.030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)										
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropane [cis]	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropane [trans]	mg/L	-	-	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	<0.00050	<0.00050

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Equipment Failure, parameter not reported (EF)

Detection limit adjusted (*)

Exceeds Regulatory Limit

Table E1C: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 1C									
			Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements												
Field pH	-	-	7.61	6.1	5.41	8.0	8.2	6.43	7.6	8	7.59	7.24
Field EC	mS	-	5.85	19.99	7.03	6.1	6.42	7.54	7.27	6.98	5.99	5.9
Field Temperature	°C	-	11.3	10	6.4	6.7	6.6	8.1	9.7	6.1	9.9	7.9
Routine Water												
pH	-	6.5 - 8.5	8.05	8.11	8.26	8.08	7.98	8.18	8.23	8.1	8.14	8.25
Conductivity (EC)	µS/cm	1000	5800	5800	5900	5900	6100	6100	6100	6100	6100	5900
Calcium	mg/L	-	150	130	130	130	140	140	150	140	140	140
Magnesium	mg/L	-	37	34	34	33	34	36	38	37	33	34
Sodium	mg/L	200	1300	1400	1300	1300	1400	1300	1400	1400	1300	1400
Potassium	mg/L	-	7.6	6.7	6.2	4.8	6.6	6.9	7.1	6.7	6.4	6.5
Iron	mg/L	0.3	<0.06	<0.060	0.095	<0.60	<0.060	<0.060	<0.6	<0.60	<0.060	0.07
Sulphate	mg/L	128-429 ²	2700	2600	2800	3000	2900	2800	2600	2700	2500	2600
Chloride	mg/L	100	2	1.8	1.3	1.1	1.7	1.4	<1	<1.0	1.8	2.1
Bicarbonate	mg/L	-	740	760	760	770	750	710	760	760	760	700
Carbonate	mg/L	-	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	-	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.009	0.0078	0.25	0.093	0.080	0.22	0.41	0.15	0.19	0.38
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	<0.010	0.018	0.28	<0.010	0.027	0.042
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	0.080	0.23	-	0.15	0.22	0.42
Total Dissolved Solids (TDS)	mg/L	500	4600	4600	4600	4800	4800	4700	4600	4700	4400	4500
Hardness	mg/L	-	-	-	-	-	490	510	530	510	480	480
Alkalinity (total as CaCO ₃)	mg/L	-	-	-	-	-	620	580	620	620	620	570
Alkalinity (pp as CaCO ₃)	mg/L	-	-	-	-	-	<0.50	<0.50	<0.5	<1.0	-	-
Ionic Balance	N/A	-	-	-	-	-	0.99	0.96	3.8	0.72	2.4	2.1
Water Nutrients												
Ammonia-N	mg/L	0.018-190 ⁴	0.74	0.66	0.57	0.57	0.60	0.46	0.7	0.56	0.63	0.39
TKN	mg/L	-	1.6	1.3	1.2	1.2	1.2	0.58	1.1	1.1	0.94	0.91
Hydrocarbons												
Benzene	mg/L	0.005	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
F1 (C6-C10)	mg/L	2.2	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10
Organics												
COD	mg/L	-	78	56	46	39	42	51	28	30	48	36
TOC	mg/L	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	11	10	12	9.6	11	11	10	11	12	9.9
Oil & Grease	mg/L	-	-	-	-	-	-	-	-	-	-	-
Metals												
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	<0.030	0.0079	0.0069	<0.030	0.0056	0.012
Antimony	mg/L	0.006	<0.006	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.006	<0.0062	<0.0060	<0.0060
Arsenic	mg/L	0.005	-	-	-	-	<0.0020	0.0011	0.00068	0.00068	0.00077	0.0005
Barium	mg/L	1	0.06	0.037	0.035	<0.10	0.025	0.023	<0.1	<0.10	0.019	0.015
Beryllium	mg/L	-	-	-	-	-	<0.010	<0.0010	<0.001	<0.0010	<0.0010	-
Boron	mg/L	1	-	-	-	-	0.24	0.24	0.24	0.24	0.25	0.24
Cadmium	mg/L	0.0004-0.00037 ²	0.00009	<0.050	0.000065	<0.000050	<0.00020	0.000036	<0.00002	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.001	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	<0.003	<0.0030	<0.0030	<0.0030	<0.0030	0.00087	0.00067	0.00069	0.00067	-
Copper	mg/L	0.007	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	0.00070	0.00039	0.00043	0.00080	0.0004
Lead	mg/L	0.001-0.007 ²	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.00020	<0.0002	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	-	-	-	-	0.32	0.32	0.35	0.32	0.32	-
Manganese	mg/L	0.05	-	-	-	-	0.27	0.28	0.28	0.27	0.21	0.21
Mercury	mg/L	0.000005	<0.000005	<0.0020	<0.0000050	<0.0000050	<0.0000050	<0.0000020	<0.000002	<0.0000020	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.003	<0.0020	0.002	<0.0020	<0.0020	0.0013	0.00068	0.00082	0.00086	0.00047
Nickel	mg/L	0.007-0.170 ²	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.0021	0.0013	0.0016	0.0012	0.0012
Phosphorus	mg/L	-	-	-	-	-	0.10	<0.10	<1	<0.10	<0.10	-
Selenium	mg/L	0.002	-	-	-	-	<0.0020	<0.00020	<0.0002	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	-	-	-	-	4.3	4.1	4.2	4.0	4.0	-
Silver	mg/L	0.0001	-	-	-	-	<0.0010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	-	-	-	-	2.2	2.2	2.6	2.1	2.1	-
Sulphur	mg/L	-	-	-	-	-	920	950	960	960	960	-
Thallium	mg/L	-	-	-	-	-	<0.0020	<0.00020	<0.0002	<0.00020	<0.00020	-
Tin	mg/L	-	-	-	-	-	<0.010	<0.0010	<0.001	<0.0010	<0.0010	-
Titanium	mg/L	-	-	-	-	-	<0.010	<0.0010	<0.001	<0.0010	<0.0010	-
Uranium	mg/L	0.01	-	-	-	-	<0.0010	0.00036	0.00022	0.00018	0.00012	0.00013
Vanadium	mg/L	-	-	-	-	-	<0.010	<0.0010	<0.001	<0.0030	<0.0010	-
Zinc	mg/L	0.03	<0.03	<0.030	0.074	<0.030	<0.030	0.0037	<0.003	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)												
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropane [cis]	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropane [trans]	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	&	

Table E10: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 10																											
			Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	May-20	
Field Measurements																														
Field pH	-	-	-	8.27	-	8.39	8.42	8.11	7.54	7.63	7.54	7.68	7.52	7.93	7.99	8.03	7.86	7.87	8.26	7.92	7.69	7.77	8.3	8.3	8.06	8.0	7.7	7.38	7.67	
Field EC	mS	-	-	-	-	-	-	-	-	-	4.23	9.72 ^(EF)	4.39	3.79	9.20	9.06	3.98	4.250	5.7	4.52	2.03	4.52	4.92	4.98	4.42	4.26	4.53	4.24	2.95	
Field Temperature	°C	-	-	-	-	-	-	-	-	-	5.7	4.9	4.6	10.2	10.2	11.55	8	4.3	16.4	17	8.6	11.5	4.2	7.5	9.8	10.3	8.5	11.2	5.5	
Routine Water																														
pH	-	6.5 - 8.5	-	8.31	-	8.43	8.57	8.25	8.4	8.3	8.2	8.4	8.2	8.4	8.3	8.1	8.2	8.16	8.32	8.18	8.1	8.33	8.12	7.79	8.26	8.11	8.27	8.14	8.14	
Conductivity (EC)	µS/cm	1000	-	2570	-	2640	2700	3090	3450	3330	3710	3370	3980	3910	4320	4300	4210	4440	4460	4600	4900	4600	4600	4700	4500	4100	4100	4300	4300	
Calcium	mg/L	-	-	28.3	-	25.8	29.7	34.8	52.8	34.9	65.3	62.5	72.3	65.2	86	78.4	79.6	82.2	78.4	72	91	83	68	140	60	71	68	73	70	
Magnesium	mg/L	-	-	14.9	-	15.1	16.6	16.1	21.7	20.5	25.2	26.7	27.0	29.4	35.9	31.6	31.4	28.2	34.1	34	33	34	35	44	31	32	32	24	26	
Sodium	mg/L	200	-	593	-	687	659	678	798	732	836	867	906	888	1010	1000	969	971	929	990	1200	1100	990	910	840	870	910	940	960	
Potassium	mg/L	-	-	3	-	2.7	3.3	2.7	1.4	2.4	4.5	4.2	4.5	4.9	5.3	4.9	2.9	5.23	4.72	4.2	5	4.4	4	4.5	4.4	4.2	4	3.7		
Iron	mg/L	0.3	-	<0.02	-	<0.05	0.19	<0.05	0.329	0.006	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.033	0.012	<0.06	<0.060	<0.060	<0.060	8.3	<0.060	<0.060	<0.06	<0.060	<0.060	
Sulphate	mg/L	128-429 ²	-	915	-	1080	1130	1160	1440	1250	1450	1560	1690	1560	1830	1850	1750	1950	1870	1900	2200	2200	2100	1900	1700	1600	1600	1600	1600	
Chloride	mg/L	100	-	3.2	-	1.4	2.1	4.8	8	8	13	12	14	15	16	19	19.4	16 *	23	25	23	26	140	60	59	55	65	74		
Bicarbonate	mg/L	-	-	640	-	539	467	614	571	578	579	559	581	559	595	613	599	579	590	600	580	600	590	620	630	650	660	660		
Carbonate	mg/L	-	-	<6	-	26	46	<6	7	<5	<5	6	<5	<5	<5	<5	<5.0	5.7	<0.5	<0.50	4.6	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	
Nitrate (N)	mg/L	3	-	1.04	-	0.771	0.436	<0.04	0.2	0.4	0.1	0.2	0.2	0.2	0.3	0.1	<0.050	<1.0 *	0.14	0.019	0.13	0.079	0.014	0.04	3.0	0.1	0.057	0.11		
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	0.01	<0.16	<0.010	<0.010	<0.010	
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.014	0.05	0.13	0.057	0.11		
Total Dissolved Solids (TDS)	mg/L	500	-	1870	-	2100	2120	2200	2610	2340	2680	2840	3000	2850	3270	3280	3150	3350	3220	3300	3900	3700	3500	3400	3000	3000	3000	3100	3100	
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	520	280	310	300	280		
Alkalinity (total as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	490	500	520	530	540		
Alkalinity (pp as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0		
Ionic Balance	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.95	0.9	2	1.3	1.1	0.51	
Water Nutrients																														
Ammonia-N	mg/L	0.018-190 ⁴	-	<0.05	-	<0.05	<0.05	<0.05	0.07	0.1	<0.05	0.16	0.17	0.10	<0.05	0.13	0.06	0.111	<0.050	0.07	0.31	0.094	0.17	0.23	0.16	0.052	0.06	0.30	0.17	
TKN	mg/L	-	-	0.32	-	0.41	0.06	0.42	0.7	0.4	0.9	0.7	1.1	0.7	0.6	0.5	1.2	0.96	1.09	0.61	0.86	0.69	0.68	0.68	0.57	0.49	0.49	0.58	0.61	
Hydrocarbons																														
Benzene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Toluene	mg/L	0.024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Ethylbenzene	mg/L	0.0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Xylene	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.0010	<0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
F1 (C6-C10)	mg/L	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
F2 (>C10-C16)	mg/L	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.050	<0.25	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Organics																														
COD	mg/L	-	-	5	-	13	18	14	20	20	24	24	23	22	26	26	23	25.6	15.5	32	33	43	33	35	32	24	28	31	34	
TOC	mg/L	-	-	6.9	-	7.8	6.7	6.6	7	7	8	8	9	9	9	9	8	8.3	9.2	11	10	11	9.6	11	9	8	8.6	17	9	
DOC	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oil & Grease	mg/L	-	-	<5	-	7	-	<5	<1	2	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	
Metals																														
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0030	0.0091	<0.0030	0.0068	<0.0030	<0.0030	
Antimony	mg/L	0.006	-	<0.02	-	<0.001	-	<0.001	0.0209	0.0011	0.0007	<0.0004	0.0004	0.0008	<0.0004	0.0009	-	-	<0.00040	<0.0006	<0.0030	0.00073	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00049	0.0006	0.00042	0.00059	0.00072	0.00061	
Barium	mg/L	1	-	0.022	-	0.017	-	0.026	0.026	0.024	0.025	0.024	0.018	0.020	0.023	0.017	0.018	0.0121	0.0184	0.018	0.015	0.015	0.016	0.0087	0.023	0.023	0.018	0.010	0.013	
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010		
Boron	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11	0.12	0.13	0.11	0.14	0.11	
Cadmium	mg/L	0.00004-0.00037 ²	-	<0.003	-	<0.0005	-	<0.0005	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.000050	<0.000025	0.000047	0.000045	<0.000025	0.000049	0.000023	0.000021	<0.000020	<0.000020	<0.000020	
Chromium	mg/L	0.05	-	0.015	-	0.011	0.008	0.006	0.008	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	0.002	<0.0015	<0.0010	0.0014	<0.0010	0.0014	<0.0010	0.0018	0.0059	<0.0010	0.0014
Cobalt	mg/L	-	-	0.0035	-																									

Table E10: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 10																													
			Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	May-20			
Volatile Organic Compounds (VOCs)																																
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromofrom	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 *- No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 // - Detection limit greater than Tier 1 Guideline

Table E11: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 11																											
			Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	May-20	
Field Measurements																														
Field pH	-	-	7.73	7.64	7.62	7.69	8.02	7.72	7.47	7.01	6.83	7.33	7.29	7.62	7.55	6.98	7.66	7.47	7.55	7.73	7.41	7.31	7.5	7.8	7.61	7.7	7.5	7.28	7.18	
Field EC	mS	-	-	-	-	-	-	-	-	-	8.65	27.2 ^(EF)	9.4	7.7	21.50	19.16	8.550	9.380	38.0	9.6	4.31	9.67	10.02	10.14	9.90	9.71	10.35	8.86	9.26	
Field Temperature	°C	-	-	-	-	-	-	-	-	-	6.0	5.0	4.4	9.6	4.8	11.25	7.1	7.0	24.1	9.9	8.8	10.5	6.2	6.4	8.6	7.9	9.6	9.3		
Routine Water																														
pH	-	6.5 - 8.5	7.83	7.75	7.79	7.78	8.09	7.95	8.2	8.1	8.0	8.2	8.0	8.2	7.9	8.2	8.01	7.98	8.04	7.98	8.06	8.19	7.79	8.03	7.88	8.01	7.99	8.05		
Conductivity (EC)	µS/cm	1000	5900	7930	6680	7360	6040	8570	7770	8020	7710	8430	8900	10700 ^(EF)	8790	9370	8760	9420	8760	9800	9900	9300	9500	9500	9600	9100	9800	8500	9400	
Calcium	mg/L	-	104	152	114	146	105	175	165	151	169	231	218	201	219	195	220	175	190	240	220	240	210	230	200	240	190	230		
Magnesium	mg/L	-	56.1	93.7	60.4	79.3	56.9	101	92.5	92.6	94.5	150	120	184	124	132	117	120	94.5	110	130	110	130	110	120	130	92	120		
Sodium	mg/L	200	1560	1990	1710	2110	1440	2000	1930	2020	1960	2540	2180	2820 ^(EF)	2210	2320	2130	2220	1920	2200	2600	2100	2300	2200	2100	2100	2300	2000	2300	
Potassium	mg/L	-	4.6	8.4	6	8.8	<4	6.6	5.5	8.2	7.3	9	8.3	11.1	9.2	6.1	3	9.25	7.69	11.1	9.1	7.1	7.6	8.4	9.1	8	8.7	<30	8.4	
Iron	mg/L	0.3	0.093	<0.02	0.019	<0.1	<0.1	<0.1	0.022	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.019	<0.005	<0.05	<0.010	<0.06	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	
Sulphate	mg/L	128-429 ²	3140	4390	3660	4720	3280	4720	4280	4380	3950	5550	4750	5710	4450	5190	4440	5020	4170	5300	5600	5400	5600	5100	4800	4500	4600	3700	3800	
Chloride	mg/L	100	1.7	4.3	2.7	2.7	2.4	5.4	5	5	5	9	7	17	8	16	10	9.17	<10 [*]	16	14	14	20	32	37	36	31	53		
Bicarbonate	mg/L	-	735	851	747	793	769	864	747	756	751	936	808	1170	913	870	882	839	813	920	880	890	840	900	930	1000	1000	910	960	
Carbonate	mg/L	-	<6	<6	<6	<6	<6	<6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Nitrate (N)	mg/L	3	0.583	0.488	0.345	<0.04	<0.04	0.36	0.5	0.4	0.3	0.4	0.5	0.5	0.4	0.4	0.4	0.282	<1.0 [*]	0.49	0.27	0.37	0.27	0.19	0.23	0.71	0.33	0.26	0.074	
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	0.015	<0.16	<0.01	<0.10	<0.050
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Dissolved Solids (TDS)	mg/L	500	5230	7060	5920	7450	5270	7430	6850	7030	6560	8950	7680	9590	7450	8310	7330	8010	6770	8300	9000	8300	8800	8200	7800	7500	7800	6500	7000	
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	980	1100	980	1100	860	1100	
Alkalinity (total as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	740	770	850	830	750	780	
Alkalinity (pp as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	-	<1.0		
Ionic Balance	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.96	0.97	0.26	3.8	6.5	11	
Water Nutrients																														
Ammonia-N	mg/L	0.018-190 ⁴	0.11	0.28	0.13	0.14	0.12	0.09	<0.05	0.12	<0.05	0.17	<0.05	0.07	<0.05	0.06	<0.05	0.088	<0.050	<0.05	0.14	0.081	0.14	0.17	0.15	0.086	0.063	0.11	0.22	
TKN	mg/L	-	1.77	2.95	2.63	2.28	1.6	2.12	1.6	1.4	1.7	2	1.7	2.4	1.7	1.8	1.4	2.31	2.08	1.8	1.8	1.5	1.7	1.7	1.7	1.5	1.7	1.2	1.1	
Hydrocarbons																														
Benzene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Toluene	mg/L	0.024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Ethylbenzene	mg/L	0.0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Xylene	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.0010	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
F1 (C6-C10)	mg/L	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
F2 (>C10-C16)	mg/L	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.050	<0.25	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Organics																														
COD	mg/L	-	103	116	167	108	84	104	100	100	99	118	105	119	92	98	80	101	90.7	110	100	95	96	100	100	84	98	86	91	
TOC	mg/L	-	34.5	45	36.6	39.8	25.9	40.4	38	39	40	45	42	48	33	39	-	-	-	-	-	-	-	-	-	-	-	-	-	
DOC	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	36.4	34.7	36	36	33	29	34	36	31	36	32	27	
Oil & Grease	mg/L	-	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	
Metals																														
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.030	0.0060	<0.030	0.0055	0.012	<0.0030
Antimony	mg/L	0.006	<0.05	<0.02	<0.02	<0.002	<0.002	<0.002	<0.002	0.0474	0.0011	0.0009	<0.0004	0.0008	0.0012	<0.0004	0.001	-	0.00061	<0.006	<0.0060	0.001	<0.0060	<0.0060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	0.0011	0.0011	0.0011	0.00085	0.0011
Barium	mg/L	1	0.01	0.0315	0.012	0.017	0.01	0.014	0.019	0.011	0.012	0.014	0.010	0.009	0.009	0.010	0.008	0.0074	0.0084	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.0010	<0.001	-	<0.0010		
Boron	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19	0.20	<0.20	0.21	0.25	0.2	
Cadmium	mg/L	0.00004-0.00037 ²	<0.0025	<0.003	<0.003	0.00013	<0.0001	0.0002	<0.001	0.00015	0.0002	<0.001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	mg/L	0.05	<0.008	<0.004	<0.004	<0.005	<0.005	0.01	<0.005	<0.005	<0.005	<																		

Table E11: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 11																																
			Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	May-20						
Volatile Organic Compounds (VOCs)																																			
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromofom	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 * - No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 Italic - Detection limit greater than Tier 1 Guideline

Table E12B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 12B																							
			Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Volatile Organic Compounds (VOCs)																										
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromofrom	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 "-" No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
italic - Detection limit greater than Tier 1 Guideline

Table E18A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 18A												
			May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements															
Field pH	-	-	8.5	8.377	8.21	8.34	8.31	6.09	8.4	8.8	6.75	8.5	8.2	8.53	8.53
Field EC	mS	-	1.386	1.500	13.4	1.56	1.614	1.80	15.82	1.64	1.916	1.517	1719	1.592	1.547
Field Temperature	°C	-	6.6	8.0	14.1	10.9	7.6	6.79	6.4	6.6	8.3	8.7	6.1	9.4	6.3
Routine Water															
pH	-	6.5 - 8.5	8.5	8.51	8.39	8.45	8.52	8.58	8.61	8.39	8.44	8.5	8.45	8.49	8.4
Conductivity (EC)	µS/cm	1000	1470	1500	1490	1500	1500	1,500	1500	1500	1500	1500	1500	1500	1500
Calcium	mg/L	-	4.1	4	4.43	3.8	3.8	3.1	3	2.7	3.0	2.9	2.8	2.9	3
Magnesium	mg/L	-	0.9	0.52	0.58	0.4	0.39	0.36	<2.0	0.30	0.34	0.31	0.3	0.25	0.37
Sodium	mg/L	200	375	380	389	400	380	360	390	360	380	380	380	360	390
Potassium	mg/L	-	1.2	1.45	1.46	1.5	1.4	1.3	<3.0	1.3	1.5	1.4	1.4	1.4	1.4
Iron	mg/L	0.3	0.108	0.0364	0.045	<0.06	<0.060	<0.060	<0.60	<0.060	0.11	<0.060	<0.06	<0.060	<0.060
Sulphate	mg/L	128-429 ²	5.7	1.42	<0.50	2	<1.0	2.0	2.4	1.4	6.9	2.1	<1.0	1.6	<1.0
Chloride	mg/L	100	8	6.18	5.75	7	6.7	6.2	7.3	7.2	7.4	7.3	7.5	7.3	7.6
Bicarbonate	mg/L	-	1010	1000	991	960	960	980	970	1000	950	1000	1000	990	930
Carbonate	mg/L	-	29	28.1	18.9	17	26	30	38	8.9	9.5	17	14	19	9.6
Hydroxide	mg/L	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.1	<0.050	<0.050	0.12	<0.0030	<0.003	<0.010	<0.010	0.011	<0.044	<0.020	<0.010	<0.010
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	<0.010	<0.010	<0.033	<0.010	<0.010	<0.010
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	<0.010	<0.020	-	<0.020	<0.014	<0.014
Total Dissolved Solids (TDS)	mg/L	500	922	914	908	910	900	890	920	880	870	910	880	870	870
Hardness	mg/L	-	-	-	-	-	-	-	-	8.1	8.9	8.4	8.3	8.3	8.9
Alkalinity (total as CaCO ₃)	mg/L	-	-	-	-	-	-	-	-	840	800	850	850	840	780
Alkalinity (pp as CaCO ₃)	mg/L	-	-	-	-	-	-	-	-	7.4	7.9	15	-	16	-
Ionic Balance	N/A	-	-	-	-	-	-	-	-	0.95	1.0	0.86	1.1	3.1	4.2
Water Nutrients															
Ammonia-N	mg/L	0.018-190 ⁴	0.54	0.598	0.231	0.64	0.64	0.62	0.62	0.64	0.66	0.72	0.59	0.60	0.63
TKN	mg/L	-	0.9	1.13	1.28	1.1	1	1.1	1.1	0.98	0.90	0.94	0.92	0.92	1
Hydrocarbons															
Benzene	mg/L	0.005	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00050	<0.00050	<0.0010	<0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
F1 (C6-C10)	mg/L	2.2	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.05	<0.050	<0.25	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics															
COD	mg/L	-	6	18.4	22.4	34	24	34	29	28	27	26	35	37	26
TOC	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	8	6.7	8.5	7.9	7.2	6.5	5.2	6.9	6.9	7.2	7.4	9.7	6.6
Oil & Grease	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals															
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	0.0046	0.029	0.0045	0.0074	<0.0030	<0.0030
Antimony	mg/L	0.006	-	-	0.0004	<0.006	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	0.0010	0.00092	0.001	0.0013	0.0010	0.0013
Barium	mg/L	1	0.124	0.0834	0.117	0.1	0.095	0.098	<0.10	0.089	0.091	0.1	0.1	0.10	0.08
Beryllium	mg/L	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Boron	mg/L	1	-	-	-	-	-	-	-	0.78	0.81	0.83	0.83	0.85	0.81
Cadmium	mg/L	0.00004-0.00037 ²	<0.001	<0.0010	0.00007	<0.00005	0.000024	<0.000025	<0.000025	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.005	<0.0050	<0.0050	<0.01	<0.0010	<0.0010	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	<0.002	<0.0020	<0.0020	<0.003	0.00056	0.00045	0.00067	0.00031	0.00031	<0.00030	<0.00030	<0.00030	<0.00030
Copper	mg/L	0.007	<0.001	0.0015	0.0032	<0.002	0.00059	0.00039	0.00057	0.00025	0.00023	0.00038	<0.00020	0.00066	0.0039
Lead	mg/L	0.001-0.007 ²	<0.005	<0.0050	0.00013	<0.002	<0.00020	<0.00020	0.00033	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	-	-	-	-	-	-	-	0.066	0.073	-	-	0.073	-
Manganese	mg/L	0.05	-	-	-	-	-	-	-	0.045	0.059	0.04	0.049	0.034	0.049
Mercury	mg/L	0.000005	-	<0.00010	<0.00010	<0.000005	<0.002	<0.0000050	<0.0000050	<0.0000050	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.026	0.0058	0.0088	0.004	0.0046	0.0047	0.0048	0.0043	0.0043	0.0043	0.0063	0.0041	0.0041
Nickel	mg/L	0.007-0.170 ²	0.003	0.01	0.0121	0.006	0.0043	0.0036	0.0044	0.0039	0.0035	0.0024	0.0025	0.0021	0.0022
Phosphorus	mg/L	-	-	-	-	-	-	-	-	0.21	0.10	0.11	-	<0.10	-
Selenium	mg/L	0.002	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	-	-	-	-	-	-	-	3.2	3.5	-	-	3.4	-
Silver	mg/L	0.0001	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	-	-	-	-	-	-	-	0.064	0.066	0.068	-	0.063	-
Sulphur	mg/L	-	-	-	-	-	-	-	-	0.22	0.22	0.32	-	0.2	-
Thallium	mg/L	-	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.0002	-	<0.00020	-
Tin	mg/L	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Titanium	mg/L	-	-	-	-	-	-	-	-	<0.0010	0.0013	<0.001	-	<0.0010	-
Uranium	mg/L	0.01	-	-	-	-	-	-	-	0.00026	0.00013	0.00026	0.00029	0.0003	0.0001
Vanadium	mg/L	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Zinc	mg/L	0.03	0.003	0.0111	0.0079	<0.03	0.0038	<0.0030	0.0033	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

*- No applicable guideline or not analyzed

Detection limit adjusted (*)

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E18A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 18A												
			May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Volatile Organic Compounds (VOCs)															
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Detection limit adjusted (*)

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E18B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 18B												
			May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements															
Field pH	-	-	7.302	7.263	7.21	7.34	7.06	6.04	7.6	8.0	6.00	7.4	7.4	7.25	7.06
Field EC	mS	-	6.08	6.04	1.05	6.33	3.10	4.92	2.92	3.80	4.24	3.16	3.5	2.84	2.95
Field Temperature	°C	-	5.7	6.9	7	7	7.2	11.6	8.9	5.9	8.3	8	8.7	11.2	8.7
Routine Water															
pH	-	6.5 - 8.5	8	7.9	7.93	7.8	7.92	8.11	8.27	7.79	7.96	8.05	7.89	7.96	7.68
Conductivity (EC)	µS/cm	1000	6020	6270	6460	6200	6900	4200	2900	3600	3400	3000	3300	2800	2900
Calcium	mg/L	-	511	524	519	450	540	230	120	190	180	180	210	180	200
Magnesium	mg/L	-	134	116	135	120	150	57	33	47	45	48	55	42	54
Sodium	mg/L	200	1110	1250	1020	1100	1300	690	510	670	570	530	560	420	460
Potassium	mg/L	-	3.6	8.42	7.08	7.4	8.4	4.9	3.7	4.6	4.5	4.4	4.7	4.1	4.2
Iron	mg/L	0.3	0.007	0.0177	0.021	<0.06	<0.060	<0.060	<0.060	<0.060	0.25	<0.060	<0.06	<0.060	<0.060
Sulphate	mg/L	128-429 ²	3230	3380	3420 *	3300	3700	2200	1400	1700	1500	1100	1100	910	720
Chloride	mg/L	100	22	19.5	<10 *	48	3.5	17	14	17	22	29	44	53	130
Bicarbonate	mg/L	-	846	838	880	780	980	400	350	410	390	760	800	650	910
Carbonate	mg/L	-	<5	<5.0	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.1	<0.050	<1.0 *	0.23	0.016	0.2	0.2	0.13	0.089	0.36	0.17	0.13	0.15
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	0.011	0.015	0.037	<0.010	<0.010	<0.010
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	0.14	0.10	-	0.17	0.13	0.15
Total Dissolved Solids (TDS)	mg/L	500	5430	5710	5530	5400	6200	3400	2300	2800	2600	2200	2400	1900	2000
Hardness	mg/L	-	-	-	-	-	-	-	-	670	630	660	740	620	720
Alkalinity (total as CaCO ₃)	mg/L	-	-	-	-	-	-	-	-	330	320	620	650	530	750
Alkalinity (pp as CaCO ₃)	mg/L	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	-	<1.0	
Ionic Balance	N/A	-	-	-	-	-	-	-	-	1.0	0.96	1.8	1.9	0.32	1.2
Water Nutrients															
Ammonia-N	mg/L	0.018-190 ⁴	0.16	0.507	0.052	0.63	0.48	0.23	0.09	0.14	0.10	0.17	0.072	0.25	0.17
TKN	mg/L	-	1.2	1.38	1.96	1.3	1.2	1.1	0.68	1.5	0.32	0.87	1.1	0.74	0.94
Hydrocarbons															
Benzene	mg/L	0.005	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00050	<0.00050	<0.0010	<0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.05	<0.050	<0.25	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics															
COD	mg/L	-	28	27.6	21.4	60	53	34	27	64	30	24	49	29	36
TOC	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	11	11.3	9.3	11	8.9	9.3	7.3	9.2	8.2	11	12	9.9	15
Oil & Grease	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals															
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	0.0034	0.11	0.0062	0.004	<0.0030	<0.0030
Antimony	mg/L	0.006	-	-	<0.00040	<0.006	<0.0060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	0.0004	0.00041	0.00037	0.00037	0.00035	0.00035
Barium	mg/L	1	0.016	0.0117	0.0173	0.01	0.012	0.011	0.017	0.012	0.014	0.016	0.015	0.016	0.015
Beryllium	mg/L	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Boron	mg/L	1	-	-	-	-	-	-	-	0.071	0.075	0.062	0.069	0.058	0.05
Cadmium	mg/L	0.00004-0.00037 ²	<0.001	<0.0010	<0.000050	<0.000050	0.000053	0.00004	<0.000025	<0.00002	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.005	<0.0050	<0.0050	<0.01	<0.010	<0.0010	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	<0.002	<0.0020	<0.0020	<0.003	<0.0030	0.0005	0.00039	0.00041	0.00031	0.00039	<0.00030	<0.00030	<0.00030
Copper	mg/L	0.007	0.009	0.0072	0.009	0.003	<0.0020	0.0014	0.0012	0.0007	0.0013	0.00064	0.0012	0.0016	0.0038
Lead	mg/L	0.001-0.007 ²	<0.005	<0.0050	<0.00010	<0.002	<0.0020	<0.00020	<0.0002	<0.00020	0.00037	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	-	-	-	-	-	-	-	0.17	0.17	-	-	0.13	-
Manganese	mg/L	0.05	-	-	-	-	-	-	-	0.15	0.046	0.15	0.057	0.085	0.11
Mercury	mg/L	0.000005	-	<0.00010	<0.00010	<0.000005	0.0000033	<0.0000050	<0.0000050	<0.0000050	0.0000068	<0.0000020	0.0000035	<0.0000020	<0.0000019
Molybdenum	mg/L	-	<0.005	<0.0050	<0.0050	<0.002	<0.0020	0.0009	0.0011	0.00074	0.00072	0.00066	0.00056	0.00055	0.00055
Nickel	mg/L	0.007-0.170 ²	0.015	0.0136	0.0123	0.005	0.0053	0.0039	0.0035	0.0039	0.0044	0.004	0.0037	0.0035	0.005
Phosphorus	mg/L	-	-	-	-	-	-	-	-	<0.10	<0.10	<0.1	-	<0.10	-
Selenium	mg/L	0.002	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.0002	<0.00020	<0.00020
Silicon	mg/L	-	-	-	-	-	-	-	-	4.1	4.1	4.9	-	4.9	-
Silver	mg/L	0.0001	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	-	-	-	-	-	-	-	1.6	1.5	1.7	-	1.3	-
Sulphur	mg/L	-	-	-	-	-	-	-	-	550	510	360	-	320	-
Thallium	mg/L	-	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.0002	-	<0.00020	-
Tin	mg/L	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Titanium	mg/L	-	-	-	-	-	-	-	-	<0.0010	0.0011	<0.001	-	<0.0010	-
Uranium	mg/L	0.01	-	-	-	-	-	-	-	0.0011	0.00091	0.0044	0.0042	0.0039	0.0068
Vanadium	mg/L	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Zinc	mg/L	0.03	0.011	0.0102	0.0041	<0.03	<0.030	0.005	<0.0030	<0.0030	0.0047	<0.0030	<0.0030	<0.0030	<0.0030

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

*- No applicable guideline or not analyzed

Detection limit adjusted (*)

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E18B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 18B												
			May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Volatile Organic Compounds (VOCs)															
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Detection limit adjusted (*)

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E19B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW19B												
			May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements															
Field pH	-	-	7.453	7.514	bent	7.65	7.75	5.32	7.5	8.4	8.09	8.2	8.2	8.23	8.48
Field EC	mS	-	6.390	6.480	bent	6.24	2.81	7.51	8.08	6.26	7.17	6.43	6.1	6.01	6.44
Field Temperature	°C	-	6.2	7.9	bent	10.7	7.9	8	8.3	6.5	-	7	8	12.3	7.6
Routine Water															
pH	-	6.5 - 8.5	8.2	8.13	8.08	8.1	8.4	8.27	8.33	8.26	8.43	8.5	8.3	8.46	8.3
Conductivity (EC)	µS/cm	1000	6290	6430	6370	6200	6500	8200	6000	5900	5700	5800	5800	5900	6300
Calcium	mg/L	-	68.6	62.6	63.2	62	61	77	29	32	31	29	30	26	33
Magnesium	mg/L	-	27.7	25.1	23.3	23	25	35	20	17	17	18	17	17	21
Sodium	mg/L	200	1580	1470	1440	1500	1800	2000	1500	1500	1300	1400	1400	930	1600
Potassium	mg/L	-	6.3	8	8.35	8.9	8.8	8.7	6.7	7.4	7.6	7.5	7.7	7.3	7.8
Iron	mg/L	0.3	<0.005	<0.050	0.022	<0.06	0.26	<0.060	<0.60	0.36	0.21	<0.6	<0.6	<0.060	0.29
Sulphate	mg/L	128-429 ²	2630	2700	2530	2600	2800	3700	2600	2400	2200	2000	2200	2100	2500
Chloride	mg/L	100	5	3.64	<10 *	4	4.2	9.8	2.6	3.1	3.1	2.7	2.8	3.3	5
Bicarbonate	mg/L	-	1140	1130	1110	1100	1100	1200	1100	1100	1000	1100	1100	1000	1100
Carbonate	mg/L	-	<5	<5.0	<5.0	<0.5	19	<0.50	5	<0.50	13	22	<1.0	33	4.8
Hydroxide	mg/L	-	-	-	-	-	-	-	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.1	0.279	<1.0 *	0.032	0.015	0.21	<0.010	<0.010	0.015	<0.044	0.038	0.026	0.024
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	<0.010	0.013	0.11	0.012	0.011	0.01
Nitrate and Nitrate (N)	mg/L	-	-	-	-	-	-	-	-	<0.010	0.028	-	0.049	0.036	0.034
Total Dissolved Solids (TDS)	mg/L	500	4880	4830	4610	4800	5200	6500	4700	4500	4100	4100	4300	3600	4800
Hardness	mg/L	-	-	-	-	-	-	-	150	150	150	150	150	130	170
Alkalinity (total as CaCO3)	mg/L	-	-	-	-	-	-	-	900	860	910	910	900	920	
Alkalinity (pp as CaCO3)	mg/L	-	-	-	-	-	-	-	<0.50	11	18	-	27		
Ionic Balance	N/A	-	-	-	-	-	-	-	0.98	0.96	3.6	0.54	18	2.9	
Water Nutrients															
Ammonia-N	mg/L	0.018-190 ⁴	0.64	0.382	0.569	0.64	0.73	1	0.76	0.76	0.73	0.84	0.63	0.63	0.81
TKN	mg/L	-	1	0.8	1.51	1.6	1.1	1.6	1.1	1.1	1.1	1.0	1.1	1.1	0.94
Hydrocarbons															
Benzene	mg/L	0.005	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00050	<0.00050	<0.0010	<0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.05	<0.050	<0.25	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics															
COD	mg/L	-	-	13.7	10.8	86	22	27	28	17	17	17	34	33	18
TOC	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	5.2	6.1	6.1	5.9	8.2	5	5.7	6.0	6.3	6.1	5.3	6.6
Oil and Grease	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals															
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	<0.030	<0.0030	0.0034	<0.003	<0.0030	0.0036
Antimony	mg/L	0.006	-	-	<0.00040	<0.006	<0.0060	<0.006	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	0.0021	0.0025	0.0017	0.0017	0.0023	0.0021
Barium	mg/L	1	-	0.0148	0.0188	0.02	0.019	0.02	<0.10	0.027	0.029	<0.10	<0.1	0.024	0.036
Beryllium	mg/L	-	-	-	-	-	-	-	-	<0.010	<0.0010	<0.001	-	<0.0010	
Boron	mg/L	1	-	-	-	-	-	-	-	0.47	0.48	0.52	0.49	0.53	0.48
Cadmium	mg/L	0.00004-0.00037 ²	<0.001	<0.0010	<0.000050	<0.00005	<0.050	0.00011	<0.000050	<0.00020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.005	<0.0050	<0.0050	<0.01	<0.010	<0.010	<0.010	<0.010	0.0010	<0.001	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	<0.002	<0.0020	<0.0020	<0.003	<0.0030	<0.0030	<0.0030	<0.0030	0.0003	<0.00030	<0.00030	<0.00030	<0.00030
Copper	mg/L	0.007	0.005	0.0062	0.0071	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	0.00023	<0.00020	<0.00020	<0.00020	0.00032
Lead	mg/L	0.001-0.007 ²	<0.005	<0.0050	<0.00010	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	-	-	-	-	-	-	-	0.48	0.47	-	-	0.49	
Manganese	mg/L	0.05	-	-	-	-	-	-	-	0.21	0.21	0.19	0.17	0.088	0.16
Mercury	mg/L	0.000005	-	<0.00010	<0.00010	<0.000005	<0.0020	<0.0000050	<0.0000050	<0.0000050	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.007	<0.0050	<0.0050	<0.002	<0.0020	0.0021	0.0029	<0.0020	0.0020	0.0016	0.0016	0.0017	
Nickel	mg/L	0.007-0.170 ²	0.005	0.0041	0.0057	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	<0.00050	0.00082	<0.00050	0.00068
Phosphorus	mg/L	-	-	-	-	-	-	-	-	0.11	<0.10	<1	-	<0.10	
Selenium	mg/L	0.002	-	-	-	-	-	-	-	<0.0020	<0.00020	<0.00020	<0.0002	<0.00020	<0.00020
Silicon	mg/L	-	-	-	-	-	-	-	-	4.5	4.4	4.7	-	4.5	
Silver	mg/L	0.0001	-	-	-	-	-	-	-	<0.0010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	-	-	-	-	-	-	-	1.1	1.1	1.2	-	1.0	
Sulphur	mg/L	-	-	-	-	-	-	-	-	770	750	750	-	540	
Thallium	mg/L	-	-	-	-	-	-	-	-	<0.0020	<0.00020	<0.0002	-	<0.00020	
Tin	mg/L	-	-	-	-	-	-	-	-	<0.010	<0.0010	<0.001	-	<0.0010	
Titanium	mg/L	-	-	-	-	-	-	-	-	<0.010	<0.0010	<0.001	-	<0.0010	
Uranium	mg/L	0.01	-	-	-	-	-	-	-	<0.0010	0.00021	0.00024	0.00027	0.00025	0.00022
Vanadium	mg/L	-	-	-	-	-	-	-	-	<0.010	<0.0010	<0.001	-	<0.0010	
Zinc	mg/L	0.03	0.012	0.0094	0.0046	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

*- No applicable guideline or not analyzed

Detection limit adjusted (*)

Pipe is bent and was unable to measure water elevation (bent)

Exceeds Regulatory Limit

italic - Detection limit greater than Tier 1 Guideline

Table E19B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW19B											
			May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	May-15	Jun-16	Jun-17	Jun-18	Jun-19
Volatile Organic Compounds (VOCs)														
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	<0.0010 <0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	<0.0020 <0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	<0.0010 <0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	<0.0010 <0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013 <0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	<0.00050 <0.00050

Notes:

¹ Alberta Environment and Parks (AEP), 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

* No applicable guideline or not analyzed

Detection limit adjusted (*)

Pipe is bent and was unable to measure water elevation (bent)

Exceeds Regulatory Limit

italic - Detection limit greater than Tier 1 Guideline

Table E20A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 20A																																				
			Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Volatile Organic Compounds (VOCs)																																							
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020		
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020		
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020		
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
1,1-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
1,2-Dichloroethane	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
1,1-Dichloroethene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
1,3-Dichloropropene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
1,3-Dichloropropene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020		
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010			
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020			
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010		
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010		
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013	<0.0013		
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050			
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
⁶ No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 - - - - - Detection limit greater than Tier 1 Guideline

Table E21A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 21A																								MW 21A										
			Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Field Measurements																																					
Field pH	-	-	7.7	-	8.17	7.86	7.52	7.81	8.06	8	8.06	7.98	8.16	8.07	8.09	7.76	7.04	7.69	7.73	7.56	7.42	7.5	7.72	7.847	8.400	8.17	7.94	8.2	7.79	9.9	8.3	7.88	7.9	7.9	7.93	7.88	
Field EC	mS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.15	4.4	2.40	2.25	4.59	4.44	1.959	2.760	2.4	2.16	1.5	2.38	2.12	2.11	2.14	2.03	2.24	2.14	1.994		
Field Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.3	10.3	10.3	9.6	5.7	8.3	6.62	8.5	13.0	9.5	8.7	8.9	10.2	8.3	8.4	7.9	7.5	7.8	13.6	7.7	
Routine Water																																					
pH	-	6.5-8.5	8.07	-	8.81	8.45	8.29	8.56	8.29	8.28	8.14	7.99	8.27	8.19	8.2	8.3	8.4	8.3	8.4	8.3	8.4	8.3	8.3	8.3	8.38	8.47	8.28	8.59	8.33	8.18	8.19	8.29	8.41	8.35	8.51	8.41	
Conductivity (EC)	µS/cm	1000	5630	-	3050	2240	2320	2310	2220	2090	2090	2180	2150	1970	2050	2110	2160	2030	2110	2070	2100	2450	2110	2030	2070	2060	2100	2100	2000	2000	2000	2000	2000	2000	2100	2000	
Calcium	mg/L	-	70.2	-	28.1	6.4	14.4	7.7	6.2	4.6	5.3	5.1	4.9	2.6	5	5.8	5.1	5.4	5.3	6.9	4.8	6.2	4.24	4.85	4.6	4.1	4.8	4.4	4.4	4.7	4.3	4.3	4.3	4.3	4.6		
Magnesium	mg/L	-	31	-	6.4	1.3	16	5.47	0.72	0.52	0.6	0.82	<1	<1	<1	0.6	0.5	<0.1	0.8	0.6	0.6	0.7	<0.1	1.4	0.36	0.54	0.5	0.47	0.53	0.47	0.44	0.45	0.4	0.4	0.42	0.47	
Sodium	mg/L	200	1660	-	802	595	597	536	602	613	565	629	600	590	582	562	552	536	547	553	534	630	581	527	496	514	440	540	460	470	490	490	480	530	470	540	
Potassium	mg/L	-	5.68	-	8.88	2.79	16.4	6.2	2.5	1.7	<2	2.4	<2	<2	<2	0.7	1.7	1.5	2.2	2.1	2.2	3.2	1.5	2.4	1.28	1.95	1.5	2	1.6	1.8	1.9	1.7	1.5	1.7	1.6	1.7	
Iron	mg/L	0.3	0.028	-	86	-	34.2	-	-	0.02	0.024	-	<0.05	0.09	<0.05	1.06	0.021	0.041	0.169	0.096	0.092	0.106	0.015	0.046	<0.0050	0.059	<0.06	<0.060	0.22	<0.060	<0.060	<0.060	<0.060	0.13	<0.060		
Sulphate	mg/L	128-429 ²	2960	-	1490	352	232	156	126	93.5	93.9	96.9	89.9	76.6	83.2	75.4	70.4	54.5	77.4	79.9	68.5	258	75.9	59.5	62.1	83.1	81	91	82	90	72	71	65	63	66	68	
Chloride	mg/L	100	21.4	-	23.9	18.9	16.8	14.2	15.6	8.9	7.7	8.5	7.7	8.4	6.9	9	10	11	15	10	10	16	11	15	8.35	7.95	9	8.9	8.4	9.3	9.4	8.7	11	11	11	10	
Bicarbonate	mg/L	-	1110	-	470	1050	1280	1150	1340	1360	1340	1340	1330	1330	1310	1270	1320	1260	1300	1210	1240	1350	1340	1310	1220	1300	1200	1300	1300	1300	1300	1300	1300	1200	1200	1200	
Carbonate	mg/L	-	-	-	65.4	49.7	-	61	<6	<6	<6	<6	<6	<6	<6	14	19	10	25	<5	31	43	<5	13	17.3	31.7	<0.5	38	8.5	<0.50	<0.50	11	8	47	11		
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (N)	mg/L	3	-	-	18.1	7.26	11.3	11.5	14.7	13.4	17.7	17	17	17.4	19.7	14.9	16.9	6.3	12.5	14.6	13.9	<0.1	30.1	9.6	6.84	9.3	1.8	1.8	1.8	2.3	1.2	1.3	4.1	0.62	0.98	1.4	
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (TDS)	mg/L	500	5300	-	2650	1540	1520	1360	1410	1390	1330	1400	1360	1330	1320	1360	1360	1300	1350	1360	1310	1570	1470	1330	1260	1280	1200	1300	1200	1200	1200	1200	1200	1300	1200	1200	
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity (total as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity (pp as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ionic Balance	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Nutrients																																					
Ammonia-N	mg/L	0.018-190 ⁴	0.25	-	2.24	1.49	0.89	0.67	0.71	0.34	0.31	0.42	0.22	0.08	0.35	0.36	0.27	0.17	0.16	0.34	0.37	0.32	0.35	0.34	0.352	0.275	0.13	0.065	0.24	0.068	0.12	0.12	0.071	0.039	0.097	0.063	
TKN	mg/L	-	0.7	-	20.1	5.62	2.32	2.43	2.31	1.76	2.65	1.96	1.91	1.63	3	2.2	<0.2	1.7	1.9	1.3	2	1.4	1.9	2.7	1.66	2.31	1.5	0.95	2.2	1.4	1.7	0.81	0.96	0.92	0.73	0.47	
Hydrocarbons																																					
Benzene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	mg/L	0.024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	0.0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylene	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F1 (C6-C10)	mg/L	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F2 (C10-C16)	mg/L	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organics																																					
COD	mg/L	-	34	-	1190	450	91	105	132	53	158	73	135	72	134	20	<10	27	24	19	22	42	21	19	24.8	18.7	29	41	110	96	74	28	43	49	39	32	
TOC	mg/L	-	13.3	-	62.5	85.1	7.5	0.9	1.7	15.7	1.1	8.4	8.3	11.3	17	7	6	10	9	7	8	15	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil & Grease	mg/L	-	<1	-	-	1	2	-	10	<5	<5	31	23	<1	6	<1	<1	<1	<1	<1	<1	<1	1	<1	1	-	-	-	-	-	-	-	-	-	-	-	-
Metals																																					
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	mg/L	0.006	<0.005	-	-	-	0.006	-	-	<0.006	<0.02	0.0022	0.0014	0.0015	0.0019	0.002	0.0022	0.0011	0.0020	0.0016	0.0007	0.0014	-	-	-	0.00082	<0.0006	<0.00060	0.0011	<0.00060	<0.00060	<0.00060	<0.00060	0.00065	<0.00060	<0.00060	
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	mg/L	1	0.0181	-	-	-	0.541	-	-	0.0533	0.054	-	0.105	0.058	0.07	0.081	0.073	0.059	0.086	0.077	0.082	0.037	0.081	0.185	0.0849	0.103	0.084	0.085	0.084	0.073	-	0.062	0.073	0.096	0.081	0.080	
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Boron	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	0.00004-0.00037 ²	<0.0005	-	-	-	0.002	-	-	<0.0006	<0.003	-	<0.0001	<0.0005	0.00012	<0.001	<0.001	<0.001	<0.001	0.0002	0.0002	0.0002	<0.001	<0.0002	<0.0002	0.00009	0.00024	0.00062	0.0001	0.000034	0.000067	0.000079	0.000099	0.00012	0.00014	0.00027	
Chromium	mg/L	0.05	0.002	-	-	-	0.0287	-	-	<0.0009	<0.004	-	0.0006	0.0031	0.0027	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Cobalt	mg/L	-	<0.0007	-	-	-																															

Table E21A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 21A																																				
			Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20			
Volatle Organic Compounds (VOCs)																																							
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010		
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020		
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013	<0.0013	
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050		
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 -- No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 Detection limit greater than Tier 1 Guideline

Table E21B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 21B																																
			Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Volatile Organic Compounds (VOCs)																																			
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromofom	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 ** No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 Italic - Detection limit greater than Tier 1 Guideline

Table E22A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 22A																																
			Oct-88	Apr-89	Oct-89	Apr-90	Oct-90	Apr-91	Oct-91	Apr-92	Oct-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95	Oct-95	Apr-96	Oct-96	Apr-97	Oct-97	May-98	May-99	May-10	Jun-11	May-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Volatile Organic Compounds (VOCs)																																			
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromofom	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 *- No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 - - - - - Detection limit greater than Tier 1 Guideline

Table E22B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 22B																																	
			Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Jan-07	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Field Measurements																																				
Field pH	-	-	6.97	7.45	7.13	7.12	7.43	7.77	7.43	7.8	7.51	7.51	7.65	7.71	7.46	7.18	6.96	7.2	7.4	-	7.44	7.56	7.569	7.300	7.84	7.71	7.35	5.5	7.7	7.8	7.57	7.5	7.03	7.60	7.54	
Field EC	mS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.96	18.78 ^(RP)	8.07	7.26	-	17.20	19.83	7.270	>3.999	3.1	8.11	3.5	8.25	8.56	8.25	8.78	7.87	8.75	8.04	8.18	
Field Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.6	8.5	6.9	7.2	-	4.8	10.08	14.9	11.5	11.6	9.6	6.8	10.3	6.4	8.4	9.7	7.8	6.7	10.3	7.9	
Routine Water																																				
pH	-	6.5-8.5	7.97	7.5	7.64	7.7	7.68	7.61	7.76	7.69	7.72	7.81	8.06	8.2	8.1	8.2	8.1	8.1	8.2	8.0	8.2	8.1	8.1	8.18	8.14	8.03	8.18	8.24	8.07	7.86	7.97	8.23	7.98	8.27	8.11	
Conductivity (EC)	µS/cm	1000	8110	7850	8400	8610	7990	7750	7870	7900	7940	7890	7420	7890	8010	5420	7480	8020	9950	8280	8040	8240	7930	8320	8200	8100	8100	8200	8100	8200	8200	8000	8000	8000	8100	
Calcium	mg/L	-	42.5	119	140	127	98.4	119	106	125	123	128	105	118	70.8	44.9	71.9	126	187	135	109	117	113	112	109	110	120	100	110	110	110	110	110	110	120	
Magnesium	mg/L	-	53	57.5	61.8	58.9	53.1	57.7	55.5	58.2	59.2	58.7	46.6	54.7	57.2	3.6	57.8	61.4	73.2	60.9	55.1	61.4	58	53.9	53.1	52	49	51	55	54	54	53	51	57		
Sodium	mg/L	200	2180	1900	2250	2160	2150	1900	2020	2340	2450	1960	1910	2000	2010	1420	2120	2030	2530	2230	2000	2100	2000	1910	1860	2000	2100	2000	2100	1900	2000	2000	1900	2000	2100	
Potassium	mg/L	-	13.5	9.97	17.1	10.1	12.8	8.2	11	11	11	7.4	9	7.3	10.7	4.6	10.2	9.5	13.9	12.0	10.7	9.2	5.8	9.61	8.79	9.9	9.8	9	8.5	10	10	9.8	9.4	9.3	9.4	
Iron	mg/L	0.3	1.37	1.13	0.025	0.026	0.014	0.1	<0.02	0.018	<0.1	<0.1	<0.1	0.243	<0.005	0.005	<0.005	<0.005	0.005	-	0.012	<0.005	<0.005	<0.0050	0.015	<0.06	<0.060	<0.060	0.075	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	
Sulphate	mg/L	128-429 ²	4140	4020	4540	4070	4480	4000	3880	4570	4890	4120	3800	3750	3800	2170	3590	3890	4970	3820	3440	3840	3470	3730	3590 [*]	3900	3800	3800	3900	3300	3900	3300	3600	3300	3600	
Chloride	mg/L	100	1	1	<0.5	0.8	4.5	0.5	0.6	0.9	<0.5	3	<0.5	1	2	11	3	3	3	3	2	2	3	1.21	<10 [*]	3	1.5	1.8	1.8	1.3	1.8	1.4	1.9	1.7	2.7	2.7
Bicarbonate	mg/L	-	1210	1230	1230	1230	1240	1230	1280	1190	1250	1220	1210	1180	1220	962	1230	992	1180	1230	1230	1240	1260	1240	1210	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	
Carbonate	mg/L	-	-	-	-	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (N)	mg/L	3	0.28	<0.05	0.17	0.12	0.14	<0.04	0.083	0.218	0.063	<0.04	<0.04	0.5	0.2	7.6	0.1	0.2	0.3	0.3	0.2	0.1	0.3	0.09	<1.0 [*]	0.14	0.18	0.11	0.11	0.16	<0.10	0.38	0.039	0.094	0.096	
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (TDS)	mg/L	500	7030	6710	7620	7030	7430	6690	6700	7680	8150	6870	6470	6510	6550	4160	6460	6710	8270	6840	6220	6740	6270	6430	6220	6600	6700	6600	6800	6600	6600	6000	6300	6100	6400	
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity (total as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity (pp as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tonic Balance	mg/L	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Nutrients																																				
Ammonia-N	mg/L	0.018-190 ⁴	0.47	0.29	0.3	0.41	0.11	0.12	<0.05	0.34	<0.05	<0.05	0.23	<0.05	<0.05	0.1	<0.05	<0.05	0.27	-	<0.05	<0.05	<0.05	<0.050	<0.050	<0.05	<0.050	<0.05	<0.050	<0.05	<0.050	0.04	<0.015	0.031	0.021	
TKN	mg/L	-	1	0.8	0.7	0.91	0.76	0.57	0.28	1.84	0.38	0.49	2.08	0.6	<0.2	0.5	0.5	<0.2	0.6	-	0.5	0.3	0.4	0.58	0.88	0.51	0.36	0.46	0.36	0.52	0.27	0.32	0.26	0.49	0.38	
Hydrocarbons																																				
Benzene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Toluene	mg/L	0.024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Ethylbenzene	mg/L	0.0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Xylene	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
F1 (C8-C10)	mg/L	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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	
F2 (C10-C16)	mg/L	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	0.118	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Organics																																				
COD	mg/L	-	89	30	22	<5	28	24	12	98	12	14	74	10	<10	18	20	14	20	-	15	17	22	20.8	12.9	41	19	37	15	51	18	20	23	44	16	
TOC	mg/L	-	8.1	8.8	8.2	6.6	7.8	7.1	6.4	6.7	6.6	6.2	6.7	5	5	6	5	8	8	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	
DOC	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil & Grease	mg/L	-	<1	2	<1	<1	9	<5	<5	<5	10	6	7	<1	<1	<1	<1	<1	<1	-	<1	<1	6	6.1	6.2	8	5.9	6	5.3	5.7	4.7	6.6	5.9	6.7	6.1	
Metals																																				
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.006	<0.006	<0.005	<0.02	<0.02	<0.002	<0.002	<0.002	0.0007	0.0009	0.001	<0.0004	0.0008	0.006	-	<0.0004	0.0009	-	-	<0.00040	<0.006	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	mg/L	1	0.0591	0.0293	0.0123	0.0074	0.0101	0.007	0.0125	0.0115	0.011	<0.01	0.014	0.009	0.012	0.01	0.012	0.01	0.013	-	0.01	0.008	0.008	0.0067	0.0101	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Boron	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	0.00004-0.00037 ²	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0006	<0.0005	<0.0003	<0.0003	<0.0001	<0.0001	0.0003	<0.0001	0.0004	0.0002	0.0002	-	<0.0																

Table E22B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 22B																																	
			Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Jan-07	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Volatile Organic Compounds (VOCs)																																				
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010		
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3-Dichloropropene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3-Dichloropropene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013	
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	

Notes:
¹ Alberta Environment and Parks (AEP), 2019, Alberta Tier 1 Soil and Groundwater Remediation Guidelines, Land Policy Branch, Policy and Planning Division, 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
⁶ No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 - - - - - Detection limit greater than Tier 1 Guideline

Table E23A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 23A																								MW 23A									
			Oct-97	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Field Measurements																																				
Field pH	-	-	-	7.11	8.54	7.69	8.26	9.07	8.78	9.07	8.46	8.81	8.75	8.73	7.76	8.49	8.04	8.19	8.05	8.36	8.15	7.89	8.529	7.5	8.3	8.63	7.85	6.08	8.5	8.8	8.65	8.8	8.6	8.12	8.74	
Field EC	mS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	6.04 ^(RP)	2.56	2.73	5.78	5.73	2.190	2.632	1.935	2.52	3.5	2.81	2.25	2.24	2.24	2.13	2.38	2.41	2.17		
Field Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.4	4.3	8.1	5.3	7.4	9.2	9.0	11.2	10.2	11.3	12	9.1	7.9	8.9	8.6	8.5	6.8	11.6	7.8		
Routine Water																																				
pH	-	6.5 - 8.5	8.22	8.35	8.54	8.67	8.72	8.73	8.61	8.7	8.48	8.72	8.57	8.63	8.5	8.5	8.5	8.5	8.5	8.6	8.5	8.5	8.5	8.57	8.57	8.63	8.57	8.63	8.48	8.44	8.53	8.75	8.51	8.70	8.63	
Conductivity (EC)	µS/cm	1000	3740	9620	5490	3820	3260	3160	2990	2750	2740	2640	2420	2590	2340	2610	2440	2430	2450	2440	2090	2450	2290	2320	2220	2400	2300	2200	2100	2100	2200	2200	2200	2200	2200	
Calcium	mg/L	-	32.2	109	22.2	20.6	13.7	7.7	8.9	6.7	8	6.4	3.7	7.6	6.5	7.4	7.2	7.1	9	7.6	4.8	6.5	6.6	5.7	5.5	6	4.7	4.8	5.4	4.1	4.1	4.4	4.1	4.0	3.2	
Magnesium	mg/L	-	9.2	30.1	5.5	14.8	7.32	1.81	1.88	1.4	1.16	<1	<1	1.1	1	1.2	<0.1	1.5	1.1	1.3	0.2	0.2	1.1	0.8	0.74	0.8	0.62	0.6	0.63	0.48	0.49	0.47	0.49	0.54	0.54	
Sodium	mg/L	200	1260	2620	1400	978	897	830	840	685	762	706	678	730	631	672	628	631	633	633	536	656	601	578	519	600	580	550	570	500	560	570	560	560	590	
Potassium	mg/L	-	6.71	13.8	6.24	14.6	8.7	3.2	3.2	2.5	2.3	<2	<2	2.3	1.8	1.4	1.7	2.3	2.4	2.5	2.3	1.9	1.4	2	2.01	2.2	2.2	1.9	1.8	2.2	2.0	2	2	1.8	1.9	
Iron	mg/L	0.3	0.017	102	-	< 0.003	-	-	-	0.021	< 0.003	< 0.005	0.09	< 0.05	0.254	0.011	0.046	0.009	0.073	0.260	0.098	0.029	0.032	0.0698	0.02	< 0.06	< 0.060	< 0.060	0.38	< 0.060	< 0.060	< 0.060	< 0.060	< 0.060	120	
Sulphate	mg/L	128-429 ²	1780	5540	2390	1510	1110	768	836	635	679	509	380	537	281	413	318	301	329	280	60.6	284	232	193	155	190	190	160	110	90	85	77	88	85	120	
Chloride	mg/L	100	1.9	5.6	16.8	18.5	18.6	18.5	< 0.5	14.1	14.4	13.4	15.7	15.8	17	18	18	19	20	19	9	18	18	16.7	18	19	19	17	20	18	21	20	19	19		
Bicarbonate	mg/L	-	1230	509	648	821	659	842	956	1020	1010	1020	1120	1080	1190	1170	1200	1220	1210	1190	1290	1260	1290	1250	1200	1200	1300	1300	1300	1300	1300	1300	1300	1200	1200	
Carbonate	mg/L	-	-	8.12	54.3	67.7	60	91	56	50	56	87	58	65	32	32	33	34	28	43	36	31	29	41.2	45.3	44	35	55	28	17	26	54	31	85	42	
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (N)	mg/L	3	-	< 0.05	< 0.05	0.09	0.055	< 0.02	< 0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	9.7	< 0.1	0.7	< 0.050	< 0.050	0.016	0.005	< 0.003	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (TDS)	mg/L	500	3700	8570	4210	3030	-	2140	2220	1900	2020	1830	1690	1890	1560	1720	1600	1590	1620	1570	1330	1610	1520	1450	1330	1500	1400	1400	1300	1300	1300	1300	1300	1400	1400	
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity (total as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity (pp as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tonic Balance	mg/L	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Nutrients																																				
Ammonia-N	mg/L	0.018-190 ⁴	0.63	2.75	2.04	0.84	3.21	1.66	0.81	1.03	0.85	0.76	0.69	0.98	0.79	0.7	0.42	0.68	1.03	0.94	0.44	0.78	0.85	0.785	0.426	1.1	0.86	0.79	0.6	0.76	0.76	0.93	0.79	0.79	0.84	
TKN	mg/L	-	0.94	26.7	2.52	11.9	5.42	2.08	1.7	1.49	2.31	1.7	1.82	4.94	1.1	1.3	1.9	1.7	3.6	2.7	2.9	1.5	1.5	1.71	2.01	3.2	1.7	2	1.5	1.4	1.5	1.6	1.5	1.3	0.83	
Hydrocarbons																																				
Benzene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.00050	< 0.00050	< 0.00050	< 0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	
Toluene	mg/L	0.024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.00050	< 0.00050	< 0.00050	< 0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	
Ethylbenzene	mg/L	0.0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.00050	< 0.00050	< 0.00050	< 0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	
Xylene	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.00050	< 0.00050	< 0.00050	< 0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	
F1 (C8-C10)	mg/L	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.1	< 0.1	< 0.10	< 0.1	0.12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
F2 (C10-C16)	mg/L	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05	0.095	< 0.25	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Organics																																				
COD	mg/L	-	18	1650	95	937	65	85	62	50	99	67	72	187	40	10	48	51	42	44	21	39	49	46.5	44.9	190	78	78	81	55	55	57	67	59	73	
TOC	mg/L	-	7.8	25.6	16.5	11.5	14	2.9	20.8	15.8	14.5	14.5	20.8	31.6	14	13	17	16	14	8	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DOC	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil & Grease	mg/L	-	< 1	-	< 1	16	1	2	< 5	< 5	7	11	< 1	5	< 1	< 1	< 1	< 1	< 1	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Metals																																				
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Antimony	mg/L	0.006	< 0.005	-	-	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	mg/L	1	0.0463	-	-	0.0149	-	-	-	-	-	0.0227	0.057	0.017	0.032	0.027	0.022	0.023	0.029	0.033	0.036	0.097	0.032	0.032	0.0331	0.0356	0.04	0.037	0.043	0.040	0.040	0.040	0.040	0.040	0.055	
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Boron	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	0.00004-0.00037 ²	< 0.0005	-	-	< 0.0005	-	-	-	-	-	< 0.0005	0.00002	< 0.0001	0.00009	< 0.0001	< 0.0001	< 0.0001	0.0002	0.0003	0.0002	0.0001	< 0.0001	< 0.0001	0.000085	0.00006	0.00011	0.000066	0.000075	< 0.000020	< 0.000020	< 0.000020	0.000026	< 0.000020	< 0.000020	
Chromium	mg/L	0.																																		

Table E23A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 23A																																		
			Oct-97	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20		
Volatile Organic Compounds (VOCs)																																					
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020		
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010		
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020		
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010		
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020		
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050		
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,3-Dichloropropene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,3-Dichloropropene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010		
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020		
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013	<0.0013	
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050		
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	

Notes:
¹ Alberta Environment and Parks (AEP), 2019, Alberta Tier 1 Soil and Groundwater Remediation Guidelines, Land Policy Branch, Policy and Planning Division, 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
⁶ No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 - - - - - Detection limit greater than Tier 1 Guideline

Table E23B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 23B																																
			Oct-98	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	May-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20		
Field Measurements																																			
Field pH	-	-	6.98	-	7.18	7.71	7.33	7.71	7.5	7.51	7.52	7.58	7.51	7.36	7.2	6.87	7.11	7.27	7.14	7.19	7.437	8.3	-	7.43	7.17	5.77	7.5	7.8	7.45	7.3	7.7	7.41	7.3		
Field EC	mS	-	-	-	-	-	-	-	-	-	-	-	-	-	9.44	24.7 (RP)	11.1	7.19	23.8	21.1	8.730	18.16	-	9.39	4.38	10.67	9.8	9.75	10.17	9.7	10.68	9.97	10.02		
Field Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	9.8	8.2	5.9	6.6	6.0	7.2	9.0	13.2	-	12.9	8.8	9.5	9.9	9.8	10.3	9.3	8	9.9	8.3		
Routine Water																																			
pH	-	6.5 - 8.5	7.69	7.68	7.67	7.67	7.54	7.67	7.59	7.8	7.75	7.95	8.1	8.1	8	8	8	8.3	8.2	8.0	8	8.19	8.16	7.94	8.07	8.24	8.08	7.76	7.89	8.05	7.95	8.09	8.04		
Conductivity (EC)	µS/cm	1000	8760	8560	10000	8950	9280	9590	9140	9480	9220	8970	9580	9660	8940	10200	8250	10100	9790	9490	9710	9530	9400	9400	9700	9600	9700	9900	10000	10000	10,000	9,900	9,900		
Calcium	mg/L	-	113	181	162	147	192	172	191	193	191	168	201	169	209	158	163	121	184	171	173	160	178*	160	160	150	170	170	170	170	160	180	180		
Magnesium	mg/L	-	49.4	51.7	48.2	39.9	51.8	50.3	43.3	41.6	45.1	35.6	64	54.6	71.2	63.7	66.1	64.8	71.5	65.3	65.9	59.7	64.2*	56	56	55	64	62	63	66	68	63	67		
Sodium	mg/L	200	2290	2540	2560	2560	2460	2610	2620	2730	2280	2330	2660	2610	2610	2690	2660	2070	2540	2490	2360	2200	2440*	2300	2500	2300	2400	2300	2400	2400	2300	2500	2500		
Potassium	mg/L	-	14.6	10.4	10.3	13.8	10	13	12	11	8.1	10	10.9	12.8	11.3	13.1	11.9	11.4	13	11.0	7.2	11.7	11.4*	12	11	11	13	12	12	12	11	12	12		
Iron	mg/L	0.3	0.46	0.02	0.064	<0.003	0.086	< 0.02	0.066	<0.1	<0.1	<0.1	0.69	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	0.035	<0.005	<0.005	1.63*	0.07	0.07	<0.060	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60		
Sulphate	mg/L	128-429 ²	4770	5520	4990	5880	5450	5410	5240	6280	5420	5000	5490	5370	5050	5450	4960	3730	4850	4970	4480	4700	4550*	5000	4900	5400	5200	4900	4700	4800	4600	5000	5000		
Chloride	mg/L	100	3.8	2.5	5.2	3.6	4	3.8	3.4	3.1	3.3	2.7	3	4	3	3	4	3	4	2.33	<10*	3	2.2	2.6	2.2	2.6	2.6	1.9	3.7	3.2	4.4	4.2	4.2		
Bicarbonate	mg/L	-	842	930	938	926	933	939	897	930	917	910	915	963	968	977	969	1200	1040	1050	1080	1070	1040	1000	1000	1100	1100	1100	1100	1100	980	980	980		
Carbonate	mg/L	-	-	-	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (N)	mg/L	3	0.24	0.09	0.225	0.25	<0.04	0.33	0.066	0.159	<0.04	<0.04	0.6	0.2	<0.5	0.2	<0.5	0.2	0.3	0.1	<0.1	0.147	<1.0*	0.24	0.073	0.26	0.36	0.072	0.32	0.85	0.068	0.21	0.24	0.24	
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.015	<0.010	<0.16	<0.01	0.022	0.026	0.026	
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.087	0.32	-	0.068	0.23	0.26	0.26	
Total Dissolved Solids (TDS)	mg/L	500	7650	8760	8230	9070	8630	8720	8550	9710	8410	7990	8880	8700	8430	8860	8340	6590	8170	8230	7620	7660	7760	8100	8200	8500	8400	7900	8000	7900	8000	7600	8300	8300	
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	670	690	690	710	650	730	730	
Alkalinity (total as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	860	860	870	860	860	800	800	800	
Alkalinity (pp as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	860	860	870	860	860	800	800	
Ionic Balance	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.50	<0.5	<0.5	-	<1.0	<1.0	0.89	
Water Nutrients																																			
Ammonia-N	mg/L	0.018-190 ⁴	0.91	1.91	1.89	1.55	0.8	1.15	1.56	1.56	1.23	1.79	0.1	1.12	0.46	1.30	1.10	<0.05	0.32	0.52	0.56	0.652	0.311	0.42	0.3	0.39	0.18	0.42	<0.050	0.39	0.33	0.25	0.38		
TKN	mg/L	-	1.45	2.36	2.39	1.8	1.59	1.25	2.78	1.9	1.64	3.12	<0.2	1.2	0.7	1.6	1.3	0.4	0.6	0.9	1.2	1.37	1.37	0.91	0.76	1.1	0.56	0.76	0.46	0.67	0.71	0.63	0.54		
Hydrocarbons																																			
Benzene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040		
Toluene	mg/L	0.024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040		
Ethylbenzene	mg/L	0.0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040		
Xylene	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.0010	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080		
B1 (C8-C10)	mg/L	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
B2 (C10-C16)	mg/L	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	0.061	<0.25	<0.1	0.23	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
Organics																																			
COD	mg/L	-	69	30	17	20	19	16	71	14	19	46	<10	<10	19	20	23	19	19	18	27	18.8	12.6	37	30	45	47	23	22	22	28	32	75		
TOC	mg/L	-	8.5	9.4	7.8	9.4	8.4	8.3	7.5	7.7	7.6	7.5	7	7	7	7	8	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DOC	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oil & Grease	mg/L	-	<1	<1	2	12	<5	<5	<5	11	<5	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
Metals																																			
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.030	0.0081	<0.030	<0.003	<0.0030	<0.0030		
Antimony	mg/L	0.006	<0.005	0.007	<0.006	<0.006	<0.005	<0.002	<0.002	<0.002	<0.002	0.006	0.0011	0.0008	<0.0004	0.0007	0.0005	<0.0004	0.0007	-	-	-	<0.00040	<0.006	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060		
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	0.0024	0.003	0.0022	0.0023	0.0033	0.0033	
Barium	mg/L	1	0.0741	0.0184	0.0118	0.0121	0.01	0.02	0.0095	0.011	<0.01	0.012	0.012	0.012	0.014	0.011	0.011	0.012	0.009	0.012	0.011	0.011	0.0159	<0.01	<0.010	<0.010	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.001	-	<0.010	0.33	0.33	
Boron	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.35	0.40	0.36	0.35	0.32	0.32	0.32		
Cadmium	mg/L	0.00004-0.00037 ²	0.0007	<0.0005	<0.0006	<0.0006	<0.0005	<0.0003	<0.0003	<0.0001	<0.0001	0.00011	<0.001	<0.0001	0.0001	<0.0001	<0.0001	0.0003	<0.001	<0.001	<0.001	<0.001	<0.001	0.000335	0.00062	0.00005	<0.0020	0.00028	0.00047	0.00035	0.00094	0.00078			
Chromium	mg/L	0.05	0.0018	<0.0008	<0.0009	<0.0008	<0.0008	<0.004	<0.004	<0.005	<0.005																								

Table E23B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 23B																															
			Oct-98	Oct-99	Apr-00	Oct-00	Apr-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Apr-05	Oct-05	May-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Volatile Organic Compounds (VOCs)																																		
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP), 2019, Alberta Tier 1 Soil and Groundwater Remediation Guidelines, Land Policy Branch, Policy and Planning Division, 196 pp. Referenced guidelines are for fine textured soils under Agricultural land use.
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 * - No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 - Detection limit greater than Tier 1 Guideline

Table E25A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 25A																			
			Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements																						
Field pH	-	-	7.95	7.82	8.13	7.62	8.02	8.21	7.71	8.274	8.900	8.41	8.4	8.42	8.02	10	8.6	8.39	8.4	8.5	8.17	8.32
Field EC	mS	-	-	2.54	5.33 ^(EF)	2.90	6.29	4.83	4.62	1.926	1.667	2.1	2.16	0.93	2.29	2.22	2.19	2.13	2.05	2.32	2.12	2.08
Field Temperature	°C	-	-	11.1	3.8	9.2	7.1	8.8	9.88	7.7	13.1	11.7	10.7	8.6	10.1	7.1	8.3	9.4	8.2	6.5	10.8	8.6
Routine Water																						
pH	-	6.5-8.5	8.5	8.4	8.5	8.4	8.7	8.7	8.5	8.4	8.59	8.59	8.56	8.67	8.53	8.28	8.39	8.45	8.55	8.51	8.58	8.51
Conductivity (EC)	µS/cm	1000	4660	2380	2120	2110	2070	2070	2080	2000	2100	2050	2100	2200	2100	2000	2100	2000	2100	2000	2100	2100
Calcium	mg/L	-	43	10.7	7.2	6.8	7.2	5.3	5.3	5.6	5.02	5.01	4.7	5.4	4.7	4.6	5.1	4.5	4.7	4.6	4.9	4.9
Magnesium	mg/L	-	21.8	0.4	1.1	0.9	1.1	0.2	<0.1	0.7	0.51	0.57	0.5	0.59	0.5	0.49	0.44	0.47	0.42	0.45	0.45	0.49
Sodium	mg/L	200	1270	625	558	557	539	553	585	543	511	436	450	490	570	480	490	540	490	550	540	570
Potassium	mg/L	-	9.3	2.7	2.5	1.9	2.5	1.7	1.3	1.74	1.9	1.8	2	1.9	1.9	2.3	1.8	1.7	1.8	1.7	1.8	2
Iron	mg/L	0.3	3.32	0.358	0.516	0.0186	0.112	0.175	0.057	0.068	0.0525	0.095	<0.06	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Sulphate	mg/L	128-429 ²	2090	323	60.7	102	52.1	36.2	21.3	24.7	19.8	13.2	-	3.2	7.1	14	13	4.3	3.1	<1.0	<1.0	2.2
Chloride	mg/L	100	30	14	11	3	10	9	10	7.74	7.24	10	8.3	8.5	8	9.2	8.4	8.9	9.4	8.7	9.3	9.3
Bicarbonate	mg/L	-	812	1220	1350	1350	1260	1330	1400	1430	1360	1320	1300	1300	1400	1400	1400	1400	1400	1400	1300	1300
Carbonate	mg/L	-	31	25	42	25	53	55	38	26	50.7	49	38	62	39	<0.50	11	19	28	30	68	28
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.050	<0.050	0.065	0.031	0.32	0.97	0.85	0.18	2	<0.020	<0.010	0.52
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	0.21	0.029	0.27	<0.010	0.081	0.1	0.1
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1	0.21	0.53	<0.020	0.081	0.62	0.62
Total Dissolved Solids (TDS)	mg/L	500	3900	1600	1340	1360	1280	1310	1350	1310	1270	1220	1200	1200	1300	1200	1200	1300	1200	1300	1300	1300
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	15	13	14	13	14	14
Alkalinity (total as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1200	1200	1200	1200	1200	1100	1100
Alkalinity (pp as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.0	16	23	-	57	-	-
Ionic Balance	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.91	1.0	4.6	0.22	0.54	5.1	5.1
Water Nutrients																						
Ammonia-N	mg/L	0.018-190 ⁴	0.68	0.42	0.54	0.83	0.85	0.62	0.68	0.68	0.68	0.281	0.67	1.2	0.59	0.42	0.41	0.62	0.55	0.76	0.71	0.66
TKN	mg/L	-	3.5	2.8	1.6	1.8	2.3	1	0.9	1.1	1.16	1.67	1.1	3.9	1.2	1.1	1.1	1.2	1.2	1.0	1.2	1.2
Hydrocarbons																						
Benzene	mg/L	0.005	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.0010	<0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	-	-	-	-	-	-	-	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	-	-	-	-	-	-	-	<0.05	<0.050	<0.25	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics																						
COD	mg/L	-	40	35	15	24	21	23	18	28	21.7	19.6	40	190	29	32	35	29	25	29	32	23
TOC	mg/L	-	8	13	8	9	9	9	9	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	-	-	-	-	-	-	7	9	9.7	14	9.8	9.3	7.9	8.1	7.9	9.6	8.7	10	8.8
Oil & Grease	mg/L	-	<1	1	<1	3	1	<1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																						
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0051	0.0046	0.0043	0.0034	0.012	<0.0030
Antimony	mg/L	0.006	0.001	0.0114	0.0012	0.0018	0.0015	0.0012	0.0011	-	-	0.00086	0.0011	0.0033	0.0012	0.00078	0.0011	<0.00060	0.00064	<0.00060	<0.00060	0.00076
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0021	0.0019	0.0023	0.0024	0.0023	0.0023	0.002
Barium	mg/L	1	0.03	0.051	0.063	0.041	0.045	0.062	0.051	0.051	0.0547	0.0622	0.074	0.11	0.085	0.081	0.081	0.088	0.10	0.08	0.098	0.099
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.0010	-	<0.0010	-	-
Boron	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	0.81	0.94	0.83	0.89	0.85	0.89	0.89
Cadmium	mg/L	0.00004-0.00037 ²	<0.001	0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.001	<0.0010	0.000175	0.00011	0.000041	0.000033	<0.000025	0.000022	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0020	<0.0020	0.0006	0.00068	0.00037	0.00046	<0.00030	0.00034	0.00032	0.00033	<0.00030	<0.00030
Copper	mg/L	0.007	0.012	0.01	0.003	0.003	0.001	0.002	0.004	<0.0010	0.0012	0.0018	0.0014	0.0022	0.0009	0.00045	0.00045	<0.00020	<0.00020	<0.00020	0.0020	0.0055
Lead	mg/L	0.001-0.007 ²	<0.005	0.0029	<0.0001	0.0003	0.0012	0.0004	0.0002	<0.005	<0.0050	0.0003	0.0002	0.00029	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0020	<0.00020
Lithium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10	0.11	-	-	-	0.097	-
Manganese	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	0.051	0.10	0.07	0.13	0.063	0.051	-
Mercury	mg/L	0.000005	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.000005	0.0000059	<0.000010	<0.0000050	<0.0000050	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.008	0.021	0.008	0.011	0.007	0.007	<0.005	<0.005	<0.0050	0.0052	0.005	0.013	0.0044	0.0039	0.0051	0.0064	0.006	0.0076	0.0063	-
Nickel	mg/L	0.007-0.170 ²	0.003	0.01	0.003	0.007	0.005	0.003	0.003	0.003	0.0033	0.003	0.0041	0.0054	0.0025	0.0025	0.0032	0.0023	0.0022	0.0015	0.0021	0.0023
Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11	<0.10	<0.1	-	0.12	-	-
Selenium	mg/L	0.002	-	-	-	-	-															

Table E25A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 25A																				
			Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Polycyclic Aromatic Hydrocarbons (PAHs)																							
Benzo[a]pyrene equivalency	mg/L	0.00004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	-	<0.000010		
Acenaphthene	mg/L	0.006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010		
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010		
Acridine	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	<0.00020	-	<0.000040	<0.00050	
Anthracene	mg/L	0.0034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	-	<0.000010	<0.00050	
Benzo[a]anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000085	<0.0000085	-	<0.0000085		
Benzo[a]pyrene	mg/L	0.0018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000075	<0.0000075	-	<0.0000075	<0.00050	
Benzo[b]fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000085	<0.0000085	-	<0.0000085		
Benzo[c]phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050	<0.0010	
Benzo[e]pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050		
Benzo[g,h,i]perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000085	<0.0000085	-	<0.0000085	<0.00050	
Benzo[k]fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000085	<0.0000085	-	<0.0000085		
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000085	<0.0000085	-	<0.0000085	<0.00050	
Dibenz[a,h]anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000075	<0.0000075	-	<0.0000075		
Fluoranthene	mg/L	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	-	<0.000010	<0.00050	
Fluorene	mg/L	0.0042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050	<0.00050	
Indeno[1,2,3-c,d]pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000085	<0.0000085	-	<0.0000085		
1-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010		
Naphthalene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010		
Perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050		
Phenanthrene	mg/L	0.00086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050	<0.00050	
Pyrene	mg/L	0.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000020	<0.000020	-	<0.000020	<0.0020	
Quinoline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	<0.00020	-	<0.00020	<0.00050	
Volatile Organic Compounds (VOCs)																							
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.00050
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.0010
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.0010
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.00050
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.00050
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.0013
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013	
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	

Notes:
¹ Alberta Environment and Parks (AEP), 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 -" No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
italic - Detection limit greater than Tier 1 Guideline

Table E25B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 25B																				
			Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Polycyclic Aromatic Hydrocarbons (PAHs)																							
Benzo(a)pyrene equivalency	mg/L	0.00004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	-	<0.000010		
Acenaphthene	mg/L	0.006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010		
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010		
Acridine	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	<0.00020	-	<0.00040		
Anthracene	mg/L	0.0034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	-	<0.000010		
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085		
Benzo(a)pyrene	mg/L	0.0018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000075	<0.000075	-	<0.000075		
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085		
Benzo(c)phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050		
Benzo(e)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050		
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085		
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085		
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085		
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000075	<0.000075	-	<0.000075		
Fluoranthene	mg/L	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010		
Fluorene	mg/L	0.0042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050		
Indeno(1,2,3-c,d)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085		
1-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010		
Naphthalene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010		
Perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050		
Phenanthrene	mg/L	0.0086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050		
Pyrene	mg/L	0.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000020	<0.000020	-	<0.000020		
Quinoline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	<0.00020	-	<0.00020		
Volatile Organic Compounds (VOCs)																							
Bromochloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 * - No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 Italic - Detection limit greater than Tier 1 Guideline

Table E26A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 26A																				
			Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Jan-07	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Volatile Organic Compounds (VOCs)																							
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

*- No applicable guideline or not analyzed

Equipment Failure, parameter not reported (EF)

Lab Filtered (*)

Not measured (NM)

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E26B: Chemical Analysis Results - Ryley Integrated Waste Management Facility

Parameter ID	Units	Regulatory Limits ¹	MW 26B																				
			Oct-03	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements																							
Field pH	-	-	-	7.46	7.05	7.37	7.26	7.44	7.38	7.98	8.060	7.382	7.9	7.67	7.35	5.62	7.7	7.5	7.63	7.4	6.85	7.52	7.08
Field EC	mS	-	-	6.92	6.48	15.11 ^(EF)	6.48	6.35	15.33	15.28	6.520	6.530	2.3	6.54	2.79	7.14	5.28	7.45	6.45	7.81	6.85	7.786	7.65
Field Temperature	°C	-	-	7.7	6.3	5.7	8.3	6.0	9.68	6.6	7.0	11.8	9.1	9.2	8.1	5.8	9.1	8.9	5.9	6.7	11.5	7	
Routine Water																							
pH	-	6.5 - 8.5	-	8.3	8.1	8.3	8.1	8.4	8.3	8.1	8.1	8.11	8.16	8.1	8.05	8.37	8.09	7.93	8.15	8.19	8.12	8.19	8.16
Conductivity (EC)	µS/cm	1000	-	5980	6130	5520	6360	6440	6710	6660	6510	6560	6470	6400	6300	6400	6100	7100	7400	7600	7400	7700	7500
Calcium	mg/L	-	-	102	89.2	83.3	91.6	87.5	88.1	89.1	90.9	88.1	78.4	78	89	74	73	100	110	120	120	110	120
Magnesium	mg/L	-	-	41.6	47.1	48.4	50.1	52.3	50.7	50.6	53.2	48.2	43.2	41	44	36	56	58	66	67	64	65	
Sodium	mg/L	200	-	2200	1560	1620	1560	1600	1610	1640	1540	1560	1370	1500	1700	1500	1400	1600	1600	1800	1800	1800	1800
Potassium	mg/L	-	-	12.2	5.6	6.4	6.4	7.5	8.0	6.5	3.8	6.97	6.42	6.4	6.4	5.9	5	8.3	7.7	7.5	8	7.5	7.4
Iron	mg/L	0.3	-	0.113	0.029	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.050	<0.010	<0.06	<0.060	<0.060	<0.060	<0.060	<0.060	<0.6	<0.60	<0.60	<0.60
Sulphate	mg/L	128-429 ²	-	4180	2690	2820	2870	2810	2740	2960	2820	2890	2480 *	2600	2900	3000	3000	3300	3400	3200	3300	3400	3300
Chloride	mg/L	100	-	4	2	2	2	1	2	2	0.62	<1.0 *	2	<1.0	1.6	1.7	3.5	3.9	4.5	5.6	6.0	5.6	
Bicarbonate	mg/L	-	-	973	1000	998	993	926	1010	1010	1040	1030	1000	980	1000	1000	960	1000	990	1000	1100	1000	960
Carbonate	mg/L	-	-	11	<5	<5	<5	18	<5	<5	<5	<5.0	<5.0	<0.5	<0.50	15	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0	
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0	
Nitrate (N)	mg/L	3	-	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.050	<1.0 *	0.081	0.043	0.14	0.052	0.23	0.19	0.42	0.09	0.048	0.18	
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	0.039	0.036	<0.16	0.012	0.027	0.01		
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.27	0.23	-	0.1	0.074	0.29		
Total Dissolved Solids (TDS)	mg/L	500	-	7030	4890	5070	5070	5030	5000	5250	5020	5100	4470	4700	5200	5100	4900	5600	5700	5800	5800	5700	
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	490	500	570	560	540	580	
Alkalinity (total as CaCO ₃)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	830	810	860	860	830	790	
Alkalinity (pp as CaCO ₃)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	-	<1.0		
Ionic Balance	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.95	0.91	3.1	3.7	0.58	4	
Water Nutrients																							
Ammonia-N	mg/L	0.018-190 ⁴	-	1.03	0.54	0.66	0.60	0.62	0.59	0.67	0.45	0.535	0.552	0.6	0.54	0.51	0.52	0.43	0.43	0.66	0.49	0.60	0.58
TKN	mg/L	-	-	1.6	1.1	1.0	1.0	1.1	1.0	1.0	0.9	1.28	1.57	1.3	0.98	1.1	0.89	0.86	0.73	0.99	1.1	0.98	0.96
Hydrocarbons																							
Benzene	mg/L	0.005	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Toluene	mg/L	0.024	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Ethylbenzene	mg/L	0.0016	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Xylene	mg/L	0.02	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.0010	<0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089	
F1 (C6-C10)	mg/L	2.2	-	-	-	-	-	-	-	-	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
F2 (>C10-C16)	mg/L	1.1	-	-	-	-	-	-	-	-	<0.05	<0.050	<0.25	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Organics																							
COD	mg/L	-	-	50	28	22	22	22	21	21	29	20.3	19.2	46	29	59	49	24	35	28	29	44	34
TOC	mg/L	-	-	11	9	9	9	10	9	10	-	-	-	-	-	-	-	-	-	-	-	-	
DOC	mg/L	-	-	-	-	-	-	-	-	-	9	8.2	8.9	8.6	8.3	8.7	7.3	9.0	10	12	9.6	12	10
Oil & Grease	mg/L	-	-	<1	<1	<1	<1	2	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	
Metals																							
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.030	0.0095	0.0072	<0.003	<0.0030	<0.0030
Antimony	mg/L	0.006	-	0.0012	0.0006	<0.0004	0.0010	0.0007	<0.0004	0.0007	-	-	<0.00040	<0.006	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.00082	<0.00060	<0.00060	
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	0.00081	0.00077	0.00056	0.00052	
Barium	mg/L	1	-	0.071	0.031	0.025	0.019	0.018	0.015	0.013	0.011	0.0093	0.0146	0.01	0.01	0.01	0.01	<0.10	0.010	<0.1	<0.10	<0.10	
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.0010	<0.001	-	<0.0010	
Boron	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.30	0.32	0.29	0.3	0.31	
Cadmium	mg/L	0.00004-0.00037 ²	-	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0010	0.00005	0.00007	0.00037	0.000056	<0.000050	<0.00020	<0.00020	<0.00002	<0.00002	<0.00020	
Chromium	mg/L	0.05	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.01	<0.010	<0.010	<0.010	<0.010	0.0017	<0.001	<0.0010	<0.0010	
Cobalt	mg/L	-	-	0.003	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0020	0.0025	0.003	<0.0030	<0.0030	<0.0030	<0.0030	0.00087	0.00081	0.00076	0.00071	
Copper	mg/L	0.007	-	0.023	0.01	0.008	0.006	0.007	0.005	0.003	0.007	0.0063	0.0073	0.11	0.0049	<0.0020	<0.0020	<0.0020	0.0014	0.00039	0.00071	0.00084	
Lead	mg/L	0.001-0.007 ²	-	<0.005	0.0002	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.005	<0.0050	<0.00010	0.004	<0.0020	<0.0020	<0.0020	<0.0020	<0.00020	<0.0002	<0.0002	<0.00020	
Lithium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.38	0.38	-	-	0.41	
Manganese	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.20	0.20	0.22	0.20	0.22	
Mercury	mg/L	0.000005	-	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.00010	<0.000005	0.0000038	<0.0000050	<0.0000050	<0.0000050	0.0000040	<0.000002	0.0000026	<0.0000020	<0.0000019	
Molybdenum	mg/L	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.002	0.0022	<0.0020	<0.0020	0.0024	0.0013	0.00087	0.0018	0.00094	
Nickel	mg/L	0.007-0.170 ²	-	0.012	0.003	0.002	<0.002	0.004	<0.002	0.003	0.004	0.0027	0.0056	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.0029	0.0013	0.0019	0.0017	
Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1.0	<1.0	<1	-	<1.0	
Selenium	mg/L																						

Table E26B: Chemical Analysis Results - Ryley Integrated Waste Management Facility

Parameter ID	Units	Regulatory Limits ¹	MW 26B																					
			Oct-03	Oct-04	Apr-05	Oct-05	Apr-06	Oct-06	Apr-07	Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Polycyclic Aromatic Hydrocarbons (PAHs)																								
Benzo(a)pyrene equivalency	mg/L	0.0004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0037	<0.00010	<0.00010	<0.00010	<0.00010	-
Acenaphthene	mg/L	0.006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	-
Acridine	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00040	-
Anthracene	mg/L	0.0034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	<0.000085	<0.000085	-
Benzo(a)pyrene	mg/L	0.0018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000075	<0.000075	<0.000075	<0.000075	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0026	<0.000085	<0.000085	<0.000085	<0.000085	-
Benzo(c)phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0017	<0.000050	<0.000050	<0.000050	<0.000050	-
Benzo(e)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0014	<0.000050	<0.000050	<0.000050	<0.000050	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0014	<0.000085	<0.000085	<0.000085	<0.000085	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0015	<0.000085	<0.000085	<0.000085	<0.000085	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0015	<0.000085	<0.000085	<0.000085	<0.000085	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0014	<0.000075	<0.000075	<0.000075	<0.000075	-
Fluoranthene	mg/L	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0018	<0.00010	<0.00010	<0.00010	<0.00010	-
Fluorene	mg/L	0.0042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0018	<0.00050	<0.00050	<0.00050	<0.00050	-
Indeno(1,2,3-c,d)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0014	<0.000085	<0.000085	<0.000085	<0.000085	-
1-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0019	<0.00010	<0.00010	<0.00010	<0.00010	-
Naphthalene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0020	<0.00010	<0.00010	<0.00010	<0.00010	-
Perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0015	<0.00050	<0.00050	<0.00050	<0.00050	-
Phenanthrene	mg/L	0.0086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0019	<0.00050	<0.00050	<0.00050	<0.00050	-
Pyrene	mg/L	0.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0019	<0.00020	<0.00020	<0.00020	<0.00020	-
Quinoline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0019	<0.00020	<0.00020	<0.00020	<0.00020	-
Volatile Organic Compounds (VOCs)																								
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 * - No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
italic - Detection limit greater than Tier 1 Guideline

Table E27A: Chemical Analysis Results - Ryley Integrated Waste Management Facility

Parameter ID	Units	Regulatory Limits ¹	MW 27A													
			Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements																
Field pH	-	-	8.09	8.479	8.3	8.5	8.52	8.35	6.03	8.3	8.9	8.62	8.5	7.96	8.48	8.4
Field EC	mS	-	15.95	2.890	1.125	2.8	2.98	1.3	3.66	2.89	2.88	2.86	2.81	3.12	3.05	2.93
Field Temperature	°C	-	9.44	5.5	9.0	10.7	10.6	8.1	6.3	7.0	10.3	6.2	8.2	6.5	11.8	6.2
Routine Water																
pH	-	6.5 - 8.5	8.5	8.5	8.64	8.59	8.53	8.45	8.64	8.52	8.38	8.57	8.6	8.41	8.59	8.47
Conductivity (EC)	µS/cm	1000	3960	2990	2940	2790	2800	2700	2800	2800	2900	2800	2900	2800	2900	2800
Calcium	mg/L	-	18.1	9.9	8.43	8.19	8.5	9.7	8.2	9.0	8.5	8.5	8.7	8.4	8.4	8.9
Magnesium	mg/L	-	10.3	4.1	2.66	1.79	1.5	1.5	1.4	1.2	1.1	1.0	1	1	0.97	0.96
Sodium	mg/L	200	1030	756	678	668	700	740	670	730	690	620	700	740	700	750
Potassium	mg/L	-	2.9	2.1	2.98	2.52	2.3	2.3	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.4
Iron	mg/L	0.3	0.012	0.057	0.112	0.112	<0.06	1.1	<0.060	0.46	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Sulphate	mg/L	128-429 ²	1260	775	681	630	710	630	730	770	730	710	720	700	660	680
Chloride	mg/L	100	10	7	5.26	4.42	8	4.4	5.8	6.2	5.2	5.0	6.9	5.1	5.5	5.7
Bicarbonate	mg/L	-	1010	992	924	898	900	940	910	920	930	850	920	950	860	930
Carbonate	mg/L	-	35	24	48.2	37.6	24	14	35	27	7.5	21	26	11	49	16
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.1	0.1	0.273	0.419	0.21	0.093	0.14	0.11	0.046	0.21	0.47	0.26	0.33	0.31
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	0.17	0.071	0.28	<0.010	0.029	0.032
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	0.22	0.28	-	0.26	0.36	0.34
Total Dissolved Solids (TDS)	mg/L	500	2860	2070	1880	1800	1900	1900	1900	2000	1900	1800	1900	1900	1900	1900
Hardness	mg/L	-	-	-	-	-	-	-	-	-	26	25	26	25	25	26
Alkalinity (total as CaCO ₃)	mg/L	-	-	-	-	-	-	-	-	-	780	730	800	790	790	790
Alkalinity (pp as CaCO ₃)	mg/L	-	-	-	-	-	-	-	-	-	6.3	17	21	-	41	-
Ionic Balance	N/A	-	-	-	-	-	-	-	-	-	0.99	0.94	0.027	3.6	1.8	4.7
Water Nutrients																
Ammonia-N	mg/L	0.018-190 ⁴	0.50	0.89	0.499	0.456	0.89	0.87	0.85	0.97	0.63	0.86	0.86	0.61	0.66	0.81
TKN	mg/L	-	1.1	1.3	1.08	1.57	1.5	1.4	1.4	1.2	1.2	0.76	1.2	1.1	0.85	0.85
Hydrocarbons																
Benzene	mg/L	0.005	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	-	<0.00050	<0.00050	<0.0010	<0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	-	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	-	<0.05	<0.050	<0.25	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics																
COD	mg/L	-	34	41	35.1	30.4	40	48	49	43	34	39	30	32	40	31
TOC	mg/L	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	11	201	11.5	12	9.5	10	11	11	11	14	11	13	12
Oil & Grease	mg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	0.0043	0.073	0.029	0.006	0.0036	0.022
Antimony	mg/L	0.006	0.0014	-	-	<0.00040	<0.006	<0.0030	0.0017	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	0.0024	0.0028	0.003	0.0027	0.0023	0.0025
Barium	mg/L	1	0.014	0.01	0.0163	0.0132	0.01	0.044	0.013	0.025	0.011	0.014	0.016	0.014	0.013	0.014
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Boron	mg/L	1	-	-	-	-	-	-	-	-	0.77	0.75	0.83	0.82	0.81	0.79
Cadmium	mg/L	0.00004-0.00037 ²	<0.0001	<0.001	<0.0010	<0.000050	<0.000050	0.000027	0.000026	<0.000025	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.005	<0.005	<0.0050	<0.0050	<0.01	<0.0050	<0.0010	0.0031	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	<0.002	<0.002	<0.0020	<0.0020	<0.003	<0.0015	<0.00030	0.00066	<0.00030	0.00043	<0.00030	<0.00030	<0.00030	<0.00030
Copper	mg/L	0.007	0.002	0.004	0.0026	0.0027	<0.002	0.0038	0.0014	0.0019	0.0053	0.00098	0.0003	0.00047	0.00024	0.00059
Lead	mg/L	0.001-0.007 ²	<0.0001	<0.005	<0.0050	0.00012	<0.002	0.0015	<0.00020	0.00077	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	-	-	-	-	-	-	-	-	0.11	0.12	-	-	0.12	-
Manganese	mg/L	0.05	-	-	-	-	-	-	-	-	0.013	0.011	0.012	0.011	0.011	0.012
Mercury	mg/L	0.000005	<0.0001	<0.0001	<0.00010	<0.00010	<0.000005	0.0000022	<0.0000050	<0.0000050	<0.0000050	0.0000021	<0.0000020	0.0000023	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.010	0.005	<0.0050	<0.0050	0.003	0.0031	0.0028	0.0019	0.0013	0.0023	0.0019	0.0015	0.0012	0.0012
Nickel	mg/L	0.007-0.170 ²	0.003	<0.002	0.0027	<0.0020	<0.005	0.0068	0.002	0.003	0.0012	0.0033	0.0014	0.00073	<0.00050	0.00054
Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	0.23	0.28	0.16	-	0.19	-
Selenium	mg/L	0.002	-	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	-	-	-	-	-	-	-	-	3.9	3.5	4	-	3.9	-
Silver	mg/L	0.0001	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	-	-	-	-	-	-	-	-	0.20	0.21	0.22	-	0.21	-
Sulphur	mg/L	-	-	-	-	-	-	-	-	-	220	200	240	-	220	-
Thallium	mg/L	-	-	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.0002	-	<0.00020	-
Tin	mg/L	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Titanium	mg/L	-	-	-	-	-	-	-	-	-	<0.0010	0.0017	<0.001	-	<0.0010	-
Uranium	mg/L	0.01	-	-	-	-	-	-	-	-	0.00055	0.00065	0.00057	0.00055	0.00054	0.00058
Vanadium	mg/L	-	-	-	-	-	-	-	-	-	0.0020	0.020	0.0092	-	<0.0010	-
Zinc	mg/L	0.03	0.011	0.008	0.0217	0.0045	<0.03	<0.015	0.0057	0.0049	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

*- No applicable guideline or not analyzed

Equipment Failure, parameter not reported (EF)

Detection limit adjusted (*)

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E27A: Chemical Analysis Results - Ryley Integrated Waste Management Facility

Parameter ID	Units	Regulatory Limits ¹	MW 27A													
			Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Volatile Organic Compounds (VOCs)																
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Equipment Failure, parameter not reported (EF)

Detection limit adjusted (*)

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E27B: Chemical Analysis Results - Ryley Integrated Waste Management Facility

Parameter ID	Units	Regulatory Limits ¹	MW 27B													
			Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements																
Field pH	-	-	7.23	7.818	7.6	7.96	7.86	7.62	6.2	7.5	8.1	7.74	7.6	7.4	7.60	7.40
Field EC	mS	-	20.75	8.250	>3.999	2.4	10.47	4.53	12.45	11.56	11.53	11.53	11.41	12.54	11.47	11.57
Field Temperature	°C	-	9.66	4.7	10.5	13.4	13	10.9	10.1	9.8	9.1	7.8	8.3	6.9	11.2	8.3
Routine Water																
pH	-	6.5 - 8.5	8.2	8.2	8.4	8.33	8.15	8.07	8.38	8.14	7.97	8.19	8.1	7.96	8.22	8.12
Conductivity (EC)	µS/cm	1000	9620	8440	8320	8240	10,000	10,000	11,000	11,000	11,000	11,000	12,000	12,000	12,000	12,000
Calcium	mg/L	-	91.5	83.4	74.4	71.2	100	130	110	130	140	140	150	140	140	
Magnesium	mg/L	-	85.6	53	45.8	40.7	82	96	96	110	100	100	130	110	120	110
Sodium	mg/L	200	2530	2170	1980	1930	2600	2900	2900	2800	2700	2700	3100	3100	3000	3200
Potassium	mg/L	-	8.6	4.1	9.01	8.13	9.1	9.5	9.3	9.2	11	11	11	11	10	10
Iron	mg/L	0.3	<0.005	<0.005	<0.0050	0.048	<0.06	0.088	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Sulphate	mg/L	128-429 ²	4520	3610	3580	3280 *	4700	5600	6000	6100	5100	5300	5100	5400	5300	5500
Chloride	mg/L	100	41	41	35.6	28 *	37	36	37	40	35	42	51	49	74	94
Bicarbonate	mg/L	-	1420	1380	1270	1250	1400	1500	1600	1700	1700	1600	1900	1800	1800	1600
Carbonate	mg/L	-	<5	<5	25.7	12.5	<0.5	<0.50	27	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.1	0.1	0.448	<1.0 *	0.11	0.11	0.35	0.29	1.1	0.91	1.5	1	<0.10	1.4
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	-	-	-	-	-	-	0.01	0.014	0.21	<0.1	0.029	0.022
Nitrate and Nitrite (N)	mg/L	-	-	-	-	-	-	-	-	-	1.1	0.92	-	1	0.029	1.5
Total Dissolved Solids (TDS)	mg/L	500	7970	6640	6370	5990	8200	9500	9900	10,000	9000	9100	9400	9700	9600	9900
Hardness	mg/L	-	-	-	-	-	-	-	-	-	740	770	860	830	820	830
Alkalinity (total as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	1400	1300	1500	1500	1500	1300
Alkalinity (pp as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	<0.50	<0.50	<0.5	-	<1.0	-
Ionic Balance	N/A	-	-	-	-	-	-	-	-	-	0.99	0.97	4.4	2.5	2.1	4.8
Water Nutrients																
Ammonia-N	mg/L	0.018-190 ⁴	0.63	0.98	0.571	0.625	0.72	0.6	0.53	0.51	0.15	0.42	0.67	0.16	0.20	0.17
TKN	mg/L	-	1.3	1.5	1.33	1.71	1.7	1.4	0.49	1.5	1.0	0.55	1.4	1.1	0.99	0.85
Hydrocarbons																
Benzene	mg/L	0.005	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	-	<0.00050	<0.00050	<0.00050	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	-	<0.00050	<0.00050	<0.0010	<0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	-	<0.1	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	-	<0.05	<0.050	<0.25	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics																
COD	mg/L	-	33	31	37.6	20.9	45	43	42	64	35	37	43	43	37	33
TOC	mg/L	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	11	253	10.2	12	12	14	13	13	15	18	13	16	14
Oil & Grease	mg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	-	-	-	-	-	-	<0.060	0.0056	0.01	0.0031	0.0093	<0.0030
Antimony	mg/L	0.006	0.0013	-	-	0.00049	<0.006	<0.012	<0.012	<0.012	<0.012	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	<0.0040	0.0020	0.0019	0.0018	0.0017	0.0017
Barium	mg/L	1	0.040	0.02	0.019	0.0194	0.02	0.013	0.013	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	<0.0020	<0.0010	<0.001	-	<0.0010	-
Boron	mg/L	1	-	-	-	-	-	-	-	-	0.42	0.43	0.46	0.45	0.45	0.39
Cadmium	mg/L	0.00004-0.00037 ²	0.0001	<0.001	<0.0010	0.00013	0.00006	<0.10	0.00011	<0.0001	<0.00040	0.00004	0.000022	0.000027	0.000026	0.000028
Chromium	mg/L	0.05	<0.005	<0.005	<0.0050	<0.0050	<0.01	<0.020	<0.020	<0.020	<0.020	0.0011	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.006	<0.002	<0.0020	<0.0020	<0.003	<0.0060	<0.0060	<0.0060	<0.0060	0.0011	0.0012	0.0011	0.0011	-
Copper	mg/L	0.007	0.006	0.009	0.0079	0.0089	<0.002	0.0073	<0.0040	<0.0040	<0.0040	0.0010	<0.00020	0.00067	0.00051	0.00041
Lead	mg/L	0.001-0.007 ²	<0.0001	<0.005	<0.0050	0.00075	<0.002	<0.0040	<0.0040	<0.0040	<0.0040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	-	-	-	-	-	-	-	-	0.48	0.49	-	-	0.54	-
Manganese	mg/L	0.05	-	-	-	-	-	-	-	-	0.052	0.052	0.062	0.053	0.051	0.056
Mercury	mg/L	0.000005	0.0002	<0.0001	<0.00010	<0.00010	<0.000005	<0.0020	<0.0000050	<0.0000050	<0.0000050	<0.0000020	<0.0000020	0.0000035	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.005	0.007	0.0057	<0.0050	0.002	<0.0040	<0.0040	<0.0040	<0.0040	0.0022	0.0018	0.0022	0.0016	0.0016
Nickel	mg/L	0.007-0.170 ³	0.019	0.009	0.0068	0.006	<0.005	<0.010	<0.010	<0.010	<0.010	0.0077	0.0051	0.005	0.0048	0.005
Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	<1.0	0.14	<1	-	<1.0	-
Selenium	mg/L	0.002	-	-	-	-	-	-	-	-	<0.0040	0.00039	0.0002	0.00033	<0.00020	<0.00020
Silicon	mg/L	-	-	-	-	-	-	-	-	-	4.2	4.2	4.5	-	4.5	-
Silver	mg/L	0.0001	-	-	-	-	-	-	-	-	<0.0020	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	-	-	-	-	-	-	-	-	4.0	3.8	4.5	-	4.7	-
Sulphur	mg/L	-	-	-	-	-	-	-	-	-	1700	1900	1900	-	1800	-
Thallium	mg/L	-	-	-	-	-	-	-	-	-	<0.0040	<0.00020	<0.0002	-	<0.00020	-
Tin	mg/L	-	-	-	-	-	-	-	-	-	<0.020	<0.0010	<0.001	-	<0.0010	-
Titanium	mg/L	-	-	-	-	-	-	-	-	-	<0.020	<0.0010	<0.001	-	<0.0010	-
Uranium	mg/L	0.01	-	-	-	-	-	-	-	-	0.0021	0.0025	0.0034	0.0021	0.0024	0.0023
Vanadium	mg/L	-	-	-	-	-	-	-	-	-	<0.020	0.0070	0.0054	-	<0.0010	-
Zinc	mg/L	0.03	0.018	0.01	0.007	0.0096	<0.03	<0.060	<0.060	<0.060	<0.060	0.0048	<0.0030	<0.0030	<0.0030	<0.0030

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 * - No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
 - Detection limit greater than Tier 1 Guideline

Table E27B: Chemical Analysis Results - Ryley Integrated Waste Management Facility

Parameter ID	Units	Regulatory Limits ¹	MW 27B														
			Oct-07	May-08	May-09	Jun-10	Jun-11	May-12	Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	
Polycyclic Aromatic Hydrocarbons (PAHs)																	
Benzo[a]pyrene equivalency	mg/L	0.00004	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	-	<0.000010	-
Acenaphthene	mg/L	0.006	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010	-
Acridine	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.00020	<0.000050	-	<0.000040	-
Anthracene	mg/L	0.0034	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010	-
Benzo[a]anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085	-
Benzo[a] pyrene	mg/L	0.0018	-	-	-	-	-	-	-	-	-	-	<0.000075	<0.000075	-	<0.000075	-
Benzo[b+]/fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085	-
Benzo[c]phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050	-
Benzo[e]pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050	-
Benzo[g,h,i]perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085	-
Benzo[k]fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085	-
Dibenz[a,h]anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000075	<0.000075	-	<0.000075	-
Fluoranthene	mg/L	0.24	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010	-
Fluorene	mg/L	0.0042	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050	-
Indeno[1,2,3-c,d]pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000085	<0.000085	-	<0.000085	-
1-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010	-
Naphthalene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	-	<0.00010	-
Perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050	-
Phenanthrene	mg/L	0.00086	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	-	<0.000050	-
Pyrene	mg/L	0.71	-	-	-	-	-	-	-	-	-	-	<0.000020	<0.000020	-	<0.000020	-
Quinoline	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.00020	<0.00020	-	<0.00020	-
Volatile Organic Compounds (VOCs)																	
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropane (cis)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropane (trans)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050

Notes:
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² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 * - No applicable guideline or not analyzed
 Equipment Failure, parameter not reported (EF)
 Detection limit adjusted (*)
 Exceeds Regulatory Limit
italic - Detection limit greater than Tier 1 Guideline

Table E28A: Chemical Analysis Results - Ryley Integrated Waste Management Facility

Parameter ID	Units	Regulatory Limits ¹	MW 28A							
			Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements										
Field pH	-	-	8.28	8.4	8.4	8.51	8.5	7.94	8.47	8.27
Field EC	mS	-	3.66	3.63	3.59	3.38	3.49	3.38	3.62	3.39
Field Temperature	°C	-	10	6.2	8.5	7.7	6.7	8.6	11.2	8.9
Routine Water										
pH	-	6.5 - 8.5	8.48	8.46	8.34	8.54	8.47	8.43	8.57	8.38
Conductivity (EC)	µS/cm	1000	3400	3400	3400	3300	3300	3300	3400	3300
Calcium	mg/L	-	14	13	13	12	13	12	12	13
Magnesium	mg/L	-	1.5	1.4	1.3	1.1	1.2	1.2	1.1	1.3
Sodium	mg/L	200	820	850	870	800	810	860	810	850
Potassium	mg/L	-	2.6	2.5	3.1	2.6	2.7	2.5	2.5	2.6
Iron	mg/L	0.3	<0.060	0.29	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Sulphate	mg/L	128-429 ²	1200	1200	1100	1000	1000	1000	960	1200
Chloride	mg/L	100	5	5.3	5.0	5.2	5	4.7	5.2	4.8
Bicarbonate	mg/L	-	820	830	850	780	850	850	800	790
Carbonate	mg/L	-	18	19	3.4	16	13	15	34	6.4
Hydroxide	mg/L	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.037	0.027	<0.010	0.066	0.044	0.047	0.041	0.13
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	0.012	0.030	<0.033	0.037	0.046	0.017
Nitrate and Nitrite (N)	mg/L	-	-	-	0.012	0.096	-	0.084	0.087	0.15
Total Dissolved Solids (TDS)	mg/L	500	2400	2500	2400	2200	2300	2300	2200	2500
Hardness	mg/L	-	-	-	38	35	36	35	36	38
Alkalinity (total as CaCO ₃)	mg/L	-	-	-	710	660	720	720	710	710
Alkalinity (pp as CaCO ₃)	mg/L	-	-	-	2.8	13	11	-	29	-
Ionic Balance	N/A	-	-	-	1.1	1.0	0.99	3.6	2.4	0.65
Water Nutrients										
Ammonia-N	mg/L	0.018-190 ⁴	1.2	1.3	1.1	1.2	1.4	1.1	1.3	1.2
TKN	mg/L	-	1.6	1.6	1.6	1.7	1.6	1.5	1.7	1.3
Hydrocarbons										
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics										
COD	mg/L	-	47	42	39	31	28	31	39	18
TOC	mg/L	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	11	9.6	8.5	10	12	9	11	9.1
Oil & Grease	mg/L	-	-	-	-	-	-	-	-	-
Metals										
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	0.0046	0.012	0.005	<0.003	0.013	0.014
Antimony	mg/L	0.006	0.00061	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	-	-	0.001	0.00084	0.00053	0.00085	0.00064	0.00073
Barium	mg/L	1	0.013	0.015	<0.010	<0.010	<0.010	<0.010	0.011	<0.010
Beryllium	mg/L	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Boron	mg/L	1	-	-	0.74	0.77	0.82	0.8	0.80	0.78
Cadmium	mg/L	0.00004-0.00037 ²	<0.000025	<0.000025	<0.000020	<0.000020	<0.000020	<0.00002	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.00069	0.00062	<0.00030	0.00039	<0.00030	<0.00030	<0.00030	<0.00030
Copper	mg/L	0.007	0.0013	0.0021	0.00044	0.00085	<0.00020	0.00041	0.00098	0.0005
Lead	mg/L	0.001-0.007 ²	<0.00020	0.00022	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	-	-	0.13	0.14	-	-	0.14	-
Manganese	mg/L	0.05	-	-	0.029	<0.0040	0.019	0.023	0.019	0.027
Mercury	mg/L	0.000005	<0.000010	<0.0000050	<0.0000050	<0.0000020	<0.0000020	<0.000002	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.0035	0.0026	0.0021	0.0017	0.0016	0.0023	0.0014	-
Nickel	mg/L	0.007-0.170 ²	0.0027	0.0024	0.0014	0.0018	0.00082	0.00079	0.00086	-
Phosphorus	mg/L	-	-	-	<0.10	0.12	<0.1	-	<0.10	-
Selenium	mg/L	0.002	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	-	-	3.6	3.3	4	-	3.9	-
Silver	mg/L	0.0001	-	-	<0.00010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	-	-	0.29	0.31	0.31	-	0.30	-
Sulphur	mg/L	-	-	-	330	300	340	-	320	-
Thallium	mg/L	-	-	-	<0.00020	<0.00020	<0.0002	-	<0.00020	-
Tin	mg/L	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Titanium	mg/L	-	-	-	<0.0010	<0.0010	<0.001	-	<0.0010	-
Uranium	mg/L	0.01	-	-	0.00056	0.00031	0.00025	0.00051	0.00031	0.00039
Vanadium	mg/L	-	-	-	<0.0010	0.0029	0.0016	-	<0.0010	-
Zinc	mg/L	0.03	<0.0030	0.0039	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.003
Volatile Organic Compounds (VOCs)										
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Bromofom	mg/L	-	-	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Equipment Failure, parameter not reported (EF)

Detection limit adjusted (*)

Exceeds Regulatory Limit

italic - Detection limit greater than Tier 1 Guideline

Table E28B: Chemical Analysis Results - Ryley Integrated Waste Management Facility

Parameter ID	Units	Regulatory Limits ¹	MW 28B							
			Jun-13	May-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements										
Field pH	-	-	7.55	7.4	7.8	7.58	7.5	7.3	7.46	7.45
Field EC	mS	-	11.63	12.78	13.02	12.86	13	14	12.49	12.83
Field Temperature	°C	-	9.1	6.5	7.2	7.8	6.2	7.4	9.5	7.1
Routine Water										
pH	-	6.5 - 8.5	8.07	8.08	7.9	8.14	8.08	7.86	8.11	8.1
Conductivity (EC)	µS/cm	1000	12000	12000	12,000	13,000	12,000	13,000	13,000	13,000
Calcium	mg/L	-	210	230	220	210	220	230	240	240
Magnesium	mg/L	-	60	89	95	93	100	110	120	100
Sodium	mg/L	200	2700	3200	3000	2800	3200	3300	3600	3500
Potassium	mg/L	-	9.4	11	13	13	12	12	13	12
Iron	mg/L	0.3	<0.060	<0.60	<0.60	<0.060	<0.60	<0.60	<0.60	<0.60
Sulphate	mg/L	128-429 ²	6500	6900	6500	6700	5700	6500	6200	6600
Chloride	mg/L	100	34	37	35	33	30	28	27	27
Bicarbonate	mg/L	-	1000	1100	1100	1000	1100	1000	1000	960
Carbonate	mg/L	-	<0.5	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	-	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.16	0.075	0.24	0.31	<0.22	0.39	<0.010	0.36
Nitrite (N)	mg/L	0.02 - 0.20 ³	-	-	0.094	0.038	0.38	0.043	0.038	0.026
Nitrate and Nitrite (N)	mg/L	-	-	-	0.34	0.35	-	0.43	0.038	1.9
Total Dissolved Solids (TDS)	mg/L	500	10,000	11,000	10,000	10,000	9,700	11,000	11,000	11,000
Hardness	mg/L	-	-	-	940	920	960	1000	1100	1000
Alkalinity (total as CaCO ₃)	mg/L	-	-	-	900	840	870	860	840	790
Alkalinity (pp as CaCO ₃)	mg/L	-	-	-	<0.50	<0.50	<0.5	-	<1.0	-
Ionic Balance	N/A	-	-	-	0.95	0.91	7.3	3.5	9.8	5.3
Water Nutrients										
Ammonia-N	mg/L	0.018-190 ⁴	2	1.6	1.2	1.4	1.6	1.1	1.1	1.5
TKN	mg/L	-	2.8	2.5	2.0	2.1	2.1	1.7	2.0	1.9
Hydrocarbons										
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics										
COD	mg/L	-	45	61	45	48	35	37	45	41
TOC	mg/L	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	19	15	16	17	17	14	15	14
Oil & Grease	mg/L	-	-	-	-	-	-	-	-	-
Metals										
Aluminum	mg/L	0.0007 / 0.05 ⁵	-	-	<0.060	0.011	0.0039	<0.003	<0.0030	<0.0030
Antimony	mg/L	0.006	0.00091	<0.012	<0.012	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	-	-	<0.0040	0.00044	0.0004	0.00038	0.00030	0.00026
Barium	mg/L	1	0.033	<0.10	<0.10	0.010	<0.10	<0.10	<0.10	0.014
Beryllium	mg/L	-	-	-	<0.020	<0.0010	<0.001	-	<0.0010	-
Boron	mg/L	1	-	-	0.44	0.45	0.44	0.44	0.52	0.39
Cadmium	mg/L	0.00004-0.00037 ²	0.00027	<0.00010	<0.00040	0.000034	0.000022	0.000024	0.000027	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.020	<0.020	0.0012	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.0051	<0.0060	<0.0060	0.0019	0.0015	0.0014	0.0013	-
Copper	mg/L	0.007	0.0021	<0.0040	<0.0040	0.0015	0.00033	0.00064	0.0014	0.0013
Lead	mg/L	0.001-0.007 ²	<0.00020	<0.0040	<0.0040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	-	-	0.58	0.61	-	-	0.70	-
Manganese	mg/L	0.05	-	-	0.27	0.25	0.25	0.25	0.25	0.31
Mercury	mg/L	0.000005	<0.000010	<0.0000050	<0.0000050	<0.0000020	<0.0000020	<0.0000022	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.0029	<0.0040	<0.0040	0.0009	0.00078	0.00087	0.00054	0.00059
Nickel	mg/L	0.007-0.170 ²	0.012	<0.010	<0.010	0.0049	0.0038	0.0034	0.0032	0.0032
Phosphorus	mg/L	-	-	-	<1.0	<1.0	<1	-	<1.0	-
Selenium	mg/L	0.002	-	-	<0.0040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	-	-	4.8	4.7	4.7	5.4	-	-
Silver	mg/L	0.0001	-	-	<0.0020	<0.00010	<0.0001	<0.0001	<0.00010	<0.00010
Strontium	mg/L	-	-	-	5.0	4.7	5.4	-	6.4	-
Sulphur	mg/L	-	-	-	2100	2200	2200	-	2500	-
Thallium	mg/L	-	-	-	<0.0040	<0.00020	<0.0002	-	<0.00020	-
Tin	mg/L	-	-	-	<0.020	<0.0010	<0.001	-	<0.0010	-
Titanium	mg/L	-	-	-	<0.020	<0.0010	<0.001	-	<0.0010	-
Uranium	mg/L	0.01	-	-	<0.0020	0.00062	0.00054	0.00047	0.00045	0.00056
Vanadium	mg/L	-	-	-	<0.020	0.0013	<0.001	-	<0.0010	-
Zinc	mg/L	0.03	0.0037	<0.060	<0.060	0.0052	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)										
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Equipment Failure, parameter not reported (EF)

Detection limit adjusted (*)

Exceeds Regulatory Limit

italic - Detection limit greater than Tier 1 Guideline

Table E29A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 29A					
			Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements								
Field pH	-	-	8.5	8.15	8.1	7.48	8.06	7.89
Field EC	mS	-	4.74	3.44	3.74	3.44	3.76	3.56
Field Temperature	°C	-	6.7	7.0	6.5	8.4	8.8	6.8
Routine Water								
pH	-	6.5 - 8.5	8.28	8.41	8.34	8.33	8.45	8.13
Conductivity (EC)	µS/cm	1000	4900	3400	3400	3400	3500	3500
Calcium	mg/L	-	72	33	32	30	32	37
Magnesium	mg/L	-	9.9	5.1	5.2	4.8	5.1	7.3
Sodium	mg/L	200	1200	810	810	850	810	840
Potassium	mg/L	-	7.4	4.1	4.1	3.8	3.7	3.9
Iron	mg/L	0.3	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Sulphate	mg/L	128-429 ²	2000	1200	1100	1100	1100	1200
Chloride	mg/L	100	7.3	3.3	3.6	3.2	3.5	3.6
Bicarbonate	mg/L	-	680	710	760	770	740	760
Carbonate	mg/L	-	<0.50	7.7	3	4.2	16	<1.0
Hydroxide	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.054	0.063	0.33	0.32	0.18	0.24
Nitrite (N)	mg/L	0.02 - 0.20 ³	0.084	0.014	1.1	0.026	0.089	0.08
Nitrate and Nitrate (N)	mg/L	-	0.14	0.077	-	0.35	0.27	0.32
Total Dissolved Solids (TDS)	mg/L	500	3600	2400	2400	2400	2300	2400
Hardness	mg/L	-	220	100	100	95	100	120
Alkalinity (total as CaCO3)	mg/L	-	560	590	630	640	630	620
Alkalinity (pp as CaCO3)	mg/L	-	<0.50	6.4	2.5	-	13	-
Ionic Balance	N/A	-	1.0	1.0	2	3.6	2.7	2.8
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	4.3	1.2	1.4	0.9	1.1	1.1
TKN	mg/L	-	16	1.3	1.6	1.3	1.7	1.5
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics								
COD	mg/L	-	1100	55	25	22	58	22
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	13	8.3	9.1	7.7	9.1	8.1
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.0048	0.0067	0.0079	0.0042	0.012	0.0057
Antimony	mg/L	0.006	0.0012	<0.00060	0.23	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0030	0.0011	0.00093	0.00076	0.00072	0.00071
Barium	mg/L	1	0.021	0.015	0.018	0.014	0.014	0.014
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	0.50	0.75	0.74	0.72	0.72	0.71
Cadmium	mg/L	0.00004-0.00037 ²	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.00044	0.00061	0.00046	<0.00030	0.00034	-
Copper	mg/L	0.007	0.0012	0.0020	0.00093	0.00098	0.0031	0.0049
Lead	mg/L	0.001-0.007 ²	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.26	0.22	0.23	0.22	0.21	-
Manganese	mg/L	0.05	0.081	0.064	0.06	0.051	0.050	0.059
Mercury	mg/L	0.000005	<0.0000050	<0.0000020	<0.000002	0.0000028	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.0091	0.0017	0.0019	0.0016	0.0015	0.0018
Nickel	mg/L	0.007-0.170 ²	0.0036	0.0020	0.0014	0.0011	0.0013	0.0013
Phosphorus	mg/L	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Selenium	mg/L	0.002	0.00039	0.00022	0.00027	0.00023	<0.00020	<0.00020
Silicon	mg/L	-	1.7	3.6	3.7	3.6	3.8	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	1.4	0.67	0.68	0.66	0.66	-
Sulphur	mg/L	-	740	400	390	370	360	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.0002	<0.00020	-
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Titanium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Uranium	mg/L	0.01	0.0093	0.0006	0.00055	0.00043	0.00047	0.00066
Vanadium	mg/L	-	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	-
Zinc	mg/L	0.03	<0.0030	<0.0030	<0.0030	<0.0030	0.0032	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Total Dissolved Solids, not a measured value (TDS)

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E29B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 29B					
			Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements								
Field pH	-	-	7.4	7.21	7.2	6.9	7.20	7.18
Field EC	mS	-	8.67	8.80	9.23	8.62	8.7	8.84
Field Temperature	°C	-	7.1	7.7	6	9	9.1	7.8
Routine Water								
pH	-	6.5 - 8.5	7.62	7.85	7.9	7.76	7.88	7.34
Conductivity (EC)	µS/cm	1000	8200	8400	8500	8600	8900	8700
Calcium	mg/L	-	520	560	530	530	440	440
Magnesium	mg/L	-	260	230	240	260	260	260
Sodium	mg/L	200	1400	1600	1600	1700	1700	1900
Potassium	mg/L	-	12	11	11	12	10	11
Iron	mg/L	0.3	<0.60	0.54	<0.60	<0.60	<0.60	<0.60
Sulphate	mg/L	128-429 ²	4700	5100	4700	5000	4900	5000
Chloride	mg/L	100	5.7	5.2	6	6.3	8.2	8.6
Bicarbonate	mg/L	-	570	520	550	560	570	570
Carbonate	mg/L	-	<0.50	<0.50	0<0.5	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.39	0.11	<0.22	0.13	<0.010	0.53
Nitrite (N)	mg/L	0.02 - 0.20 ³	0.027	0.025	<0.16	0.032	0.079	0.059
Nitrate and Nitrate (N)	mg/L	-	0.42	0.13	-	0.17	0.079	0.59
Total Dissolved Solids (TDS)	mg/L	500	7200	7700	7400	7800	7600	7900
Hardness	mg/L	-	2300	2400	2300	2400	2200	2200
Alkalinity (total as CaCO3)	mg/L	-	470	420	450	460	470	470
Alkalinity (pp as CaCO3)	mg/L	-	<0.50	<0.50	<0.50	-	<1.0	-
Ionic Balance	N/A	-	1.0	1.0	4.6	3.5	1.7	4.3
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	0.72	1.1	1.4	1.2	0.91	0.81
TKN	mg/L	-	4.5	0.96	1.8	1.9	1.5	1.1
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics								
COD	mg/L	-	150	41	45	76	56	34
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	17	15	18	14	17	15
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.0041	0.022	0.01	0.0049	<0.0030	<0.0030
Antimony	mg/L	0.006	0.0017	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0077	0.00054	0.00031	0.00035	<0.00020	0.00037
Barium	mg/L	1	<0.10	0.019	<0.10	<0.10	<0.10	0.1
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	<0.20	0.20	0.21	<0.20	0.20	0.19
Cadmium	mg/L	0.00004-0.00037 ²	0.00017	0.00082	0.00006	0.000057	0.000058	0.000046
Chromium	mg/L	0.05	<0.0010	0.0014	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.018	0.0056	0.0044	0.0041	0.0032	-
Copper	mg/L	0.007	0.0019	0.0019	0.00098	0.0009	0.0014	0.00055
Lead	mg/L	0.001-0.007 ²	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.55	0.65	0.67	0.68	0.61	-
Manganese	mg/L	0.05	0.77	0.85	0.88	0.96	0.80	0.81
Mercury	mg/L	0.000005	<0.0000050	0.0000043	<0.0000020	0.0000036	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.016	0.00045	0.00057	0.00043	0.00030	-
Nickel	mg/L	0.007-0.170 ²	0.048	0.0099	0.0075	0.0075	0.0055	0.0053
Phosphorus	mg/L	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium	mg/L	0.002	0.001	<0.00020	<0.00020	0.0002	<0.00020	<0.00020
Silicon	mg/L	-	4.4	5.3	5.6	5.4	5.2	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	6.9	7.9	8	8.2	8.6	-
Sulphur	mg/L	-	1600	1800	1700	1800	1700	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Titanium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Uranium	mg/L	0.01	0.019	0.0042	0.0061	0.0049	0.0042	0.005
Vanadium	mg/L	-	<0.0010	0.0015	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	mg/L	0.03	0.014	0.0051	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E30A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 30A					
			Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	May-20
Field Measurements								
Field pH	-	-	8.5	8.29	8.2	7.98	8.19	8.08
Field EC	mS	-	2.40	2.32	2.02	1.932	2.18	1.94
Field Temperature	°C	-	7.5	8.7	7	8.4	10.1	6.9
Routine Water								
pH	-	6.5 - 8.5	8.34	8.37	8.57	8.44	8.53	8.4
Conductivity (EC)	µS/cm	1000	2300	2200	1900	1900	2000	2000
Calcium	mg/L	-	16	12	8.9	7.9	8.3	8.8
Magnesium	mg/L	-	2.2	1.6	1.4	1.3	1.4	1.3
Sodium	mg/L	200	540	540	460	450	430	420
Potassium	mg/L	-	2.9	2.4	2.2	2.1	2.0	1.8
Iron	mg/L	0.3	0.44	0.63	<0.06	<0.060	<0.060	<0.060
Sulphate	mg/L	128-429 ²	510	510	360	350	350	360
Chloride	mg/L	100	5.3	3.0	1.3	1.5	1.3	2.2
Bicarbonate	mg/L	-	770	780	770	770	740	730
Carbonate	mg/L	-	3.5	5.3	17	12	23	7.9
Hydroxide	mg/L	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.013	0.16	0.19	0.1	0.086	0.088
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.033	0.046	0.081	<0.010	0.010	0.023
Nitrate and Nitrate (N)	mg/L	-	0.023	0.21	-	0.1	0.096	0.11
Total Dissolved Solids (TDS)	mg/L	500	1500	1500	1200	1200	1200	1200
Hardness	mg/L	-	48	36	28	25	26	27
Alkalinity (total as CaCO3)	mg/L	-	640	650	660	650	640	610
Alkalinity (pp as CaCO3)	mg/L	-	2.9	4.5	14	-	19	-
Ionic Balance	N/A	-	1.0	1.0	0.27	0.61	2.4	2.2
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	0.78	0.42	0.46	0.39	0.40	0.40
TKN	mg/L	-	2.6	1.1	0.8	0.75	0.76	0.79
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics								
COD	mg/L	-	130	43	23	57	24	22
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	15	9.9	7.8	7.1	8.7	7.3
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	1.0	3.8	0.011	0.0059	<0.0030	<0.0030
Antimony	mg/L	0.006	0.0008	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0037	0.0030	0.00089	0.00077	0.00059	0.00066
Barium	mg/L	1	0.028	0.025	0.015	0.013	0.011	0.012
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	0.43	0.52	0.40	0.38	0.39	0.37
Cadmium	mg/L	0.00004-0.00037 ²	0.00004	0.000026	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	0.0016	0.0045	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.0012	0.0012	<0.00030	<0.0003	<0.00030	<0.00030
Copper	mg/L	0.007	0.0056	0.0075	0.00034	0.00057	0.00065	0.0005
Lead	mg/L	0.001-0.007 ²	0.00077	0.00054	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.11	0.13	0.16	0.15	0.14	-
Manganese	mg/L	0.05	0.081	0.059	0.018	0.016	0.015	0.015
Mercury	mg/L	0.000005	<0.0000050	<0.0000020	<0.0000020	0.0000025	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.013	0.0082	0.0015	0.001	0.00080	0.00081
Nickel	mg/L	0.007-0.170 ²	0.013	0.010	0.0023	0.00065	0.00074	<0.00050
Phosphorus	mg/L	-	<0.10	0.11	0.1	<0.10	<0.10	<0.10
Selenium	mg/L	0.002	0.0012	0.00064	<0.00020	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	3.4	3.7	3.9	3.6	3.9	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	0.15	0.13	0.14	0.14	0.15	-
Sulphur	mg/L	-	190	170	120	120	120	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Titanium	mg/L	-	0.033	0.084	<0.0010	<0.0010	<0.0010	<0.0010
Uranium	mg/L	0.01	0.0063	0.0035	0.00018	0.00017	0.00011	<0.00010
Vanadium	mg/L	-	0.0034	0.0090	0.011	<0.0010	<0.0010	<0.0010
Zinc	mg/L	0.03	0.0034	0.0037	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

*- No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E30B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 30B					
			Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	May-20
Field Measurements								
Field pH	-	-	8.1	8.19	7.9	7.28	7.88	7.67
Field EC	mS	-	2.83	2.65	2.68	2.5	2.47	2.53
Field Temperature	°C	-	6.5	7.4	5.6	8.7	8.4	5.9
Routine Water								
pH	-	6.5 - 8.5	8.06	8.44	8.32	8.27	8.26	8.22
Conductivity (EC)	µS/cm	1000	2700	2600	2500	2500	2500	2500
Calcium	mg/L	-	29	26	24	22	22	23
Magnesium	mg/L	-	9.1	9.5	8.9	8	8.1	8.2
Sodium	mg/L	200	680	610	560	610	570	580
Potassium	mg/L	-	3.3	3.2	2.9	2.6	2.6	2.4
Iron	mg/L	0.3	<0.060	<0.060	<0.060	<0.060	0.13	<0.30
Sulphate	mg/L	128-429 ²	830	830	750	720	690	700
Chloride	mg/L	100	1.4	1.5	1.8	<1.0	1.9	2
Bicarbonate	mg/L	-	670	610	680	710	700	660
Carbonate	mg/L	-	<0.50	8.0	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	1.3	0.12	1.5	0.4	0.45	0.63
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	0.012	<0.033	<0.010	<0.010	0.017
Nitrate and Nitrate (N)	mg/L	-	1.3	0.13	-	0.4	0.45	0.65
Total Dissolved Solids (TDS)	mg/L	500	1900	1800	1700	1700	1600	1600
Hardness	mg/L	-	110	100	97	87	88	91
Alkalinity (total as CaCO3)	mg/L	-	550	520	560	580	570	540
Alkalinity (pp as CaCO3)	mg/L	-	<0.50	6.7	<0.5	-	<1.0	-
Ionic Balance	N/A	-	1.1	1.0	0.76	3.4	1.4	2.9
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	0.16	<0.050	<0.015	<0.015	0.056	<0.015
TKN	mg/L	-	0.49	0.40	0.6	0.62	0.62	0.68
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics								
COD	mg/L	-	110	44	38	55	32	29
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	8.4	9.1	10	8	9.6	8.4
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	<0.030	0.011	0.0039	<0.0030	0.18	0.025
Antimony	mg/L	0.006	<0.0060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0024	0.0010	0.00068	0.00068	0.00084	0.00096
Barium	mg/L	1	0.022	0.022	0.024	0.019	0.021	0.018
Beryllium	mg/L	-	<0.010	<0.0010	<0.001	<0.0010	<0.0010	-
Boron	mg/L	1	0.11	0.14	0.12	0.12	0.12	0.11
Cadmium	mg/L	0.00004-0.00037 ²	<0.00020	<0.00020	<0.00002	<0.00020	<0.00020	<0.00020
Chromium	mg/L	0.05	<0.010	0.0012	<0.001	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	<0.0030	<0.00030	<0.0003	<0.0003	<0.00030	<0.00030
Copper	mg/L	0.007	0.0035	0.0024	0.00083	0.00091	0.0014	0.00084
Lead	mg/L	0.001-0.007 ²	<0.0020	<0.00020	<0.0002	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.21	0.24	0.24	0.24	0.22	-
Manganese	mg/L	0.05	0.068	<0.0040	<0.004	<0.0040	0.0057	<0.0040
Mercury	mg/L	0.000005	<0.0000050	<0.0000020	<0.000002	0.0000033	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.0028	0.0011	0.00092	0.00089	0.00087	-
Nickel	mg/L	0.007-0.170 ²	0.0053	0.0023	0.001	0.00098	0.0029	0.00071
Phosphorus	mg/L	-	<0.10	<0.10	0.13	<0.10	<0.10	<0.10
Selenium	mg/L	0.002	<0.0020	0.00024	0.00046	0.0006	0.00058	0.00062
Silicon	mg/L	-	4.6	4.7	4.8	4.8	5.1	-
Silver	mg/L	0.0001	<0.0010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	0.37	0.33	0.35	0.33	0.32	-
Sulphur	mg/L	-	260	290	250	230	230	-
Thallium	mg/L	-	<0.0020	<0.00020	<0.0002	<0.00020	<0.00020	<0.00020
Tin	mg/L	-	<0.010	<0.0010	<0.001	<0.0010	<0.0010	<0.0010
Titanium	mg/L	-	<0.010	<0.0010	<0.001	<0.0010	0.0034	-
Uranium	mg/L	0.01	0.0053	0.0032	0.0038	0.0024	0.0030	0.0040
Vanadium	mg/L	-	<0.010	0.0019	<0.001	<0.0010	<0.0010	<0.0010
Zinc	mg/L	0.03	<0.030	0.0064	<0.003	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E31A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 31A					
			Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements								
Field pH	-	-	8.6	8.53	-	8.03	8.46	8.13
Field EC	mS	-	1.98	1.72	-	1.796	1.702	1.73
Field Temperature	°C	-	10.5	9.5	-	13.8	10.5	8.7
Routine Water								
pH	-	6.5 - 8.5	8.57	8.53	8.57	8.48	8.66	8.46
Conductivity (EC)	µS/cm	1000	1900	1800	1700	1700	1800	1800
Calcium	mg/L	-	7.8	4.5	4.9 *	4.9	3.5	4.4
Magnesium	mg/L	-	3.1	<2.0	0.52 *	0.51	0.35	0.43
Sodium	mg/L	200	420	430	470	440	410	470
Potassium	mg/L	-	3.2	<3.0	1.9 *	1.6	1.5	1.6
Iron	mg/L	0.3	9.0	<0.60	0.18 *	0.074	0.06	<0.060
Sulphate	mg/L	128-429 ²	220	120	76	67	58	51
Chloride	mg/L	100	12	6.7	5.2	11	8.5	4.9
Bicarbonate	mg/L	-	920	940	1000	1100	990	1000
Carbonate	mg/L	-	22	18	23	19	57	16
Hydroxide	mg/L	-	<0.50	<0.50	<0.5	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.017	2.0	14	1.5	1.9	1.8
Nitrite (N)	mg/L	0.02 - 0.20 ³	0.013	0.028	0.077	<0.010	<0.010	<0.010
Nitrate and Nitrate (N)	mg/L	-	0.03	2.0	3.2	1.5	1.9	1.8
Total Dissolved Solids (TDS)	mg/L	500	1100	1000	1100	1100	1000	1100
Hardness	mg/L	-	32	11	15	15	10	13
Alkalinity (total as CaCO3)	mg/L	-	790	800	880	900	910	880
Alkalinity (pp as CaCO3)	mg/L	-	19	15	19	-	48	-
Ionic Balance	N/A	-	0.94	1.0	3.2	2	3.9	4.7
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	1.1	1.1	1.2	0.52	0.61	0.47
TKN	mg/L	-	5.2	1.0	7.4	1.9	3.0	1.0
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics								
COD	mg/L	-	560	380	300	140	270	89
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	19	17	-	11	18	9.5
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	1.5	0.31	0.55 *	0.097	0.024	0.074
Antimony	mg/L	0.006	0.0013	<0.00060	0.00077 *	0.00065	0.00073	<0.00060
Arsenic	mg/L	0.005	0.0069	0.00088	0.0042 *	0.0035	0.0051	0.0028
Barium	mg/L	1	0.097	<0.10	0.085 *	0.05	0.051	0.054
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010 *	<0.0010	<0.0010	-
Boron	mg/L	1	0.58	0.66	0.74 *	0.76	0.75	0.8
Cadmium	mg/L	0.00004-0.00037 ²	0.000048	<0.000020	0.000025 *	<0.000020	0.000026	<0.000020
Chromium	mg/L	0.05	0.0017	<0.0010	<0.0010 *	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.0034	0.00039	0.0016 *	<0.00030	0.00050	-
Copper	mg/L	0.007	0.0093	0.00093	0.0046 *	0.0021	0.0020	0.0010
Lead	mg/L	0.001-0.007 ²	0.0021	0.00043	0.00043 *	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.064	<0.20	0.086 *	0.083	0.072	-
Manganese	mg/L	0.05	0.068	<0.040	0.036 *	<0.0040	0.027	0.021
Mercury	mg/L	0.000005	0.000008	0.000043	<0.000020 *	0.0000051	-	<0.0000019
Molybdenum	mg/L	-	0.023	0.0021	0.019 *	0.01	0.023	0.011
Nickel	mg/L	0.007-0.170 ²	0.020	0.0026	0.012 *	0.0033	0.0056	0.0031
Phosphorus	mg/L	-	0.12	<1.0	<0.10 *	<0.10	0.12	-
Selenium	mg/L	0.002	0.0013	<0.00020	0.00078 *	0.00051	0.00054	0.00024
Silicon	mg/L	-	55	2.7	3.1 *	2.8	2.6	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010 *	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	0.10	<0.20	0.11 *	0.078	0.07	-
Sulphur	mg/L	-	75	40	24 *	21	17	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020 *	<0.00020	<0.00020	-
Tin	mg/L	-	<0.0010	<0.0010	<0.0010 *	<0.0010	<0.0010	-
Titanium	mg/L	-	0.030	0.0032	0.0094 *	0.0014	<0.0010	-
Uranium	mg/L	0.01	0.0095	0.00054	0.0041 *	0.0039	0.0032	0.0029
Vanadium	mg/L	-	0.0028	<0.0010	0.0013 *	<0.0010	<0.0010	-
Zinc	mg/L	0.03	0.0051	<0.0030	<0.0030 *	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

*- No applicable guideline or not analyzed

Exceeds Regulatory Limit

Laboratory filtered (*)

Italic - Detection limit greater than Tier 1 Guideline

Table E31B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 31B					
			Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements								
Field pH	-	-	8.4	8.33	8.1	7.55	8.15	7.78
Field EC	mS	-	2.53	2.50	2.66	2.72	2.71	2.75
Field Temperature	°C	-	8.0	9.4	8.1	9.5	10.3	7.6
Routine Water								
pH	-	6.5 - 8.5	8.29	8.56	8.4	8.39	8.45	8.29
Conductivity (EC)	µS/cm	1000	2400	2500	2500	2700	2800	2700
Calcium	mg/L	-	15	15	14	15	17	18
Magnesium	mg/L	-	4.3	5.4	5.6	5.7	6.4	7
Sodium	mg/L	200	550	590	570	660	630	650
Potassium	mg/L	-	3.7	3.6	3.3	3.4	3.5	3.6
Iron	mg/L	0.3	0.75	0.26	<0.060	<0.060	0.22	<0.060
Sulphate	mg/L	128-429 ²	670	750	780	850	850	900
Chloride	mg/L	100	1.1	1.4	1.4	<1.0	2.0	1.6
Bicarbonate	mg/L	-	690	610	640	630	610	580
Carbonate	mg/L	-	<0.50	13	5.2	7.2	12	<1.0
Hydroxide	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.046	<0.010	0.8	0.14	0.15	0.17
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	<0.010	<0.033	<0.010	<0.010	<0.010
Nitrate and Nitrate (N)	mg/L	-	0.046	<0.020	-	0.14	0.15	0.17
Total Dissolved Solids (TDS)	mg/L	500	1600	1700	1700	1900	1800	1900
Hardness	mg/L	-	55	59	59	61	68	73
Alkalinity (total as CaCO3)	mg/L	-	570	520	530	530	520	480
Alkalinity (pp as CaCO3)	mg/L	-	<0.50	11	4.3	-	9.6	-
Ionic Balance	N/A	-	0.99	1.0	1.7	2.6	1.2	2.6
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	0.59	0.13	0.034	<0.015	0.02	0.015
TKN	mg/L	-	2.2	0.38	0.51	0.4	0.51	0.46
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	0.12	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics								
COD	mg/L	-	140	28	30	24	31	33
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	9	8.2	8.8	7.7	10	7.5
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.70	0.084	0.011	0.0038	0.12	0.0032
Antimony	mg/L	0.006	0.00095	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0094	0.0017	0.0011	0.0011	0.0011	0.00099
Barium	mg/L	1	0.024	0.023	0.022	0.018	0.019	0.018
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	0.16	0.20	0.17	0.18	0.17	0.18
Cadmium	mg/L	0.00004-0.00037 ²	<0.00002	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.0021	0.00053	<0.0003	<0.00030	<0.00030	<0.00030
Copper	mg/L	0.007	0.0022	0.0022	0.00027	0.00064	0.0017	0.00082
Lead	mg/L	0.001-0.007 ²	0.00048	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.12	0.16	0.15	0.16	0.15	-
Manganese	mg/L	0.05	0.061	0.041	0.017	0.01	0.015	<0.0040
Mercury	mg/L	0.000005	<0.0000050	0.0000027	<0.0000020	0.0000035	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.0058	0.0015	0.0014	0.0013	0.0014	-
Nickel	mg/L	0.007-0.170 ²	0.0086	0.0033	0.00081	0.0008	0.0011	0.00067
Phosphorus	mg/L	-	<0.10	<0.10	0.13	<0.10	<0.10	<0.10
Selenium	mg/L	0.002	0.00064	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	5.2	3.9	3.6	3.6	3.9	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	0.17	0.23	0.24	0.27	0.27	-
Sulphur	mg/L	-	220	270	250	270	280	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Titanium	mg/L	-	0.018	<0.0010	<0.0010	<0.0010	0.0025	-
Uranium	mg/L	0.01	0.0034	0.00099	0.0012	0.0008	0.00098	0.0011
Vanadium	mg/L	-	0.0024	0.0011	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	mg/L	0.03	<0.0030	0.0078	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E32A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 32A					
			Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	May-20
Field Measurements								
Field pH	-	-	8.2	7.79	7.6	7.51	7.65	7.74
Field EC	mS	-	8.66	7.91	8.49	13.26	8.1	8.1
Field Temperature	°C	-	7.6	8.2	7.3	11.7	11.5	8.1
Routine Water								
pH	-	6.5 - 8.5	8.16	8.25	8.12	8	8.04	8.12
Conductivity (EC)	µS/cm	1000	8200	8100	8000	8100	8200	8000
Calcium	mg/L	-	120	120	120	120	120	110
Magnesium	mg/L	-	15	15	15	16	<20	12
Sodium	mg/L	200	2000	2000	2000	2100	1900	2000
Potassium	mg/L	-	11	8.4	7.7	8	<30	6.5
Iron	mg/L	0.3	<0.60	0.12	<0.60	<0.60	<0.60	<0.60
Sulphate	mg/L	128-429 ²	4100	3900	3400	3500	3300	3200
Chloride	mg/L	100	8.9	3.1	3.2	2.8	3.7	4.1
Bicarbonate	mg/L	-	960	980	1000	1000	1000	810
Carbonate	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.010	<0.050	<0.22	0.058	<0.20	0.11
Nitrite (N)	mg/L	0.02 - 0.20 ³	0.013	<0.050	0.71	0.017	<0.20	0.26
Nitrate and Nitrate (N)	mg/L	-	0.013	<0.020	-	0.075	<0.28	0.37
Total Dissolved Solids (TDS)	mg/L	500	6700	6500	6100	6300	5900	5800
Hardness	mg/L	-	370	360	350	360	300	320
Alkalinity (total as CaCO3)	mg/L	-	790	800	850	840	820	670
Alkalinity (pp as CaCO3)	mg/L	-	<0.50	<0.50	<0.50	-	<1.0	-
Ionic Balance	N/A	-	0.92	1.0	4.4	4.5	2.8	7.6
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	3.5	2.9	3.2	2.8	2.9	3
TKN	mg/L	-	6.8	3.2	3.2	3.2	3.2	3.1
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	0.0011	0.0011
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	0.00043	0.00043
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	0.0026	0.0026
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	0.28
Organics								
COD	mg/L	-	410	26	19	39	39	26
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	12	7.9	7.2	7.6	7.8	8.9
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	<0.030	0.029	0.008	0.008	<0.0030	<0.0030
Antimony	mg/L	0.006	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Arsenic	mg/L	0.005	0.0041	0.00051	0.00037	0.00035	0.00039	0.00061
Barium	mg/L	1	<0.10	0.015	<0.10	<0.10	<1.0	0.021
Beryllium	mg/L	-	<0.010	<0.010	<0.010	<0.010	<0.010	-
Boron	mg/L	1	0.85	1.2	1.2	1.2	1.1	0.94
Cadmium	mg/L	0.00004-0.00037 ²	<0.00020	<0.00020	0.00021	0.00021	<0.00020	0.00027
Chromium	mg/L	0.05	<0.010	0.0015	<0.010	<0.010	<0.010	<0.010
Cobalt	mg/L	-	<0.0030	0.00077	0.00062	0.00044	0.00047	-
Copper	mg/L	0.007	<0.0020	0.0031	0.00073	0.0082	0.0016	0.0012
Lead	mg/L	0.001-0.007 ²	<0.0020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.36	0.47	0.49	0.45	<2.0	-
Manganese	mg/L	0.05	0.15	0.12	0.14	0.12	0.11	0.16
Mercury	mg/L	0.000005	<0.0000050	0.0000023	<0.0000020	0.0000032	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.014	0.00054	0.00068	0.00069	0.00064	-
Nickel	mg/L	0.007-0.170 ²	0.011	0.0032	0.0016	0.0026	0.0011	0.0018
Phosphorus	mg/L	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium	mg/L	0.002	<0.0020	<0.00020	<0.00020	<0.00020	0.00025	<0.00020
Silicon	mg/L	-	2.4	5.2	5.3	5.2	<10	-
Silver	mg/L	0.0001	<0.0010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	2.6	2.9	3.0	3.0	2.8	-
Sulphur	mg/L	-	1300	1300	1300	1300	1300	-
Thallium	mg/L	-	<0.0020	<0.00020	<0.00020	<0.00020	<0.00020	-
Tin	mg/L	-	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	-
Titanium	mg/L	-	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	-
Uranium	mg/L	0.01	0.0080	0.00016	0.00014	0.00013	0.00011	0.00042
Vanadium	mg/L	-	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	-
Zinc	mg/L	0.03	<0.030	0.015	<0.0030	0.0091	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E32B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 32B					
			Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	May-20
Field Measurements								
Field pH	-	-	7.7	7.69	7.4	7.48	7.50	7.03
Field EC	mS	-	12.55	13.26	13.01	8	12.01	12.22
Field Temperature	°C	-	7.6	9.1	6.8	9.6	11.7	8.5
Routine Water								
pH	-	6.5 - 8.5	7.73	7.97	7.98	7.82	7.98	7.92
Conductivity (EC)	µS/cm	1000	12,000	13,000	12,000	12,000	12,000	12,000
Calcium	mg/L	-	210	230	210	220	220	220
Magnesium	mg/L	-	100	120	100	110	92	96
Sodium	mg/L	200	2800	3200	3000	3200	2900	3200
Potassium	mg/L	-	18	17	15	16	<30	14
Iron	mg/L	0.3	<0.60	<0.60	<0.60	<0.60	<0.60	0.22
Sulphate	mg/L	128-429 ²	6300	6800	5700	6400	5700	4500
Chloride	mg/L	100	110	120	120	130	130	140
Bicarbonate	mg/L	-	1300	1300	1300	1300	1200	1100
Carbonate	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.050	<0.050	<0.22	0.14	<0.10	0.17
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.050	<0.050	<0.16	0.073	<0.10	0.11
Nitrate and Nitrate (N)	mg/L	-	<0.050	<0.020	-	0.22	<0.14	0.28
Total Dissolved Solids (TDS)	mg/L	500	10,000	11,000	9,800	11,000	9700	8700
Hardness	mg/L	-	930	1100	950	1000	930	940
Alkalinity (total as CaCO3)	mg/L	-	1100	1100	1000	1000	1000	930
Alkalinity (pp as CaCO3)	mg/L	-	<0.50	<0.50	<0.50	-	<1.0	-
Ionic Balance	N/A	-	0.91	0.97	1.9	1.1	0.83	14
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	1.3	1.5	1.5	1.1	1.3	1.5
TKN	mg/L	-	3.5	2.6	2.3	2	2.3	2.4
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics								
COD	mg/L	-	210	78	74	85	51	68
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	18	15	17	15	15	13
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.0045	0.0038	0.016	0.27	<0.0030	<0.0030
Antimony	mg/L	0.006	0.0016	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.012	0.0016	0.00085	0.0011	0.00081	0.00068
Barium	mg/L	1	<0.10	<0.10	<0.10	<0.10	<1.0	0.014
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	0.40	0.48	0.46	0.48	0.46	0.39
Cadmium	mg/L	0.00004-0.00037 ²	0.00011	0.00046	0.00083	0.00014	0.000028	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.0093	0.0054	0.0028	0.0033	0.0018	0.0018
Copper	mg/L	0.007	0.0012	0.0036	0.0022	0.001	0.00023	0.00029
Lead	mg/L	0.001-0.007 ²	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.43	0.54	0.47	0.52	<2.0	-
Manganese	mg/L	0.05	0.68	0.85	0.67	0.57	0.52	0.6
Mercury	mg/L	0.000005	<0.0000050	<0.0000020	<0.0000020	0.0000037	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.0089	0.0016	0.0012	0.007	0.0010	0.0010
Nickel	mg/L	0.007-0.170 ²	0.031	0.013	0.0066	0.0089	0.0037	0.005
Phosphorus	mg/L	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium	mg/L	0.002	0.00079	0.00046	<0.00020	0.00028	0.00063	<0.00020
Silicon	mg/L	-	3.9	4.7	4.7	4.6	<10	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	4.3	5.1	4.7	5.1	4.6	-
Sulphur	mg/L	-	2000	2300	2000	2200	2100	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	-
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Titanium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Uranium	mg/L	0.01	0.0027	0.00085	0.00084	0.0006	0.00045	0.00049
Vanadium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Zinc	mg/L	0.03	0.0055	0.0040	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E33A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 33A					
			May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements								
Field pH	-	-	8.6	8.66	-	8.97	8.54	8.81
Field EC	mS	-	2.54	2.01	-	2.37	1.859	1.768
Field Temperature	°C	-	6.9	7.0	-	10.9	9.6	8.1
Routine Water								
pH	-	6.5 - 8.5	8.32	8.52	8.52	8.57	8.72	8.45
Conductivity (EC)	µS/cm	1000	3300	2100	1800	1800	1800	1800
Calcium	mg/L	-	35	7.4	4.7	6.4	3.6	4
Magnesium	mg/L	-	10	1.4	0.7	0.81	0.41	0.52
Sodium	mg/L	200	930	480	390	460	410	450
Potassium	mg/L	-	5.8	2.2	1.4	2	1.5	1.5
Iron	mg/L	0.3	<0.060	0.60	<0.060	1.2	0.34	<0.060
Sulphate	mg/L	128-429 ²	860	230	130	75	51	59
Chloride	mg/L	100	28	27	24	28	24	24
Bicarbonate	mg/L	-	1100	990	990	1100	960	1000
Carbonate	mg/L	-	2.6	16	18	30	60	15
Hydroxide	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.010	<0.010	<0.044	0.021	<0.010	<0.010
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	<0.010	<0.033	<0.010	<0.010	<0.010
Nitrate and Nitrate (N)	mg/L	-	<0.010	<0.020	<0.010	0.021	<0.014	<0.014
Total Dissolved Solids (TDS)	mg/L	500	2400	1200	1100	1100	1000	1100
Hardness	mg/L	-	130	24	15	19	11	12
Alkalinity (total as CaCO3)	mg/L	-	870	840	840	930	890	860
Alkalinity (pp as CaCO3)	mg/L	-	2.2	13	15	-	50	-
Ionic Balance	N/A	-	1.2	0.96	7.7	0.47	3.2	2.5
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	1.3	0.89	0.79	0.7	1.4	0.58
TKN	mg/L	-	8.0	2.6	2.4	1.5	9.2	1.1
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics								
COD	mg/L	-	460	140	130	110	730	67
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	39	33	25	26	23	27
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.0044	0.66	0.005	0.22	0.081	0.0083
Antimony	mg/L	0.006	0.00076	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0089	0.0042	0.0018	0.0056	0.0011	0.00088
Barium	mg/L	1	0.070	0.080	0.053	0.11	0.059	0.024
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	0.50	0.71	0.68	0.82	0.87	0.75
Cadmium	mg/L	0.00004-0.00037 ²	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.0032	0.0016	0.00057	0.0016	0.00030	0.00030
Copper	mg/L	0.007	0.0017	0.028	<0.00020	0.0012	0.00087	0.0019
Lead	mg/L	0.001-0.007 ²	<0.00020	0.00094	<0.00020	0.00073	<0.00020	<0.00020
Lithium	mg/L	-	0.20	0.089	0.07	0.087	0.078	-
Manganese	mg/L	0.05	0.13	0.058	0.027	0.081	0.037	0.069
Mercury	mg/L	0.000005	<0.0000050	<0.0000060	<0.0000020	0.000016	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.023	0.018	0.016	0.022	0.021	0.0026
Nickel	mg/L	0.007-0.170 ²	0.016	0.0083	0.0022	0.009	0.00074	0.0027
Phosphorus	mg/L	-	<0.10	0.17	<0.10	0.11	0.16	-
Selenium	mg/L	0.002	0.00058	<0.00020	<0.00020	0.00028	<0.00020	<0.00020
Silicon	mg/L	-	3.5	3.9	3.3	3.8	3.9	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	0.7	0.16	0.093	0.12	0.073	-
Sulphur	mg/L	-	360	64	35	35	16	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	-
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Titanium	mg/L	-	<0.0010	0.0095	<0.0010	0.0034	0.0015	-
Uranium	mg/L	0.01	0.0096	0.0035	0.0012	0.0013	0.00054	0.00096
Vanadium	mg/L	-	0.0015	0.0040	0.0014	0.003	<0.0010	-
Zinc	mg/L	0.03	<0.0030	<0.0030	<0.0030	0.004	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.00050	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.00050	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E33B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW 33B					
			May-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements								
Field pH	-	-	7.5	7.48	-	7.88	7.36	7.35
Field EC	mS	-	5.18	5.34	-	5.65	5.42	5.85
Field Temperature	°C	-	6.0	6.9	-	11.6	13.0	7.6
Routine Water								
pH	-	6.5 - 8.5	7.89	8.15	7.99	7.82	7.96	7.85
Conductivity (EC)	µS/cm	1000	5000	5400	5600	5500	5600	5800
Calcium	mg/L	-	91	110	130	120	130	120
Magnesium	mg/L	-	26	38	42	39	40	40
Sodium	mg/L	200	1200	1300	1200	1300	1300	1400
Potassium	mg/L	-	6.9	6.9	6.1	6.4	6.6	6
Iron	mg/L	0.3	<0.060	0.35	<0.6	<0.060	1.6	0.66
Sulphate	mg/L	128-429 ²	1900	2000	2100	2100	1900	2200
Chloride	mg/L	100	21	20	21	22	23	23
Bicarbonate	mg/L	-	1000	1100	1200	1300	1200	1200
Carbonate	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.010	<0.050	0.68	0.097	0.011	0.017
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	<0.050	0.2	0.056	0.023	0.015
Nitrate and Nitrate (N)	mg/L	-	<0.010	<0.020	0.21	0.15	0.034	0.032
Total Dissolved Solids (TDS)	mg/L	500	3700	4000	4100	4200	4000	4400
Hardness	mg/L	-	840	440	490	460	490	470
Alkalinity (total as CaCO3)	mg/L	-	350	920	1000	1000	1000	1000
Alkalinity (pp as CaCO3)	mg/L	-	<0.50	<0.50	<0.50	-	<1.0	-
Ionic Balance	N/A	-	1.0	1.0	0.82	1.3	2.4	4.1
Water Nutrients								
Ammonia-N	mg/L	0.018-190 ⁴	0.83	0.78	0.6	0.44	0.58	0.82
TKN	mg/L	-	5.3	2.6	2.7	2.3	2.4	1.9
Hydrocarbons								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Organics								
COD	mg/L	-	280	140	150	120	150	116
TOC	mg/L	-	-	-	-	-	-	-
DOC	mg/L	-	45	44	49	48	59	48
Oil & Grease	mg/L	-	-	-	-	-	-	-
Metals								
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.0056	0.060	0.0049	0.073	0.19	0.1
Antimony	mg/L	0.006	0.0013	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0065	0.0013	0.0014	0.0021	0.0013	0.0012
Barium	mg/L	1	0.038	0.031	<0.10	0.025	0.028	0.022
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	0.23	0.28	0.25	0.27	0.29	0.25
Cadmium	mg/L	0.00004-0.00037 ²	<0.000020	<0.000020	0.000044	0.00002	0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	0.0020	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.0030	0.0020	0.0024	0.0026	0.0013	-
Copper	mg/L	0.007	0.00037	0.0027	0.0028	0.0012	0.00038	0.00041
Lead	mg/L	0.001-0.007 ²	<0.00020	0.00024	<0.00020	<0.00020	0.00039	0.00022
Lithium	mg/L	-	0.30	0.35	0.37	0.34	0.35	-
Manganese	mg/L	0.05	0.19	0.24	0.25	0.23	0.22	0.23
Mercury	mg/L	0.000005	<0.0000050	0.00023	0.000076	0.000053	<0.000020	<0.000019
Molybdenum	mg/L	-	0.0070	0.00038	0.0008	0.00077	0.00044	-
Nickel	mg/L	0.007-0.170 ²	0.015	0.0096	0.011	0.01	0.0090	0.0099
Phosphorus	mg/L	-	<0.10	<0.10	<1.0	<0.10	<0.10	<0.10
Selenium	mg/L	0.002	0.00064	0.00038	0.00043	0.00048	0.00060	0.00046
Silicon	mg/L	-	3.9	5.0	4.6	4.9	5.0	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	1.6	2.1	2.3	2.3	2.1	-
Sulphur	mg/L	-	610	720	690	720	730	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	-
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Titanium	mg/L	-	<0.0010	0.0033	<0.0010	<0.0010	0.0066	-
Uranium	mg/L	0.01	0.0021	0.00016	0.00026	0.00014	<0.00010	<0.00010
Vanadium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Zinc	mg/L	0.03	<0.0030	0.0056	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)								
Bromodichloromethane	mg/L	-	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	-	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E35-Deep: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW-35-DEEP				
			Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements							
Field pH	-	-	8.22	8.1	7.66	7.90	7.64
Field EC	mS	-	4.90	3.92	-	5.39	5270
Field Temperature	°C	-	8.9	10	13.2	10.4	9.8
Routine Water							
pH	-	6.5 - 8.5	8.19	8.13	8.14	8.29	8.11
Conductivity (EC)	µS/cm	1000	4700	5300	5100	5300	5600
Calcium	mg/L	-	18	20	20	21	24
Magnesium	mg/L	-	2.1	2.1	2	2.0	2.4
Sodium	mg/L	200	970	1100	1100	1300	1200
Potassium	mg/L	-	3.3	3.8	3.7	3.6	3.9
Iron	mg/L	0.3	<0.060	<0.060	<0.060	<0.060	-
Sulphate	mg/L	128-429 ²	25	13	25	27	23
Chloride	mg/L	100	1100	1400	1400	1400	1500
Bicarbonate	mg/L	-	560	500	540	530	440
Carbonate	mg/L	-	<0.50	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.25	<0.22	<0.02	<0.010	<0.010
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	<0.16	<0.010	<0.010	<0.010
Nitrate and Nitrite (N)	mg/L	-	0.25	<0.050	<0.020	<0.014	<0.014
Total Dissolved Solids (TDS)	mg/L	500	2400	2800	2800	3000	3000
Hardness	mg/L	-	53	58	59	60	69
Alkalinity (total as CaCO3)	mg/L	-	460	410	450	430	360
Alkalinity (pp as CaCO3)	mg/L	-	<0.50	<0.50	-	<1.0	-
Ionic Balance	N/A	-	1.0	2.3	1.7	9.5	2.7
Water Nutrients							
Ammonia-N	mg/L	0.018-190 ⁴	1.1	1.2	1	1.1	1.5
TKN	mg/L	-	2.2	2.5	2.2	1.8	2
Hydrocarbons							
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10
Organics							
COD	mg/L	-	110	130	100	110	144
TOC	mg/L	-	-	-	-	-	-
DOC	mg/L	-	18	-	19	19	29
Oil & Grease	mg/L	-	-	-	-	-	-
Metals							
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.017	0.0031	0.0034	0.0044	0.0054
Antimony	mg/L	0.006	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0018	0.00081	0.00089	0.00092	0.00087
Barium	mg/L	1	0.27	0.41	0.38	0.39	0.42
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	0.69	0.75	0.81	0.75	0.78
Cadmium	mg/L	0.00004-0.00037 ²	0.000040	<0.000020	<0.000020	0.000040	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.00069	0.00052	0.00051	0.00051	-
Copper	mg/L	0.007	0.00094	0.00048	0.00079	0.00034	<0.00020
Lead	mg/L	0.001-0.007 ²	<0.00020	<0.00020	<0.00020	<0.00020	-
Lithium	mg/L	-	0.15	0.19	0.17	0.17	-
Manganese	mg/L	0.05	0.048	0.053	0.061	0.082	0.12
Mercury	mg/L	0.000005	0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.021	0.017	0.02	0.018	-
Nickel	mg/L	0.007-0.170 ²	0.0038	0.0013	0.0017	0.0017	0.0018
Phosphorus	mg/L	-	<0.10	<0.10	<0.10	<0.10	-
Selenium	mg/L	0.002	0.00020	<0.00020	0.0003	<0.00020	<0.00020
Silicon	mg/L	-	3.5	3.6	3.6	3.7	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	0.36	0.5	0.45	0.50	-
Sulphur	mg/L	-	9.2	4.6	8	8.2	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	-
Tin	mg/L	-	<0.0010	0.0013	<0.0010	<0.0010	-
Titanium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	-
Uranium	mg/L	0.01	0.0023	0.00064	0.00075	0.00078	0.00081
Vanadium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	-
Zinc	mg/L	0.03	<0.0030	0.16	0.48	0.030	<0.0030
Volatile Organic Compounds (VOCs)							
Bromodichloromethane	mg/L	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	<0.00050	-
1,1-Dichloroethene	mg/L	0.014	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	<0.00050	<0.00050

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E35A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW-35A				
			Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements							
Field pH	-	-	-	-	-	8.6	-
Field EC	mS	-	-	-	-	1.992	-
Field Temperature	°C	-	-	-	-	12.5	-
Routine Water							
pH	-	6.5 - 8.5	8.60	8.61	8.44	-	8.47
Conductivity (EC)	µS/cm	1000	1500	1600	1600	-	1700
Calcium	mg/L	-	3.8	3.6	3.6	-	3.4
Magnesium	mg/L	-	0.36	0.34	0.32	-	0.3
Sodium	mg/L	200	370	390	410	-	450
Potassium	mg/L	-	2.2	3.1	2.2	-	1.9
Iron	mg/L	0.3	0.11	<0.060	0.28	-	0.069
Sulphate	mg/L	128-429 ²	41	21	17	-	16
Chloride	mg/L	100	36	36	40	-	40
Bicarbonate	mg/L	-	900	960	1000	-	960
Carbonate	mg/L	-	26	23	16	-	18
Hydroxide	mg/L	-	<0.50	<0.50	<1.0	-	<1.0
Nitrate (N)	mg/L	3	<0.010	<0.044	<0.020	-	<0.010
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	<0.033	<0.010	-	<0.010
Nitrate and Nitrite (N)	mg/L	-	<0.020	<0.010	<0.020	-	<0.014
Total Dissolved Solids (TDS)	mg/L	500	930	950	990	-	1000
Hardness	mg/L	-	11	10	10	-	9.7
Alkalinity (total as CaCO ₃)	mg/L	-	780	830	860	-	820
Alkalinity (pp as CaCO ₃)	mg/L	-	22	19	-	-	-
Ionic Balance	N/A	-	0.95	2.4	1.2	-	5.6
Water Nutrients							
Ammonia-N	mg/L	0.018-190 ⁴	0.83	-	0.33	0.68	0.37
TKN	mg/L	-	12	-	7	3.7	3.4
Hydrocarbons							
Benzene	mg/L	0.005	<0.00040	0.00049	0.003	<0.00040	-
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	-
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	-
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00089	<0.00089	-
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	-
F2 (>C10-C16)	mg/L	1.1	<0.27	<0.27	-	<0.10	-
Organics							
COD	mg/L	-	1100	-	310	140	-
TOC	mg/L	-	-	-	-	-	-
DOC	mg/L	-	15	-	-	-	18
Oil & Grease	mg/L	-	-	-	-	-	-
Metals							
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.092	0.055	0.12	-	0.0076
Antimony	mg/L	0.006	<0.00060	<0.00060	<0.00060	-	<0.00060
Arsenic	mg/L	0.005	0.0035	0.0023	0.0015	-	0.0011
Barium	mg/L	1	0.080	0.13	0.084	-	-
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	-	0.078
Boron	mg/L	1	0.75	0.74	0.79	-	0.82
Cadmium	mg/L	0.00004-0.00037 ²	<0.000020	<0.000020	<0.000020	-	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	-	<0.0010
Cobalt	mg/L	-	0.00042	0.00035	0.00035	-	-
Copper	mg/L	0.007	0.0011	0.00065	0.0022	-	0.0025
Lead	mg/L	0.001-0.007 ²	<0.00020	<0.00020	<0.00020	-	<0.00020
Lithium	mg/L	-	0.068	0.069	0.074	-	-
Manganese	mg/L	0.05	0.012	0.013	0.028	-	0.017
Mercury	mg/L	0.000005	<0.000020	<0.000020	-	-	<0.000019
Molybdenum	mg/L	-	0.020	0.016	0.016	-	-
Nickel	mg/L	0.007-0.170 ²	0.0053	0.0034	0.0016	-	0.0017
Phosphorus	mg/L	-	0.15	1.2	0.58	-	-
Selenium	mg/L	0.002	<0.00020	<0.00020	<0.00020	-	0.00026
Silicon	mg/L	-	3.7	3.5	4.4	-	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	-	<0.00010
Strontium	mg/L	-	0.076	0.086	0.081	-	-
Sulphur	mg/L	-	11	5.9	5.4	-	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	-	-
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	-	-
Titanium	mg/L	-	0.0015	<0.0010	0.0028	-	-
Uranium	mg/L	0.01	0.0013	0.00095	0.00073	-	0.00076
Vanadium	mg/L	-	0.0014	0.0012	0.0015	-	-
Zinc	mg/L	0.03	0.0035	<0.0030	<0.0030	-	<0.0030
Volatile Organic Compounds (VOCs)							
Bromodichloromethane	mg/L	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	<0.00050	-
Chlorobenzene	mg/L	0.0013	-	-	-	<0.00050	-
Chloroethane	mg/L	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	<0.00050	-
Chloromethane	mg/L	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	<0.0010	-
1,2-Dibromoethane	mg/L	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	<0.00050	-
1,3-Dichlorobenzene	mg/L	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	<0.00050	-
1,1-Dichloroethane	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	<0.00050	-
1,1-Dichloroethene	mg/L	0.014	-	-	-	<0.00050	-
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	<0.00050	-
Methylene Chloride	mg/L	0.05	-	-	-	<0.0020	-
Methyl Methacrylate	mg/L	0.47	-	-	-	<0.00050	-
Styrene	mg/L	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	<0.00050	-
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	<0.0010	-
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	<0.0010	-
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	<0.00050	-
1,1,1-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	<0.00050	-
Trichlorofluoromethane	mg/L	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	<0.0013	-
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	<0.00050	-

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E35B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW-35B				
			Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements							
Field pH	-	-	7.83	7.8	7.05	7.70	7.70
Field EC	mS	-	8.08	7.27	8.53	7.97	7.41
Field Temperature	°C	-	7.6	8	7.1	9.9	7.5
Routine Water							
pH	-	6.5 - 8.5	8.16	8.22	8.12	8.27	8.21
Conductivity (EC)	µS/cm	1000	7700	7600	7700	7800	7800
Calcium	mg/L	-	99	98	110	120	6100
Magnesium	mg/L	-	14	14	15	16	15
Sodium	mg/L	200	1800	1800	2000	2100	2000
Potassium	mg/L	-	7.8	8.6	8.4	9.1	7.8
Iron	mg/L	0.3	<0.60	<0.60	<0.60	<0.60	<0.60
Sulphate	mg/L	128-429 ²	3700	3300	3500	3400	3600
Chloride	mg/L	100	5.2	6.8	6.3	6.3	6.6
Bicarbonate	mg/L	-	790	780	830	820	780
Carbonate	mg/L	-	<0.50	<0.50	<1.0	<1.0	<1.0
Hydroxide	mg/L	-	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.42	2.5	0.76	1.6	1.5
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	<0.16	<0.01	0.019	0.026
Nitrate and Nitrite (N)	mg/L	-	0.42	-	0.76	1.6	1.5
Total Dissolved Solids (TDS)	mg/L	500	6000	5700	6000	6100	6100
Hardness	mg/L	-	300	300	330	360	340
Alkalinity (total as CaCO ₃)	mg/L	-	650	640	680	680	640
Alkalinity (pp as CaCO ₃)	mg/L	-	<0.50	<0.50	-	<1.0	-
Ionic Balance	N/A	-	0.95	2.3	2.8	8.0	2.7
Water Nutrients							
Ammonia-N	mg/L	0.018-190 ⁴	1.9	2	1.3	1.2	1.1
TKN	mg/L	-	2.7	2.5	2	1.7	1.5
Hydrocarbons							
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	0.0004	0.0004
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10
Organics							
COD	mg/L	-	37	66	33	37	28
TOC	mg/L	-	-	-	-	-	-
DOC	mg/L	-	8.2	12	10	10	8.9
Oil & Grease	mg/L	-	-	-	-	-	-
Metals							
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.012	0.0035	0.0047	0.0032	0.0032
Antimony	mg/L	0.006	0.00069	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0019	0.0014	0.0011	0.0011	0.0011
Barium	mg/L	1	<0.10	<0.1	<0.10	<0.10	<0.10
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron	mg/L	1	0.70	0.71	0.82	0.84	0.84
Cadmium	mg/L	0.00004-0.00037 ²	<0.000020	0.000022	<0.000020	0.000065	0.000065
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.00065	0.00054	0.00032	0.00037	0.00037
Copper	mg/L	0.007	0.0018	0.0032	0.0016	0.0026	0.0026
Lead	mg/L	0.001-0.007 ²	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.50	0.52	0.55	0.66	0.66
Manganese	mg/L	0.05	0.066	0.074	0.049	0.049	0.049
Mercury	mg/L	0.000005	<0.0000020	<0.0000020	0.0000027	<0.0000020	<0.0000020
Molybdenum	mg/L	-	0.0055	0.0041	0.0031	0.0031	0.0031
Nickel	mg/L	0.007-0.170 ²	0.0041	0.0036	0.0028	0.0033	0.0033
Phosphorus	mg/L	-	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium	mg/L	0.002	0.00082	0.00053	0.00034	0.00049	0.00049
Silicon	mg/L	-	3.1	3.1	3.3	3.5	3.5
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	2.2	2.3	2.6	2.5	2.5
Sulphur	mg/L	-	1200	1200	1200	1300	1300
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Titanium	mg/L	-	<0.0010	<0.0010	<0.0010	0.0011	0.0011
Uranium	mg/L	0.01	0.0023	0.0015	0.001	0.0010	0.0010
Vanadium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	mg/L	0.03	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)							
Bromodichloromethane	mg/L	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	<0.00050	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use
² Guideline varies with hardness
³ Guideline varies with chloride
⁴ Guideline varies with pH and temperature
⁵ Guideline varies with pH
 "-" No applicable guideline or not analyzed
 Exceeds Regulatory Limit
Italic - Detection limit greater than Tier 1 Guideline

Table E36-Deep: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW-36-DEEP				
			Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements							
Field pH	-	-	8.52	8	7.38	8.05	7.78
Field EC	mS	-	3.83	4.84	4.9	5.28	4760
Field Temperature	°C	-	7.7	10.3	10.9	12.3	11.4
Routine Water							
pH	-	6.5 - 8.5	8.51	8.33	8.19	8.39	8.32
Conductivity (EC)	µS/cm	1000	3600	4800	4700	4800	4800
Calcium	mg/L	-	17	18	18	18	19
Magnesium	mg/L	-	2.4	2.1	2	1.9	2.1
Sodium	mg/L	200	800	1100	1100	1100	1100
Potassium	mg/L	-	5.4	3.9	3.7	3.7	3.6
Iron	mg/L	0.3	0.41	<0.060	<0.060	<0.060	
Sulphate	mg/L	128-429 ²	46	11	10	11	12
Chloride	mg/L	100	770	1100	1000	980	1100
Bicarbonate	mg/L	-	650	940	960	900	910
Carbonate	mg/L	-	13	3.1	<1.0	16	3.8
Hydroxide	mg/L	-	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	0.018	<0.044	<0.020	<0.010	<0.010
Nitrite (N)	mg/L	0.02 - 0.20 ³	0.043	<0.033	<0.010	<0.010	<0.010
Nitrate and Nitrite (N)	mg/L	-	0.061	<0.01	<0.020	<0.014	<0.014
Total Dissolved Solids (TDS)	mg/L	500	2000	2600	2600	2500	2700
Hardness	mg/L	-	52	53	53	52	57
Alkalinity (total as CaCO ₃)	mg/L	-	550	770	780	770	750
Alkalinity (pp as CaCO ₃)	mg/L	-	11	2.6	-	13	-
Ionic Balance	N/A	-	1.1	2.3	2.6	4.7	3
Water Nutrients							
Ammonia-N	mg/L	0.018-190 ⁴	0.92	1.3	1.3	1.3	1.3
TKN	mg/L	-	1.9	2.6	2.8	2.1	1.9
Hydrocarbons							
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10
Organics							
COD	mg/L	-	99	140	130	140	144
TOC	mg/L	-	-	-	-	-	-
DOC	mg/L	-	12	-	35	33	33
Oil & Grease	mg/L	-	-	-	-	-	-
Metals							
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.19	0.0069	0.0039	0.0059	0.0034
Antimony	mg/L	0.006	0.0030	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0088	0.0024	0.0025	0.0020	0.0019
Barium	mg/L	1	0.23	0.32	0.32	0.34	0.37
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	0.71	0.97	1	1.0	1.0
Cadmium	mg/L	0.00004-0.00037 ²	0.000070	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.00082	0.0012	0.001	0.0010	-
Copper	mg/L	0.007	0.011	0.0006	0.00085	0.00029	<0.00020
Lead	mg/L	0.001-0.007 ²	0.00094	<0.00020	<0.00020	<0.00020	-
Lithium	mg/L	-	0.11	0.19	0.18	0.19	-
Manganese	mg/L	0.05	0.030	0.071	0.072	0.13	0.58
Mercury	mg/L	0.000005	0.00019	<0.0000020	<0.0000020	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.041	0.011	0.014	0.013	-
Nickel	mg/L	0.007-0.170 ²	0.0086	0.0046	0.005	0.0046	0.0052
Phosphorus	mg/L	-	0.13	<0.10	<0.10	<0.10	-
Selenium	mg/L	0.002	0.00096	0.0003	0.00064	<0.00020	<0.00020
Silicon	mg/L	-	2.6	3.6	3.6	3.5	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	0.34	0.46	0.4	0.42	-
Sulphur	mg/L	-	17	3.3	3.5	3.7	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	-
Tin	mg/L	-	<0.0010	0.003	0.0064	0.0025	-
Titanium	mg/L	-	0.0030	<0.0010	<0.0010	<0.0010	-
Uranium	mg/L	0.01	0.0066	0.0016	0.0016	0.0015	0.0016
Vanadium	mg/L	-	0.0078	<0.0010	<0.0010	<0.0010	-
Zinc	mg/L	0.03	0.0068	0.1	0.11	0.010	<0.0030
Volatile Organic Compounds (VOCs)							
Bromodichloromethane	mg/L	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	<0.00050	-
1,1-Dichloroethene	mg/L	0.014	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	<0.00050	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E36A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	MW-36A				
			Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
Field Measurements							
Field pH	-	-	8.87	8.8	8.57	8.73	8.6
Field EC	mS	-	1.588	1.633	1.609	1.68	1.57
Field Temperature	°C	-	9.1	6.5	9.2	9.9	7.8
Routine Water							
pH	-	6.5 - 8.5	8.66	8.52	8.52	8.71	8.55
Conductivity (EC)	µS/cm	1000	1600	1600	1600	1600	1600
Calcium	mg/L	-	3.9	3.3	3.2	3.2	960
Magnesium	mg/L	-	0.41	0.32	0.33	0.23	0.42
Sodium	mg/L	200	390	380	410	380	440
Potassium	mg/L	-	1.4	1.3	1.4	1.5	1.4
Iron	mg/L	0.3	<0.060	<0.060	<0.060	0.076	0.1
Sulphate	mg/L	128-429 ²	<1.0	2.9	<1.0	1.8	<1.0
Chloride	mg/L	100	7.4	7.1	7.1	8.9	8.2
Bicarbonate	mg/L	-	970	1000	1000	960	980
Carbonate	mg/L	-	25	18	24	58	26
Hydroxide	mg/L	-	<0.50	<0.50	<1.0	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.010	<0.044	<0.020	0.018	<0.010
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	<0.033	<0.010	<0.010	<0.010
Nitrate and Nitrite (N)	mg/L	-	<0.020	<0.010	<0.020	0.018	<0.014
Total Dissolved Solids (TDS)	mg/L	500	900	930	960	930	960
Hardness	mg/L	-	12	9.5	9.3	9	11
Alkalinity (total as CaCO ₃)	mg/L	-	830	880	900	890	840
Alkalinity (pp as CaCO ₃)	mg/L	-	21	15	-	48	-
Ionic Balance	N/A	-	1.0	2.7	0.69	3.0	6.2
Water Nutrients							
Ammonia-N	mg/L	0.018-190 ⁴	0.60	0.52	0.63	0.69	0.6
TKN	mg/L	-	1.3	1.2	1	1.0	1.4
Hydrocarbons							
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00080	<0.00080	<0.00089	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	<0.10
Organics							
COD	mg/L	-	55	42	44	57	47
TOC	mg/L	-	-	-	-	-	-
DOC	mg/L	-	13	14	13	10	13
Oil & Grease	mg/L	-	-	-	-	-	-
Metals							
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.015	0.0093	0.0071	0.047	0.0043
Antimony	mg/L	0.006	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0012	0.00075	0.001	0.00069	0.00095
Barium	mg/L	1	0.031	0.034	0.033	0.046	0.044
Beryllium	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	-
Boron	mg/L	1	0.82	0.79	0.84	0.87	0.81
Cadmium	mg/L	0.00004-0.00037 ²	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	-	0.00056	0.00043	0.00033	0.00040	-
Copper	mg/L	0.007	0.0026	<0.00020	0.00041	0.00099	<0.00020
Lead	mg/L	0.001-0.007 ²	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	-	0.064	0.067	0.069	0.073	-
Manganese	mg/L	0.05	0.022	0.032	0.039	0.033	0.23
Mercury	mg/L	0.000005	0.000017	<0.0000020	0.0000026	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.010	0.0088	0.011	0.0081	-
Nickel	mg/L	0.007-0.170 ²	0.0019	0.00085	0.0012	0.00067	0.0022
Phosphorus	mg/L	-	0.13	0.11	0.18	0.15	-
Selenium	mg/L	0.002	0.00023	<0.00020	<0.00020	<0.00020	<0.00020
Silicon	mg/L	-	3.4	3.5	3.6	3.5	-
Silver	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Strontium	mg/L	-	0.045	0.046	0.047	0.049	-
Sulphur	mg/L	-	1.0	0.72	0.95	0.45	-
Thallium	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	-
Tin	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	-
Titanium	mg/L	-	<0.0010	<0.0010	<0.0010	0.0033	-
Uranium	mg/L	0.01	0.00037	0.00026	0.00058	0.00018	0.0011
Vanadium	mg/L	-	0.0028	0.0021	<0.0010	0.0032	-
Zinc	mg/L	0.03	0.0033	<0.0030	<0.0030	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)							
Bromodichloromethane	mg/L	-	-	-	-	<0.00050	-
Bromoform	mg/L	-	-	-	-	<0.00050	-
Bromomethane	mg/L	-	-	-	-	<0.0020	-
Carbon tetrachloride	mg/L	0.002	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.0013	-	-	-	<0.00050	<0.00050
Chloroethane	mg/L	-	-	-	-	<0.0010	-
Chloroform	mg/L	0.08	-	-	-	<0.00050	<0.00050
Chloromethane	mg/L	-	-	-	-	<0.0020	-
Dibromochloromethane	mg/L	0.1	-	-	-	<0.0010	<0.0010
1,2-Dibromoethane	mg/L	-	-	-	-	<0.00020	-
1,2-Dichlorobenzene	mg/L	0.0007	-	-	-	<0.00050	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-	-	<0.00050	-
1,4-Dichlorobenzene	mg/L	0.001	-	-	-	<0.00050	<0.00050
1,1-Dichloroethane	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethane	mg/L	0.005	-	-	-	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	-	-	<0.00050	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloroethene (trans)	mg/L	-	-	-	-	<0.00050	-
1,2-Dichloropropane	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [cis]	mg/L	-	-	-	-	<0.00050	-
1,3-Dichloropropene [trans]	mg/L	-	-	-	-	<0.00050	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	-	-	<0.00050	<0.00050
Methylene Chloride	mg/L	0.05	-	-	-	<0.0020	<0.0020
Methyl Methacrylate	mg/L	0.47	-	-	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	-	<0.00050	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	<0.0020	-
Tetrachloroethene	mg/L	0.01	-	-	-	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	-	-	<0.0010	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	-	-	<0.0010	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	-	-	<0.00050	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	<0.00050	-
Trichloroethene	mg/L	0.005	-	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-	-	<0.00050	-
Trihalomethanes	mg/L	-	-	-	-	<0.0013	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	<0.00050	-
Vinyl chloride	mg/L	0.002	-	-	-	<0.00050	<0.00050

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E37A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	19MW37A	19MW37A
			Nov-19	Jun-20
Field Measurements				
Field pH	-	-	8.10	8.14
Field EC	mS	-	3.24	3.9
Field Temperature	°C	-	1.0	6.5
Routine Water				
pH	-	6.5 - 8.5	8.06	8.38
Conductivity (EC)	µS/cm	1000	3000	3800
Calcium	mg/L	-	32	26
Magnesium	mg/L	-	12	9.1
Sodium	mg/L	200	770	960
Potassium	mg/L	-	5.5	4.9
Iron	mg/L	0.3	3.8	<0.060
Sulphate	mg/L	128-429 ²	730	1200
Chloride	mg/L	100	8.0	6.3
Bicarbonate	mg/L	-	1100	850
Carbonate	mg/L	-	<1.0	8.2
Hydroxide	mg/L	-	<1.0	<1.0
Nitrate (N)	mg/L	3	0.029	<0.010
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	<0.010
Nitrate and Nitrate (N)	mg/L	-	0.029	<0.014
Total Dissolved Solids (TDS)	mg/L	500	2100	2600
Hardness	mg/L	-	130	100
Alkalinity (total as CaCO ₃)	mg/L	-	870	710
Alkalinity (pp as CaCO ₃)	mg/L	-	<1.0	-
Ionic Balance	N/A	-	5.5	5.4
Water Nutrients				
Ammonia-N	mg/L	0.018-190 ⁴	0.69	1.3
TKN	mg/L	-	1.3	1.5
Hydrocarbons				
Benzene	mg/L	0.005	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10
Organics				
COD	mg/L	-	62	41
TOC	mg/L	-	-	-
DOC	mg/L	-	10	11
Oil & Grease	mg/L	-	-	-
Metals				
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.90	0.01
Antimony	mg/L	0.006	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0019	0.0006
Barium	mg/L	1	0.018	<0.010
Beryllium	mg/L	-	<0.0010	-
Boron	mg/L	1	0.60	0.69
Cadmium	mg/L	0.00004-0.00037 ²	0.000051	<0.000020
Chromium	mg/L	0.05	0.0011	<0.0010
Cobalt	mg/L	-	0.0027	-
Copper	mg/L	0.007	0.0029	0.0005
Lead	mg/L	0.001-0.007 ²	0.0042	<0.00020
Lithium	mg/L	-	0.19	-
Manganese	mg/L	0.05	0.43	0.28
Mercury	mg/L	0.000005	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.00061	0.0013
Nickel	mg/L	0.007-0.170 ²	0.0061	0.0017
Phosphorus	mg/L	-	0.16	-
Selenium	mg/L	0.002	<0.00020	<0.0002
Silicon	mg/L	-	6.1	-
Silver	mg/L	0.0001	<0.00010	<0.0001
Strontium	mg/L	-	0.55	-
Sulphur	mg/L	-	370	-
Thallium	mg/L	-	<0.00020	-
Tin	mg/L	-	0.0010	-
Titanium	mg/L	-	0.010	-
Uranium	mg/L	0.01	0.0033	0.0055
Vanadium	mg/L	-	0.0041	-
Zinc	mg/L	0.03	0.014	0.0033
Volatile Organic Compounds (VOCs)				
Bromodichloromethane	mg/L	-	-	-
Bromoform	mg/L	-	-	-
Bromomethane	mg/L	-	-	-
Carbon tetrachloride	mg/L	0.002	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	<0.00050
Chloroethane	mg/L	-	-	-
Chloroform	mg/L	0.08	-	<0.00050
Chloromethane	mg/L	-	-	-
Dibromochloromethane	mg/L	0.1	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	-
1,2-Dichlorobenzene	mg/L	0.0007	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-
1,4-Dichlorobenzene	mg/L	0.001	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-
1,2-Dichloroethane	mg/L	0.005	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	<0.00050
1,2-Dichloroethene (trans)	mg/L	-	-	-
1,2-Dichloropropane	mg/L	-	-	-
1,3-Dichloropropene [cis]	mg/L	-	-	-
1,3-Dichloropropene [trans]	mg/L	-	-	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	<0.00050
Methylene Chloride	mg/L	0.05	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	<0.00050
Styrene	mg/L	-	-	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-
Tetrachloroethene	mg/L	0.01	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-
1,1,2-Trichloroethane	mg/L	-	-	-
Trichloroethene	mg/L	0.005	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-
Trihalomethanes	mg/L	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-
1,3,5-Trimethylbenzene	mg/L	-	-	-
Vinyl chloride	mg/L	0.002	<0.00050	<0.00050

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Total Dissolved Solids, not a measured value (TDS)

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E37B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	19MW37B	19MW37B
			Nov-19	Jun-20
Field Measurements				
Field pH	-	-	7.58	7.25
Field EC	mS	-	2.05	1.92
Field Temperature	°C	-	2.2	8.2
Routine Water				
pH	-	6.5 - 8.5	7.74	7.94
Conductivity (EC)	µS/cm	1000	1900	1900
Calcium	mg/L	-	79	73
Magnesium	mg/L	-	36	30
Sodium	mg/L	200	320	370
Potassium	mg/L	-	11	9.3
Iron	mg/L	0.3	0.096	<0.060
Sulphate	mg/L	128-429 ²	220	230
Chloride	mg/L	100	3.6	3.3
Bicarbonate	mg/L	-	1000	1000
Carbonate	mg/L	-	<1.0	<1.0
Hydroxide	mg/L	-	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.010	0.011
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	<0.010
Nitrate and Nitrite (N)	mg/L	-	<0.014	<0.014
Total Dissolved Solids (TDS)	mg/L	500	1200	1200
Hardness	mg/L	-	350	310
Alkalinity (total as CaCO ₃)	mg/L	-	850	820
Alkalinity (pp as CaCO ₃)	mg/L	-	<1.0	
Ionic Balance	N/A	-	1.6	2.9
Water Nutrients				
Ammonia-N	mg/L	0.018-190 ⁴	0.64	0.69
TKN	mg/L	-	3.5	0.99
Hydrocarbons				
Benzene	mg/L	0.005	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10
Organics				
COD	mg/L	-	189	19
TOC	mg/L	-	-	-
DOC	mg/L	-	7.5	8.4
Oil & Grease	mg/L	-	-	-
Metals				
Aluminum	mg/L	0.0007 / 0.05 ⁵	<0.0030	<0.0030
Antimony	mg/L	0.006	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.001	0.00051
Barium	mg/L	1	0.027	0.023
Beryllium	mg/L	-	<0.0010	
Boron	mg/L	1	0.11	0.12
Cadmium	mg/L	0.00004-0.00037 ²	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010
Cobalt	mg/L	-	0.0012	
Copper	mg/L	0.007	0.00021	0.0033
Lead	mg/L	0.001-0.007 ²	0.00026	<0.00020
Lithium	mg/L	-	0.13	
Manganese	mg/L	0.05	0.27	0.26
Mercury	mg/L	0.000005	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.00054	
Nickel	mg/L	0.007-0.170 ²	0.0017	0.0012
Phosphorus	mg/L	-	<0.10	
Selenium	mg/L	0.002	<0.00020	<0.00020
Silicon	mg/L	-	6	
Silver	mg/L	0.0001	<0.00010	<0.00010
Strontium	mg/L	-	0.84	
Sulphur	mg/L	-	73	
Thallium	mg/L	-	<0.00020	
Tin	mg/L	-	<0.0010	
Titanium	mg/L	-	<0.0010	
Uranium	mg/L	0.01	0.0012	0.0019
Vanadium	mg/L	-	<0.0010	
Zinc	mg/L	0.03	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)				
Bromodichloromethane	mg/L	-	-	
Bromoform	mg/L	-	-	
Bromomethane	mg/L	-	-	
Carbon tetrachloride	mg/L	0.002	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	<0.00050
Chloroethane	mg/L	-	-	
Chloroform	mg/L	0.08	-	<0.00050
Chloromethane	mg/L	-	-	
Dibromochloromethane	mg/L	0.1	-	<0.0010
1,2-Dibromoethane	mg/L	-	-	
1,2-Dichlorobenzene	mg/L	0.0007	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	
1,4-Dichlorobenzene	mg/L	0.001	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	
1,2-Dichloroethane	mg/L	0.005	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	
1,2-Dichloroethene (trans)	mg/L	-	-	
1,2-Dichloropropane	mg/L	-	-	
1,3-Dichloropropene [cis]	mg/L	-	-	
1,3-Dichloropropene [trans]	mg/L	-	-	
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	<0.00050
Methylene Chloride	mg/L	0.05	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	<0.00050
Styrene	mg/L	-	-	
1,1,1,2-Tetrachloroethane	mg/L	-	-	
1,1,2,2-Tetrachloroethane	mg/L	-	-	
Tetrachloroethene	mg/L	0.01	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	
1,1,2-Trichloroethane	mg/L	-	-	
Trichloroethene	mg/L	0.005	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	
Trihalomethanes	mg/L	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	
1,3,5-Trimethylbenzene	mg/L	-	-	
Vinyl chloride	mg/L	0.002	<0.00050	<0.00050

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E38A: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	19MW38A	19MW38A
			Nov-19	Jun-20
Field Measurements				
Field pH	-	-	7.99	8.34
Field EC	mS	-	4.45	2680
Field Temperature	°C	-	2.0	5.1
Routine Water				
pH	-	6.5 - 8.5	8.42	8.77
Conductivity (EC)	µS/cm	1000	4000	2170
Calcium	mg/L	-	31	12
Magnesium	mg/L	-	13	3
Sodium	mg/L	200	1000	420
Potassium	mg/L	-	9.9	3.6
Iron	mg/L	0.3	0.15	<0.060
Sulphate	mg/L	128-429 ²	980	420
Chloride	mg/L	100	8.8	13.0
Bicarbonate	mg/L	-	1400	1100
Carbonate	mg/L	-	25	21
Hydroxide	mg/L	-	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.010	<0.010
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	0.012
Nitrate and Nitrate (N)	mg/L	-	<0.014	<0.014
Total Dissolved Solids (TDS)	mg/L	500	2800	1700
Hardness	mg/L	-	130	42
Alkalinity (total as CaCO ₃)	mg/L	-	1200	930
Alkalinity (pp as CaCO ₃)	mg/L	-	20	-
Ionic Balance	N/A	-	2.8	6.4
Water Nutrients				
Ammonia-N	mg/L	0.018-190 ⁴	1.8	0.95
TKN	mg/L	-	46	1.7
Hydrocarbons				
Benzene	mg/L	0.005	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10
Organics				
COD	mg/L	-	3540	45
TOC	mg/L	-	-	-
DOC	mg/L	-	16	16
Oil & Grease	mg/L	-	-	-
Metals				
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.11	0.02
Antimony	mg/L	0.006	0.00075	<0.00060
Arsenic	mg/L	0.005	0.0049	0.0049
Barium	mg/L	1	0.022	0.017
Beryllium	mg/L	-	<0.0010	-
Boron	mg/L	1	0.52	0.76
Cadmium	mg/L	0.00004-0.00037 ²	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010
Cobalt	mg/L	-	0.00074	-
Copper	mg/L	0.007	0.00058	0.0016
Lead	mg/L	0.001-0.007 ²	<0.00020	-
Lithium	mg/L	-	0.17	-
Manganese	mg/L	0.05	0.12	0.032
Mercury	mg/L	0.000005	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.015	0.0097
Nickel	mg/L	0.007-0.170 ²	0.0055	0.005
Phosphorus	mg/L	-	<0.10	-
Selenium	mg/L	0.002	0.00052	0.0004
Silicon	mg/L	-	4.4	-
Silver	mg/L	0.0001	<0.00010	<0.00010
Strontium	mg/L	-	0.52	-
Sulphur	mg/L	-	300	-
Thallium	mg/L	-	<0.00020	-
Tin	mg/L	-	<0.0010	-
Titanium	mg/L	-	0.006	-
Uranium	mg/L	0.01	0.0094	0.0035
Vanadium	mg/L	-	0.0033	-
Zinc	mg/L	0.03	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)				
Bromodichloromethane	mg/L	-	-	-
Bromoform	mg/L	-	-	-
Bromomethane	mg/L	-	-	-
Carbon tetrachloride	mg/L	0.002	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	<0.00050
Chloroethane	mg/L	-	-	-
Chloroform	mg/L	0.08	-	<0.00050
Chloromethane	mg/L	-	-	<0.0010
Dibromochloromethane	mg/L	0.1	-	<0.00050
1,2-Dibromoethane	mg/L	-	-	-
1,2-Dichlorobenzene	mg/L	0.0007	-	<0.00050
1,3-Dichlorobenzene	mg/L	-	-	-
1,4-Dichlorobenzene	mg/L	0.001	-	<0.00050
1,1-Dichloroethane	mg/L	-	-	-
1,2-Dichloroethane	mg/L	0.005	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	<0.00050
1,2-Dichloroethene (cis)	mg/L	-	-	-
1,2-Dichloroethene (trans)	mg/L	-	-	-
1,2-Dichloropropane	mg/L	-	-	-
1,3-Dichloropropene [cis]	mg/L	-	-	-
1,3-Dichloropropene [trans]	mg/L	-	-	-
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	<0.00050
Methylene Chloride	mg/L	0.05	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	<0.00050
Styrene	mg/L	-	-	-
1,1,1,2-Tetrachloroethane	mg/L	-	-	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-
Tetrachloroethene	mg/L	0.01	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	-
1,1,2-Trichloroethane	mg/L	-	-	-
Trichloroethene	mg/L	0.005	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	-	-	-
Trihalomethanes	mg/L	-	-	<0.0013
1,2,4-Trimethylbenzene	mg/L	-	-	-
1,3,5-Trimethylbenzene	mg/L	-	-	-
Vinyl chloride	mg/L	0.002	<0.00050	<0.00050

Notes:
¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

Table E38B: Field Data and Chemical Analysis Results

Parameter ID	Units	Regulatory Limits ¹	19MW38B	19MW38B
			Nov-19	Jun-20
Field Measurements				
Field pH	-	-	7.86	7.86
Field EC	mS	-	4.43	4440
Field Temperature	°C	-	1.8	5.2
Routine Water				
pH	-	6.5 - 8.5	8.23	8.27
Conductivity (EC)	µS/cm	1000	4300	4300
Calcium	mg/L	-	32	25
Magnesium	mg/L	-	20	21
Sodium	mg/L	200	980	1100
Potassium	mg/L	-	11	9.9
Iron	mg/L	0.3	0.17	<0.060
Sulphate	mg/L	128-429 ²	960	900
Chloride	mg/L	100	2.9	3.4
Bicarbonate	mg/L	-	1700	1600
Carbonate	mg/L	-	<1.0	<1.0
Hydroxide	mg/L	-	<1.0	<1.0
Nitrate (N)	mg/L	3	<0.010	0.032
Nitrite (N)	mg/L	0.02 - 0.20 ³	<0.010	0.035
Nitrate and Nitrite (N)	mg/L	-	<0.014	0.067
Total Dissolved Solids (TDS)	mg/L	500	2800	2900
Hardness	mg/L	-	160	150
Alkalinity (total as CaCO ₃)	mg/L	-	1400	1300
Alkalinity (pp as CaCO ₃)	mg/L	-	<1.0	-
Ionic Balance	N/A	-	1.8	6.7
Water Nutrients				
Ammonia-N	mg/L	0.018-190 ⁴	0.4	0.26
TKN	mg/L	-	6.4	0.9
Hydrocarbons				
Benzene	mg/L	0.005	<0.00040	<0.00040
Toluene	mg/L	0.024	<0.00040	<0.00040
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040
Xylene	mg/L	0.02	<0.00089	<0.00089
F1 (C6-C10)	mg/L	2.2	<0.10	<0.10
F2 (>C10-C16)	mg/L	1.1	<0.10	<0.10
Organics				
COD	mg/L	-	696	31
TOC	mg/L	-	-	-
DOC	mg/L	-	16	13
Oil & Grease	mg/L	-	-	-
Metals				
Aluminum	mg/L	0.0007 / 0.05 ⁵	0.04	0.02
Antimony	mg/L	0.006	<0.00060	<0.00060
Arsenic	mg/L	0.005	0.0028	0.0017
Barium	mg/L	1	0.028	0.023
Beryllium	mg/L	-	<0.0010	-
Boron	mg/L	1	0.31	0.23
Cadmium	mg/L	0.00004-0.00037 ²	<0.000020	<0.000020
Chromium	mg/L	0.05	<0.0010	<0.0010
Cobalt	mg/L	-	0.0017	-
Copper	mg/L	0.007	0.0014	0.0016
Lead	mg/L	0.001-0.007 ²	<0.00020	-
Lithium	mg/L	-	0.13	-
Manganese	mg/L	0.05	0.15	0.15
Mercury	mg/L	0.000005	<0.0000020	<0.0000019
Molybdenum	mg/L	-	0.0045	-
Nickel	mg/L	0.007-0.170 ²	0.0062	0.0041
Phosphorus	mg/L	-	<0.10	-
Selenium	mg/L	0.002	0.00044	0.00021
Silicon	mg/L	-	4.9	-
Silver	mg/L	0.0001	<0.00010	<0.00010
Strontium	mg/L	-	0.38	-
Sulphur	mg/L	-	280	-
Thallium	mg/L	-	<0.00020	-
Tin	mg/L	-	<0.0010	-
Titanium	mg/L	-	0.005	-
Uranium	mg/L	0.01	0.008	0.0086
Vanadium	mg/L	-	0.0011	-
Zinc	mg/L	0.03	<0.0030	<0.0030
Volatile Organic Compounds (VOCs)				
Carbon tetrachloride	mg/L	0.002	-	<0.00050
Chlorobenzene	mg/L	0.0013	-	<0.00050
Chloroform	mg/L	0.08	-	<0.00050
Chloromethane	mg/L	-	-	<0.00050
Dibromochloromethane	mg/L	0.1	-	<0.0010
1,2-Dichlorobenzene	mg/L	0.0007	-	<0.00050
1,4-Dichlorobenzene	mg/L	0.001	-	<0.00050
1,2-Dichloroethane	mg/L	0.005	<0.00050	<0.00050
1,1-Dichloroethene	mg/L	0.014	-	<0.00050
Methyl t-Butyl Ether (MTBE)	mg/L	0.015	-	<0.00050
Methylene Chloride	mg/L	0.05	-	<0.0020
Methyl Methacrylate	mg/L	0.47	-	<0.00050
Tetrachloroethene	mg/L	0.01	<0.00050	<0.00050
1,2,3-Trichlorobenzene	mg/L	0.008	-	<0.0010
1,2,4-Trichlorobenzene	mg/L	0.015	-	<0.0010
1,3,5-Trichlorobenzene	mg/L	0.014	-	<0.00050
Trichloroethene	mg/L	0.005	<0.00050	<0.00050
Trihalomethanes	mg/L	-	-	<0.0013
Vinyl chloride	mg/L	0.002	<0.00050	<0.00050

Notes:

¹ Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp. Referenced guidelines are for fine textured soils under Agricultural land use

² Guideline varies with hardness

³ Guideline varies with chloride

⁴ Guideline varies with pH and temperature

⁵ Guideline varies with pH

"-" No applicable guideline or not analyzed

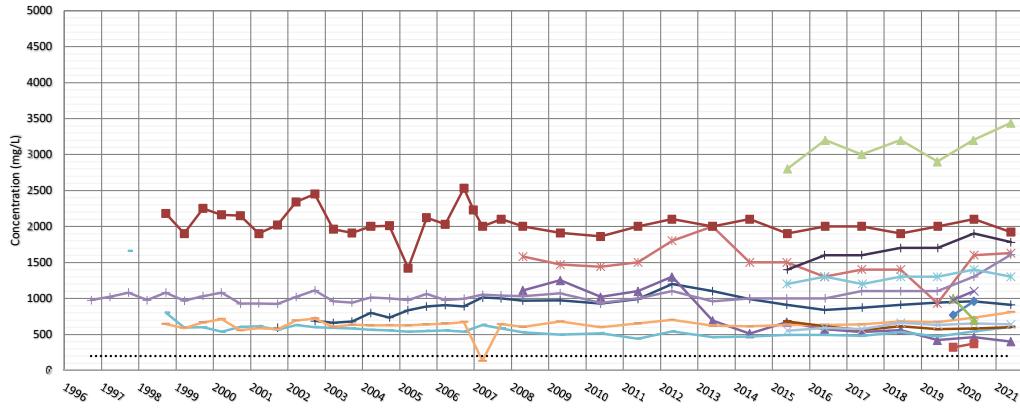
Exceeds Regulatory Limit

Italic - Detection limit greater than Tier 1 Guideline

APPENDIX F

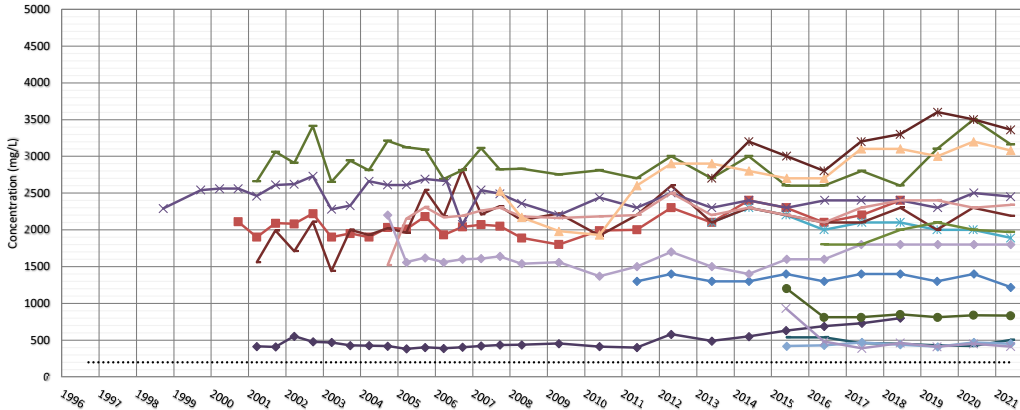
CONCENTRATION TRENDS

Appendix F1 - Sodium Concentration Trends



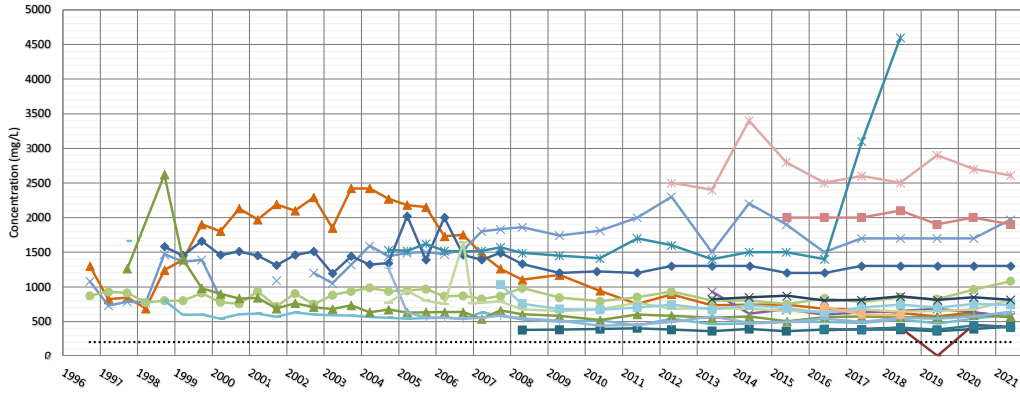
Surficial Materials

- MW10
- MW18B
- MW19B
- MW20B
- MW21A
- MW21B
- MW22B
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 19MW37A
- 19MW37B
- 19MW38A
- 19MW38B
- Sodium Guideline (200 mg/L)



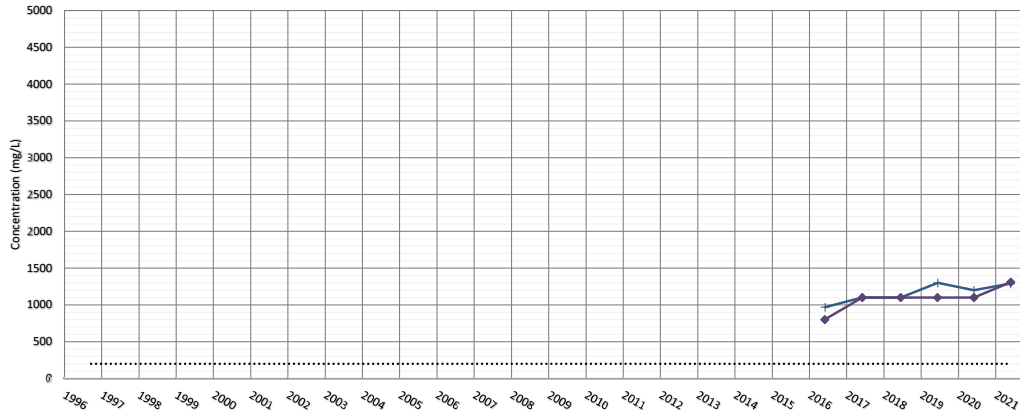
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- 15MW35B
- Sodium Guideline (200 mg/L)



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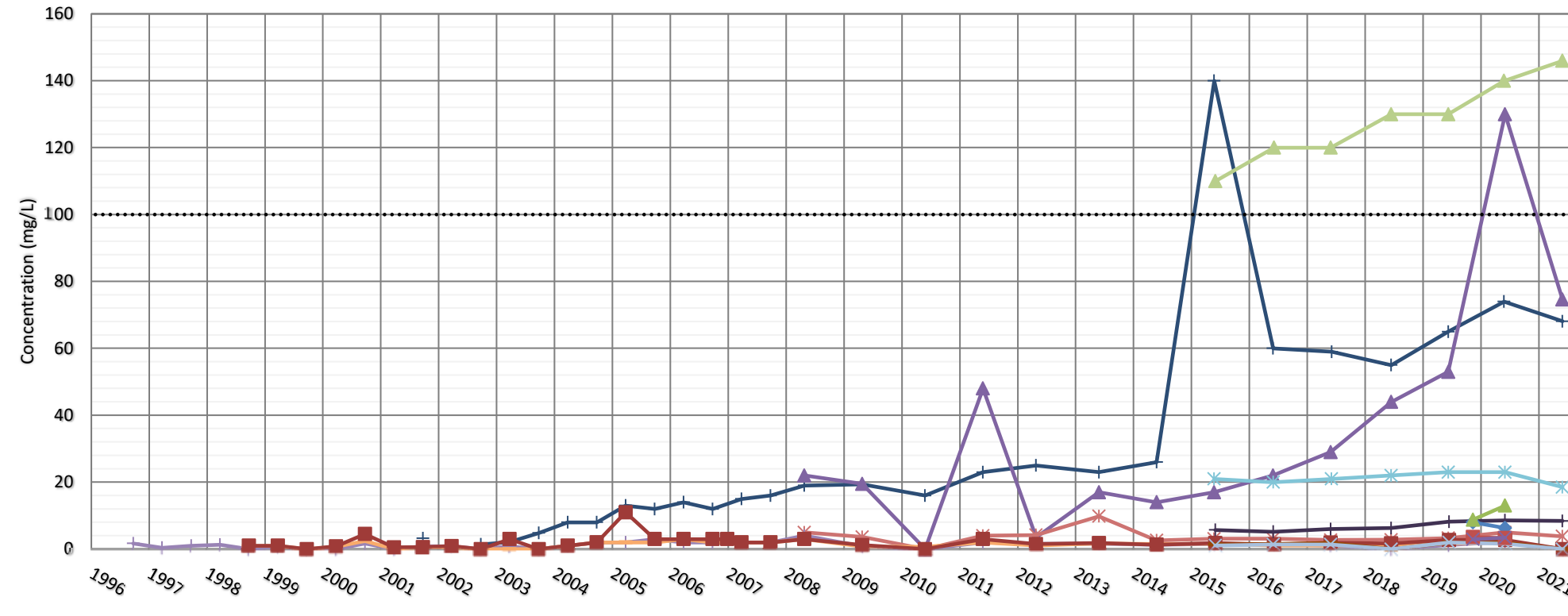
- MW18
- MW5R - Decom.
- MW8A
- MW12B
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW23A
- MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- Sodium Guideline (200 mg/L)



Lower Bedrock

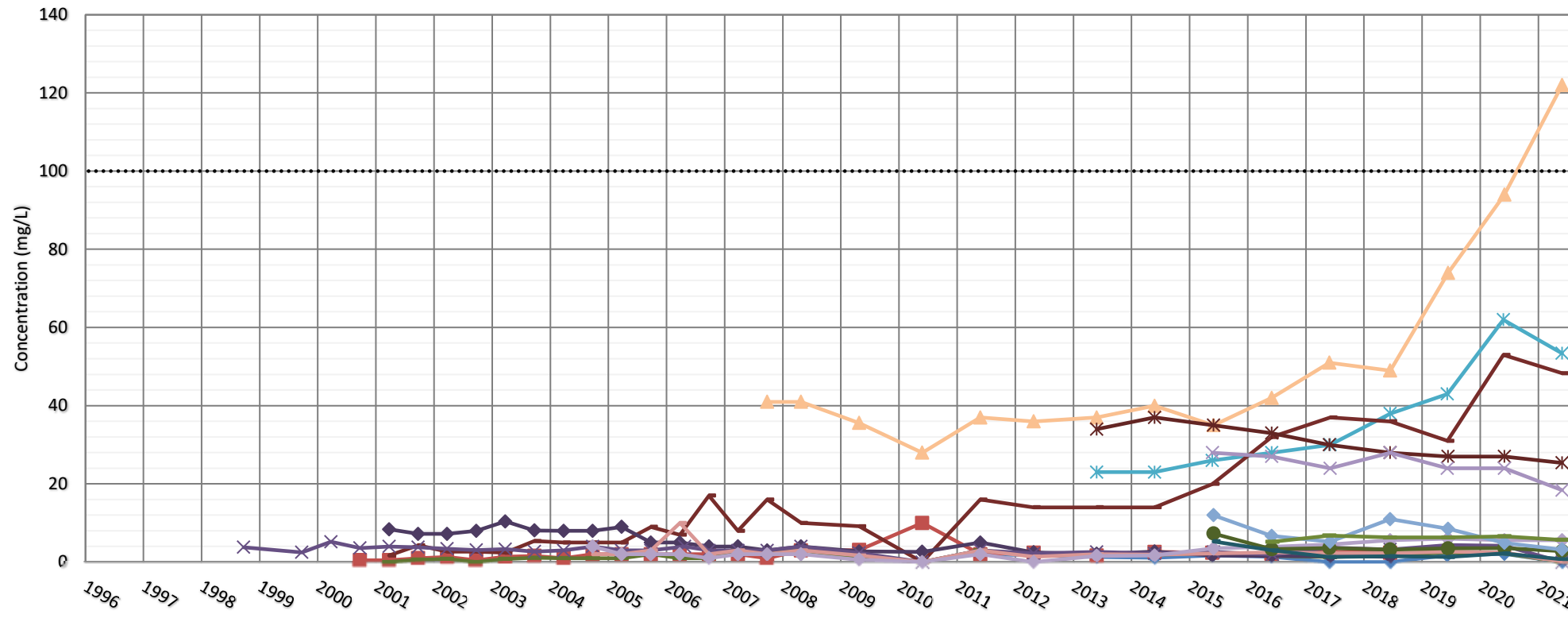
- 15MW35-DEEP
- 15MW36-DEEP
- Sodium Guideline (200 mg/L)

Appendix F2 - Chloride Concentration Trends



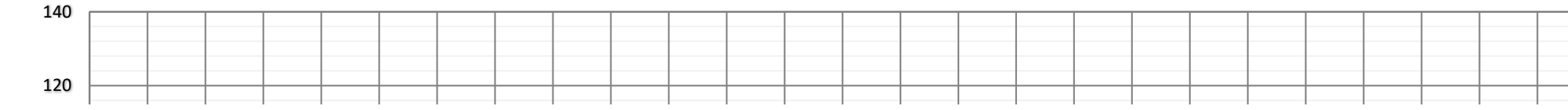
Surficial Materials

- MW10
- MW18B
- MW19B
- MW20B
- MW21B
- MW22B
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 19MW37A
- 19MW37B
- 19MW38A
- 19MW38B
- Chloride guideline (100 mg/L)

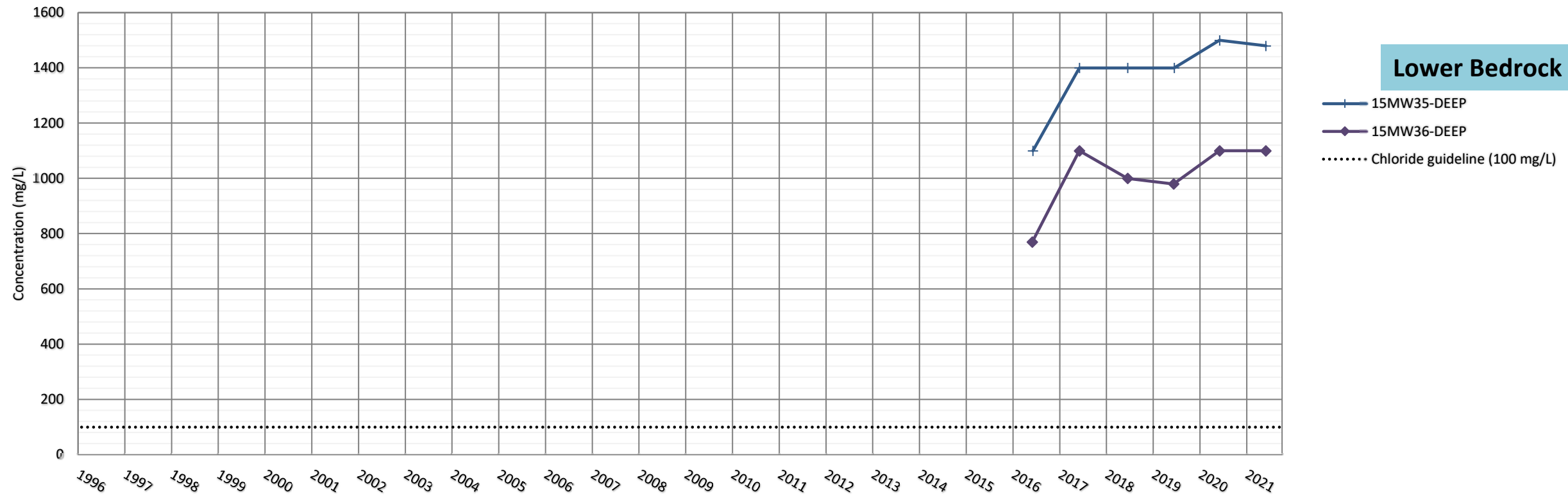
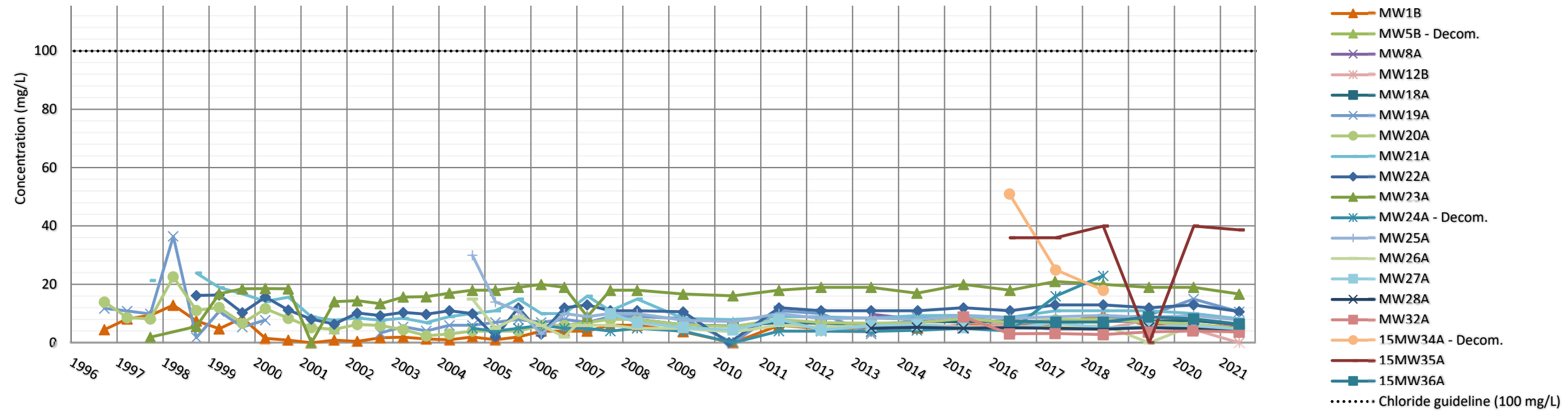


Upper Sandstone

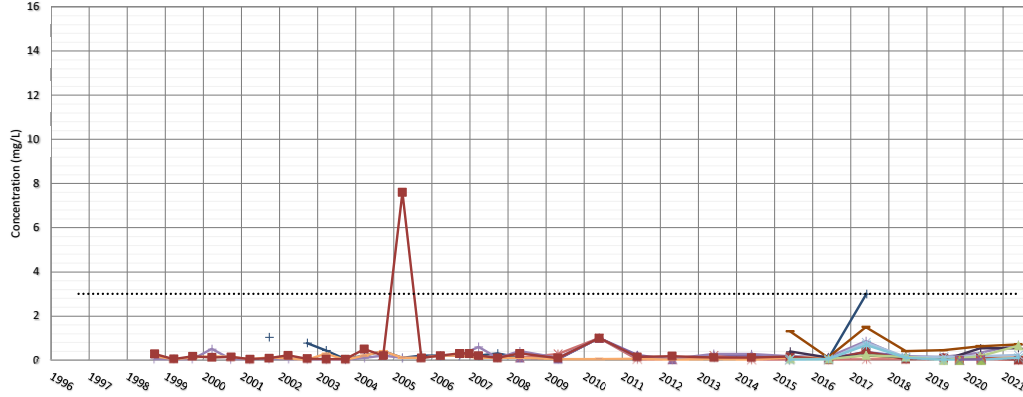
- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- 15MW35B
- Chloride guideline (100 mg/L)



Clay Shale

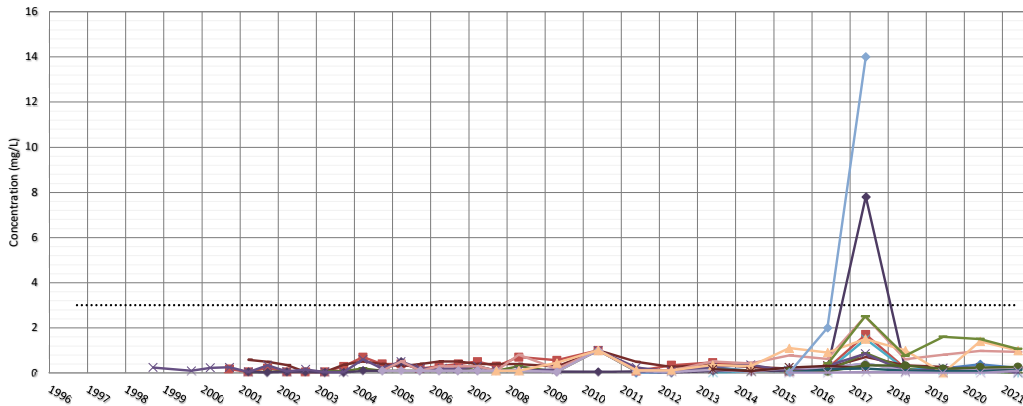


Appendix F3 - Nitrate Concentration Trends



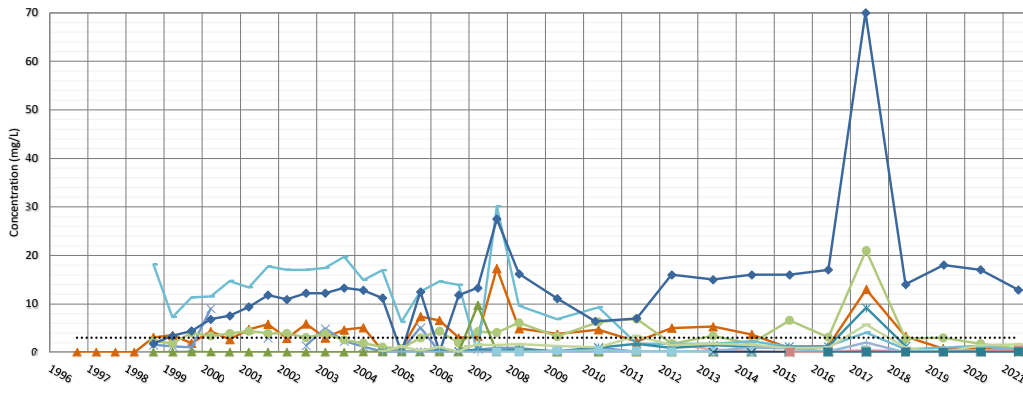
Surficial Materials

- MW10
- MW18B
- MW19B
- MW20B
- MW21A
- MW21B
- MW22B
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 19MW37A
- 19MW37B
- 19MW38A
- 19MW38B
- Nitrate (N) guideline (3 mg/L)



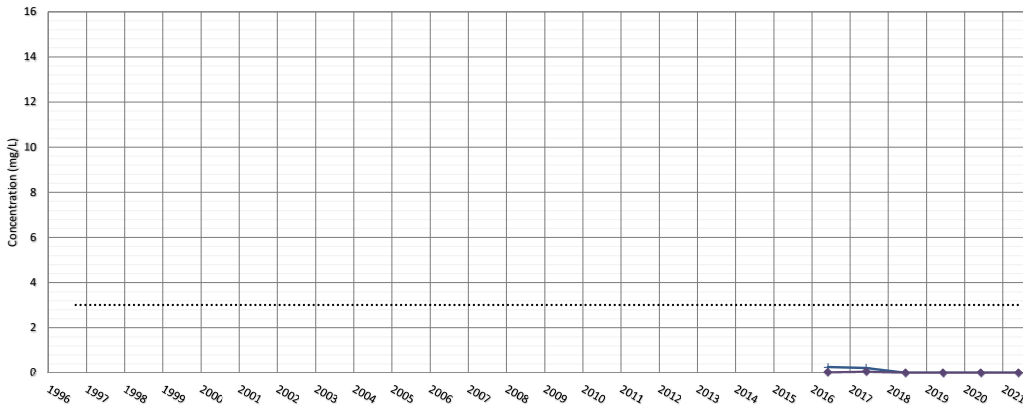
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- 15MW35B
- Nitrate (N) guideline (3 mg/L)



Clay Shale

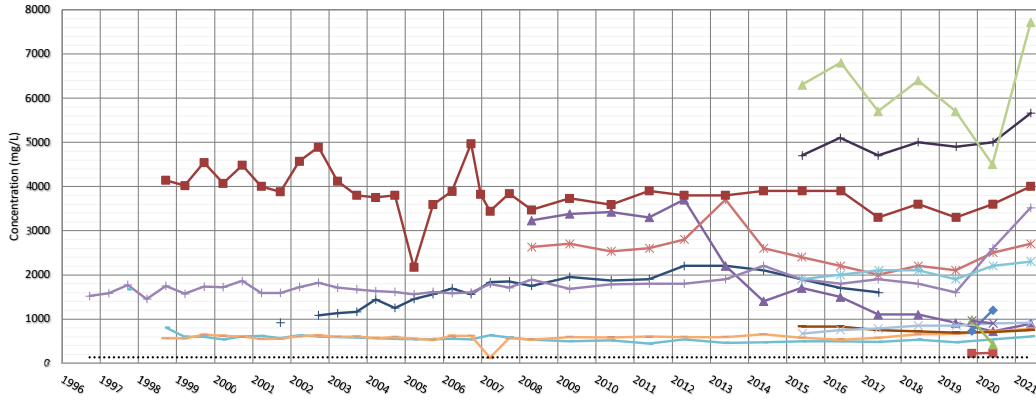
- MW1R
- MW5B - Decom.
- MW8A
- MW12B
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW23A
- MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- Nitrate (N) guideline (3 mg/L)



Lower Bedrock

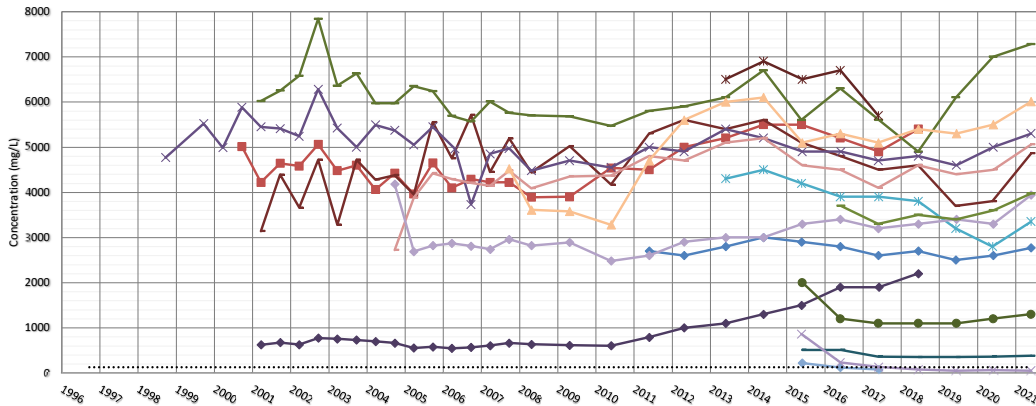
- 15MW35-DEEP
- 15MW36-DEEP
- Nitrate (N) guideline (3 mg/L)

Appendix F4 - Sulphate Concentration Trends



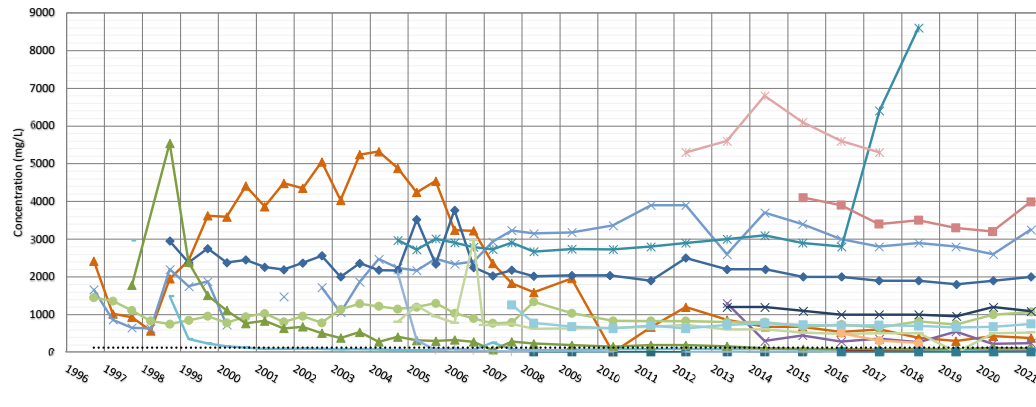
Surficial Materials

- MW10
- MW18B
- MW19B
- MW20B
- MW21A
- MW21B
- MW22B
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 19MW37A
- 19MW37B
- 19MW38A
- 19MW38B
- 19MW388
- Sulphate guideline (128 mg/L)



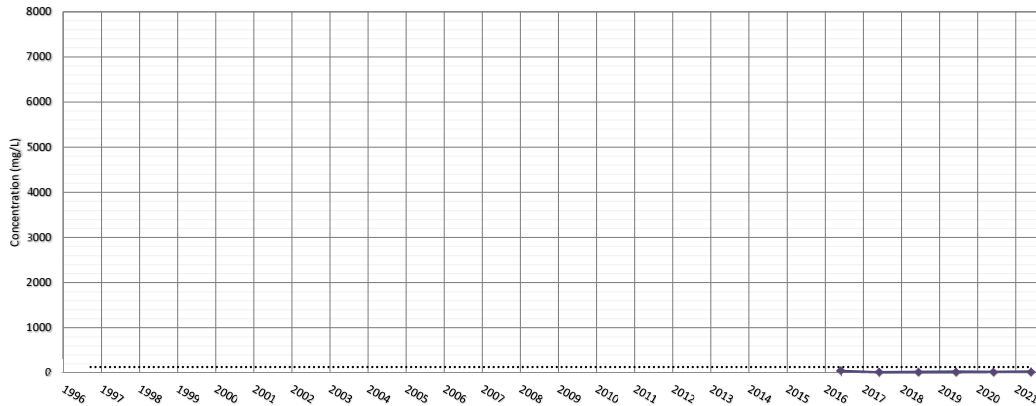
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- MW33A
- 15MW35B
- Sulphate guideline (128 mg/L)



Clay Shale

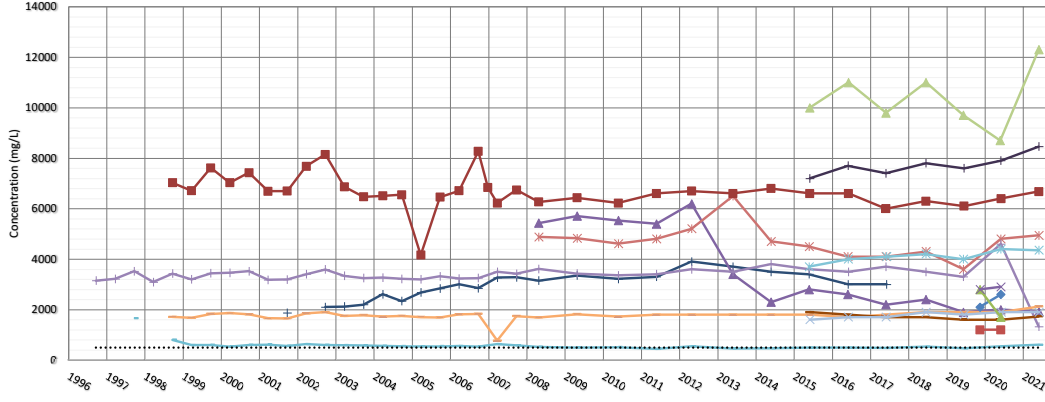
- MW1R
- MW5B - Decom.
- MW8A
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW27A
- MW28A
- MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- MW12B
- Sulphate guideline (128 mg/L)



Lower Bedrock

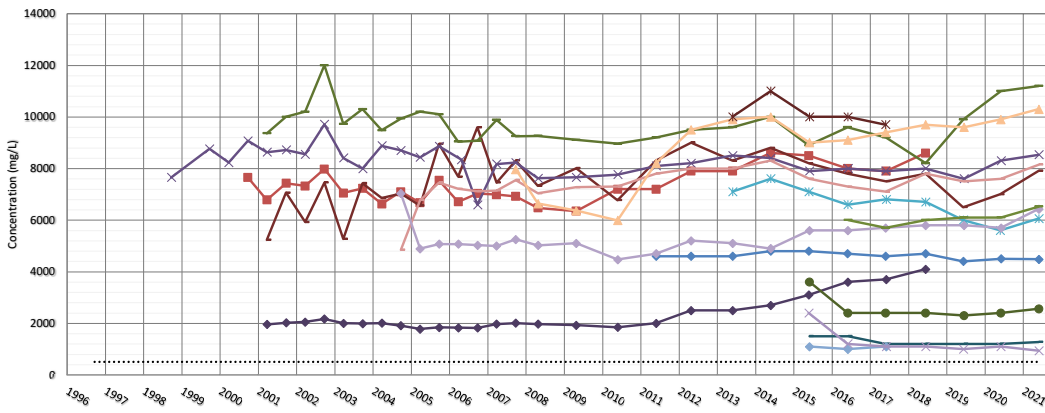
- 15MW35-DEEP
- 15MW36-DEEP
- Sulphate guideline (128 mg/L)

Appendix F5 - TDS Concentration Trends



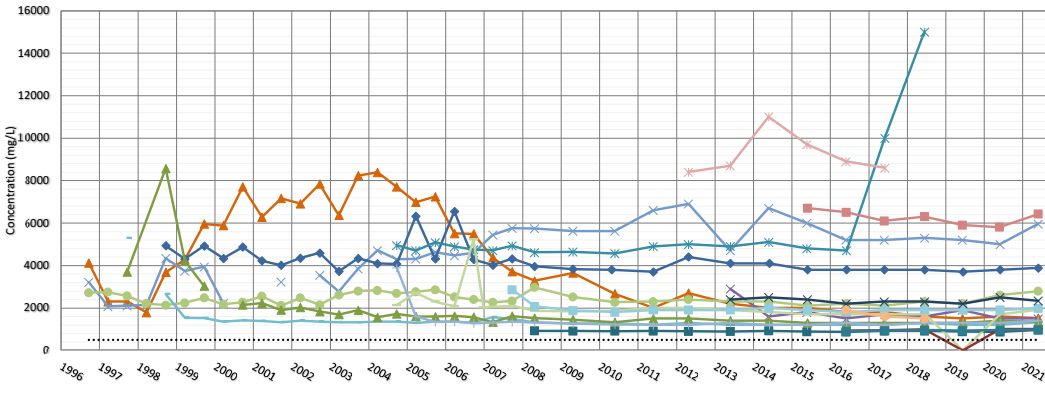
Surficial Materials

- MW10
- MW18B
- MW19B
- MW20B
- MW21A
- MW21B
- MW22B
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 19MW37A
- 19MW37B
- 19MW38A
- 19MW38B
- TDS guideline (500 mg/L)



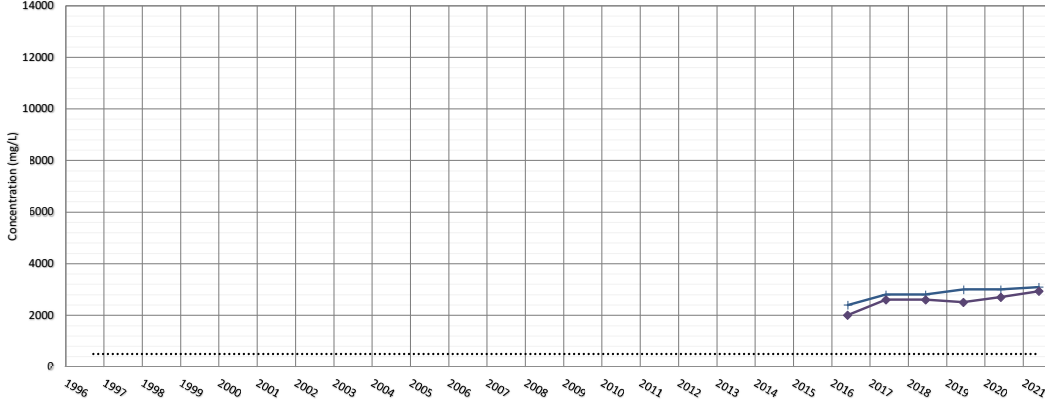
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- 15MW35B
- TDS guideline (500 mg/L)



Clay Shale

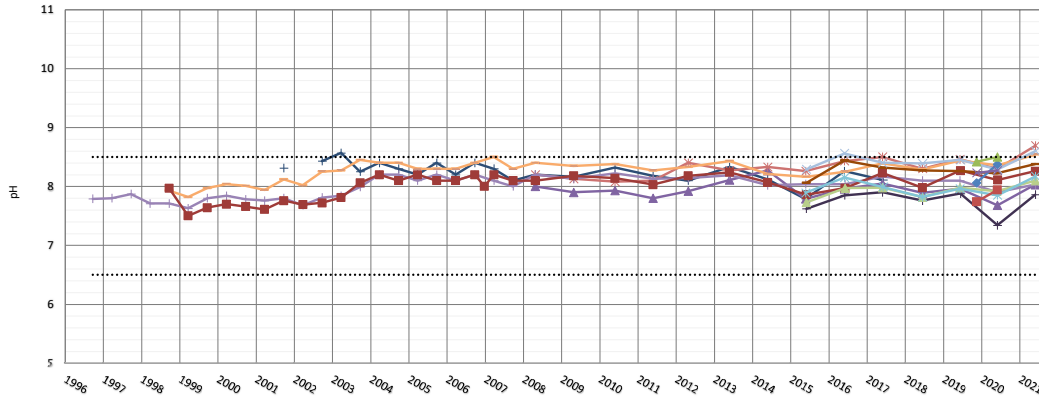
- MW1R
- MW5B - Decom.
- MW8A
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW23A
- MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- MW12B
- TDS guideline (500 mg/L)



Lower Bedrock

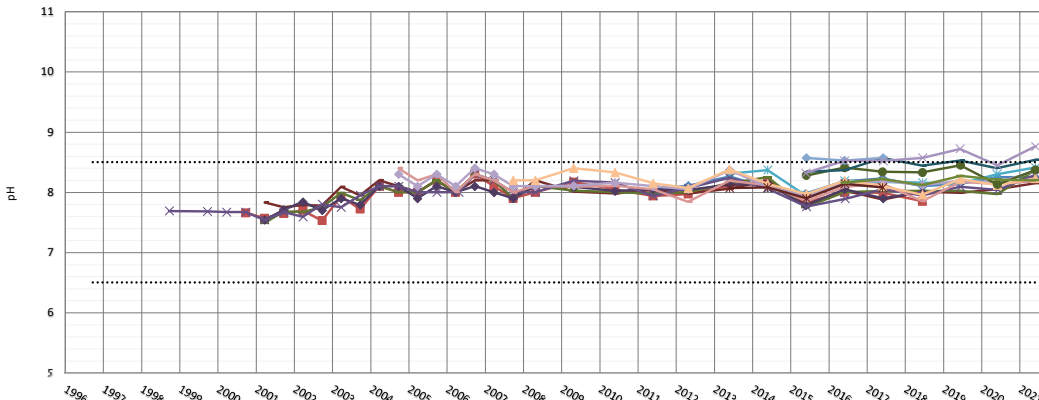
- 15MW35-DEEP
- 15MW36-DEEP
- TDS guideline (500 mg/L)

Appendix F6 - Lab pH Trends



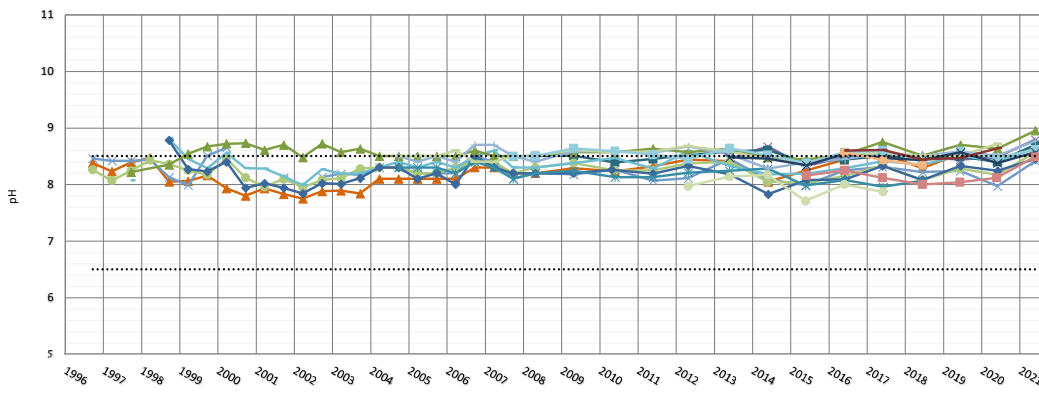
Surficial Materials

- MW10
- MW188
- MW198
- MW208
- MW21A
- MW21B
- MW22B
- MW29B
- MW30B
- MW31B
- MW31B
- MW32B
- MW33B
- MW33B
- 19MW37A
- 19MW37B
- 19MW38A
- 19MW38B
- pH (Upper Limit 8.5)
- pH (Lower Limit 6.5)



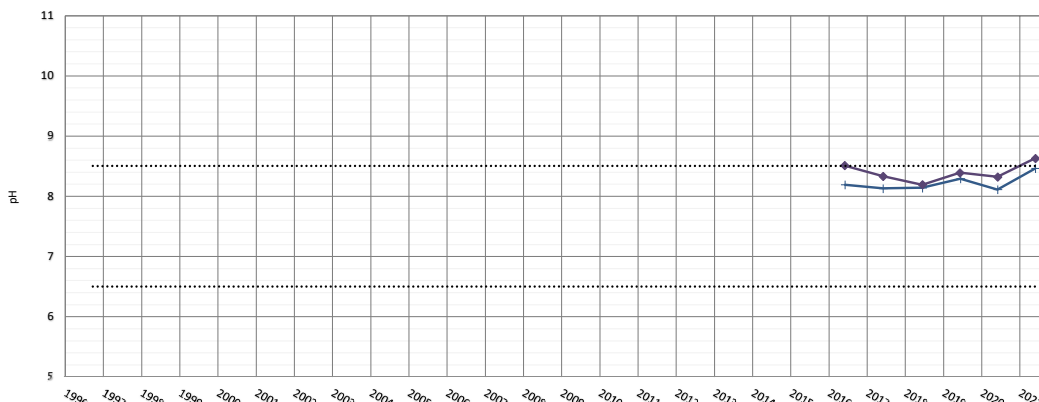
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- 15MW35B
- pH (Upper Limit 8.5)
- pH (Lower Limit 6.5)



Clay Shale

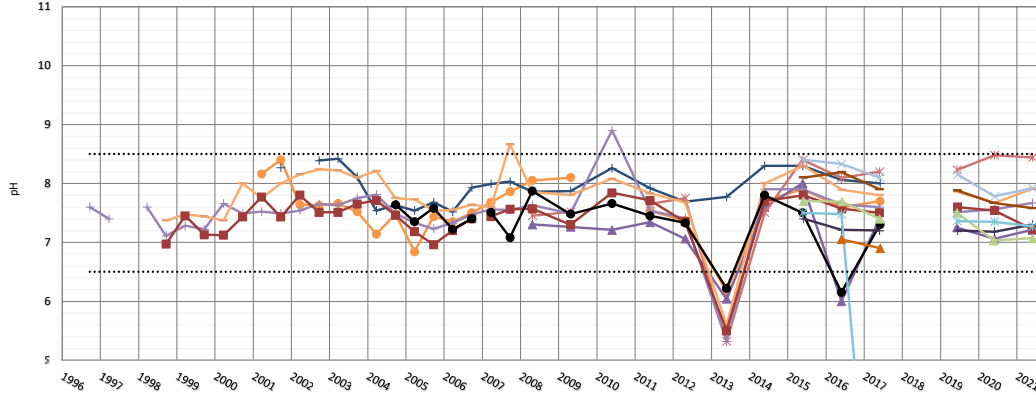
- MW1B
- MW5B - Decom.
- MW8A
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW23A
- MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW28A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- MW12B
- pH (Upper Limit 8.5)
- pH (Lower Limit 6.5)



Lower Bedrock

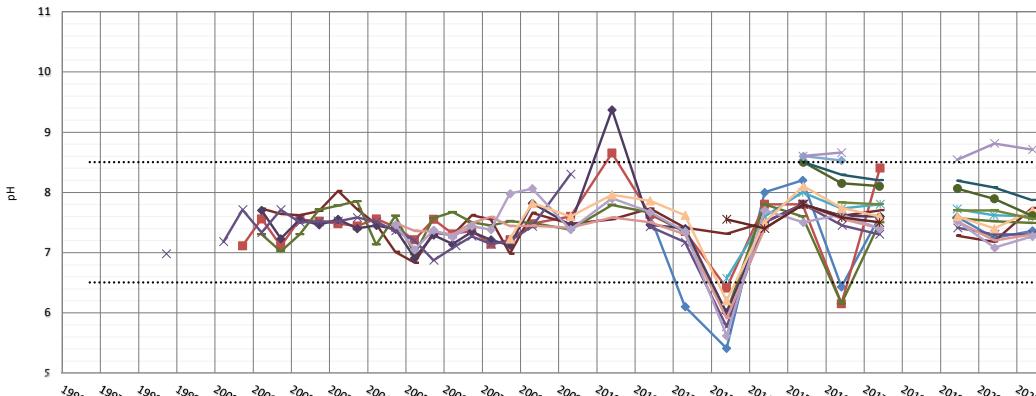
- 15MW35-DEEP
- 15MW36-DEEP
- pH (Upper Limit 8.5)
- pH (Lower Limit 6.5)

Appendix F7 - Field pH Trends



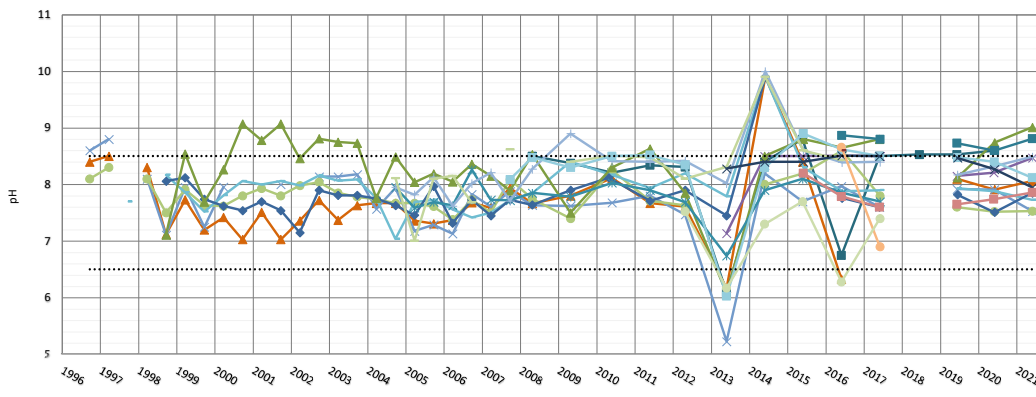
Surfacial Materials

- MW9 - Decom.
- MW10
- MW18B
- MW19B
- MW20B
- MW21B
- MW22B
- MW24B - Decom.
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 15MW34B - Decom.
- Field pH (Upper Limit 8.5)
- Field pH (Lower Limit 6.5)



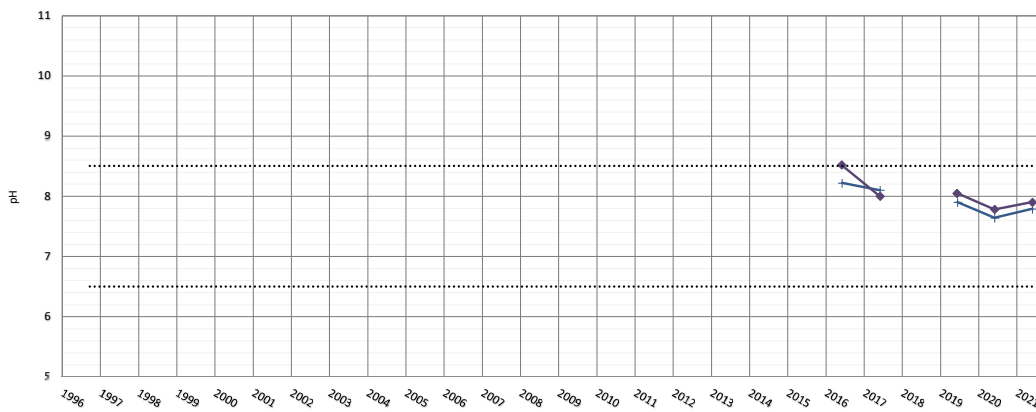
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- 15MW35B
- Field pH (Upper Limit 8.5)
- Field pH (Lower Limit 6.5)



Clay Shale

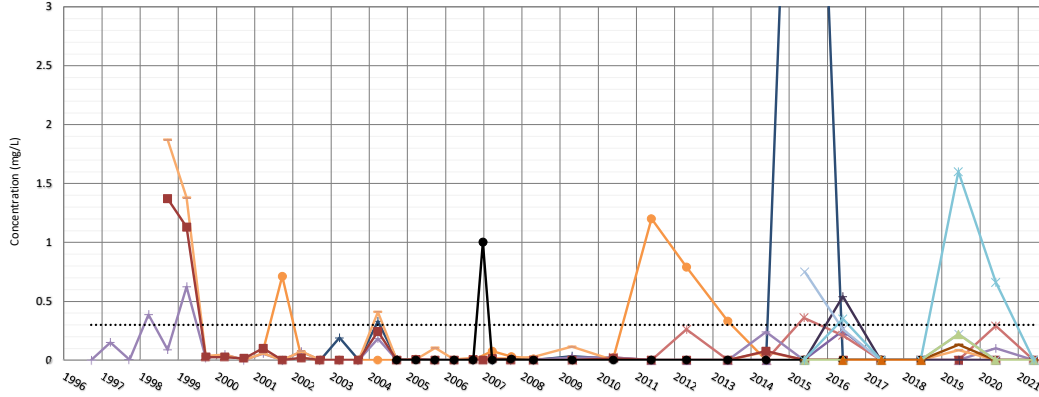
- MW1B
- MW5B - Decom.
- MW8A
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW23A
- MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- MW12B
- Field pH (Upper Limit 8.5)
- Field pH (Lower Limit 6.5)



Lower Bedrock

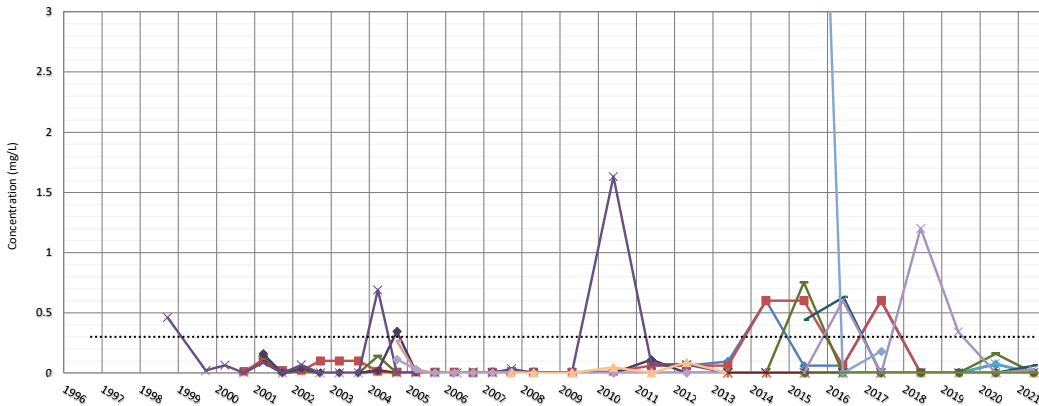
- 15MW35-DEEP
- 15MW36-DEEP
- Field pH (Upper Limit 8.5)
- Field pH (Lower Limit 6.5)

Appendix F8 - Iron Concentration Trends



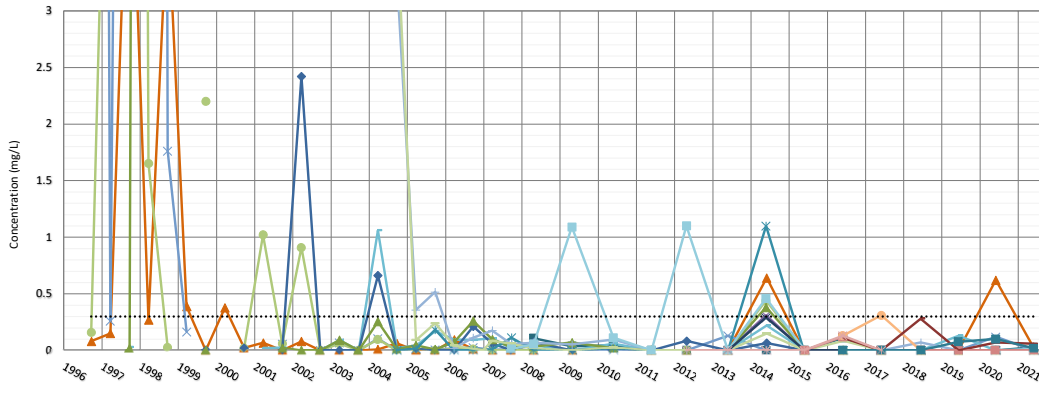
Surficial Materials

- MW9 - Decom.
- MW10
- MW18B
- MW19B
- MW20B
- MW21B
- MW22B
- MW24B - Decom.
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 15MW34B - Decom.
- Iron guideline (0.3 mg/L)



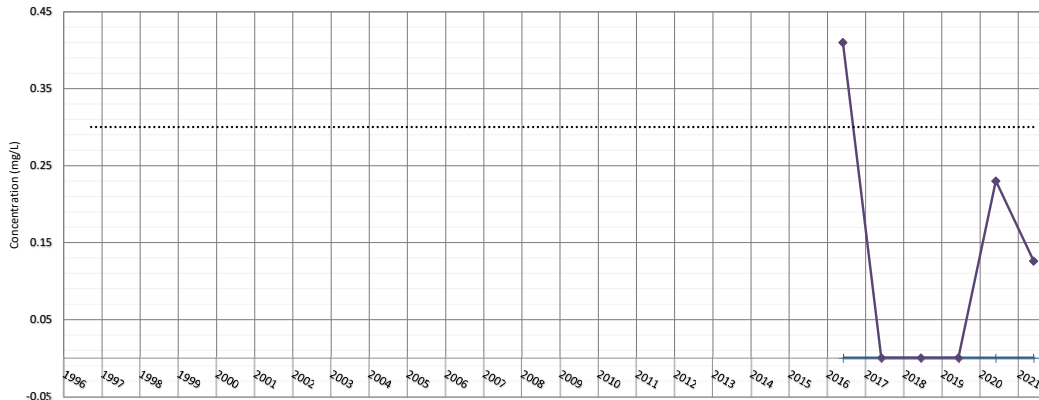
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- 15MW35B
- Iron guideline (0.3 mg/L)



Clay Shale

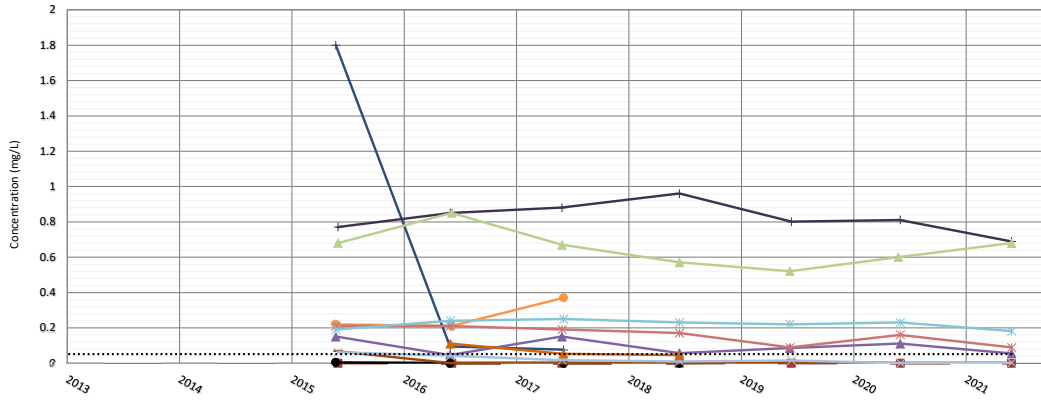
- MW1R
- MW5B - Decom.
- MW8A
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW23A
- MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- 15MW36A
- MW12B
- Iron guideline (0.3 mg/L)



Lower Bedrock

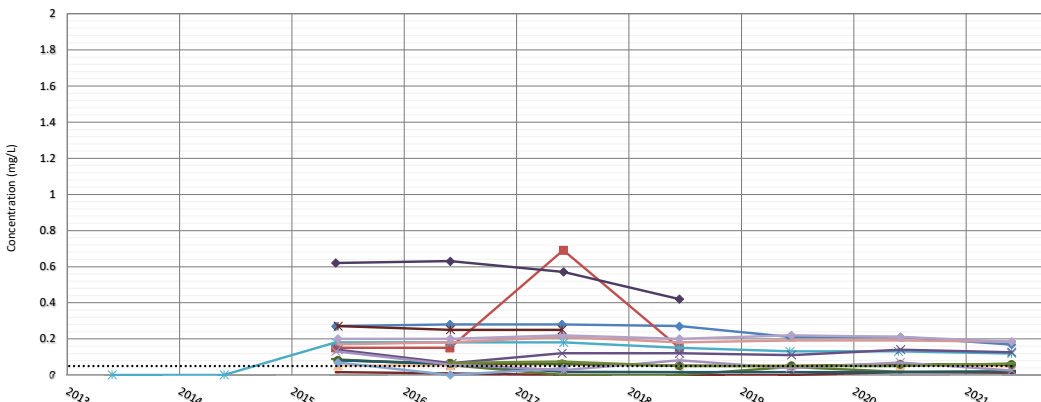
- 15MW35-DEEP
- 15MW36-DEEP
- Iron guideline (0.3 mg/L)

Appendix F9 - Manganese Concentration Trends



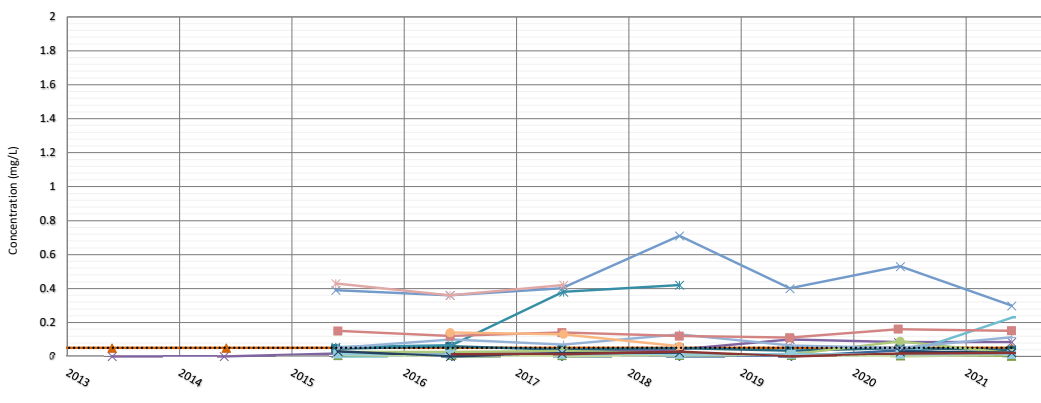
Surficial Materials

- MW9 - Decom.
- MW10
- MW18B
- MW19B
- MW20B
- MW21B
- MW22B
- MW24B - Decom.
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 15MW34B - Decom.
- Manganese Guideline (0.05 mg/L)



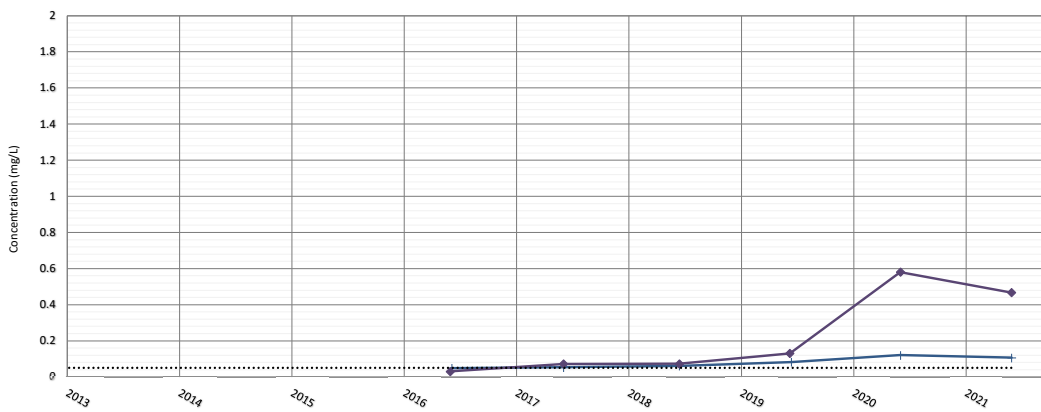
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- 15MW35B
- Manganese Guideline (0.05 mg/L)



Clay Shale

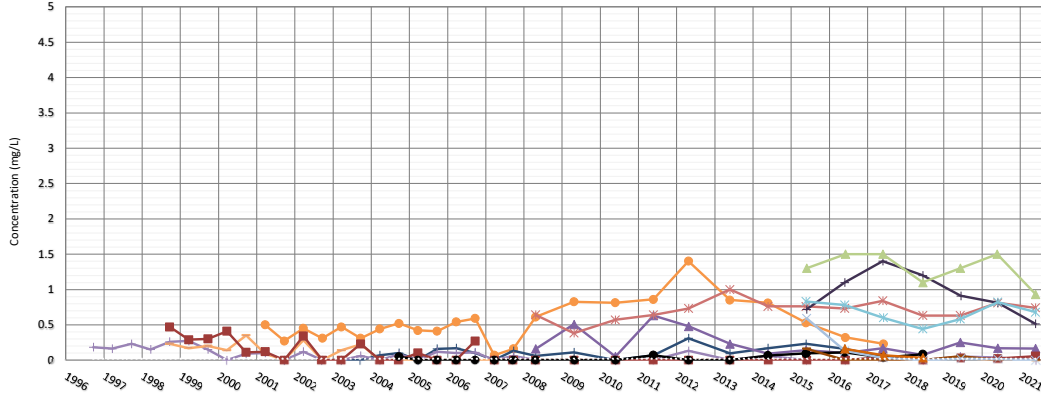
- MW1R
- MW5B - Decom.
- MW8A
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW73A
- MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- MW12B
- Manganese Guideline (0.05 mg/L)



Lower Bedrock

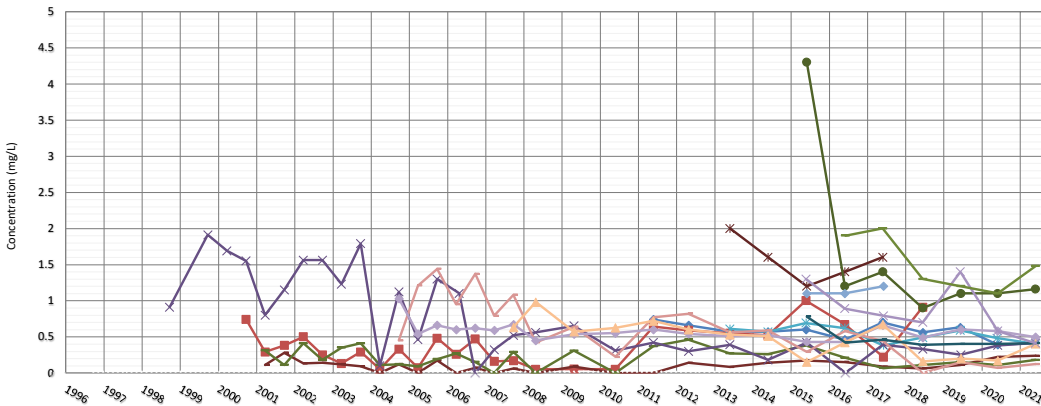
- 15MW35-DEEP
- 15MW36-DEEP
- Manganese Guideline (0.05 mg/L)

Appendix F10 - Ammonia Concentration Trends



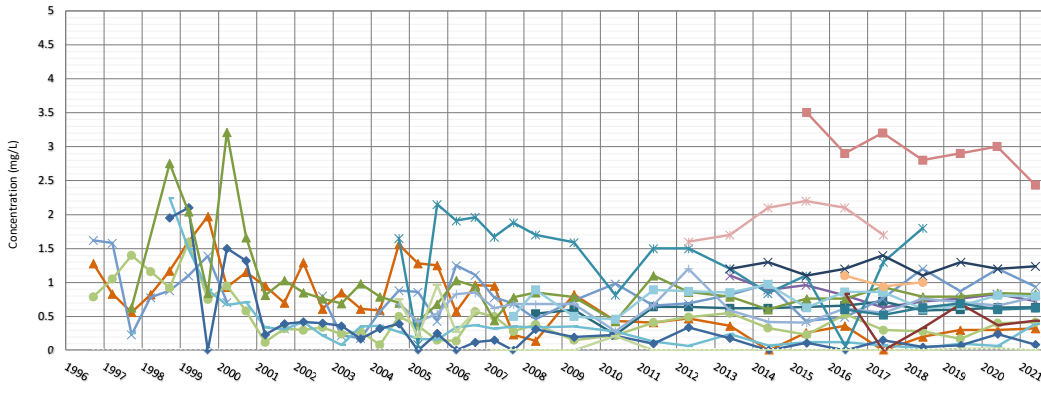
Surficial Materials

- MW9 - Decom.
 - MW10
 - MW188
 - MW198
 - MW208
 - MW218
 - MW228
 - MW248 - Decom.
 - MW298
 - MW308
 - MW318
 - MW328
 - MW338
 - 15MW348 - Decom.
- Ammonia guideline (0.018 mg/L)



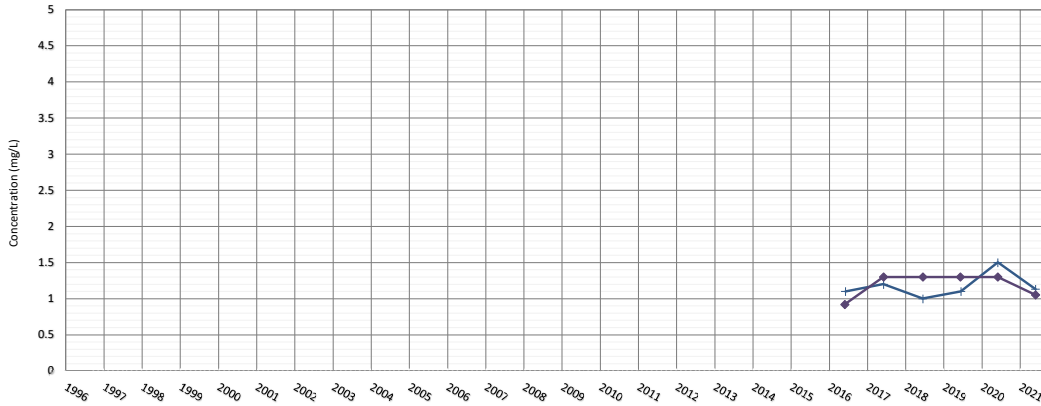
Upper Sandstone

- MW1C
 - MW5A - Decom.
 - MW88
 - MW11
 - MW12A
 - MW14 - Decom.
 - MW23B
 - MW25B
 - MW26B
 - MW27B
 - MW28B
 - MW29A
 - MW30A
 - MW31A
 - MW33A
 - 15MW35B
- Ammonia guideline (0.018 mg/L)



Clay Shale

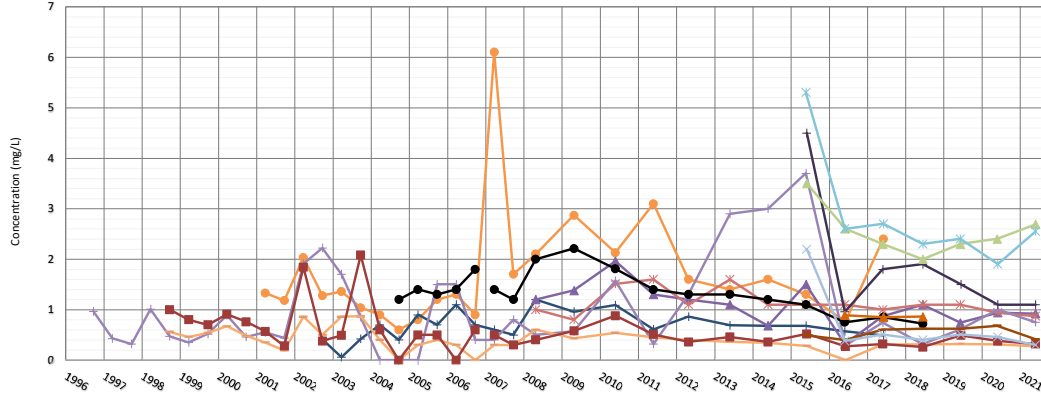
- MW1R
 - MW5B - Decom.
 - MW8A
 - MW18A
 - MW19A
 - MW20A
 - MW21A
 - MW22A
 - MW23A
 - MW24A - Decom.
 - MW25A
 - MW26A
 - MW27A
 - MW28A
 - MW32A
 - 15MW34A - Decom.
 - 15MW35A
 - 15MW36A
 - MW12B
- Ammonia guideline (0.018 mg/L)



Lower Bedrock

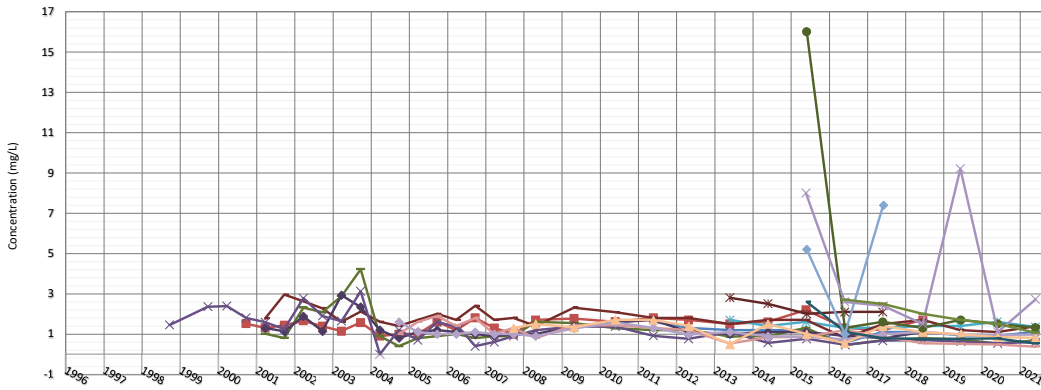
- 15MW35-DEEP
 - 15MW36-DEEP
- Ammonia guideline (0.018 mg/L)

Appendix F11 - TKN Concentration Trends



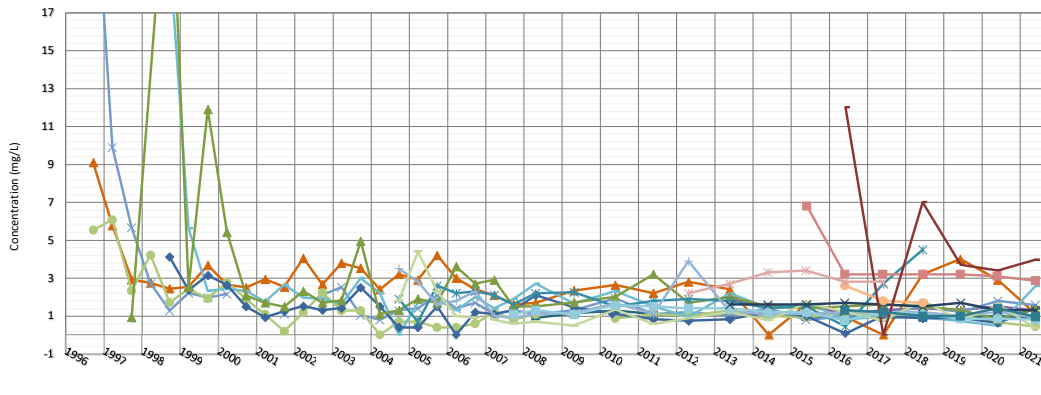
Surficial Materials

- MW9 - Decom.
- MW10
- ▲ MW188
- ✱ MW198
- ◆ MW208
- ◇ MW218
- MW228
- MW248 - Decom.
- MW298
- MW308
- ✱ MW318
- ▲ MW328
- ✱ MW338
- ▲ 15MW348 - Decom.
- No TKN Guideline



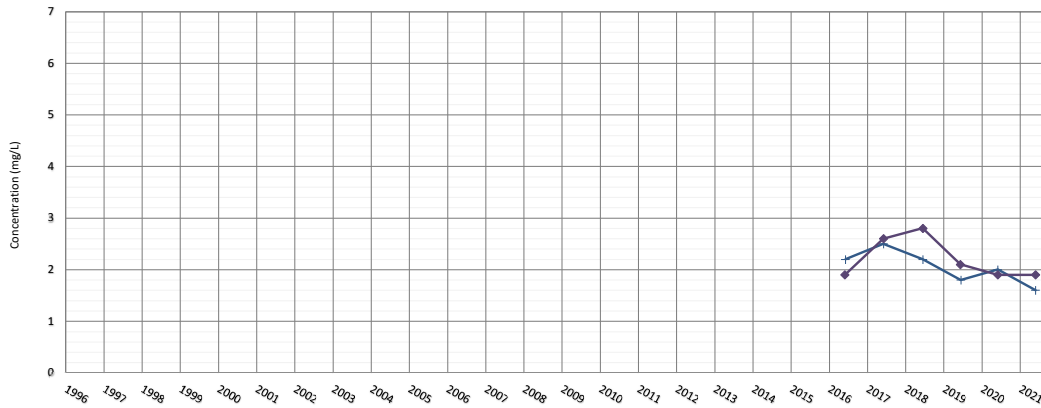
Upper Sandstone

- ◆ MW1C
- MW5A - Decom.
- ✱ MW8B
- MW11
- MW12A
- ◆ MW14 - Decom.
- ✱ MW23B
- MW25B
- MW26B
- MW27B
- ✱ MW28B
- MW29A
- MW30A
- ◆ MW31A
- ✱ MW33A
- 15MW35B
- No TKN Guideline



Clay Shale

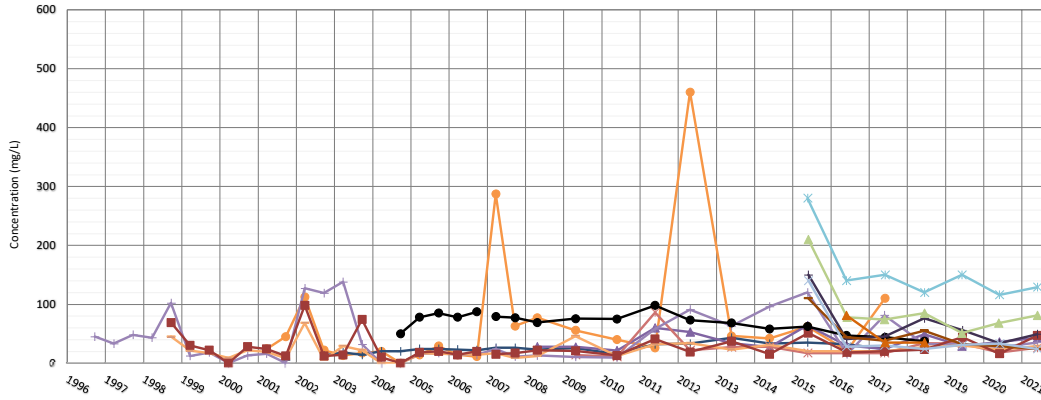
- ▲ MW1R
- ▲ MW5B - Decom.
- ✱ MW8A
- MW18A
- ✱ MW19A
- MW20A
- MW21A
- MW22A
- MW23A
- ✱ MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW32A
- ▲ 15MW34A - Decom.
- 15MW35A
- 15MW36A
- MW12B
- No TKN Guideline



Lower Bedrock

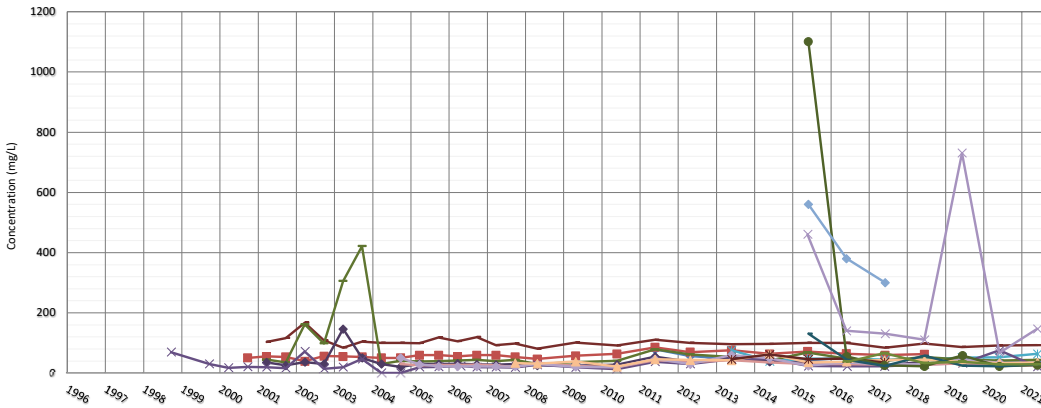
- 15MW35-DEEP
- 15MW36-DEEP
- No TKN Guideline

Appendix F12 - COD Concentration Trends



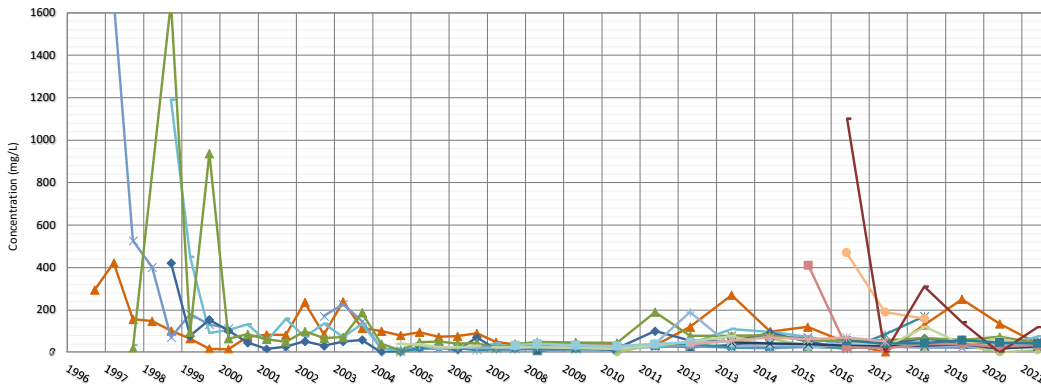
Surficial Materials

- MW9 - Decom.
- MW10
- MW18B
- MW19B
- MW20B
- MW21B
- MW22B
- MW24B - Decom.
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 15MW34B - Decom.
- No COD Guideline



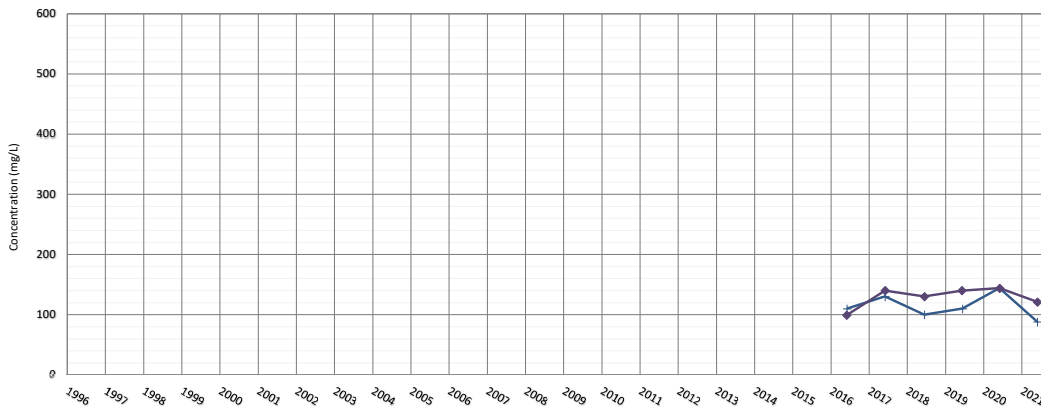
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- 15MW35B
- No COD Guideline



Clay Shale

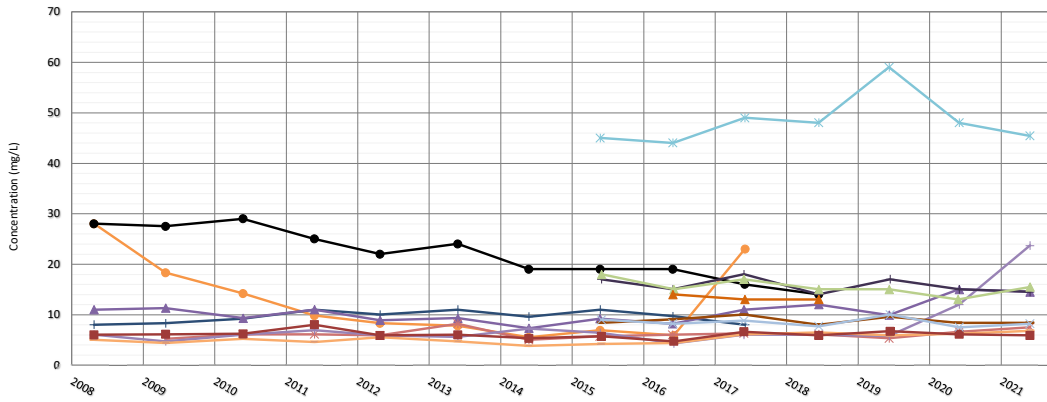
- MW1R
- MW5B - Decom.
- MW8A
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW23A
- MW24A - Decom.
- MW25A
- MW26A
- MW27A
- MW28A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- MW12B
- No COD Guideline



Lower Bedrock

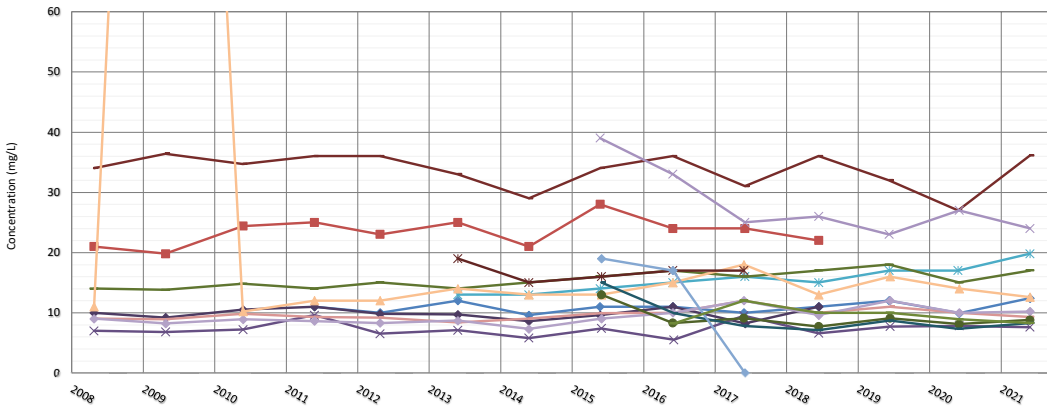
- 15MW35-DEEP
- 15MW36-DEEP
- No COD Guideline

Appendix F13 - DOC Concentration Trends



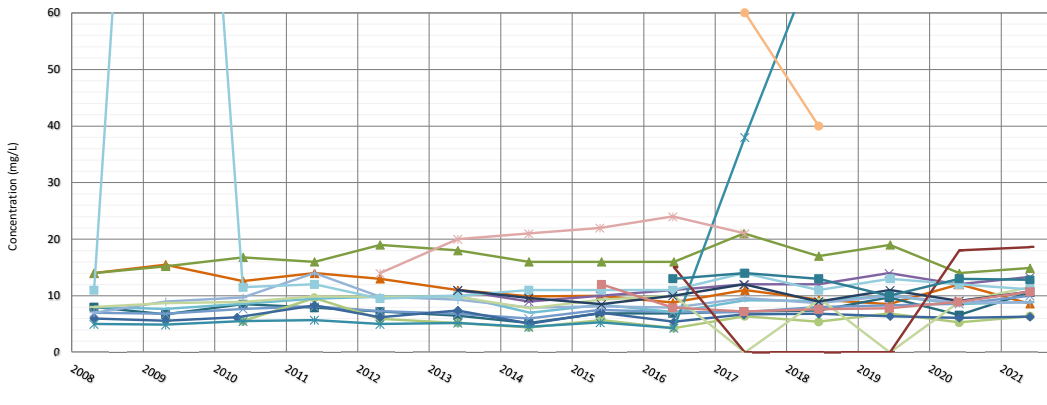
Surficial Materials

- MW9 - Decom.
- MW10
- MW18B
- MW19B
- MW20B
- MW21B
- MW22B
- MW24B - Decom.
- MW29B
- MW30B
- MW31B
- MW32B
- MW33B
- 15MW34B - Decom.
- No DOC Guideline



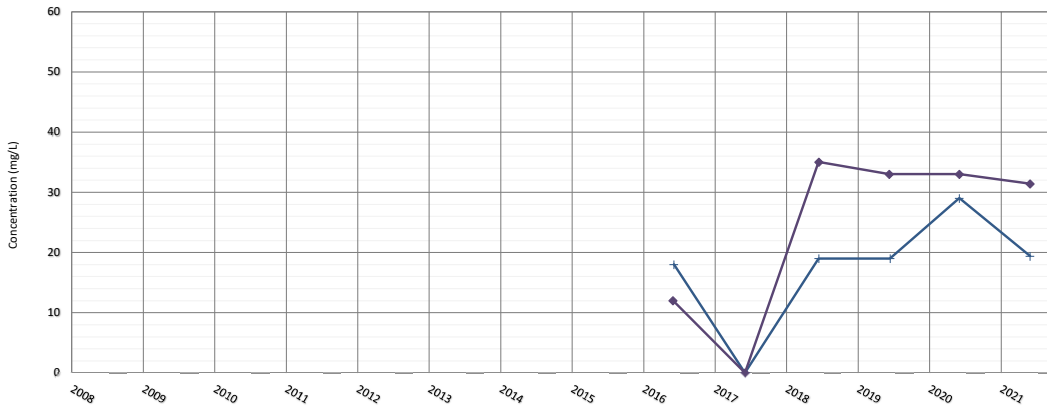
Upper Sandstone

- MW1C
- MW5A - Decom.
- MW8B
- MW11
- MW12A
- MW14 - Decom.
- MW23B
- MW25B
- MW26B
- MW27B
- MW28B
- MW29A
- MW30A
- MW31A
- MW33A
- MW33B
- 15MW35B
- No DOC Guideline



Clay Shale

- MW1R
- MW5B - Decom.
- MW8A
- MW18A
- MW19A
- MW20A
- MW21A
- MW22A
- MW73A
- MW74A
- MW75A
- MW76A
- MW77A
- MW78A
- MW32A
- MW32A
- 15MW34A - Decom.
- 15MW35A
- 15MW36A
- MW12B
- No DOC Guideline



Lower Bedrock

- 15MW35-DEEP
- 15MW36-DEEP
- No DOC Guideline

APPENDIX G

TETRA TECH'S LIMITATIONS ON THE USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

GEOENVIRONMENTAL

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