ATTACHMENT A

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May 14, 2021
3241-20-001

Cowichan Valley Regional District
175 Ingram Street
Duncan, BC V9L 1N8

Attention: Ilse Sarady

Dear Ms. Sarady,

RE: Groundwater Investigation near Fisher Rd., Cobble Hill, BC

1.0 INTRODUCTION

1.1 Background

The Cowichan Valley Regional District (CVRD) retained Waterline Resources Inc. (Waterline) on behalf of the Cobble Hill Aquifer Interagency Task Group (CHAITG), to investigate groundwater conditions near 1345, 1355 and 1360 Fisher Road in Cobble Hill, British Columbia (the Site; Figure 1).

The CHAITG is a working group comprised of representatives from the CVRD, Island Health, the Ministry of Environment and Climate Change Strategy (ENV), Ministry of Forests, Lands, Natural Resources Operations and Rural Development (FLNRORD) and the Ministry of Agriculture. CHAITG was formed to work collaboratively on the groundwater and drinking water concerns associated with the known nitrate contamination at the Site.

The Fisher Road area is a mix of industrial, commercial, residential, and agricultural lands. The Site comprises of the following industrial/commercial businesses shown on Figure 2:

- 1345 Fisher Road - Central Landscaping Supplies, currently operating as a composting facility and a landscape supply business,
- 1355 Fisher Road - Fisher Road Recycling, currently operating as a recycling and composting facility, and
- 1360 Fisher Road - Gamboa Greenhouses operated a vegetable greenhouse which ceased operations in 2017.

An investigation at the Site by ENV in 2002 concluded that land use practices in the area had resulted in elevated nitrate concentrations in groundwater exceeding drinking water guidelines for the *Environmental Management Act - Contaminated Site Regulation* (CSR) and the *Canadian Drinking Water Quality* (GCDWQ) standards. The nitrate contamination in groundwater at the Site

is believed to have originated from organic sourced nitrogen from composting at 1345 and 1355 Fisher Road and inorganic-sourced nitrogen from synthetic fertilizers historically used at 1360 Fisher Road vegetable greenhouse. Nitrate concentrations in groundwater at the Site may also be elevated due to migration of impacted water from upgradient agricultural and rural land use practices southeast of the Site, not associated with 1345, 1355 and 1360 Fisher Road.

A series of groundwater studies and investigations have been commissioned to investigate the contaminant issue at the Site, including:

- A site investigation of 1345 and 1355 Fisher Road. (EBA, 2010),
- An environmental assessment of the groundwater at 1355 Fisher Road. (Thurber, 2011),
- Installation of four groundwater monitoring wells by the CVRD (MW12-1, MW12-2, MW12-3, and MW13-4) upgradient and downgradient of the Site, screened across the water table to help delineate and characterize the nitrate contamination initially observed in the Production Well at 1355 Fisher Road. (Thurber, 2013; Figure 3),
- Fisher Road. groundwater investigation - Well sampling program (Thurber, 2014), and
- Fisher Road. groundwater investigation - Data review (WWAL, 2018).

FLNRORD and the CVRD also published a report on the *Groundwater Quality of Aquifers in the South Cowichan Valley, Vancouver Island* (Barroso et.al, 2019). The report provides data on background levels of nitrates in groundwater near the Site.

In addition to the above groundwater monitoring programs, steps have been taken to address groundwater quality impacts from 1345, 1355 and 1360 Fisher Road. In late 2018, a Pollution Prevention Order was issued by ENV which required the composting facility at 1345 Fisher Road to install a pond liner in their leachate collection pond. The facility was also required to repair the asphalt surface and the berms around asphalt surface where the compost is made. A groundwater protection plan was imposed for the facility on March 12, 2021 through the issuance of a new Waste Stream Management Licence (Licence) under the CVRD's Bylaw No. 2570 - *Waste Stream Management Licensing Bylaw, 2004* (Bylaw 2570). Under the new Licence, the facility is required to sample the compost leachate collection pond water and install a groundwater monitoring well on their property. Alternatively, they may seek to enter into an agreement with the CVRD to monitor the groundwater at MW12-3 which is located immediately downgradient of the facility.

Under the provisions of the Environmental Management Act, and in accordance with their Operating Permit (#108536) issued by ENV on February 9, 2018 and their Licence under CVRD Bylaw 2570, the compost facility at 1355 Fisher Road is required to sample the leachate collection ponds, the onsite Production Well, the CVRD MW12-1 and facility's new monitoring well (MW19-5). MW19-5 is located on the northwestern side of their property boundary and downgradient of their facility (Figure 3).

At 1360 Fisher Road, the new owners are working on a rezoning application for the property and have been requested by the CVRD to conduct a stage two Preliminary Site Investigation (PSI 2)

for a better understanding of the fertilizer contamination from this site. Requirements for a PSI 2 investigation are detailed in Section 58 and 59 of the CSR and can include sampling of the relevant environmental media (soil or groundwater), laboratory or field analysis of environmental media and assessment of substance concentrations relative to standards in the CSR.

1.2 Objectives and Scope of Work

The objective of Waterline's study is to document current groundwater conditions at the Site, and to assess if the nitrate contamination is being appropriately managed by current landowners. The following scope of work was completed by Waterline:

- Sampled the CVRD monitoring wells (MW12-1 to 3, and MW13-4),
- Compiled the groundwater chemistry and groundwater level data (both recent and historic) for the CVRD monitoring wells, the production and monitoring well at 1355 Fisher Road,
- Compiled geochemistry data and prepared summary tables, groundwater level hydrographs and time-series concentration plots,
- Interpreted and evaluated trends in the groundwater chemistry spatially and temporally, groundwater flow and contaminant transport, and potential environmental impact, and
- Completed a report summarizing the findings.

2.0 METHODS

2.1 Groundwater Sampling Program

The 2020 and 2021 field activities were carried out in accordance with the British Columbia Field Sampling Manual (ENV, 2013) and the British Columbia Environmental Laboratory Manual (ENV, 2015). At each of the CVRD monitoring wells, Waterline completed an inspection of well condition, measured the water level, downloaded the transducer with datalogger, measured and recorded in-situ field chemistry parameters, and collected a groundwater sample. Monitoring well construction details are provided in Table A1 (Appendix A). Details of the sampling events are as follows:

- In 2020, groundwater samples were collected using Waterra tubing on February 27. Three well volumes were purged from each well prior to sample collection. It was noted that this sampling method agitated the water column, resulting in highly turbid samples. In addition, the fine-grained sediment plugged off the Waterra tubing, requiring continuous cleaning of the foot valve and additional field time and effort by field staff.
- In 2021, groundwater levels and water quality samples via HydraSleeve deployment was completed on February 24. Samples were collected on March 3. HydraSleeves were utilized to reduced agitation of the water column, thus decreasing the sample turbidity, and improving the overall sample quality. This low-flow sampling technique also eliminated the need to purge a large volume of water to obtain a representative sample from the aquifer.

Waterline understands that Goode Environmental Services Ltd. (Goode) of Victoria was commissioned to complete the groundwater sampling work for the composting facility at 1355

Fisher Road in accordance with the requirements of Operating Permit #108536. Groundwater monitoring requirements under the Operating Permit includes sampling of the onsite Production Well, MW19-5 and CVRD's MW12-1. Since 2019, this facility has also voluntarily sampled CVRD MW12-2, MW12-3, and MW13-4. The sampling has occurred quarterly, in accordance with an agreement with the CVRD. Monitoring data collected by Goode since 2019 was uploaded to the provincial Environmental Monitoring System (EMS) database and has been considered as part of this report.

2.1.1 Analytical Program

Groundwater quality samples were collected to assess the groundwater geochemistry at the Site. The water samples collected by Waterline were submitted to CARO Analytical Services (CARO) in Richmond, BC. CARO is in good standing with Canadian Association for Laboratory Accreditation (CALA) and hold a valid permit to practice (Permit # 3010). Isotope samples taken for the CVRD monitoring wells were analyzed by Isotope Tracers Technology Inc. in Waterloo, ON, a partner lab of CARO. A summary of the analytical parameters is included in Table A2; the following water analysis were completed:

- Stable isotopes of nitrogen (N14, N15) and oxygen (O16, O18),
- General chemistry, including total and dissolved carbon,
- Major anions and cations,
- Dissolved metals, and
- Nutrient parameters including nitrogen species Total Kjeldahl Nitrogen (TKN indicating organic forms of nitrogen), nitrate, nitrite, and ammonia (indicating inorganic forms of nitrogen).

2.2 Data Compilation

Waterline used our in-house geodatabase data management system (Enviro Web Services [EWS]) to compile historical groundwater chemistry data for the CVRD wells and the wells at 1355 Fisher Road, including the sampling results collected by Waterline and Goode in 2020 and 2021. The EWS water quality tool allows for rapid assessment of geochemical trends for water quality parameters including contaminants of concern such as nitrogen species. In addition, EWS allowed Waterline hydrogeologists to perform quality assurance/quality control (QAQC) of the reported water quality parameters, through comparison of historical values and water quality standards.

3.0 RESULTS

3.1 Site Inspection

A visual inspection of the CVRD monitoring wells was completed by Waterline. Site inspection photographs are included in Appendix B. Generally, the condition of the four CVRD monitoring wells was good (Photographs B1 to B4; Appendix B) and met the standards of Groundwater Protection Regulation (GWPR; Government of BC, 2016). The vegetation around the casing did

not appear to be stressed, indicating that no surficial disturbance or changes had occurred since Waterline's initial site visit in March 2020.

During the September 2020 sampling event completed by Goode, it was noted that the well casing at MW12-3 was "loose". The CVRD confirmed this and secured the well casing temporarily. Waterline further confirmed the condition of the well during the February 2021 field visit. It is assumed that the well casing may have been struck by machinery operating at or near 1345 Fisher Road.

To ensure that representative groundwater samples could be collected from MW12-3 by the composting facilities at 1345 and 1355 Fisher Road and that the well cover meets the maintenance standards listed in Section 41 of the GWPR (Government of BC, 2016), the CVRD contracted Drillwell Enterprises Ltd. to complete the well repairs. The damaged section of well casing (Photograph B5; Appendix B) was replaced and the casing protector was re-secured with a new surface seal (Appendix B6; Appendix B).

3.2 Physiography and Regional Hydrogeology

To understand the surface water and groundwater hydraulics beneath the Site, the regional hydrogeological/hydrological setting, and the physical location of the Site within the watershed(s) is needed. The Site straddles the watershed divide that separates the Patrolas Creek watershed to the north and the Shawnigan Creek watershed to the south (Figure 4). Surface water drainage at the Site is expected to follow topography and predominantly flows southwest towards Shawnigan Creek, which migrates approximately five kilometers to the southeast and discharge to the ocean at Mill Bay (Figure 4). There is also a small component of surface water that drains northward into the Patrolas Creek watershed (Figure 4).

The Site is underlain by Aquifer 206 south of the watershed divide and Aquifer 197 mapped to the north of the divide (ENV, 2020; Figure 5). Although Aquifers 206 and 197 are mapped as two distinct aquifers, monitoring wells and supply wells appear to be screened across one water bearing unit and are likely hydraulically connected. Table 1 provides a description of the two overburden aquifers mapped in the area.

Table 1: Description of Aquifer Conditions at the Site

Aquifer Number	Aquifer Name	Aquifer Type	Aquifer Material	Aquifer Vulnerability	Comments
197	Cherry Point	Confined	Glacial - Sand and Gravel	Moderate	942 associated wells
206	Mill Bay	Unconfined	Glacial - Sand and Gravel	High	235 associated wells

Aquifer 197 is described as confined from the surface due to a low permeability till unit (Dashwood till) covering the aquifer. Aquifer 206 has a variable cover and is best described as a semi-confined aquifer near the Site, classified as highly vulnerable to contamination by surface activities. At present, groundwater quality in both aquifers is considered excellent with an average background nitrate concentration of 0.5 mg/L (Barroso et.al, 2019).

3.3 Groundwater Flow Assessment

The following groundwater flow observations and characteristics are summarized for the Site:

- Water level elevations measured from the CVRD monitoring wells in 2020 and 2021 (Table A3) confirmed that the groundwater flow direction beneath the site is in a northwest direction, as reported by WWAL in 2018 (Figure 6).
- An average horizontal hydraulic gradient across the Site, was calculated to be 0.0043 m/m (unitless) for the month February 2021.
- Using a bulk average hydraulic conductivity of $1x10^{-5}$ m/s (WWAL, 2018) and a porosity of 30% for the sand and gravel aquifer, the average linear groundwater velocity is estimated to be approximately 4.5 m/year. Therefore, the residence time for groundwater in the aquifer to move across the Site is approximately 97-years without the influence of any pumping activities.
- However, pumping of the 1355 Fisher Road Production Well likely causes a cumulative drawdown effect in the aquifer and captures groundwater at some radial distance from the site, enhancing the movement of groundwater. WWAL (2018) completed a capture zone analysis assuming various continuous pumping rates of up to a maximum of 100 cubic meters per day (m^3/day). As can be seen in the WWAL report, the 1355 Fisher Road Production Well is capturing groundwater from the adjacent properties, specifically from 1360 Fisher Road (WWAL, 2018).
- Pressure transducers with data loggers (transducers) were temporarily installed in select groundwater monitoring wells to record changes in water levels at the Site. The transducers are portable devices that can be interchanged between wells and are not permanent.
- There is a data gap in recorded groundwater levels from December 2019 to present as transducers were removed from the wells for calibration (Figure 7). The transducers were reinstalled in MW12-1 and MW12-3 during Waterline's site visit on March 3, 2021 (Figure 7). The data logger from the MW13-4 was not re-installed as the unit has reached its end of life.
- Figure 7 shows a water level hydrograph for MW12-1, MW12-3, and MW13-4. The data shows a decline of water levels from 2012 to 2015. This downward trend is followed by an increasing trend from 2015 to 2019. Precipitation data from climate station ID 1017230 indicates a period of drought (or lesser cumulative precipitation) prior to 2015, followed by increased annual cumulative precipitation between 2015 and 2019. This pattern has been observed in other coastal areas of Vancouver Island (Waterline, 2020).
- Seasonal fluctuation in groundwater levels is observed "over-printing" the longer-term groundwater water level record, with the highest water level elevations in the summer months and lowest elevations in the winter months (Figure 7).
- There appears to be a time lag for aquifer recharge following the winter rainy period (October to February). The water level rise in the aquifer (i.e., recharge) occurs slowly into the the summer when groundwater supply is needed. This lag time is likely due to the semi-confined nature of the aquifer and a 34-55 m thick unsaturated zone that separates the saturated portion of the aquifer from surface. The unsaturated zone consists of a thin unit of sandy till (lower permeability) above a large sequence of sand (higher permeability).

3.3.1 Groundwater Quality Assessment

Due to the presence of private domestic groundwater users and the Cobble Hill Improvement District (CHID) water supply wells in the vicinity of the Site, groundwater quality data collected/reviewed as part of this assessment was compared to drinking water guidelines for comparison purposes. Guideline concentrations from Schedule 3.2 of the CSR (Government of BC, 2019) and the GCDWQ (Health Canada, 2020) were used.

The drinking water quality standards with recent and historical groundwater sampling results, including field measured parameter results, are provided in Tables A4 to A7 (Appendix A). In cases where the CSR and GCDWQ are both listed, exceedances were reported for the most stringent guideline. Laboratory certificates and their QA/QC reviews for Waterline's 2020 and 2021 sampling programs are provided in Appendix C.

3.3.2 General Groundwater Chemistry

Groundwater at the Site is a calcium - bicarbonate type water, with a total dissolved solids (TDS) concentration ranging from 154 mg/L at MW13-4 (background location) to 666 mg/L MW12-2 (downgradient of the 1360 Fisher Road site; Table A4, Appendix A). A Durov plot of the major-ions concentrations and TDS, is presented on Figure 8. In general, all major ion concentrations are elevated in down gradient wells (MW12-1, 2, and 3) in comparison to MW13-4. However, all major ion concentrations are below the CSR and/or GCDWQ guideline limits (Table A5, Appendix A).

Groundwater in unconfined and semi-confined aquifers are typically in directly contact with atmospheric oxygen. The maximum solubility of oxygen in natural groundwater systems is approximately 10 mg/L under ambient temperature and pressure conditions. Dissolved oxygen (DO) concentrations measured in monitoring wells at the Site ranged from 3.8 to 7.5 mg/L in 2021 (Table A4, Appendix A) and as such are slightly undersaturated with respect to DO. This may be characteristic of the deeper groundwater system. Reported values decreased in comparison to 2020 measurements, due to the low-flow sampling technique using HydraSleeves. The oxidation reduction potential (ORP) measured in 2021 ranged from 107 to 185 mV and were lower than was measured in 2020 (Table A4, Appendix A).

The average concentration of total and dissolved organic carbon (TOC and DOC) was 2.1 and 3.1 mg/L, respectively (Table A4, Appendix A). These concentrations are comparable to the 2018 sample results collected by WWAL (Table A4, Appendix A). Of all the dissolved metals parameters tested in 2020 and 2021, only cobalt exceeded CSR guideline (Table A6, Appendix A). Historically, exceedances were noted for manganese and chromium (GCDWQ), lead (GCDWQ & CSR), aluminum, iron, nickel, and vanadium (CSR). However, concentrations of these elements are now all below the applicable regulatory standards.

The general groundwater chemistry results reported for the Site are comparable to groundwater chemistry reported as part of the South Cowichan Valley aquifers study (Barroso et.al, 2019).

3.3.3 Nitrogen and Oxygen Isotopes

Nitrogen and oxygen isotopes (15N and 18O) were sampled from the CVRD monitoring wells in 2020. The 15N vs 18O ratios were plotted with historical isotope data from 2012 to 2018 to characterize the different nitrate sources at the Site (Figure 9). When plotted against the isotopic ranges for different nitrate source zones, as sited by Kendall (1998), the 2020 data confirmed that nitrate in groundwater is from three distinct sources:

- An organic source observed at MW12-1 and MW12-3, consistent with composting operations at 1345 and 1355 Fisher Road (Figure 9).
- An organic source observed at MW13-4, believed to be from current and or historic upgradient agricultural (manure) and rural land use practices (septic fields) in the area, migrating onsite overtime (Figure 9).
- An inorganic source observed at MW12-2 and the 1355 Fisher Road Production Well, consistent with anticipated parameters from historical fertilizer use at the 1360 Fisher Road (Figure 9). As discussed in Section 3.3, pumping from the 1355 Fisher Road Production Well appears to capture the nitrate-impacted groundwater beneath the former greenhouse facility at 1360 Fisher Road and therefore may provide some hydraulic containment.

3.3.4 Nitrogen Concentrations in Groundwater

Past studies commissioned to investigate the contaminant issue at the Site have determined that leaching and transport of nitrate from surface operations into the underlying groundwater system originated from three distinct sources; 1345, 1355 and 1360 Fisher Road. More stringent source control measures have been implemented at 1345 and 1355 Fisher Road to reduce the risk of contaminant load to the subsurface. However, a residual mass of nitrate that may be contained in the soil pore space, will drain over time to field capacity. Although some flushing of the residual nitrates may occur, impermeable surfaces may also help immobilize vertical movement below the Site, resulting in lower groundwater concentrations over time. On-going groundwater monitoring by the property owners at 1345 and 1355 Fisher Road as well as the requested PSI 2 at 1360 Fisher Road will help to assess the effectiveness of current groundwater protection measures and the need for additional remedial actions relating to the source control at the Site. In 2021, nitrate concentrations in groundwater at:

- **MW13-4** (Figure 10) have remained below the CSR and GCDWQ guideline limits. However, nitrate concentrations have steadily increased overtime from 0.3 to 4.2 mg/L (Table A7), exceeding background concentration (0.5 mg/L) for aquifers in the South Cowichan Valley (Barroso et.al, 2019). This suggest that other upgradient land users are contributing to nitrate loading in groundwater at the Site.

- **MW12-3** (Figure 11) are above CSR and GCDWQ guideline limits and have fluctuated over time from 15.3 mg/L in 2012 to 18.9 mg/L in 2021, with the highest concentration of 27.5 mg/L reported in 2018 (Table A7). Source control measures have been implemented by the facility at 1345 Fisher Road as part of a Pollution Prevention Order issued by ENV

in 2018. These changes to leachate containment are expected to reduce/eliminate nitrate loading into the subsurface. The property owner of 1345 Fisher Road is required to monitor MW12-3 twice per year as part of their Licence under CVRD Bylaw No. 2570.

- **1355 Fisher Road MW19-5** exceeded the guideline limit for the first time in December 2020 (Figure 12) with a concentration of 16.9 mg/L. The recent increases could be the result of residual nitrates flushing through the soil column from increased groundwater recharge during the fall of 2020. However, trends are hard to distinguish due to limited data collection from this well (only four samples to date). It is expected that source control measures at 1355 Fisher Road are helping to reduce nitrate concentrations in the groundwater. This is evident by the continuous reduction in nitrate concentrations (from 28.0 to 10.4 mg/L) at **MW12-1**, which is downgradient of this facility (Figure 13).

- **MW12-2** (Figure 14) and the **1355 Fisher Road Production Well** (Figure 15), both downgradient of the former greenhouse property at 1360 Fisher Road, continued to exceed the CSR and GCDWQ standards. However, nitrate concentrations have generally reduced from 98.1 mg/L in 2012 to 37.3 mg/L in 2021 and from 81.1 mg/L in 2008 to 18.3 mg/L in 2021, respectively. Source containment from pumping at the 1355 Fisher Road Production Well is helping reduce the nitrate concentrations through enhancement of groundwater movement. The pumped groundwater is being used by the composting facility at 1355 Fisher Road to add moisture to the compost during the composting process. Excess moisture in the form of compost leachate is recaptured and recirculated in the composting process. Pumped groundwater is also used to control dust on paved and unpaved roads at the facility. The impact of using the contaminated groundwater for dust suppression was discussed in the Liquid Waste Management Plan as part of this facility's Operating Permit #108536. No added impact to the receiving environment is expected as pathways for nitrate leaching have been mitigated.

4.0 SUMMARY AND CONCLUSIONS

The Fisher Road Site is located near a watershed divide where surface drainage is predominantly directed south towards the Shawnigan Creek watershed and a small portion to the north, towards the Patrolas Creek watershed. The underlying groundwater system is characterized by a semi-confined aquifer (mapped Aquifer 206/197) that is currently in use for domestic and industrial water supply. Groundwater is recharged by precipitation travelling through the unsaturated zone. The groundwater flow direction in the aquifer is towards the northwest.

Historical agricultural, commercial, and industrial land use has caused nitrate contamination in groundwater, which is in contravention of the Groundwater and Drinking Water Protection Regulations under the Water Sustainability Act. Several groundwater studies and investigations have been completed by the CHAITG working group members to assess the nitrate levels in groundwater and the possible sources at the Site. This included the installation of four CVRD groundwater monitoring wells in 2012-2013, upgradient and downgradient of the suspected

contaminant sources, to quantify the issue at the time. In 2020 and 2021, Waterline was retained to review the information collected to date and completed annual groundwater sampling programs.

The following observations are provided:

- Three distinct nitrate sources in groundwater have been reconfirmed at the Site:
  - Organic nitrate from composing operations at the 1345 and 1355 Fisher Road properties,
  - Organic nitrate from agricultural (manure) and rural land use practices (septic) upgradient of the Site, and
  - Inorganic nitrate from fertilizers used for growing vegetables at the former greenhouse operation at 1360 Fisher Road.
- Nitrates in groundwater from all three sources appear to be migrating in a northwest direction along the natural groundwater flow path. As such, Waterline encourages all private domestic groundwater user downgradient of the Site, to complete potability testing of their groundwater supply wells.
- Nitrate concentrations reported from MM13-4, located upgradient of the Site are not exceeding guideline concentrations but are above background concentrations estimated for Aquifer 196/206. Concentrations have steadily increased over the period of record, suggesting that upgradient land users are also contributing to nitrate loading in groundwater at the Site.
- The mass of nitrate retained in the soil column beneath 1345, 1355 and 1360 Fisher Road is unknown. Some flushing of the residual nitrates may occur over time to field capacity; however, impermeable surfaces may also help immobilize vertical movement below the Site. Nitrate concentrations in groundwater at the Site are reported to be above the applicable CSR and GCDWQ drinking water quality standards.
- While in operation, the composting facilities at 1345 and 1355 Fisher Road are required under provisions of the Environmental Management Act and CVRD Bylaw 2570 to collect groundwater samples for determination of general groundwater chemistry and nitrate concentrations. This ongoing performance monitoring by the facility owners will verify the effectiveness of the sources control measures at their composting facilities. It will have the added benefit of indicating if nitrate concentrations in groundwater at 1360 Fisher Road, from historical land use practices, are also reducing.
- The proposed re-zoning of 1360 Fisher Road may provide an opportunity to address the fertilizer contamination, to help delineate and reduce ongoing nitrate loading on the aquifer.
- Based on the current source control measures, decreases in nitrate concentrations at the Site to below guideline concentrations is expected to take some time.
- Waterline understand that while historical land use decisions were made with out an assessment of potential impacts on groundwater, new tools, such as those available under the Water Sustainability Act and the CVRD's Regional Drinking Water and Water Protection Program will enhanced protection of water resources going forward.

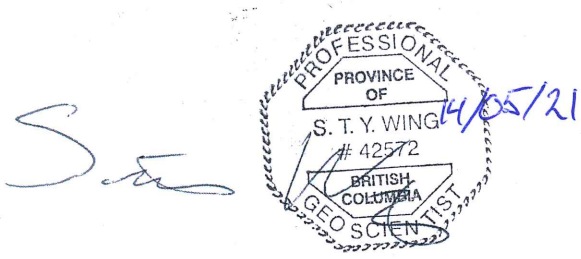
5.0 CERTIFICATION

This document was prepared under the direction of a professional hydrogeologist registered in the Province of British Columbia. Both the author and reviewer of the enclosed report are qualified groundwater professionals as defined under the Water Sustainability Act and associated Groundwater Protection Regulation.

Waterline Resources Inc. trusts that the information provided in this document is sufficient for your requirements. Should you have any questions or concerns, please do not hesitate to contact the undersigned.

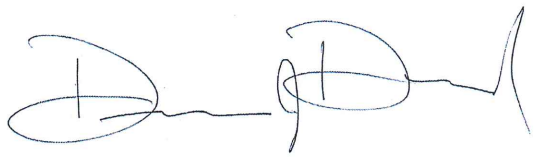
Respectfully submitted,

Waterline Resources Inc.



Simon Wing, P.Geo (BC)
Intermediate Hydrogeologist

Reviewed By:



Darren David, M.Sc., P.Geo. (BC)
Principal Hydrogeologist

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7.0 LIMITATIONS AND USE

The information presented in this document was compiled exclusively for Cowichan Valley Regional District (the Client) by Waterline Resources Inc. (Waterline). This work was completed in accordance with the scope of work for this project that was agreed between Waterline and the Client. Waterline exercised reasonable skill, care and diligence to assess the information acquired during the preparation of this document but makes no guarantees or warranties as to the accuracy or completeness of this information. The information contained in this document is based upon, and limited by, the circumstances and conditions acknowledged herein, and upon information available at the time of the preparation of this document. Any information provided by others is believed to be accurate but cannot be guaranteed. No other warranty, expressed or implied, is made as to the professional services provided to the Client.

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FIGURES

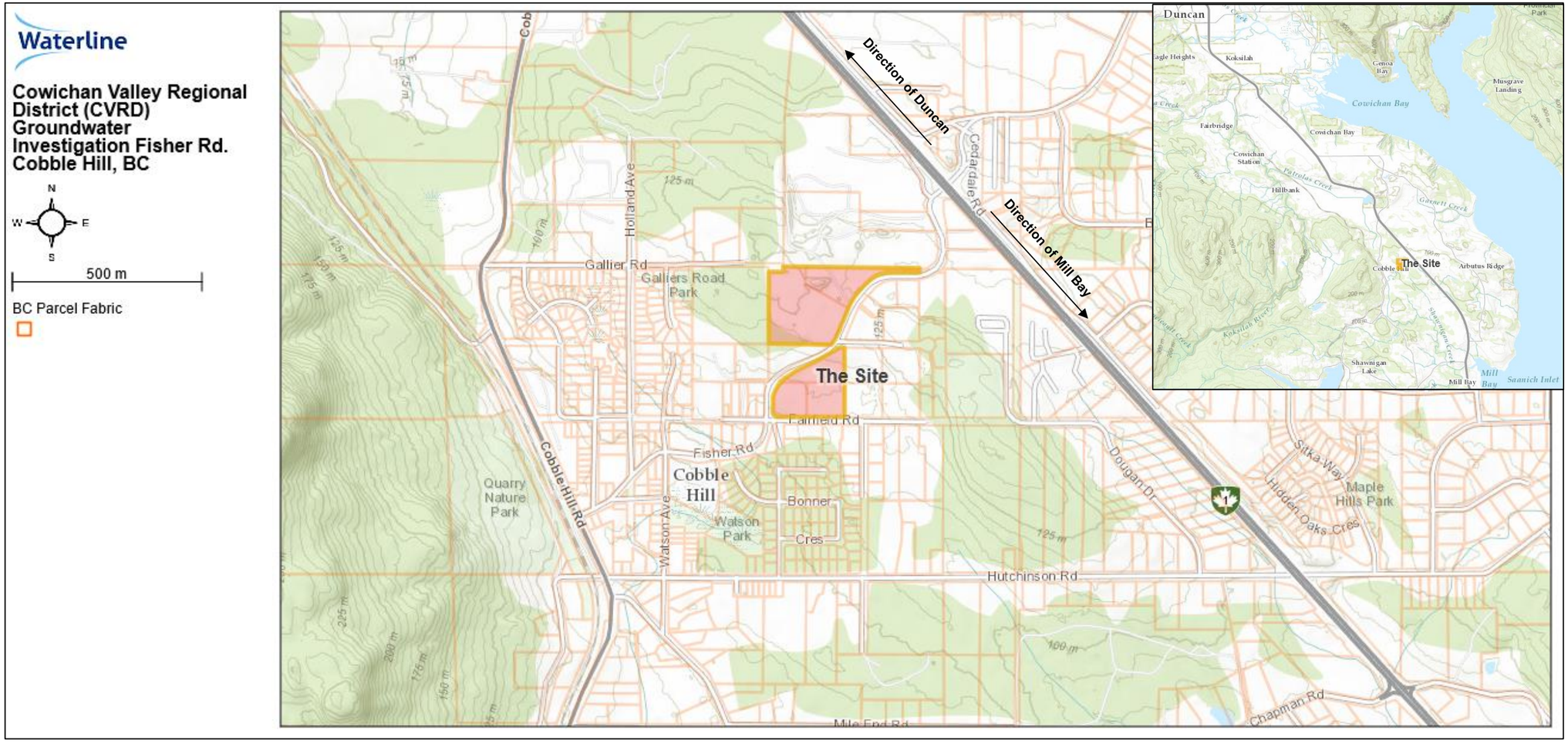


Figure 1:Location Map

Waterline

Figure 2: Site Map

Figure 3: CVRD and FRR Monitoring Well Locations

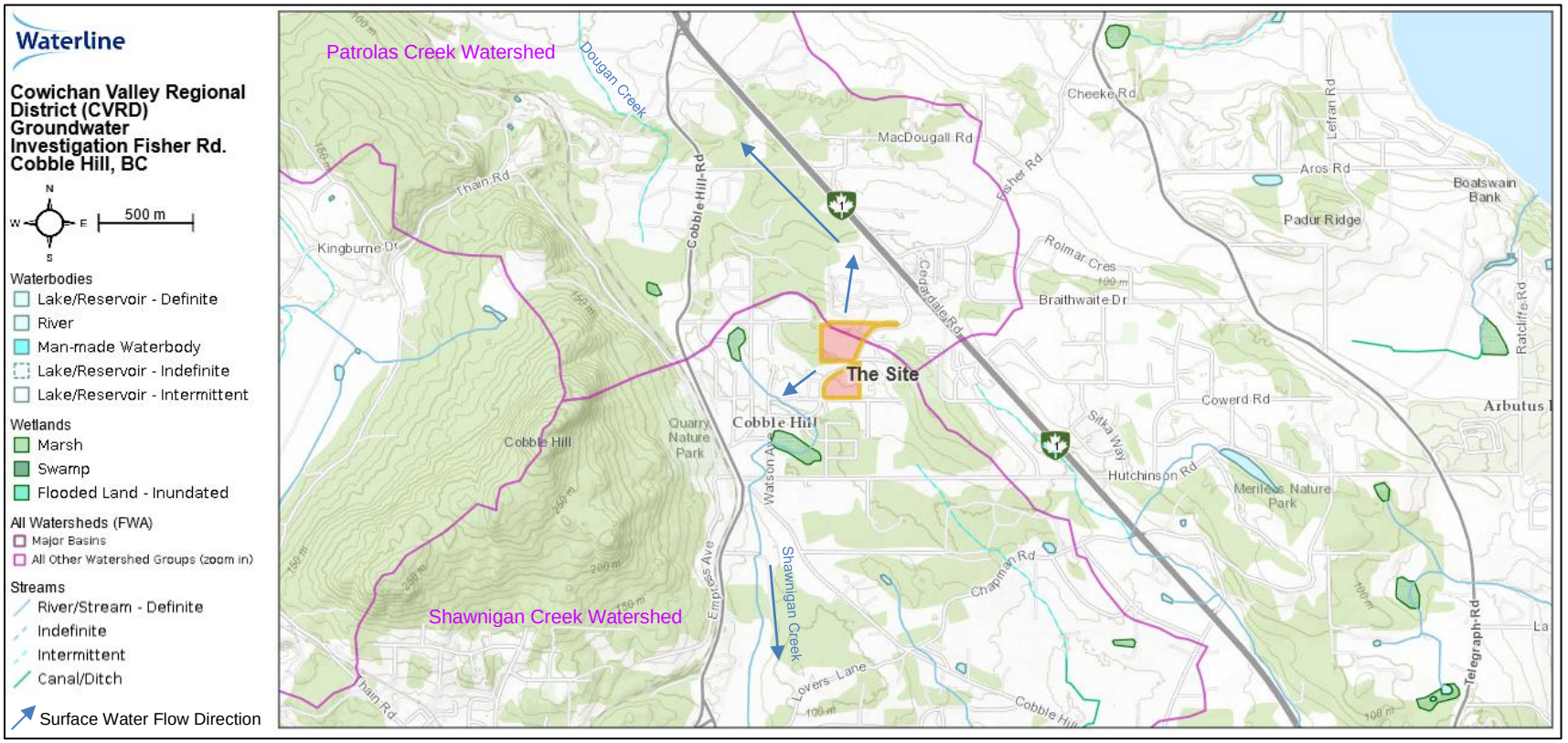


Figure 4: Watershed Map (including all Surface water features)

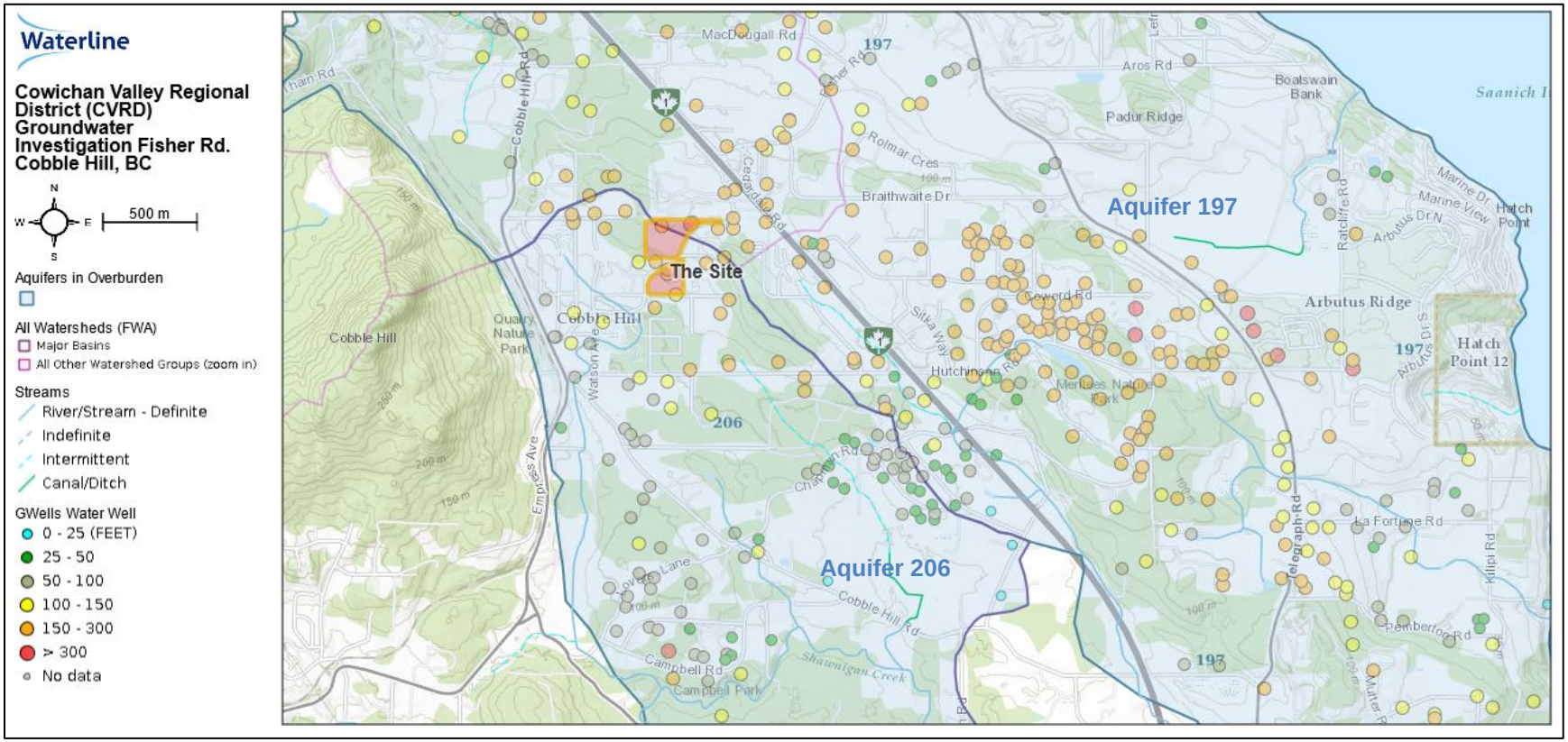


Figure 5: Aquifer Map with Registered Groundwater Wells Filtered for Aquifer 206/197

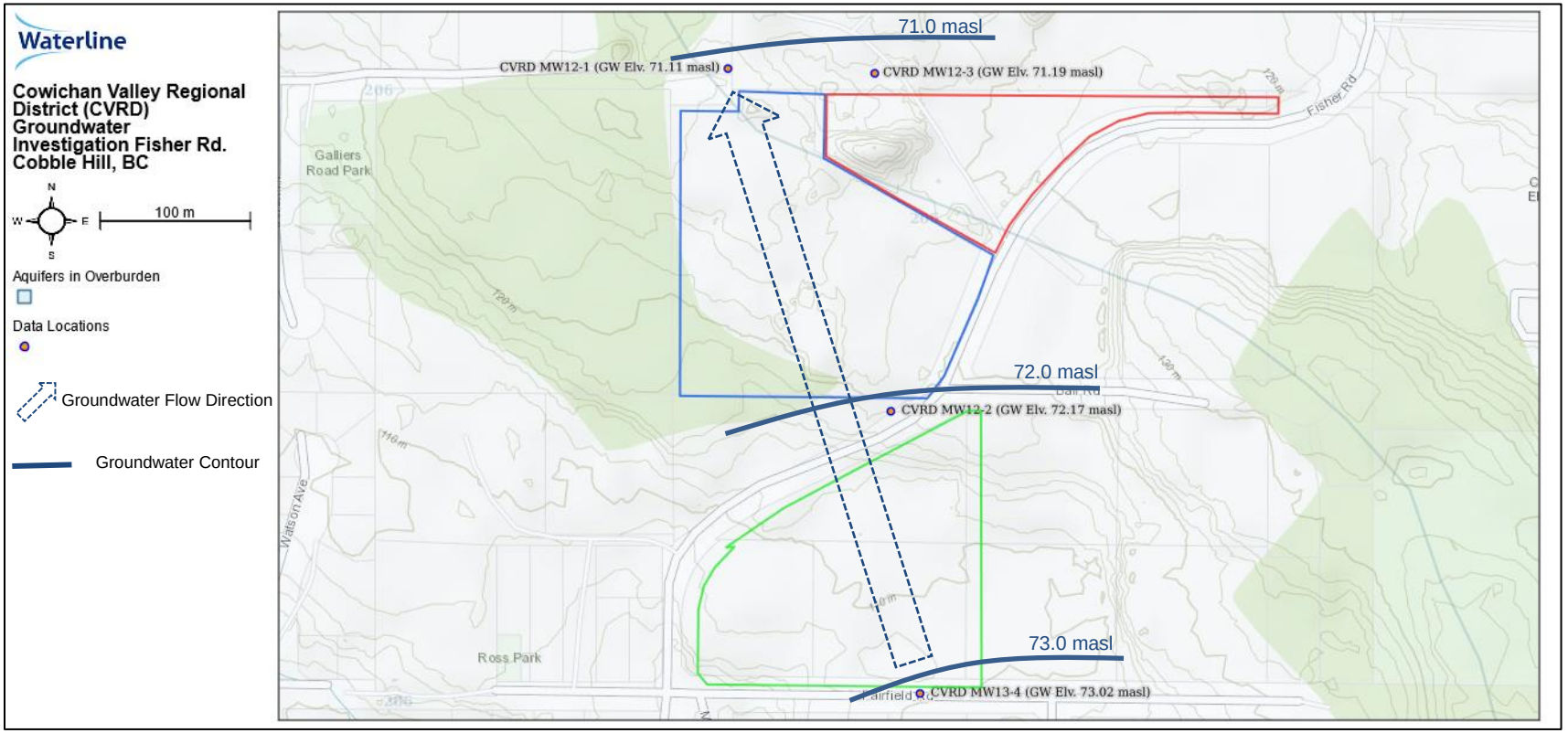
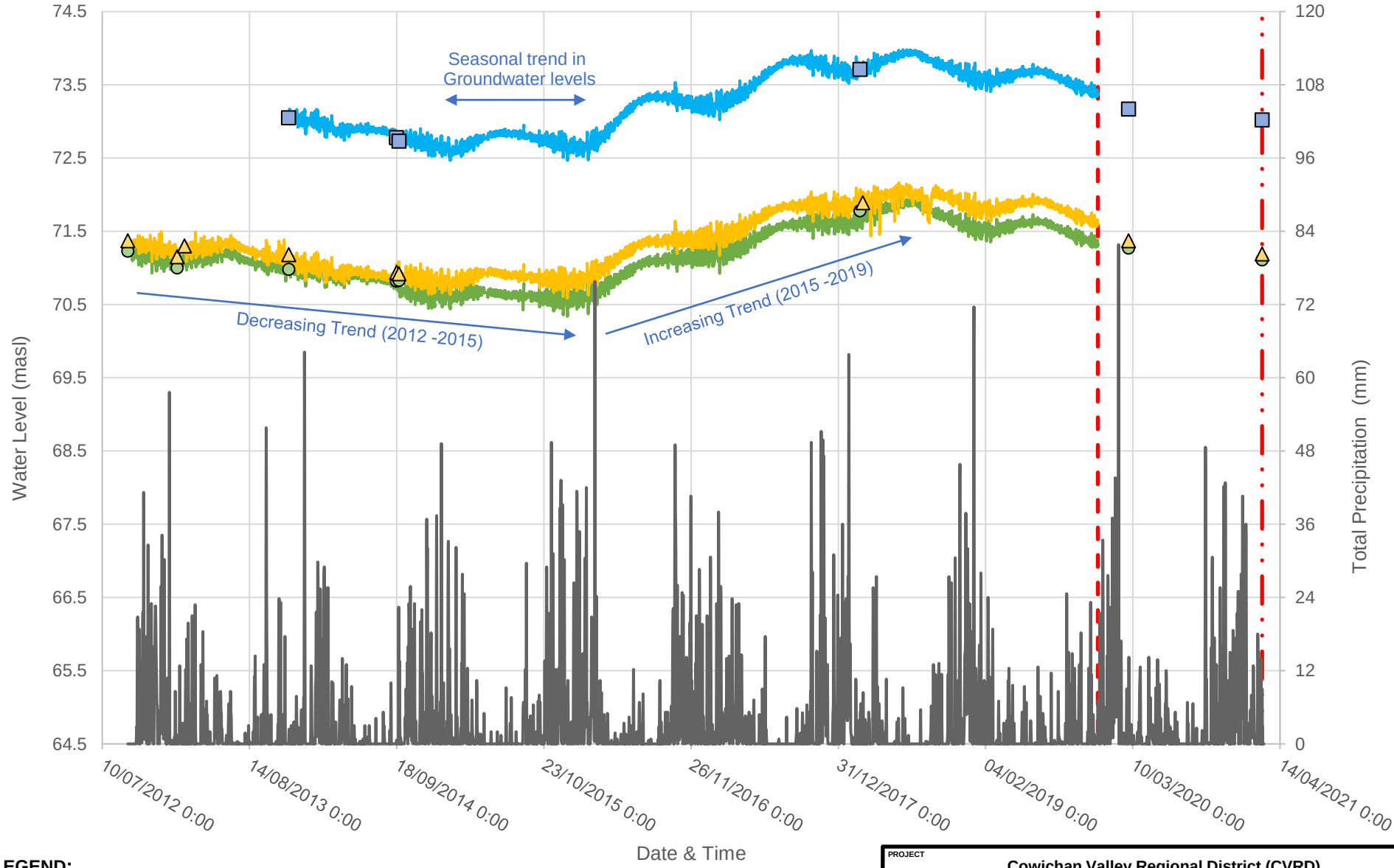


Figure 6: Groundwater Flow direction from February 2021



LEGEND:

- Data Logger Memory Full @ All Locations
- Data Logger Re-installed @ MW12-1 and MW12-3
- Water Level Elevation MW12-1
- Manual Water Level MW12-1
- Water Level Elevation MW12-3
- Manual Water Level MW12-3
- Water Level Elevation MW13-4
- Manual Water Level MW13-4
- Shawnigan Lake Weather Station (Climate ID 1017230)

PROJECT

Cowichan Valley Regional District (CVRD)
Groundwater Investigation
Fisher Rd. Cobble Hill, BC

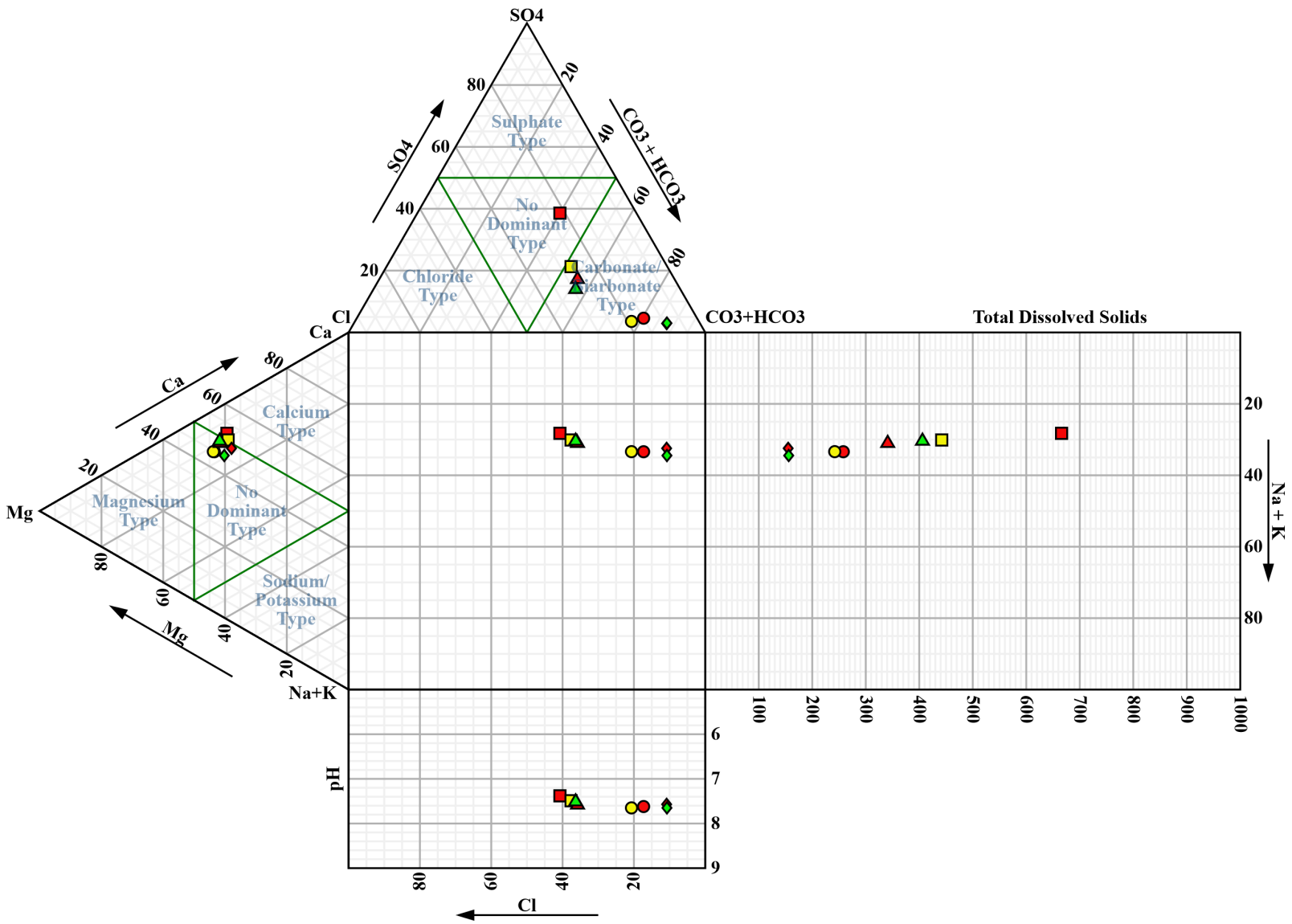
TITLE

Water Level Hydrograph – CVRD Monitoring Wells

Waterline

PREPARED BY:	Waterline Resources Inc.
PROJECT:	3241-20-001
COMPILED BY:	SW
DATE ISSUED:	March, 2020
REVISED:	-

FIGURE 7



CVRD MW12-1
- 2020-Feb-27 WTN 115138 - 2020a
- 2021-Mar-03 WTN 115138 - 2021

CVRD MW12-2
- 2020-Feb-27 WTN 115140 - 2020a
- 2021-Mar-03 WTN 115140 - 2021

CVRD MW12-3
- 2020-Feb-27 WTN 115141 - 2020a
- 2021-Mar-03 WTN 115141 - 2021

CVRD MW13-4
- 2020-Feb-27 WTN 108347 - 2020a
- 2021-Mar-03 WTN 108347 - 2021

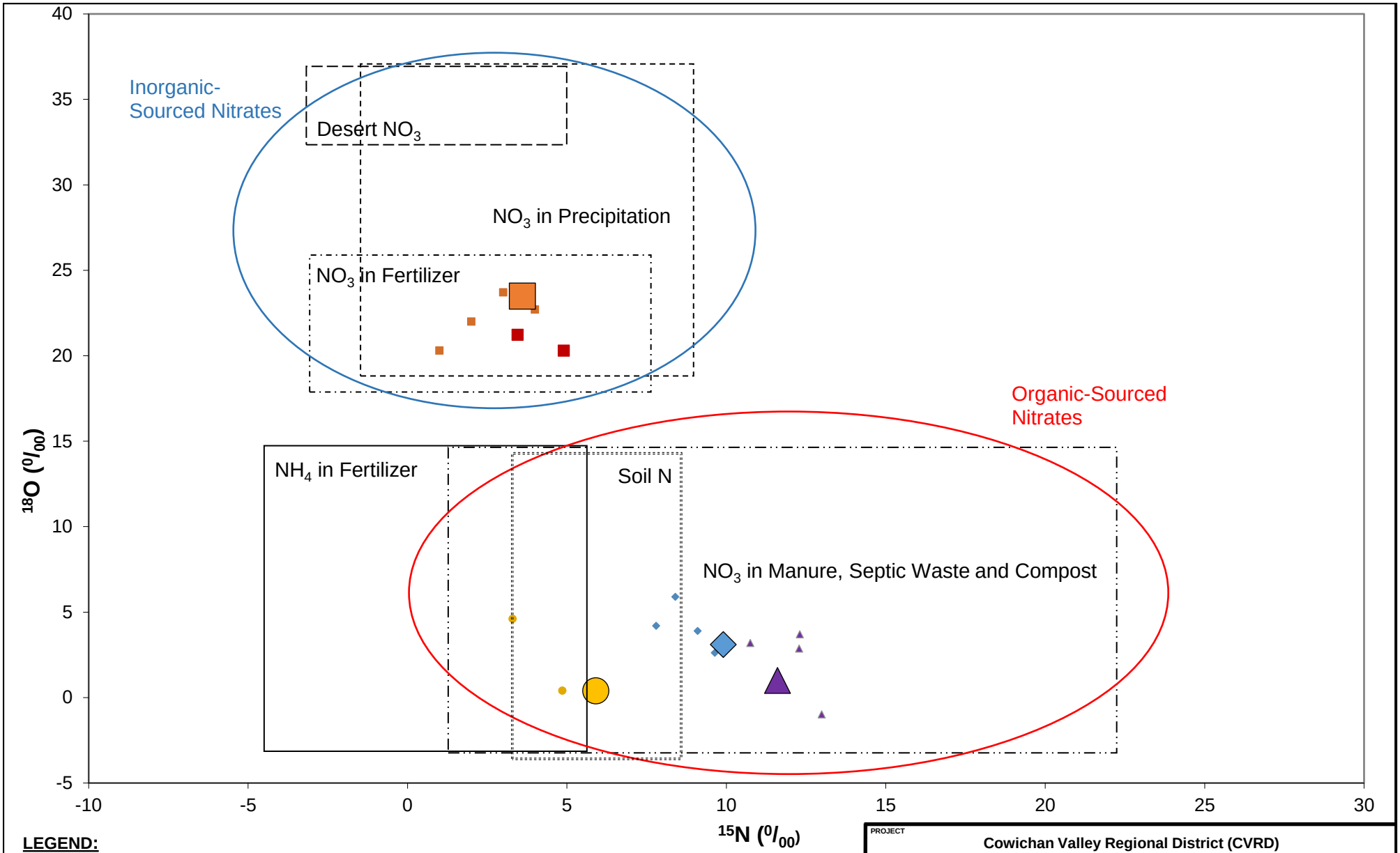
PROJECT
Cowichan Valley Regional District (CVRD)
Groundwater Investigation
Fisher Rd. Cobble Hill, BC

TITLE
DUROV PLOT

Waterline

PREPARED BY:	Waterline Resources Inc.
PROJECT:	3241-20-001
COMPILED BY:	Hydrachem
DATE ISSUED:	2021-Apr-24
REVISED:	-

FIGURE 14



LEGEND:

- Isotope Ratio for CVRD12-1 (2012 to 2018)
- Isotope Ratio for CVRD12-1 (2020)
- Isotope Ratio for CVRD12-2 (2012 to 2018)
- Isotope Ratio for CVRD12-2 (2020)
- Isotope Ratio for CVRD12-3 (2012 to 2018)
- Isotope Ratio for CVRD12-3 (2020)
- Isotope Ratio for CVRD13-4 (2013 to 2018)
- Isotope Ratio for CVRD13-4 (2020)
- FRR (Production Well)

PROJECT

Cowichan Valley Regional District (CVRD)
Groundwater Investigation
Fisher Rd. Cobble Hill, BC

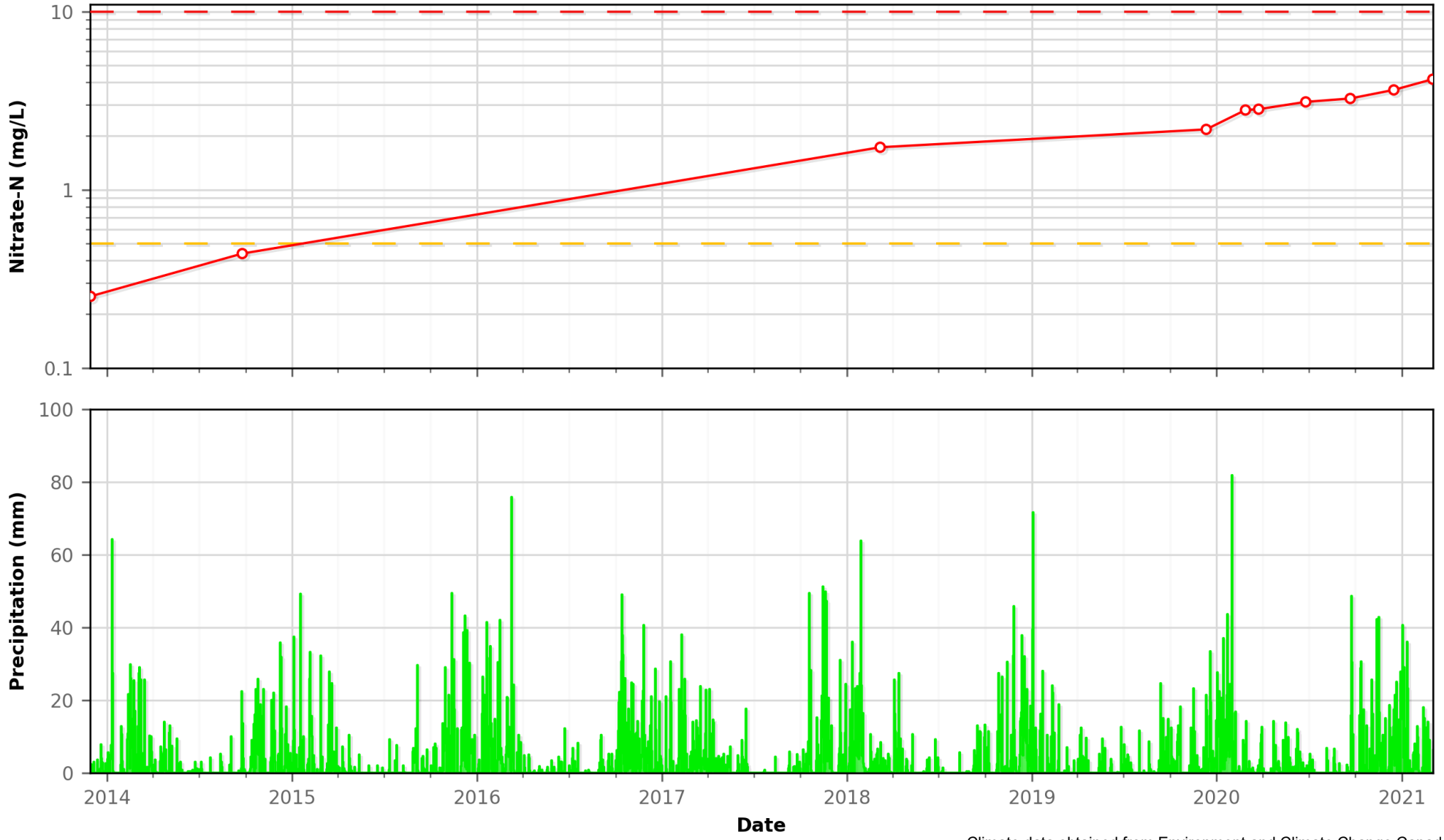
TITLE

Nitrate Characterization Using Isotope Ratios for 15N & 18O

Waterline

PREPARED BY:	Waterline Resources Inc.
PROJECT:	3241-20-001
COMPILED BY:	SW
DATE ISSUED:	March, 2020
REVISED:	-

FIGURE 9



Climate data obtained from Environment and Climate Change Canada.

- Background Nitrate Concentration for South Cowichan Valley Aquifers: 0.5 mg/L
- Schedule 3.2 Drinking Water for Nitrate-N: 10 mg/L
- CVRD MW13-4
- Shawnigan Lake - Total Precipitation

PROJECT

Cowichan Valley Regional District (CVRD)
Groundwater Investigation
Fisher Rd. Cobble Hill, BC

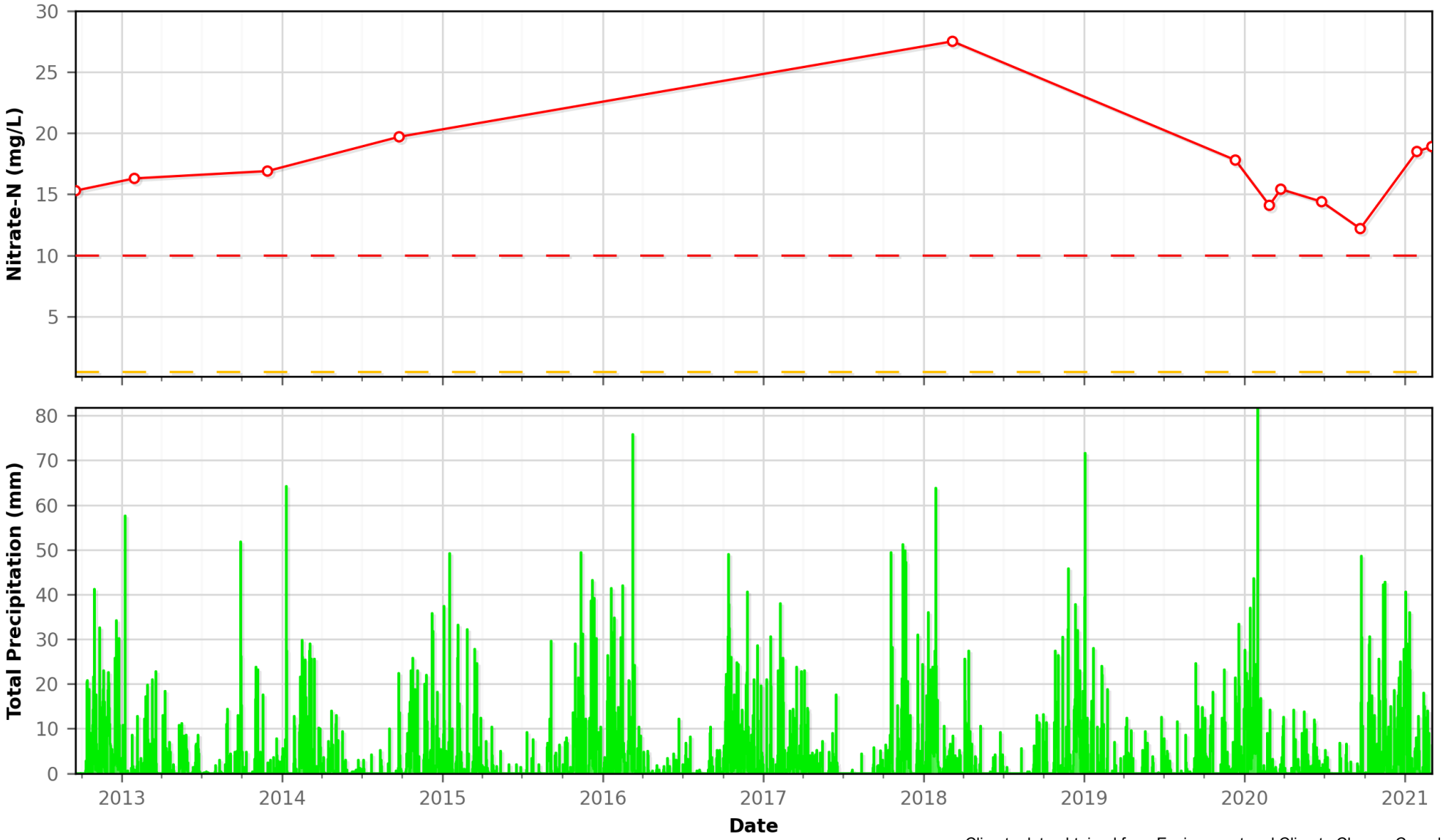
TITLE

MW13-4: Nitrate Concentration Plot

Waterline

PREPARED BY: Waterline Resources Inc.
PROJECT: 3241-20-001
COMPILED BY: Hydrachem
DATE ISSUED: 2021-Apr-26
REVISED: -

FIGURE 10



Climate data obtained from Environment and Climate Change Canada.

- Background Nitrate Concentration for South Cowichan Valley Aquifers: 0.5 mg/L
- Schedule 3.2 Drinking Water for Nitrate-N: 10 mg/L
- CVRD MW12-3
- Shawnigan Lake - Total Precipitation

PROJECT

Cowichan Valley Regional District (CVRD)
Groundwater Investigation
Fisher Rd. Cobble Hill, BC

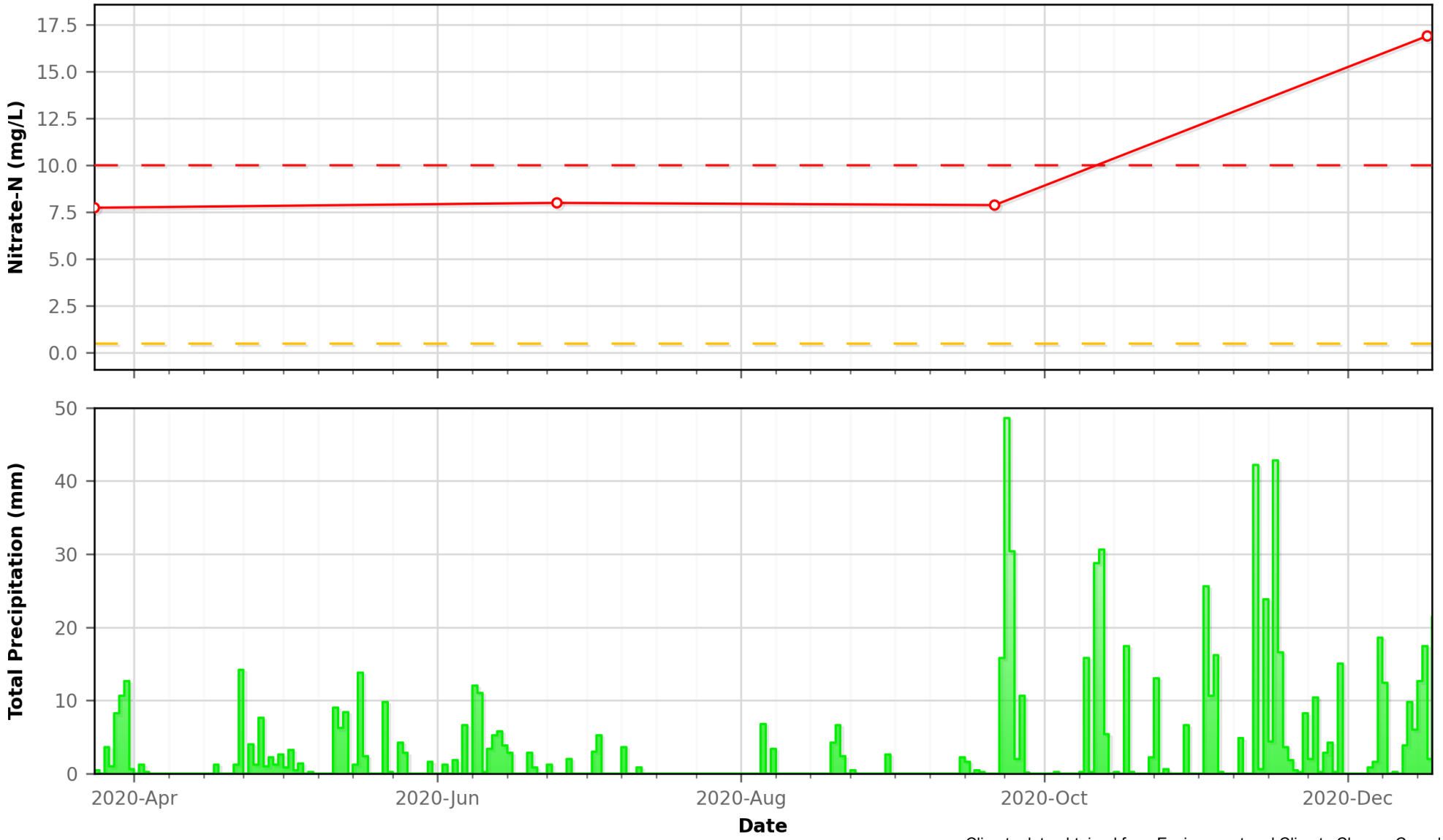
TITLE

MW12-3: Nitrate Concentration Plot

Waterline

PREPARED BY: Waterline Resources Inc.
PROJECT: 3241-20-001
COMPILED BY: Hydrachem
DATE ISSUED: 2021-Apr-26
REVISED: -

FIGURE 11



Climate data obtained from Environment and Climate Change Canada.

- Background Nitrate Concentration for South Cowichan Valley Aquifers: 0.5 mg/L
- Schedule 3.2 Drinking Water for Nitrate-N: 10 mg/L
- FRR MW19-5
- Shawnigan Lake - Total Precipitation

PROJECT

Cowichan Valley Regional District (CVRD)
Groundwater Investigation
Fisher Rd. Cobble Hill, BC

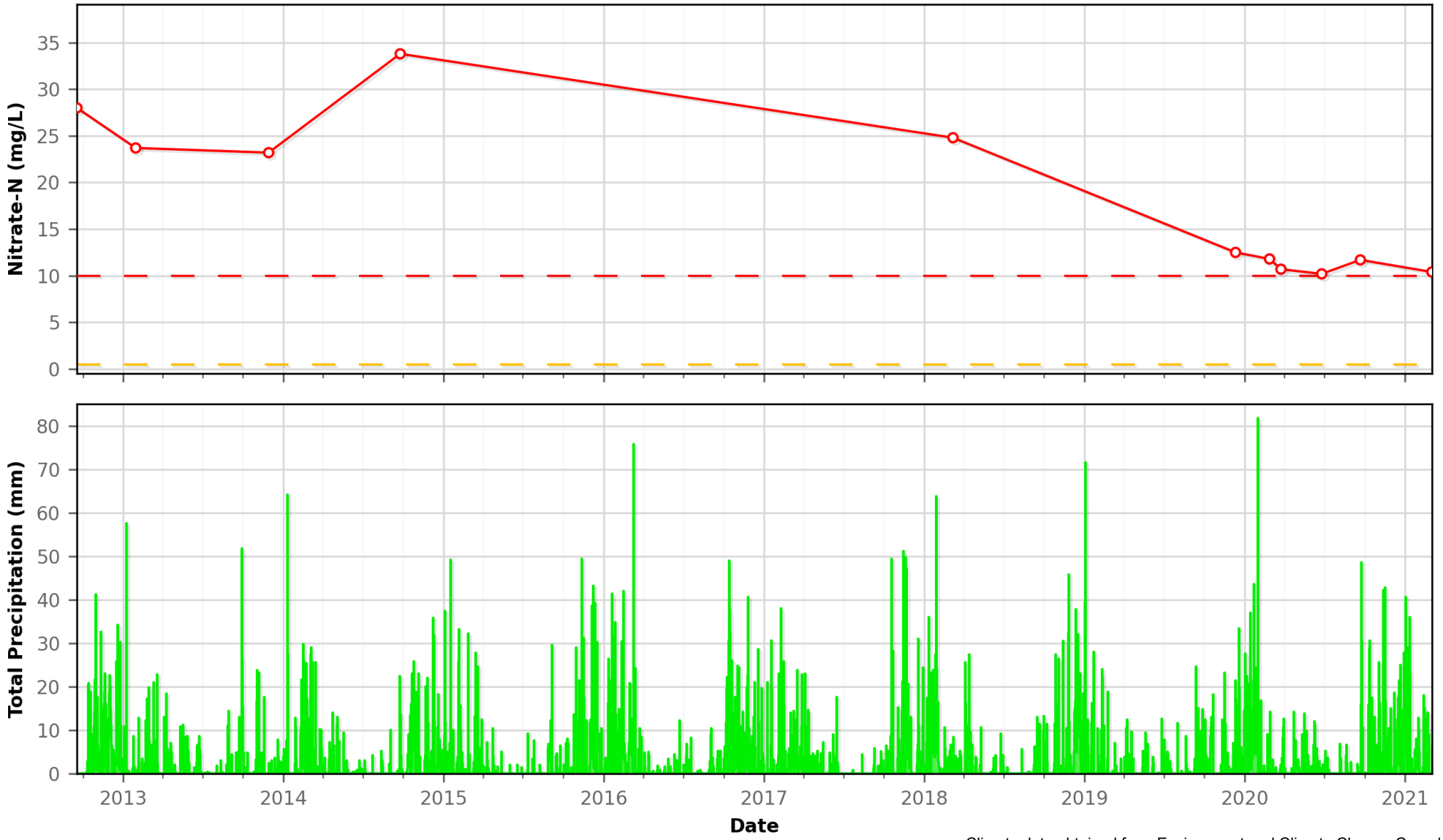
TITLE

FRR MW19-5: Nitrate Concentration Plot

Waterline

PREPARED BY: Waterline Resources Inc.
PROJECT: 3241-20-001
COMPILED BY: Hydrachem
DATE ISSUED: 2021-Apr-26
REVISED: -

FIGURE 12



Climate data obtained from Environment and Climate Change Canada.

- Background Nitrate Concentration for South Cowichan Valley Aquifers: 0.5 mg/L
- Schedule 3.2 Drinking Water for Nitrate-N: 10 mg/L
- CVRD MW12-1
- Shawnigan Lake - Total Precipitation

PROJECT

Cowichan Valley Regional District (CVRD)
Groundwater Investigation
Fisher Rd. Cobble Hill, BC

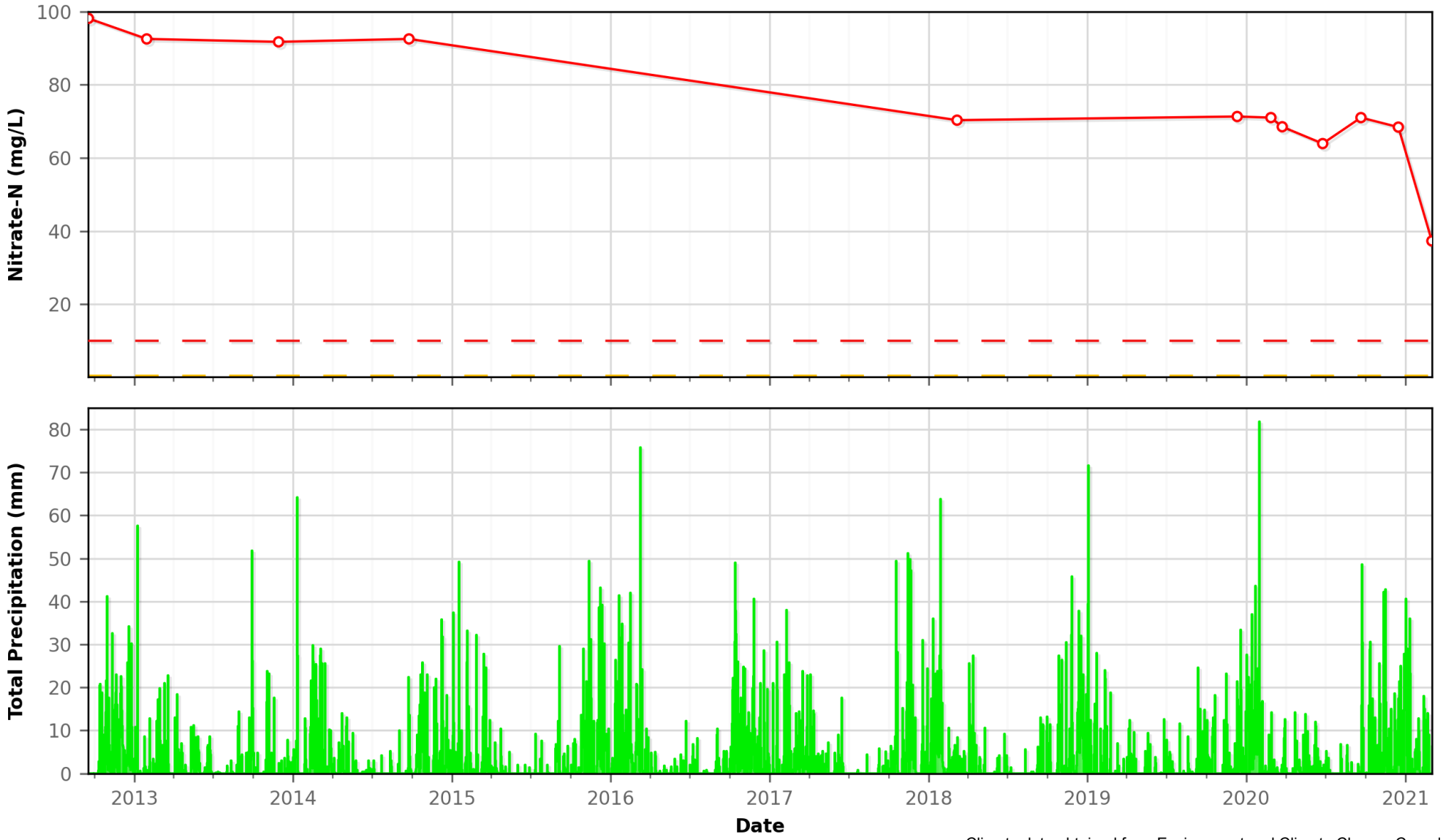
TITLE

MW12-1: Nitrate Concentration Plot

Waterline

PREPARED BY: Waterline Resources Inc.
PROJECT: 3241-20-001
COMPILED BY: Hydrachem
DATE ISSUED: 2021-Apr-26
REVISED: -

FIGURE 13



Climate data obtained from Environment and Climate Change Canada.

- Background Nitrate Concentration for South Cowichan Valley Aquifers: 0.5 mg/L
- Schedule 3.2 Drinking Water for Nitrate-N: 10 mg/L
- CVRD MW12-2
- Shawnigan Lake - Total Precipitation

PROJECT

Cowichan Valley Regional District (CVRD)
Groundwater Investigation
Fisher Rd. Cobble Hill, BC

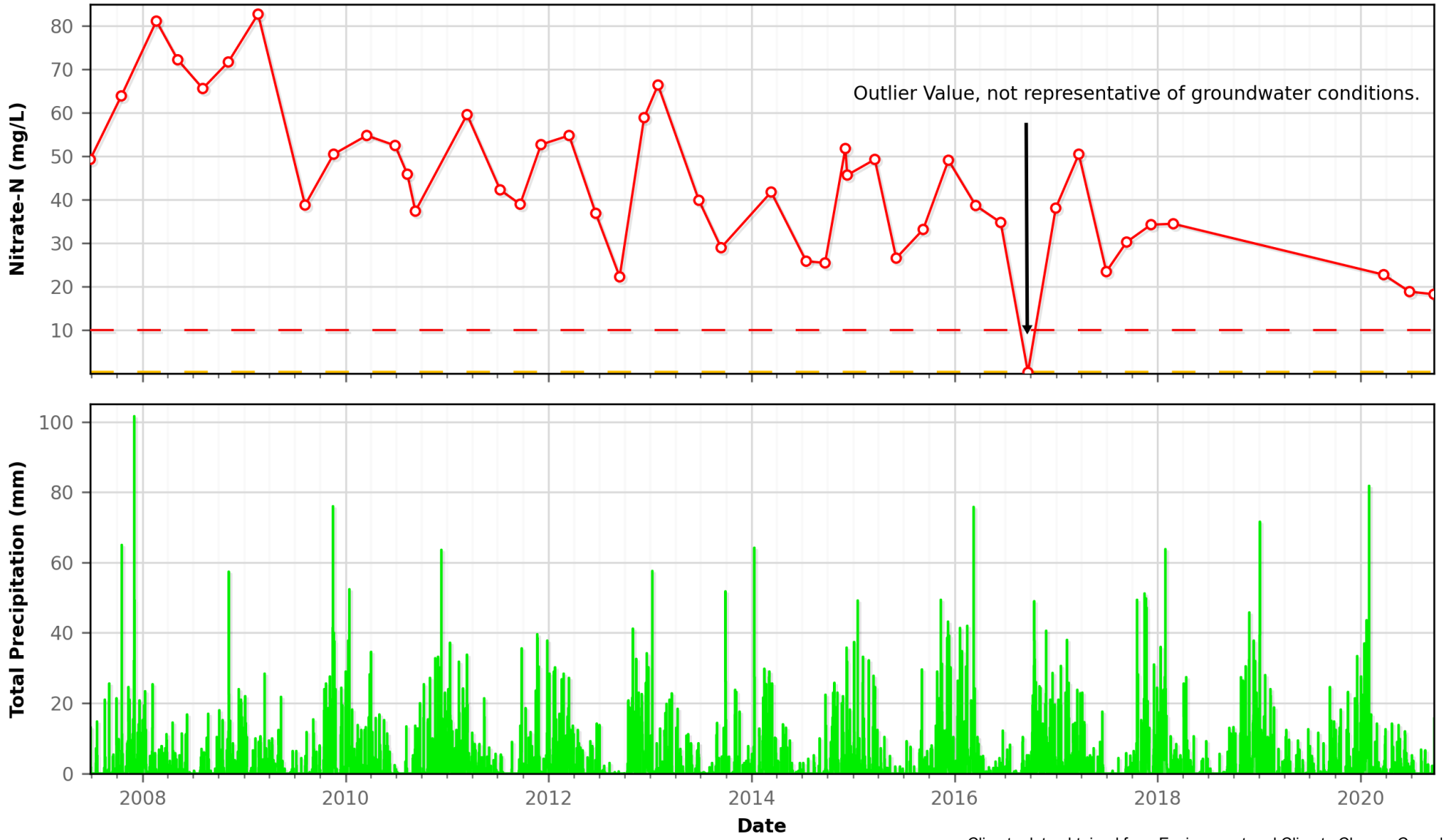
TITLE

MW12-2: Nitrate Concentration Plot

Waterline

PREPARED BY: Waterline Resources Inc.
PROJECT: 3241-20-001
COMPILED BY: Hydrachem
DATE ISSUED: 2021-Apr-26
REVISED: -

FIGURE 14



Climate data obtained from Environment and Climate Change Canada.

- Background Nitrate Concentration for South Cowichan Valley Aquifers: 0.5 mg/L
- Schedule 3.2 Drinking Water for Nitrate-N: 10 mg/L
- FRR Production Well
- Shawnigan Lake - Total Precipitation

PROJECT

Cowichan Valley Regional District (CVRD)
Groundwater Investigation
Fisher Rd. Cobble Hill, BC

TITLE

FRR Production Well: Nitrate Concentration Plot

Waterline

PREPARED BY: Waterline Resources Inc.
PROJECT: 3241-20-001
COMPILED BY: Hydrachem
DATE ISSUED: 2021-Apr-26
REVISED: -

FIGURE 15

APPENDIX A

Chemistry Tables

Table A1: Monitoring Well Location Details

Location	UTM Coordinates			Depth		Elevation (masl)				Formation Screened	Installation Date
	Grid Zone	Easting	Northing	Borehole (mbgl)	Well (mbtoc)	Ground	Top of Casing	Screen			
								Top	Bottom		
FRR MW19-5	10	456023	5393559	57.90	-	126.80	-	70.40	68.90	Aquifer 206	2019-07-23
FRR Production Well	10	456106	5393543	64.00	-	125.50	-	-	61.50	Aquifer 206	1972-12-06
MW12-1	10	456053	5393597	-	60.40	126.30	126.87	68.30	66.50	Aquifer 197	2012-06-14
MW12-2	10	456160	5393368	-	50.20	117.70	118.30	69.90	68.10	Aquifer 206	2012-07-31
MW12-3	10	456151	5393593	-	56.70	122.30	123.07	68.20	66.40	Aquifer 197	2012-07-31
MW13-4	10	456178	5393180	-	39.91	107.26	108.17	70.90	69.10	Aquifer 206	2013-11-26

Notes:
mbgl indicates metres below ground level.
mbtoc indicates metres below top of casing.
masl indicates metres above sea level.
UTM Coordinates NAD 83.

Table A2: Summary of the Waterline Analytical Program

Location	Field Sample ID	Sample Matrix	Date	Lab ID	Analytical Groups					Comments
					Isotopes (15N + 18O)	Field & General Chemistry	Major Ions & Nutrients	DOC & TOC	Dissolved Metals	
MW12-1	WTN 115138	Water	2020-02-27	2020a	X	X	X	X	X	Sampled with Hydrolift Waterra Pump
MW12-1	WTN 115138	Water	2021-03-03	2021		X	X	X	X	Sampled with 1.5L HydraSleeve
MW12-2	WTN 115140	Water	2020-02-27	2020a	X	X	X	X	X	Sampled with Hydrolift Waterra Pump
MW12-2	WTN 115140	Water	2021-03-03	2021		X	X	X	X	Sampled with 1.5L HydraSleeve
MW12-3	WTN 115141	Water	2020-02-27	2020a	X	X	X	X	X	Sampled with Hydrolift Waterra Pump
MW12-3	WTN 115141	Water	2021-03-03	2021		X	X	X	X	Sampled with 1.5L HydraSleeve
MW13-4	WTN 108347	Water	2020-02-27	2020a	X	X	X	X	X	Sampled with Hydrolift Waterra Pump
MW13-4	WTN 108347	Water	2021-03-03	2021		X	X	X	X	Sampled with 1.5L HydraSleeve

Table A3: Water Level Measurements from the 2020 & 2021 Groundwater Sampling Programs

Location	Date	Time	Depth to Water		Elevation (masl)		
			mbtoc	mbgl	TOC	Ground	Water
MW12-1	2020-02-27	11:11	55.60	55.03	126.87	126.30	71.27
MW12-1	2021-02-24	10:00	55.76	55.19	126.87	126.30	71.11
MW12-2	2020-02-27	11:13	45.97	45.37	118.30	117.70	72.33
MW12-2	2021-02-24	11:30	46.13	45.53	118.30	117.70	72.17
MW12-3	2020-02-27	11:19	51.70	50.93	123.07	122.30	71.37
MW12-3	2021-02-24	11:00	51.88	51.11	123.07	122.30	71.19
MW13-4	2020-02-27	11:12	35.00	34.09	108.17	107.26	73.17
MW13-4	2021-02-24	15:30	35.15	34.24	108.17	107.26	73.02

Notes:
mbtoc indicates metres below top of well casing.
mbgl indicates metres below ground level.
masl indicates metres above sea level.

Table A4: Field and General Chemistry Parameters

				Field					General Chemistry												
Sample Location	**Sample Date**	**Field Sample ID**	**Lab ID**	**Field Conductivity (EC)**	**Field Dissolved Oxygen (DO)**	**Field Oxidation Reduction Potential (ORP)**	**Field Temperature**	**Field pH**	**Alkalinity, Bicarbonate (as $CaCO_3$)**	**Alkalinity, Carbonate (as $CaCO_3$)**	**Alkalinity, Hydroxide (as $CaCO_3$)**	**Alkalinity, Total (as $CaCO_3$)**	**Alkalinity, pp (as $CaCO_3$)**	**Conductivity (EC)**	**Dissolved Organic Carbon (DOC)**	**Total Dissolved Solids-Calculated**	**Total Dissolved Solids-Gravimetric**	**Hardness (as $CaCO_3$)**	**Total Organic Carbon (TOC)**	**Turbidity**	**pH**
			Units	µS/cm	mg/L	mV	Celsius	-	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	-
Guidelines		**GCDWQ MAC Exceedances**		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Schedule 3.2 Drinking Water		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	24/03/2020	WTN 118056	2020a	-	-	-	-	-	-	-	-	80	-	-	-	-	-	183	-	38.9	6.86
FRR MW19-5	25/06/2020	WTN 118056	2020b	-	-	-	-	-	-	-	-	79.3	-	-	-	-	-	159	-	1.45	7.25
FRR MW19-5	21/09/2020	WTN 118056	2020c	-	-	-	-	-	-	-	-	74.5	-	327	-	-	-	150	-	8.59	7.76
FRR MW19-5	17/12/2020	WTN 118056	2020e	-	-	-	-	-	-	-	-	135	-	-	-	-	-	175	-	2.66	7.32
FRR Production Well	27/06/2007	WTN 102275	2007a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.43
FRR Production Well	17/10/2007	WTN 102275	2007b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.89
FRR Production Well	07/05/2008	WTN 102275	2008b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.49
FRR Production Well	05/08/2008	WTN 102275	2008c	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3
FRR Production Well	05/11/2008	WTN 102275	2008d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.25
FRR Production Well	20/02/2009	WTN 102275	2009a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.05
FRR Production Well	08/08/2009	WTN 102275	2009b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.34
FRR Production Well	19/11/2009	WTN 102275	2009c	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.44
FRR Production Well	11/08/2010	WTN 102275	2010c	-	-	-	-	-	-	-	-	-	-	786	-	563	-	310	-	<0.1	7.3
FRR Production Well	16/07/2014	WTN 102275	2014b	-	-	-	-	-	-	-	-	70.0	-	491	-	285	-	181	-	-	7.02
FRR Production Well	22/09/2014	WTN 102275	2014c	-	-	-	-	-	-	-	-	70.0	-	529	-	307	-	224	-	-	7.16
FRR Production Well	11/12/2014	WTN 102275	2014e	-	-	-	-	-	-	-	-	75.0	-	767	-	445	-	250	-	0.33	6.97
FRR Production Well	20/03/2015	WTN 102275	2015a	-	-	-	-	-	-	-	-	400.0	-	777	-	451	-	299	-	0.25	6.83
FRR Production Well	05/06/2015	WTN 102275	2015b	-	-	-	-	-	-	-	-	70.0	-	542	-	314	-	220	-	0.3	7.01
FRR Production Well	10/09/2015	WTN 102275	2015c	-	-	-	-	-	-	-	-	75.0	-	627	-	364	-	212	-	0.14	7.05
FRR Production Well	10/12/2015	WTN 102275	2015d	-	-	-	-	-	-	-	-	75.0	-	766	-	444	-	389	-	0.48	7.22
FRR Production Well	17/03/2016	WTN 102275	2016a	-	-	-	-	-	-	-	-	80.0	-	690	-	400	-	243	-	1.24	7.06
FRR Production Well	15/06/2016	WTN 102275	2016b	-	-	-	-	-	-	-	-	70.0	-	602	-	349	-	228	-	0.77	6.99
FRR Production Well	21/09/2016	WTN 102275	2016c	-	-	-	-	-	-	-	-	75.0	-	627	-	368	-	252	-	0.27	7
FRR Production Well	30/12/2016	WTN 102275	2016d	-	-	-	-	-	-	-	-	80.0	-	685	-	397	-	241	-	0.68	6.98
FRR Production Well	23/03/2017	WTN 102275	2017a	-	-	-	-	-	-	-	-	80.0	-	695	-	403	-	273	-	0.26	6.99
FRR Production Well	30/06/2017	WTN 102275	2017b	-	-	-	-	-	-	-	-	75.0	-	634	-	386	-	221	-	0.018	7.21
FRR Production Well	11/09/2017	WTN 102275	2017c	-	-	-	-	-	-	-	-	170.0	-	507	-	294	-	188	-	0.3	7.15

Waterline

Table A4: Field and General Chemistry Parameters

				Field					General Chemistry												
Sample Location	**Sample Date**	**Field Sample ID**	**Lab ID**	**Field Conductivity (EC)**	**Field Dissolved Oxygen (DO)**	**Field Oxidation Reduction Potential (ORP)**	**Field Temperature**	**Field pH**	**Alkalinity, Bicarbonate (as $CaCO_3$)**	**Alkalinity, Carbonate (as $CaCO_3$)**	**Alkalinity, Hydroxide (as $CaCO_3$)**	**Alkalinity, Total (as $CaCO_3$)**	**Alkalinity, pp (as $CaCO_3$)**	**Conductivity (EC)**	**Dissolved Organic Carbon (DOC)**	**Total Dissolved Solids-Calculated**	**Total Dissolved Solids-Gravimetric**	**Hardness (as $CaCO_3$)**	**Total Organic Carbon (TOC)**	**Turbidity**	**pH**
			Units	µS/cm	mg/L	mV	Celsius	-	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	-
Guidelines		**GCDWQ MAC Exceedances**		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Schedule 3.2 Drinking Water		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	08/12/2017	WTN 102275	2017d	-	-	-	-	-	-	-	-	70.0	-	636	-	371	-	227	-	0.41	6.81
FRR Production Well	26/02/2018	WTN 102275	2018a	-	-	-	-	-	72.6	-	-	70.9	-	628	0.57	473	-	231	0.64	<0.10	7.45
FRR Production Well	24/03/2020	WTN 102275	2020a	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	97.8	-	0.12	6.93
FRR Production Well	25/06/2020	WTN 102275	2020b	-	-	-	-	-	-	-	-	85.9	-	474	-	-	-	206	-	0.64	7.93
FRR Production Well	21/09/2020	WTN 102275	2020c	-	-	-	-	-	-	-	-	83.7	-	449	-	-	-	190	-	0.11	7.77
MW12-1	17/09/2012	WTN 115138	2012	-	-	-	-	-	75.5	<0.5	<0.5	61.9	-	459	-	318	-	-	-	6000	7.5
MW12-1	29/01/2013	WTN 115138	2013a	-	-	-	-	-	63	<1	<1	63	-	445	-	173	-	-	-	-	7.6
MW12-1	28/11/2013	WTN 115138	2013b	-	-	-	-	-	86.1	<0.5	<0.5	70.6	-	445	-	293	-	254	-	2000	7.7
MW12-1	24/09/2014	WTN 115138	2014	-	-	-	-	-	76.2	<0.5	<0.5	62.5	-	477	-	323	-	627	-	6000	7.7
MW12-1	07/03/2018	WTN 115138	2018	-	-	-	-	-	-	-	-	98	-	463	1.22	365	-	194	2.76	154	7.8
MW12-1	11/12/2019	WTN 115138	2019b	-	-	-	-	-	-	-	-	130	-	408	-	237	-	168	-	106	7.08
MW12-1	27/02/2020	WTN 115138	2020a	382	10.95	194.5	10.4	6.94	131	<1.0	<1.0	131	-	378	<0.50	-	258	167	0.72	217	7.62
MW12-1	24/03/2020	WTN 115138	2020b	-	-	-	-	-	-	-	-	135	-	355	-	-	-	331	-	3.24	7.47
MW12-1	25/06/2020	WTN 115138	2020c	-	-	-	-	-	-	-	-	126	-	377	-	-	-	162	-	2.89	7.94
MW12-1	21/09/2020	WTN 115138	2020d	-	-	-	-	-	-	-	-	129.0	-	384	-	-	-	182	-	2.39	7.79
MW12-1	03/03/2021	WTN 115138	2021	406	4.67	107.3	9.9	7.11	136	<1.0	<1.0	136	<1.0	419	14.4	242	-	180	5.63	51	7.65
MW12-2	17/09/2012	WTN 115140	2012	-	-	-	-	-	<0.5	93.9	<0.5	77	-	1100	-	814	-	-	-	1200	6.67
MW12-2	29/01/2013	WTN 115140	2013a	-	-	-	-	-	80	<1	<1	80	-	1140	-	444	-	-	-	-	6.78
MW12-2	28/11/2013	WTN 115140	2013b	-	-	-	-	-	96.6	<0.5	<0.5	79.2	-	1140	-	780	-	492	-	110	7.03
MW12-2	24/09/2014	WTN 115140	2014	-	-	-	-	-	92.9	<0.5	<0.5	76.2	-	1070	-	737	-	500	-	280	6.63
MW12-2	07/03/2018	WTN 115140	2018	-	-	-	-	-	-	-	-	76.5	-	940	1.02	750	-	353	3.44	289	6.83
MW12-2	11/12/2019	WTN 115140	2019b	-	-	-	-	-	-	-	-	90	-	991	-	575	-	362	-	35.6	7.04
MW12-2	27/02/2020	WTN 115140	2020a	928	11.03	235.1	10.2	6.71	82	<1.0	<1.0	82	-	946	1.18	-	666	397	1.36	1430	7.38
MW12-2	24/03/2020	WTN 115140	2020b	-	-	-	-	-	-	-	-	80	-	1000	-	-	-	356	-	72.9	6.89
MW12-2	25/06/2020	WTN 115140	2020c	-	-	-	-	-	-	-	-	84.6	-	943	-	-	-	441	-	82.7	7.72
MW12-2	21/09/2020	WTN 115140	2020d	-	-	-	-	-	-	-	-	79.5	-	911	-	-	-	409	-	15.1	7.5
MW12-2	16/12/2020	WTN 115140	2020e	-	-	-	-	-	-	-	-	80.4	-	-	-	-	-	459	-	103	7.74

Table A4: Field and General Chemistry Parameters

				Field					General Chemistry												
Sample Location	**Sample Date**	**Field Sample ID**	**Lab ID**	**Field Conductivity (EC)**	**Field Dissolved Oxygen (DO)**	**Field Oxidation Reduction Potential (ORP)**	**Field Temperature**	**Field pH**	**Alkalinity, Bicarbonate (as $CaCO_3$)**	**Alkalinity, Carbonate (as $CaCO_3$)**	**Alkalinity, Hydroxide (as $CaCO_3$)**	**Alkalinity, Total (as $CaCO_3$)**	**Alkalinity, pp (as $CaCO_3$)**	**Conductivity (EC)**	**Dissolved Organic Carbon (DOC)**	**Total Dissolved Solids-Calculated**	**Total Dissolved Solids-Gravimetric**	**Hardness (as $CaCO_3$)**	**Total Organic Carbon (TOC)**	**Turbidity**	**pH**
			Units	µS/cm	mg/L	mV	Celsius	-	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	-
Guidelines		**GCDWQ MAC Exceedances**		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Schedule 3.2 Drinking Water		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW12-2	03/03/2021	WTN 115140	2021	660	7.54	185.3	10.9	6.85	90.4	<1.0	<1.0	90.4	<1.0	658	1.31	442	-	275	0.98	78.6	7.49
MW12-3	17/09/2012	WTN 115141	2012	-	-	-	-	-	113	<0.5	<0.5	92.6	-	681	-	457	-	-	-	1300	7.6
MW12-3	29/01/2013	WTN 115141	2013a	-	-	-	-	-	106	<1	<1	106	-	712	-	329	-	-	-	-	7.15
MW12-3	28/11/2013	WTN 115141	2013b	-	-	-	-	-	101	<0.5	<0.5	82.8	-	939	-	591	-	385	-	-	7.7
MW12-3	24/09/2014	WTN 115141	2014	-	-	-	-	-	115	<0.5	<0.5	94.6	-	1140	-	797	-	528	-	14	7.5
MW12-3	07/03/2018	WTN 115141	2018	-	-	-	-	-	-	-	-	118	-	743	1.35	510	-	305	2.76	14.8	7.8
MW12-3	11/12/2019	WTN 115141	2019b	-	-	-	-	-	-	-	-	155	-	697	-	404	-	285	-	89	7.06
MW12-3	27/02/2020	WTN 115141	2020a	576	9.68	214.8	14	6.91	131	<1.0	<1.0	131	-	559	2.68	-	341	247	3.01	125	7.54
MW12-3	24/03/2020	WTN 115141	2020b	-	-	-	-	-	-	-	-	135	-	393	-	-	-	255	-	1.44	7.15
MW12-3	25/06/2020	WTN 115141	2020c	-	-	-	-	-	-	-	-	134	-	633	-	-	-	265	-	1.23	7.06
MW12-3	21/09/2020	WTN 115141	2020d	-	-	-	-	-	-	-	-	126	-	487	-	-	-	238	-	2.14	7.89
MW12-3	28/01/2021	WTN 115141	2020e	-	-	-	-	-	-	-	-	148	-	-	-	-	-	313	-	1.8	7.91
MW12-3	03/03/2021	WTN 115141	2021	659	6.09	159	11.8	6.8	150	<1.0	<1.0	150	<1.0	718	1.59	406	-	284	1.63	23.8	7.47
MW13-4	28/11/2013	WTN 108347	2013	-	-	-	-	-	81.2	<0.5	<0.5	66.5	-	435	-	314	-	119	-	600	7.5
MW13-4	24/09/2014	WTN 108347	2014	-	-	-	-	-	92.7	<0.5	<0.5	76	-	172	-	124	-	100	-	280	7.3
MW13-4	07/03/2018	WTN 108347	2018	-	-	-	-	-	-	-	-	80.1	-	179	-	133	-	78.7	-	1780	7.73
MW13-4	11/12/2019	WTN 108347	2019b	-	-	-	-	-	-	-	-	120	-	252	-	146	-	111	-	15.1	6.99
MW13-4	27/02/2020	WTN 108347	2020a	244	10.62	225.7	9.1	6.82	111	<1.0	<1.0	111	-	239	<0.50	-	155	106	0.89	445	7.57
MW13-4	24/03/2020	WTN 108347	2020b	-	-	-	-	-	-	-	-	120	-	248	-	-	-	115	-	16	7.16
MW13-4	25/06/2020	WTN 108347	2020c	-	-	-	-	-	-	-	-	97.8	-	232	-	-	-	110	-	66.1	7.16
MW13-4	21/09/2020	WTN 108347	2020d	-	-	-	-	-	-	-	-	101	-	229	-	-	-	118	-	77.9	7.9
MW13-4	16/12/2020	WTN 108347	2020e	-	-	-	-	-	-	-	-	99.8	-	-	-	-	-	119	-	23	7.87
MW13-4	03/03/2021	WTN 108347	2021	276	3.77	119.4	9.8	7.04	100	<1.0	<1.0	100	<1.0	256	1.2	156	-	101	0.57	3.15	7.65

Notes:

Guidelines - Health Canada, September 2020, Guidelines for Canadian Drinking Water Quality (GCDWQ), Summary Table.

Yellow highlight - Value exceeds the Maximum Acceptable Concentration (MAC).

Red highlight - Value exceeds the BC Reg. 196/2017

Waterline

Table A5: Major Ions

Sample Location	Sample Date	Field Sample ID	Lab ID	Bicarbonate (HCO_3)	Calcium (Ca)-Dissolved	Carbonate (CO_3)	Chloride (Cl)	Fluoride (F)	Hydroxide (OH)	Iron (Fe)-Dissolved	Magnesium (Mg)-Dissolved	Manganese (Mn)-Dissolved	Orthophosphate (P)	Phenolphthalein	Potassium (K)-Dissolved	Sodium (Na)-Dissolved	Sulphate (SO_4)
			Units	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
Guidelines		**GCDWQ MAC Exceedances**		**-**	**-**	**-**	**-**	**1.5**	**-**	**-**	**-**	**0.12**	**-**	**-**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*-*	*-*	*-*	*250*	*1.5*	*-*	*6.5*	*-*	*1.5*	*-*	*-*	*-*	*200*	*500*
FRR MW19-5	24/03/2020	WTN 118056	2020a	-	-	-	16.0	-	-	-	-	-	0.0059	-	-	-	44
FRR MW19-5	25/06/2020	WTN 118056	2020b	-	-	-	16.4	-	-	-	-	-	<0.005	-	-	-	50.20
FRR MW19-5	21/09/2020	WTN 118056	2020c	-	-	-	16.4	-	-	-	-	-	0.005	-	-	-	41.7
FRR MW19-5	17/12/2020	WTN 118056	2020e	-	-	-	47.1	-	-	-	-	-	0.05	-	-	-	38.7
FRR Production Well	27/06/2007	WTN 102275	2007a	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	17/10/2007	WTN 102275	2007b	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	20/02/2008	WTN 102275	2008a	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	07/05/2008	WTN 102275	2008b	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	05/08/2008	WTN 102275	2008c	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	05/11/2008	WTN 102275	2008d	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	20/02/2009	WTN 102275	2009a	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	08/08/2009	WTN 102275	2009b	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	19/11/2009	WTN 102275	2009c	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	18/03/2010	WTN 102275	2010a	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	28/06/2010	WTN 102275	2010b	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	11/08/2010	WTN 102275	2010c	-	68.10	-	36	0.02	-	0.034	30.8	<0.001	-	-	0.98	13.4	43
FRR Production Well	09/09/2010	WTN 102275	2010d	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	14/03/2011	WTN 102275	2011a	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	10/06/2011	WTN 102275	2011b	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	11/07/2011	WTN 102275	2011c	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	21/09/2011	WTN 102275	2011d	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	05/12/2011	WTN 102275	2011e	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A5: Major Ions

Sample Location	Sample Date	Field Sample ID	Lab ID	Bicarbonate (HCO_3)	Calcium (Ca)-Dissolved	Carbonate (CO_3)	Chloride (Cl)	Fluoride (F)	Hydroxide (OH)	Iron (Fe)-Dissolved	Magnesium (Mg)-Dissolved	Manganese (Mn)-Dissolved	Orthophosphate (P)	Phenolphthalein	Potassium (K)-Dissolved	Sodium (Na)-Dissolved	Sulphate (SO_4)
			Units	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
Guidelines		**GCDWQ MAC Exceedances**		**-**	**-**	**-**	**-**	**1.5**	**-**	**-**	**-**	**0.12**	**-**	**-**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*-*	*-*	*-*	*250*	*1.5*	*-*	*6.5*	*-*	*1.5*	*-*	*-*	*-*	*200*	*500*
FRR Production Well	15/03/2012	WTN 102275	2012a	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	19/06/2012	WTN 102275	2012b	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	13/09/2012	WTN 102275	2012c	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	10/12/2012	WTN 102275	2012d	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	29/01/2013	WTN 102275	2013a	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	25/06/2013	WTN 102275	2013b	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	13/09/2013	WTN 102275	2013c	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	12/03/2014	WTN 102275	2014a	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	16/07/2014	WTN 102275	2014b	-	-	-	30.1	-	-	-	-	-	-	-	-	-	21.10
FRR Production Well	22/09/2014	WTN 102275	2014c	-	-	-	27.7	-	-	-	-	-	-	-	-	-	31.70
FRR Production Well	04/12/2014	WTN 102275	2014d	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	11/12/2014	WTN 102275	2014e	-	-	-	33.9	-	-	-	-	-	-	-	-	-	47.60
FRR Production Well	20/03/2015	WTN 102275	2015a	-	-	-	50.6	-	-	-	-	-	-	-	-	-	35.80
FRR Production Well	05/06/2015	WTN 102275	2015b	-	-	-	27.2	-	-	-	-	-	-	-	-	-	30.60
FRR Production Well	10/09/2015	WTN 102275	2015c	-	-	-	31.6	-	-	-	-	-	-	-	-	-	37.40
FRR Production Well	10/12/2015	WTN 102275	2015d	-	-	-	39.5	-	-	-	-	-	-	-	-	-	55.20
FRR Production Well	17/03/2016	WTN 102275	2016a	-	-	-	36.9	-	-	-	-	-	-	-	-	-	45.60
FRR Production Well	15/06/2016	WTN 102275	2016b	-	-	-	30.8	-	-	-	-	-	-	-	-	-	41.00
FRR Production Well	21/09/2016	WTN 102275	2016c	-	-	-	32.2	-	-	-	-	-	-	-	-	-	31.70
FRR Production Well	30/12/2016	WTN 102275	2016d	-	-	-	33.9	-	-	-	-	-	-	-	-	-	193.00
FRR Production Well	23/03/2017	WTN 102275	2017a	-	-	-	38.2	-	-	-	-	-	-	-	-	-	8.66
FRR Production Well	30/06/2017	WTN 102275	2017b	-	-	-	29.8	-	-	-	-	-	-	-	-	-	9.86
FRR Production Well	11/09/2017	WTN 102275	2017c	-	-	-	25.1	-	-	-	-	-	-	-	-	-	10.10
FRR Production Well	08/12/2017	WTN 102275	2017d	-	-	-	37.4	-	-	-	-	-	-	-	-	-	15.00
FRR Production Well	26/02/2018	WTN 102275	2018a	-	51.90	-	40.2	0.025	-	0.0303	24.7	0.0009	-	-	0.807	12.10	13.4
FRR Production Well	24/03/2020	WTN 102275	2020a	-	-	-	31.5	-	-	-	-	-	4.8	-	-	-	34.2
FRR Production Well	25/06/2020	WTN 102275	2020b	-	-	-	29.8	-	-	-	-	-	0.005	-	-	-	28.7
FRR Production Well	21/09/2020	WTN 102275	2020c	-	-	-	28.4	-	-	-	-	-	0.005	-	-	-	26.8

Waterline

Table A5: Major Ions

Sample Location	Sample Date	Field Sample ID	Lab ID	Bicarbonate (HCO_3)	Calcium (Ca)-Dissolved	Carbonate (CO_3)	Chloride (Cl)	Fluoride (F)	Hydroxide (OH)	Iron (Fe)-Dissolved	Magnesium (Mg)-Dissolved	Manganese (Mn)-Dissolved	Orthophosphate (P)	Phenolphthalein	Potassium (K)-Dissolved	Sodium (Na)-Dissolved	Sulphate (SO_4)
			Units	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
Guidelines		**GCDWQ MAC Exceedances**		**-**	**-**	**-**	**-**	**1.5**	**-**	**-**	**-**	**0.12**	**-**	**-**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*-*	*-*	*-*	*250*	*1.5*	*-*	*6.5*	*-*	*1.5*	*-*	*-*	*-*	*200*	*500*
MW12-1	17/09/2012	WTN 115138	2012	92.11	0.04	37.14	31.5	0.1	<0.5	0.0228	0.0193	**0.344**	-	-	0.00152	0.0141	17.9
MW12-1	29/01/2013	WTN 115138	2013a	76.86	0.04	37.80	29.2	0.07	<1	0.016	0.0194	0.043	-	-	0.0010	0.0121	-
MW12-1	28/11/2013	WTN 115138	2013b	105.04	0.04	42.36	26	0.055	<0.5	0.0279	0.0205	0.020	-	-	0.00106	0.0115	19.3
MW12-1	24/09/2014	WTN 115138	2014	92.96	-	37.50	26.8	0.039	<0.5	-	-	-	-	-	-	-	15.6
MW12-1	07/03/2018	WTN 115138	2018	0.00	0.04	58.80	20.4	0.034	-	0.0026	0.0204	0.001	-	-	0.00093	0.0098	8.58
MW12-1	11/12/2019	WTN 115138	2019b	-	36.60	-	15.0	-	-	-	18.6	-	-	-	1.45	10.0	8.89
MW12-1	27/02/2020	WTN 115138	2020a	159.82	33.90	<1.0	17.3	<0.10	<1.0	<0.010	19.9	<0.00020	-	<1.0	0.85	9.62	7.2
MW12-1	24/03/2020	WTN 115138	2020b	-	-	-	17.4	-	-	-	-	-	0.0098	-	-	-	5.89
MW12-1	25/06/2020	WTN 115138	2020c	-	-	-	18.3	-	-	-	-	-	0.005	-	-	-	6.3
MW12-1	21/09/2020	WTN 115138	2020d	-	-	-	20.2	-	-	-	-	-	0.005	-	-	-	6.6
MW12-1	03/03/2021	WTN 115138	2021	165.92	36.40	<1.0	23.5	<0.10	<1.0	<0.010	21.6	0.00349	-	<1.0	1.06	10.1	6
MW12-2	17/09/2012	WTN 115140	2012	0.61	0.11	46.20	36	0.067	<0.5	0.12	0.0472	**0.554**	-	-	0.00213	0.0188	93.7
MW12-2	29/01/2013	WTN 115140	2013a	97.60	0.13	48.00	35	0.03	<1	*42.4*	0.0613	**0.696**	-	-	-	0.0178	89.4
MW12-2	28/11/2013	WTN 115140	2013b	117.85	0.12	47.52	38	0.033	<0.5	4.18	0.0499	0.085	-	-	0.00163	0.0162	93
MW12-2	24/09/2014	WTN 115140	2014	113.34	0.10	45.72	43	0.031	<0.5	*19.1*	0.0925	**0.246**	-	-	0.00826	0.0159	85.8
MW12-2	07/03/2018	WTN 115140	2018	0.00	0.08	45.90	34.3	<0.10	-	0.0649	0.0348	0.002	-	-	0.0011	0.0133	84
MW12-2	11/12/2019	WTN 115140	2019b	-	82.60	-	31.7	-	-	-	38.0	-	-	-	1.89	18.7	74.2
MW12-2	27/02/2020	WTN 115140	2020a	100.04	90.50	<1.0	31.2	<0.10	<1.0	0.082	41.5	0.00101	-	<1.0	1.13	16.4	76
MW12-2	24/03/2020	WTN 115140	2020b	-	-	-	29.3	-	-	-	-	-	0.005	-	-	-	76.4
MW12-2	25/06/2020	WTN 115140	2020c	-	-	-	28.6	-	-	-	-	-	0.005	-	-	-	75.4
MW12-2	21/09/2020	WTN 115140	2020d	-	-	-	27.5	-	-	-	-	-	0.005	-	-	-	74.2
MW12-2	16/12/2020	WTN 115140	2020e	-	-	-	28.1	-	-	-	-	-	0.243	-	-	-	76.7
MW12-2	03/03/2021	WTN 115140	2021	110.28	62.00	<1.0	33.4	<0.10	<1.0	0.078	29.1	0.00176	-	<1.0	1.16	14.3	35.7

Table A5: Major Ions

Sample Location	Sample Date	Field Sample ID	Lab ID	Bicarbonate (HCO_3)	Calcium (Ca)-Dissolved	Carbonate (CO_3)	Chloride (Cl)	Fluoride (F)	Hydroxide (OH)	Iron (Fe)-Dissolved	Magnesium (Mg)-Dissolved	Manganese (Mn)-Dissolved	Orthophosphate (P)	Phenolphthalein	Potassium (K)-Dissolved	Sodium (Na)-Dissolved	Sulphate (SO_4)
			Units	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
Guidelines		**GCDWQ MAC Exceedances**		**-**	**-**	**-**	**-**	**1.5**	**-**	**-**	**-**	**0.12**	**-**	**-**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*-*	*-*	*-*	*250*	*1.5*	*-*	*6.5*	*-*	*1.5*	*-*	*-*	*-*	*200*	*500*
MW12-3	17/09/2012	WTN 115141	2012	137.86	0.07	55.56	69.5	0.084	<0.5	*11.6*	0.0295	**0.754**	-	-	0.0019	0.0259	47.9
MW12-3	29/01/2013	WTN 115141	2013a	129.32	0.09	63.60	114	0.13	<1	*29.5*	0.0420	**1.150**	-	-	-	0.0201	22.6
MW12-3	28/11/2013	WTN 115141	2013b	123.22	0.09	49.68	180	0.039	<0.5	1.72	0.0404	0.058	-	-	0.00147	0.0147	28.2
MW12-3	24/09/2014	WTN 115141	2014	140.30	0.12	56.76	*262*	<0.010	<0.5	2.28	0.0564	0.055	-	-	0.0017	0.0167	47.2
MW12-3	07/03/2018	WTN 115141	2018	0.00	0.07	70.80	77.6	0.027	-	0.0026	0.0326	-	-	-	0.0011	-	33.3
MW12-3	11/12/2019	WTN 115141	2019b	-	62.80	-	63.1	-	-	-	31.1	-	-	-	2.05	14.1	37.3
MW12-3	27/02/2020	WTN 115141	2020a	159.82	53.20	<1.0	45.2	0.11	<1.0	0.04	27.5	0.0382	-	<1.0	0.98	11.6	40.5
MW12-3	24/03/2020	WTN 115141	2020b	-	-	-	57.8	-	-	-	-	-	0.0014	-	-	-	32.6
MW12-3	25/06/2020	WTN 115141	2020c	-	-	-	52.4	-	-	-	-	-	0.0074	-	-	-	40.1
MW12-3	21/09/2020	WTN 115141	2020d	-	-	-	39.5	-	-	-	-	-	0.005	-	-	-	37
MW12-3	28/01/2021	WTN 115141	2020e	-	-	-	53.7	-	-	-	-	-	0.175	-	-	-	36.5
MW12-3	03/03/2021	WTN 115141	2021	183.00	61.50	<1.0	54.8	<0.10	<1.0	0.023	31.6	0.00824	-	<1.0	1.2	12.2	37.2
MW13-4	28/11/2013	WTN 108347	2013	99.06	0.03	39.90	23	0.14	<0.5	*12.9*	0.0105	**0.988**	-	-	0.00161	0.0555	109
MW13-4	24/09/2014	WTN 108347	2014	113.09	0.02	45.60	4.24	0.115	<0.5	*13*	0.0095	**0.355**	-	-	0.00174	0.0078	3.56
MW13-4	07/03/2018	WTN 108347	2018	0.00	-	48.06	5.46	0.046	-	-	-	-	-	-	-	-	2.58
MW13-4	11/12/2019	WTN 108347	2019b	-	25.80	-	9.38	-	-	-	11.4	-	-	-	0.780	6.73	2.72
MW13-4	27/02/2020	WTN 108347	2020a	135.42	23.90	<1.0	8.42	<0.10	<1.0	<0.010	11.3	0.0012	-	<1.0	0.54	7.3	3.5
MW13-4	24/03/2020	WTN 108347	2020b	-	-	-	9.17	-	-	-	-	-	0.0143	-	-	-	2.79
MW13-4	25/06/2020	WTN 108347	2020c	-	-	-	8.59	-	-	-	-	-	0.005	-	-	-	3.5
MW13-4	21/09/2020	WTN 108347	2020d	-	-	-	8.9	-	-	-	-	-	0.005	-	-	-	3.8
MW13-4	16/12/2020	WTN 108347	2020e	-	-	-	8.49	-	-	-	-	-	0.063	-	-	-	3.7
MW13-4	03/03/2021	WTN 108347	2021	122.00	21.40	<1.0	7.46	<0.10	<1.0	<0.010	11.5	0.0261	-	<1.0	0.64	7.38	3.3

Notes:

Guidelines - Health Canada, September 2020, Guidelines for Canadian Drinking Water Quality (GCDWQ), Summary Table.

Yellow highlight - Value exceeds the Maximum Acceptable Concentration (MAC).

Red highlight - Value exceeds the BC Reg. 196/2017

Waterline

Table A6: Dissolved Metals

Sample Location	Sample Date	Field Sample ID	Lab ID	Aluminum (Al)-Dissolved	Antimony (Sb)-Dissolved	Arsenic (As)-Dissolved	Barium (Ba)-Dissolved	Beryllium (Be)-Dissolved	Bismuth (Bi)-Dissolved	Boron (B)-Dissolved	Cadmium (Cd)-Dissolved	Chromium (Cr)-Dissolved	Cobalt (Co)-Dissolved	Copper (Cu)-Dissolved
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exeedances**		**-**	**0.006**	**0.01**	**2**	**-**	**-**	**5**	**0.007**	**0.05**	**-**	**2**
		Schedule 3.2 Drinking Water		*9.5*	*0.006*	*0.01*	*1*	*0.008*	*-*	*5*	*0.005*	*-*	*0.001*	*1.5*
FRR MW19-5	24/03/2020	WTN 118056	2020a	-	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	25/06/2020	WTN 118056	2020b	-	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	21/09/2020	WTN 118056	2020c	-	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	17/12/2020	WTN 118056	2020e	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	11/08/2010	WTN 102275	2010c	<0.003	<0.0005	0.0003	0.013	<0.0001	<0.001	<0.05	0.00004	0.001	<0.0005	0.0087
FRR Production Well	26/02/2018	WTN 102275	2018a	<0.00020	<0.000020	0.000101	0.0119	<0.000010	<0.0000050	0.0468	0.0000512	0.00091	*0.00107*	0.014
FRR Production Well	24/03/2020	WTN 102275	2020a	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	25/06/2020	WTN 102275	2020b	-	-	-	-	-	-	-	-	-	-	-
FRR Production Well	21/09/2020	WTN 102275	2020c	-	-	-	-	-	-	-	-	-	-	-
MW12-1	17/09/2012	WTN 115138	2012	0.0087	<0.00050	0.0004	0.0221	<0.00010	<0.001	<0.05	0.000166	<0.001	*0.00249*	0.0108
MW12-1	29/01/2013	WTN 115138	2013a	0.078	<0.00005	0.0004	0.0152	0.00001	-	0.002	<0.00001	0.0012	0.00092	0.0066
MW12-1	28/11/2013	WTN 115138	2013b	0.0217	<0.00050	0.00032	0.0133	<0.00010	<0.001	<0.05	0.000219	<0.001	0.000840	0.0036
MW12-1	07/03/2018	WTN 115138	2018	0.00091	0.000072	0.000297	0.0129	<0.000010	<0.0000050	0.0059	0.0000175	0.00182	0.0000755	0.0002
MW12-1	27/02/2020	WTN 115138	2020a	<0.0050	<0.00020	<0.00050	0.0156	<0.00010	<0.00010	0.0147	<0.000010	0.00254	<0.00010	0.00386
MW12-1	24/03/2020	WTN 115138	2020b	-	-	-	-	-	-	-	-	-	-	-
MW12-1	25/06/2020	WTN 115138	2020c	-	-	-	-	-	-	-	-	-	-	-
MW12-1	21/09/2020	WTN 115138	2020d	-	-	-	-	-	-	-	-	-	-	-
MW12-1	03/03/2021	WTN 115138	2021	<0.0050	0.00026	<0.00050	0.0179	<0.00010	<0.00010	<0.0500	0.00015	0.00245	0.00018	0.0057

Table A6: Dissolved Metals

Sample Location	Sample Date	Field Sample ID	Lab ID	Aluminum (Al)-Dissolved	Antimony (Sb)-Dissolved	Arsenic (As)-Dissolved	Barium (Ba)-Dissolved	Beryllium (Be)-Dissolved	Bismuth (Bi)-Dissolved	Boron (B)-Dissolved	Cadmium (Cd)-Dissolved	Chromium (Cr)-Dissolved	Cobalt (Co)-Dissolved	Copper (Cu)-Dissolved
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exeedances**		**-**	**0.006**	**0.01**	**2**	**-**	**-**	**5**	**0.007**	**0.05**	**-**	**2**
		Schedule 3.2 Drinking Water		*9.5*	*0.006*	*0.01*	*1*	*0.008*	*-*	*5*	*0.005*	*-*	*0.001*	*1.5*
MW12-2	17/09/2012	WTN 115140	2012	0.011	<0.00050	0.00019	0.0368	<0.00010	<0.001	<0.05	0.000419	<0.001	*0.0054*	0.0314
MW12-2	29/01/2013	WTN 115140	2013a	*24.1*	<0.00005	0.0072	0.199	0.00065	-	0.029	0.000480	**0.0591**	*0.0282*	0.0785
MW12-2	28/11/2013	WTN 115140	2013b	1.59	<0.00050	0.00116	0.0517	<0.00010	<0.001	<0.05	0.000368	0.01310	*0.005900*	0.0374
MW12-2	24/09/2014	WTN 115140	2014	*11.1*	<0.00050	0.00492	0.0939	0.00023	<0.001	<0.05	0.000381	**0.0612**	*0.012200*	0.0530
MW12-2	07/03/2018	WTN 115140	2018	0.00038	<0.000020	0.000131	0.0244	<0.000010	<0.0000050	0.0579	0.000246	0.00087	*0.00282*	0.0232
MW12-2	27/02/2020	WTN 115140	2020a	<0.0050	<0.00020	<0.00050	0.0246	<0.00010	<0.00010	0.0783	0.000189	0.00101	*0.00515*	0.0324
MW12-2	24/03/2020	WTN 115140	2020b	-	-	-	-	-	-	-	-	-	-	-
MW12-2	25/06/2020	WTN 115140	2020c	-	-	-	-	-	-	-	-	-	-	-
MW12-2	21/09/2020	WTN 115140	2020d	-	-	-	-	-	-	-	-	-	-	-
MW12-2	16/12/2020	WTN 115140	2020e	-	-	-	-	-	-	-	-	-	-	-
MW12-2	03/03/2021	WTN 115140	2021	0.0058	<0.00020	<0.00050	0.0234	<0.00010	<0.00010	0.0881	0.000163	0.00068	*0.00455*	0.0302
MW12-3	17/09/2012	WTN 115141	2012	4.35	<0.00050	0.00349	0.223	0.001	<0.001	<0.05	0.001050	0.0308	*0.03*	0.0306
MW12-3	29/01/2013	WTN 115141	2013a	*17.4*	0.00024	0.0092	0.289	0.00206	-	0.021	0.00114	**0.0568**	*0.0598*	0.0546
MW12-3	28/11/2013	WTN 115141	2013b	0.916	<0.00050	0.00111	0.0512	0.000130	<0.001	<0.05	0.000272	0.0058	*0.00279*	0.0044
MW12-3	24/09/2014	WTN 115141	2014	1.41	<0.00050	0.00078	0.0498	<0.00010	<0.001	<0.05	0.000145	0.0129	*0.00242*	0.0044
MW12-3	07/03/2018	WTN 115141	2018	0.00098	<0.000020	0.000275	0.0237	<0.000010	<0.0000050	0.0078	0.0000381	0.00142	0.0000318	0.0002
MW12-3	27/02/2020	WTN 115141	2020a	0.0347	<0.00020	<0.00050	0.0238	<0.00010	<0.00010	0.0175	0.000119	0.00187	0.00074	0.00457
MW12-3	24/03/2020	WTN 115141	2020b	-	-	-	-	-	-	-	-	-	-	-
MW12-3	25/06/2020	WTN 115141	2020c	-	-	-	-	-	-	-	-	-	-	-
MW12-3	21/09/2020	WTN 115141	2020d	-	-	-	-	-	-	-	-	-	-	-
MW12-3	28/01/2021	WTN 115141	2020e	-	-	-	-	-	-	-	-	-	-	-
MW12-3	03/03/2021	WTN 115141	2021	<0.0050	0.00123	<0.00050	0.0336	<0.00010	<0.00010	<0.0500	0.000374	0.00186	0.00016	0.0129

Table A6: Dissolved Metals

Sample Location	Sample Date	Field Sample ID	Lab ID	Aluminum (Al)-Dissolved	Antimony (Sb)-Dissolved	Arsenic (As)-Dissolved	Barium (Ba)-Dissolved	Beryllium (Be)-Dissolved	Bismuth (Bi)-Dissolved	Boron (B)-Dissolved	Cadmium (Cd)-Dissolved	Chromium (Cr)-Dissolved	Cobalt (Co)-Dissolved	Copper (Cu)-Dissolved
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exeedances**		**-**	**0.006**	**0.01**	**2**	**-**	**-**	**5**	**0.007**	**0.05**	**-**	**2**
		Schedule 3.2 Drinking Water		*9.5*	*0.006*	*0.01*	*1*	*0.008*	*-*	*5*	*0.005*	*-*	*0.001*	*1.5*
MW13-4	28/11/2013	WTN 108347	2013	5.25	<0.00050	0.00171	0.115	0.00109	<0.001	<0.05	0.000294	0.0178	*0.0178*	0.0245
MW13-4	24/09/2014	WTN 108347	2014	*9.67*	<0.00050	0.0026	0.082700	0.00044	<0.001	<0.05	0.000105	0.01960	*0.01*	0.0176
MW13-4	27/02/2020	WTN 108347	2020a	<0.0050	<0.00020	<0.00050	0.0167	<0.00010	<0.00010	0.0139	0.000052	0.00179	<0.00010	0.00586
MW13-4	24/03/2020	WTN 108347	2020b	-	-	-	-	-	-	-	-	-	-	-
MW13-4	25/06/2020	WTN 108347	2020c	-	-	-	-	-	-	-	-	-	-	-
MW13-4	21/09/2020	WTN 108347	2020d	-	-	-	-	-	-	-	-	-	-	-
MW13-4	16/12/2020	WTN 108347	2020e	-	-	-	-	-	-	-	-	-	-	-
MW13-4	03/03/2021	WTN 108347	2021	<0.0050	<0.00020	<0.00050	0.0074	<0.00010	<0.00010	<0.0500	<0.000010	0.00055	0.00011	0.001

Notes:

Guidelines - Health Canada, September 2020, Guidelines for Canadian Drinking Water Quality (GCDWQ), Summary Table.

Laboratory results that were less than detection limits and greater than the applied guidelines are not shown as exceedances.

Yellow highlight - Value exceeds the Maximum Acceptable Concentration (MAC).

Red highlight - Value exceeds the BC Reg. 196/2017

Table A6: Dissolved Metals

Sample Location	Sample Date	Field Sample ID	Lab ID	Lead (Pb)-Dissolved	Lithium (Li)-Dissolved	Mercury (Hg)-Dissolved	Molybdenum (Mo)-Dissolved	Nickel (Ni)-Dissolved	Phosphorus (P)-Dissolved	Selenium (Se)-Dissolved	Silicon (Si)-Dissolved	Silver (Ag)-Dissolved	Strontium (Sr)-Dissolved
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exeedances**		**0.005**	**-**	**0.001**	**-**	**-**	**-**	**0.050000**	**-**	**-**	**7**
		Schedule 3.2 Drinking Water		*0.01*	*0.008*	*0.001*	*0.250000*	*0.080000*	*-*	*0.010000*	*-*	*0.02*	*2.5*
FRR MW19-5	24/03/2020	WTN 118056	2020a	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	25/06/2020	WTN 118056	2020b	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	21/09/2020	WTN 118056	2020c	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	17/12/2020	WTN 118056	2020e	-	-	-	-	-	-	-	-	-	-
FRR Production Well	11/08/2010	WTN 102275	2010c	0.0004	<0.005	<0.00002	<0.001	0.008000	-	<0.0001	13.6	<0.00002	0.286
FRR Production Well	26/02/2018	WTN 102275	2018a	0.000216	0.00081	-	<0.000050	0.012900	-	<0.000040	12.7	<0.0000050	0.202
FRR Production Well	24/03/2020	WTN 102275	2020a	-	-	-	-	-	-	-	-	-	-
FRR Production Well	25/06/2020	WTN 102275	2020b	-	-	-	-	-	-	-	-	-	-
FRR Production Well	21/09/2020	WTN 102275	2020c	-	-	-	-	-	-	-	-	-	-
MW12-1	17/09/2012	WTN 115138	2012	0.000260	-	<0.000050	0.016300	0.007800	-	0.000310	11.4	<0.000020	0.158
MW12-1	29/01/2013	WTN 115138	2013a	0.00079	-	0.000007	0.001470	0.003700	-	0.000400	-	<0.00001	-
MW12-1	28/11/2013	WTN 115138	2013b	<0.00020	<0.005	-	0.001800	0.002100	-	<0.10	11.9	<0.000020	0.159
MW12-1	07/03/2018	WTN 115138	2018	0.0000089	0.00094	-	0.000298	0.001280	-	<0.040	12	<0.0000050	0.145
MW12-1	27/02/2020	WTN 115138	2020a	<0.00020	0.00086	<0.000010	<0.00010	<0.00040	<0.050	<0.00050	14	<0.000050	0.143
MW12-1	24/03/2020	WTN 115138	2020b	-	-	-	-	-	-	-	-	-	-
MW12-1	25/06/2020	WTN 115138	2020c	-	-	-	-	-	-	-	-	-	-
MW12-1	21/09/2020	WTN 115138	2020d	-	-	-	-	-	-	-	-	-	-
MW12-1	03/03/2021	WTN 115138	2021	0.00034	0.00095	<0.000010	0.000110	0.000830	<0.050	<0.00050	14.1	0.000398	0.164

Table A6: Dissolved Metals

Sample Location	Sample Date	Field Sample ID	Lab ID	Lead (Pb)-Dissolved	Lithium (Li)-Dissolved	Mercury (Hg)-Dissolved	Molybdenum (Mo)-Dissolved	Nickel (Ni)-Dissolved	Phosphorus (P)-Dissolved	Selenium (Se)-Dissolved	Silicon (Si)-Dissolved	Silver (Ag)-Dissolved	Strontium (Sr)-Dissolved
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exeedances**		**0.005**	**-**	**0.001**	**-**	**-**	**-**	**0.050000**	**-**	**-**	**7**
		Schedule 3.2 Drinking Water		*0.01*	*0.008*	*0.001*	*0.250000*	*0.080000*	*-*	*0.010000*	*-*	*0.02*	*2.5*
MW12-2	17/09/2012	WTN 115140	2012	<0.00020	-	<0.000050	0.006000	*0.080700*	-	0.000210	13.2	<0.000020	0.466
MW12-2	29/01/2013	WTN 115140	2013a	0.0047	-	0.000127	<0.0001	*0.126000*	-	0.002400	-	0.00005	-
MW12-2	28/11/2013	WTN 115140	2013b	0.001040	-	<0.000010	<0.0001	*0.080300*	-	0.000160	17.3	<0.000020	0.513
MW12-2	24/09/2014	WTN 115140	2014	0.00285	0.0064	<0.000010	0.055800	*0.418000*	-	0.001380	113	0.000213	0.528
MW12-2	07/03/2018	WTN 115140	2018	0.0000185	0.00106	-	0.000146	0.058700	-	0.000074	11.6	<0.0000050	0.372
MW12-2	27/02/2020	WTN 115140	2020a	<0.00020	0.00095	<0.000010	0.000190	0.073300	<0.050	<0.00050	15	<0.000050	0.42
MW12-2	24/03/2020	WTN 115140	2020b	-	-	-	-	-	-	-	-	-	-
MW12-2	25/06/2020	WTN 115140	2020c	-	-	-	-	-	-	-	-	-	-
MW12-2	21/09/2020	WTN 115140	2020d	-	-	-	-	-	-	-	-	-	-
MW12-2	16/12/2020	WTN 115140	2020e	-	-	-	-	-	-	-	-	-	-
MW12-2	03/03/2021	WTN 115140	2021	<0.00020	0.00089	<0.000010	0.000150	0.040600	<0.050	<0.00050	14.6	<0.000050	0.316
MW12-3	17/09/2012	WTN 115141	2012	**0.00852**	-	<0.000050	0.003800	0.046300	-	0.000360	16.6	<0.000020	0.333
MW12-3	29/01/2013	WTN 115141	2013a	***0.0149***	-	0.000150	0.005900	*0.080400*	-	0.001400	-	<0.00001	-
MW12-3	28/11/2013	WTN 115141	2013b	0.00107	-	<0.000010	<0.0001	0.009300	-	<0.0001	15.2	<0.000020	0.361
MW12-3	24/09/2014	WTN 115141	2014	0.000560	<0.005	<0.000010	0.001300	0.011700	-	0.000170	16.9	<0.000020	0.483
MW12-3	07/03/2018	WTN 115141	2018	<0.0000050	0.00117	-	0.000060	0.000973	-	0.000056	12.6	-	0.256
MW12-3	27/02/2020	WTN 115141	2020a	0.00021	0.00111	<0.000010	0.000260	0.001600	<0.050	<0.00050	14.8	<0.000050	0.234
MW12-3	24/03/2020	WTN 115141	2020b	-	-	-	-	-	-	-	-	-	-
MW12-3	25/06/2020	WTN 115141	2020c	-	-	-	-	-	-	-	-	-	-
MW12-3	21/09/2020	WTN 115141	2020d	-	-	-	-	-	-	-	-	-	-
MW12-3	28/01/2021	WTN 115141	2020e	-	-	-	-	-	-	-	-	-	-
MW12-3	03/03/2021	WTN 115141	2021	0.00029	0.00142	<0.000010	0.000290	0.001660	<0.050	<0.00050	14.5	<0.000050	0.305

Table A6: Dissolved Metals

Sample Location	Sample Date	Field Sample ID	Lab ID	Lead (Pb)-Dissolved	Lithium (Li)-Dissolved	Mercury (Hg)-Dissolved	Molybdenum (Mo)-Dissolved	Nickel (Ni)-Dissolved	Phosphorus (P)-Dissolved	Selenium (Se)-Dissolved	Silicon (Si)-Dissolved	Silver (Ag)-Dissolved	Strontium (Sr)-Dissolved
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exeedances**		**0.005**	**-**	**0.001**	**-**	**-**	**-**	**0.050000**	**-**	**-**	**7**
		Schedule 3.2 Drinking Water		*0.01*	*0.008*	*0.001*	*0.250000*	*0.080000*	*-*	*0.010000*	*-*	*0.02*	*2.5*
MW13-4	28/11/2013	WTN 108347	2013	**0.0077**	-	<0.000010	0.007900	0.028200	-	0.000310	18.5	0.000023	0.163
MW13-4	24/09/2014	WTN 108347	2014	0.00347	<0.005	<0.000010	0.002100	0.018200	-	0.000250	30.6	<0.000020	0.205
MW13-4	27/02/2020	WTN 108347	2020a	<0.00020	0.00062	<0.000010	0.000210	<0.00040	<0.050	<0.00050	13.5	<0.000050	0.0993
MW13-4	24/03/2020	WTN 108347	2020b	-	-	-	-	-	-	-	-	-	-
MW13-4	25/06/2020	WTN 108347	2020c	-	-	-	-	-	-	-	-	-	-
MW13-4	21/09/2020	WTN 108347	2020d	-	-	-	-	-	-	-	-	-	-
MW13-4	16/12/2020	WTN 108347	2020e	-	-	-	-	-	-	-	-	-	-
MW13-4	03/03/2021	WTN 108347	2021	<0.00020	0.00066	<0.000010	<0.00010	<0.00040	<0.050	<0.00050	12.5	<0.000050	0.0994

Notes:

Guidelines - Health Canada, September 2020, Guidelines for Canadian Drin

Laboratory results that were less than detection limits and greater than the a

Yellow highlight - Value exceeds the Maximum Acceptable Concentration

Red highlight - Value exceeds the BC Reg. 196/2017

Table A6: Dissolved Metals

Sample Location	Sample Date	Field Sample ID	Lab ID	Tellurium (Te)-Dissolved	Thallium (Tl)-Dissolved	Thorium (Th)-Dissolved	Tin (Sn)-Dissolved	Titanium (Ti)-Dissolved	Tungsten (W)-Dissolved	Uranium (U)-Dissolved	Vanadium (V)-Dissolved	Zinc (Zn)-Dissolved	Zirconium (Zr)-Dissolved
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exeedances**		**-**	**-**	**-**	**-**	**-**	**-**	**0.020000**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*-*	*-*	*-*	*2.5*	*-*	*0.003000*	*0.020000*	*0.02*	*3*	*-*
FRR MW19-5	24/03/2020	WTN 118056	2020a	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	25/06/2020	WTN 118056	2020b	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	21/09/2020	WTN 118056	2020c	-	-	-	-	-	-	-	-	-	-
FRR MW19-5	17/12/2020	WTN 118056	2020e	-	-	-	-	-	-	-	-	-	-
FRR Production Well	11/08/2010	WTN 102275	2010c	-	<0.00005	-	<0.005	<0.005	-	<0.0001	<0.005	0.007	<0.0005
FRR Production Well	26/02/2018	WTN 102275	2018a	-	0.0000025	-	<0.000010	-	-	0.000054	0.00196	0.00863	-
FRR Production Well	24/03/2020	WTN 102275	2020a	-	-	-	-	-	-	-	-	-	-
FRR Production Well	25/06/2020	WTN 102275	2020b	-	-	-	-	-	-	-	-	-	-
FRR Production Well	21/09/2020	WTN 102275	2020c	-	-	-	-	-	-	-	-	-	-
MW12-1	17/09/2012	WTN 115138	2012	-	<0.000050	-	<0.0050	<0.0050	-	0.000450	<0.0050	0.017	<0.00050
MW12-1	29/01/2013	WTN 115138	2013a	-	<0.000002	-	-	0.051600	-	0.000310	0.0012	0.047	-
MW12-1	28/11/2013	WTN 115138	2013b	-	<0.000050	-	<0.0050	<0.0050	-	0.000470	<0.0050	0.01310	<0.00050
MW12-1	07/03/2018	WTN 115138	2018	-	-	-	0.0000046	-	-	0.000135	0.00168	0.00239	-
MW12-1	27/02/2020	WTN 115138	2020a	<0.00050	<0.000020	<0.00010	<0.00020	<0.0050	<0.0010	0.000173	0.002	0.008	<0.00010
MW12-1	24/03/2020	WTN 115138	2020b	-	-	-	-	-	-	-	-	-	-
MW12-1	25/06/2020	WTN 115138	2020c	-	-	-	-	-	-	-	-	-	-
MW12-1	21/09/2020	WTN 115138	2020d	-	-	-	-	-	-	-	-	-	-
MW12-1	03/03/2021	WTN 115138	2021	<0.00050	<0.000020	<0.00010	0.00027	<0.0050	<0.0010	0.000175	0.0021	0.024	<0.00010

Table A6: Dissolved Metals

Sample Location	Sample Date	Field Sample ID	Lab ID	Tellurium (Te)-Dissolved	Thallium (Tl)-Dissolved	Thorium (Th)-Dissolved	Tin (Sn)-Dissolved	Titanium (Ti)-Dissolved	Tungsten (W)-Dissolved	Uranium (U)-Dissolved	Vanadium (V)-Dissolved	Zinc (Zn)-Dissolved	Zirconium (Zr)-Dissolved
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exeedances**		**-**	**-**	**-**	**-**	**-**	**-**	**0.020000**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*-*	*-*	*-*	*2.5*	*-*	*0.003000*	*0.020000*	*0.02*	*3*	*-*
MW12-2	17/09/2012	WTN 115140	2012	-	<0.000050	-	<0.0050	<0.0050	-	0.000460	<0.0050	0.0081	<0.00050
MW12-2	29/01/2013	WTN 115140	2013a	-	<0.00001	-	-	1.700000	-	0.000780	*0.0988*	0.072	-
MW12-2	28/11/2013	WTN 115140	2013b	-	<0.000050	-	<0.0050	0.076400	-	0.000240	0.0127	0.0114	0.00127
MW12-2	24/09/2014	WTN 115140	2014	-	0.000792	-	0.0143	7.330000	-	0.004420	*0.536*	1.28	0.0136
MW12-2	07/03/2018	WTN 115140	2018	-	-	-	0.0000101	-	-	0.000076	0.00091	0.00215	-
MW12-2	27/02/2020	WTN 115140	2020a	<0.00050	<0.000020	<0.00010	<0.00020	<0.0050	<0.0010	0.000079	0.0012	0.0045	<0.00010
MW12-2	24/03/2020	WTN 115140	2020b	-	-	-	-	-	-	-	-	-	-
MW12-2	25/06/2020	WTN 115140	2020c	-	-	-	-	-	-	-	-	-	-
MW12-2	21/09/2020	WTN 115140	2020d	-	-	-	-	-	-	-	-	-	-
MW12-2	16/12/2020	WTN 115140	2020e	-	-	-	-	-	-	-	-	-	-
MW12-2	03/03/2021	WTN 115140	2021	<0.00050	<0.000020	<0.00010	<0.00020	<0.0050	<0.0010	0.000118	<0.0010	0.0078	<0.00010
MW12-3	17/09/2012	WTN 115141	2012	-	0.000128	-	<0.0050	0.029200	-	0.003670	*0.0313*	0.0418	<0.00050
MW12-3	29/01/2013	WTN 115141	2013a	-	0.000260	-	-	0.478000	-	0.003450	*0.0598*	0.374	-
MW12-3	28/11/2013	WTN 115141	2013b	-	0.000051	-	<0.0050	0.039100	-	0.000450	<0.0050	0.0089	<0.00050
MW12-3	24/09/2014	WTN 115141	2014	-	<0.000050	-	<0.0050	0.093900	-	0.000420	0.00590	0.0101	0.00117
MW12-3	07/03/2018	WTN 115141	2018	-	-	-	0.000014	-	-	0.000237	0.00155	0.00087	-
MW12-3	27/02/2020	WTN 115141	2020a	<0.00050	<0.000020	<0.00010	0.00024	<0.0050	<0.0010	0.000232	0.0019	0.008	<0.00010
MW12-3	24/03/2020	WTN 115141	2020b	-	-	-	-	-	-	-	-	-	-
MW12-3	25/06/2020	WTN 115141	2020c	-	-	-	-	-	-	-	-	-	-
MW12-3	21/09/2020	WTN 115141	2020d	-	-	-	-	-	-	-	-	-	-
MW12-3	28/01/2021	WTN 115141	2020e	-	-	-	-	-	-	-	-	-	-
MW12-3	03/03/2021	WTN 115141	2021	<0.00050	<0.000020	<0.00010	<0.00020	<0.0050	<0.0010	0.000326	0.0014	0.0333	<0.00010

Table A6: Dissolved Metals

Sample Location	Sample Date	Field Sample ID	Lab ID	Tellurium (Te)-Dissolved	Thallium (Tl)-Dissolved	Thorium (Th)-Dissolved	Tin (Sn)-Dissolved	Titanium (Ti)-Dissolved	Tungsten (W)-Dissolved	Uranium (U)-Dissolved	Vanadium (V)-Dissolved	Zinc (Zn)-Dissolved	Zirconium (Zr)-Dissolved
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exeedances**		**-**	**-**	**-**	**-**	**-**	**-**	**0.020000**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*-*	*-*	*-*	*2.5*	*-*	*0.003000*	*0.020000*	*0.02*	*3*	*-*
MW13-4	28/11/2013	WTN 108347	2013	-	0.000063	-	<0.0050	0.042500	-	0.001650	*0.0241*	0.0346	0.00073
MW13-4	24/09/2014	WTN 108347	2014	-	0.000083	-	<0.0050	0.448000	-	0.001270	*0.0291*	0.0233	0.00215
MW13-4	27/02/2020	WTN 108347	2020a	<0.00050	<0.000020	<0.00010	0.00063	<0.0050	<0.0010	0.000075	0.0019	0.0126	<0.00010
MW13-4	24/03/2020	WTN 108347	2020b	-	-	-	-	-	-	-	-	-	-
MW13-4	25/06/2020	WTN 108347	2020c	-	-	-	-	-	-	-	-	-	-
MW13-4	21/09/2020	WTN 108347	2020d	-	-	-	-	-	-	-	-	-	-
MW13-4	16/12/2020	WTN 108347	2020e	-	-	-	-	-	-	-	-	-	-
MW13-4	03/03/2021	WTN 108347	2021	<0.00050	<0.000020	<0.00010	<0.00020	<0.0050	<0.0010	0.000037	0.0018	0.107	<0.00010

Notes:

Guidelines - Health Canada, September 2020, Guidelines for Canadian Drin

Laboratory results that were less than detection limits and greater than the a

Yellow highlight - Value exceeds the Maximum Acceptable Concentration

Red highlight - Value exceeds the BC Reg. 196/2017

Table A7: Nutrients

Sample Location	Sample Date	Field Sample ID	Lab ID	Nitrate-N	Nitrite-N	Nitrogen-Dissolved (as N)	Nitrogen-Total (as N)	Organic Nitrogen-Total (as N)	Ammonia-Total (as N)	Dissolved Kjeldahl Nitrogen	Total Kjeldahl Nitrogen
			Units	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exceedances**		**10**	**1**	**-**	**-**	**-**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*10*	*1*	-	-	-	-	-	-
FRR MW19-5	24/03/2020	WTN 118056	2020a	7.74	<0.0005	-	8.24	0.4827	0.0173	-	0.5
FRR MW19-5	25/06/2020	WTN 118056	2020b	8	<0.01	-	8.1	0.06	<0.05	-	0.111
FRR MW19-5	21/09/2020	WTN 118056	2020c	7.88	0.01	-	8.07	0.135	0.05	-	0.185
FRR MW19-5	17/12/2020	WTN 118056	2020e	***16.9***	0.01	-	16.9	-	0.05	-	0.05
FRR Production Well	27/06/2007	WTN 102275	2007a	***49.3***	-	-	51.1	-	0.00693	-	-
FRR Production Well	17/10/2007	WTN 102275	2007b	***63.9***	-	-	68.8	-	-	-	-
FRR Production Well	20/02/2008	WTN 102275	2008a	***81.1***	-	-	-	-	0.0345	-	-
FRR Production Well	07/05/2008	WTN 102275	2008b	***72.2***	-	-	72.7	-	0.323	-	-
FRR Production Well	05/08/2008	WTN 102275	2008c	***65.6***	-	-	69.1	-	0.0953	-	-
FRR Production Well	05/11/2008	WTN 102275	2008d	***71.7***	-	-	71.7	-	-	-	-
FRR Production Well	20/02/2009	WTN 102275	2009a	***82.7***	-	-	-	-	-	-	-
FRR Production Well	08/08/2009	WTN 102275	2009b	***38.8***	-	-	-	-	-	-	-
FRR Production Well	19/11/2009	WTN 102275	2009c	***50.5***	-	-	49	-	45.2	-	-
FRR Production Well	18/03/2010	WTN 102275	2010a	***54.8***	-	-	72.6	-	-	-	-
FRR Production Well	28/06/2010	WTN 102275	2010b	***52.5***	-	-	66.2	-	0.0292	-	-
FRR Production Well	11/08/2010	WTN 102275	2010c	***45.9***	<0.002	-	45	-	0.005	-	<2
FRR Production Well	09/09/2010	WTN 102275	2010d	***37.4***	-	-	77.2	-	0.058	-	-
FRR Production Well	14/03/2011	WTN 102275	2011a	***59.6***	-	-	71.8	-	1.77	-	-
FRR Production Well	10/06/2011	WTN 102275	2011b	-	-	-	37.4	-	0.04	-	-
FRR Production Well	11/07/2011	WTN 102275	2011c	***42.3***	-	-	-	-	-	-	-
FRR Production Well	21/09/2011	WTN 102275	2011d	***39***	-	-	41.2	-	0.155	-	-
FRR Production Well	05/12/2011	WTN 102275	2011e	***52.7***	-	-	61.8	-	-	-	-
FRR Production Well	15/03/2012	WTN 102275	2012a	***54.8***	-	-	60.3	-	-	-	-
FRR Production Well	19/06/2012	WTN 102275	2012b	***36.9***	-	-	38.4	-	-	-	-
FRR Production Well	13/09/2012	WTN 102275	2012c	***22.3***	-	-	78.0	-	0.097	-	-
FRR Production Well	10/12/2012	WTN 102275	2012d	***58.9***	-	-	59.0	-	0.0058	-	-
FRR Production Well	29/01/2013	WTN 102275	2013a	***66.4***	-	-	78.6	-	-	-	-

Table A7: Nutrients

Sample Location	Sample Date	Field Sample ID	Lab ID	Nitrate-N	Nitrite-N	Nitrogen-Dissolved (as N)	Nitrogen-Total (as N)	Organic Nitrogen-Total (as N)	Ammonia-Total (as N)	Dissolved Kjeldahl Nitrogen	Total Kjeldahl Nitrogen
			Units	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		GCDWQ MAC Exceedances		10	1	-	-	-	-	-	-
		Schedule 3.2 Drinking Water		*10*	*1*	-	-	-	-	-	-
FRR Production Well	25/06/2013	WTN 102275	2013b	***39.9***	-	-	40.0	-	-	-	-
FRR Production Well	13/09/2013	WTN 102275	2013c	***29***	-	-	30.4	-	-	-	-
FRR Production Well	12/03/2014	WTN 102275	2014a	***41.8***	-	-	55.4	-	-	-	-
FRR Production Well	16/07/2014	WTN 102275	2014b	***25.9***	-	-	-	-	-	-	-
FRR Production Well	22/09/2014	WTN 102275	2014c	***25.5***	-	-	27.3	-	-	-	1.73
FRR Production Well	04/12/2014	WTN 102275	2014d	***51.8***	-	-	54.6	-	-	-	-
FRR Production Well	11/12/2014	WTN 102275	2014e	***45.7***	-	-	48.7	-	0.0158	-	3.04
FRR Production Well	20/03/2015	WTN 102275	2015a	***49.3***	-	-	69.0	-	0.0079	-	19.6
FRR Production Well	05/06/2015	WTN 102275	2015b	***26.6***	-	-	26.9	-	0.0214	-	0.304
FRR Production Well	10/09/2015	WTN 102275	2015c	***33.2***	-	-	42.5	-	0.0221	-	9.36
FRR Production Well	10/12/2015	WTN 102275	2015d	***49.1***	-	-	55.5	-	0.0154	-	6.37
FRR Production Well	17/03/2016	WTN 102275	2016a	***38.7***	-	-	35.9	-	0.0135	-	0.014
FRR Production Well	15/06/2016	WTN 102275	2016b	***34.8***	-	-	58.0	-	0.0231	-	0.023
FRR Production Well	21/09/2016	WTN 102275	2016c	0.33	-	-	35.9	-	-	-	35.6
FRR Production Well	30/12/2016	WTN 102275	2016d	***38.1***	-	-	75.3	-	0.017	-	37.2
FRR Production Well	23/03/2017	WTN 102275	2017a	***50.5***	-	-	61.9	-	0.0082	-	11.4
FRR Production Well	30/06/2017	WTN 102275	2017b	***23.5***	-	-	23.5	-	-	-	-
FRR Production Well	11/09/2017	WTN 102275	2017c	***30.3***	-	-	30.4	-	0.0121	-	0.012
FRR Production Well	08/12/2017	WTN 102275	2017d	***34.3***	-	-	34.3	-	-	-	-
FRR Production Well	26/02/2018	WTN 102275	2018a	***34.5***	<0.0010	-	37.4	-	<0.0050	-	<3.7
FRR Production Well	24/03/2020	WTN 102275	2020a	***22.8***	<0.0005	-	23.9	1.2	<0.002	-	1.2
FRR Production Well	25/06/2020	WTN 102275	2020b	***18.9***	0.01	-	19	-0.029	0.05	-	0.021
FRR Production Well	21/09/2020	WTN 102275	2020c	***18.3***	0.01	-	18.3	-	0.05	-	0.05
MW12-1	17/09/2012	WTN 115138	2012	***28***	0.075	-	33.1	-	0.11	-	5
MW12-1	29/01/2013	WTN 115138	2013a	***23.7***	<0.005	-	26	-	<0.01	-	-
MW12-1	28/11/2013	WTN 115138	2013b	***23.2***	0.006	-	22.8	-	0.053	-	<1
MW12-1	24/09/2014	WTN 115138	2014	***33.8***	0.036	-	29.8	-	0.096	-	<1

Table A7: Nutrients

Sample Location	Sample Date	Field Sample ID	Lab ID	Nitrate-N	Nitrite-N	Nitrogen-Dissolved (as N)	Nitrogen-Total (as N)	Organic Nitrogen-Total (as N)	Ammonia-Total (as N)	Dissolved Kjeldahl Nitrogen	Total Kjeldahl Nitrogen
			Units	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exceedances**		**10**	**1**	**-**	**-**	**-**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*10*	*1*	-	-	-	-	-	-
MW12-1	07/03/2018	WTN 115138	2018	***24.8***	<0.0010	-	25.2	-	<0.0050	-	<2.5
MW12-1	11/12/2019	WTN 115138	2019b	***12.5***	0.0057	-	13.6	-	0.0511	-	1.15
MW12-1	27/02/2020	WTN 115138	2020a	***11.8***	<0.010	-	11.9	0.111	0.025	0.057	0.136
MW12-1	24/03/2020	WTN 115138	2020b	***10.7***	0.0005	-	10.8	0.124	0.002	-	0.126
MW12-1	25/06/2020	WTN 115138	2020c	***10.2***	0.01	-	10.2	-	0.05	-	0.05
MW12-1	21/09/2020	WTN 115138	2020d	***11.7***	0.01	-	11.8	0.0020	0.05	-	0.052
MW12-1	03/03/2021	WTN 115138	2021	***10.4***	0.095	10.7	10.8	0.327	<0.050	0.219	0.327
MW12-2	17/09/2012	WTN 115140	2012	***98.1***	0.33	-	92.4	-	0.041	-	<2
MW12-2	29/01/2013	WTN 115140	2013a	***92.5***	0.04	-	99.4	-	<0.01	-	<1
MW12-2	28/11/2013	WTN 115140	2013b	***91.7***	0.0211	-	84.7	-	0.019	-	<2.0
MW12-2	24/09/2014	WTN 115140	2014	***92.5***	0.085	-	84	-	<0.0050	-	<2.0
MW12-2	07/03/2018	WTN 115140	2018	***70.3***	<0.0050	-	69.5	-	<0.0050	-	<6.9
MW12-2	11/12/2019	WTN 115140	2019b	***71.3***	<0.010	-	79.5	-	0.0786	-	8.28
MW12-2	27/02/2020	WTN 115140	2020a	***71***	<0.010	-	72	0.925	0.059	0.266	0.984
MW12-2	24/03/2020	WTN 115140	2020b	***68.5***	0.0005	-	76.5	7.8087	0.0713	-	7.88
MW12-2	25/06/2020	WTN 115140	2020c	***63.9***	0.018	-	64.2	0.25	0.05	-	0.3
MW12-2	21/09/2020	WTN 115140	2020d	***71***	0.016	-	71.3	0.166	0.05	-	0.216
MW12-2	16/12/2020	WTN 115140	2020e	***68.4***	0.036	-	68.6	0	0.05	-	0.05
MW12-2	03/03/2021	WTN 115140	2021	***37.3***	0.022	37.4	37.4	0.079	<0.050	<0.050	0.079
MW12-3	17/09/2012	WTN 115141	2012	***15.3***	<0.1	-	13.9	-	0.057	-	<2
MW12-3	29/01/2013	WTN 115141	2013a	***16.3***	<0.005	-	17.9	-	0.02	-	2.5
MW12-3	28/11/2013	WTN 115141	2013b	***16.9***	0.0101	-	17	-	0.028	-	<0.40
MW12-3	24/09/2014	WTN 115141	2014	***19.7***	<0.010	-	17.9	-	0.02	-	<0.20
MW12-3	07/03/2018	WTN 115141	2018	***27.5***	<0.0010	-	27.8	-	<0.0050	-	<2.8
MW12-3	11/12/2019	WTN 115141	2019b	***17.8***	0.00290	-	19.2	-	0.0798	-	1.34
MW12-3	27/02/2020	WTN 115141	2020a	***14.1***	<0.010	-	14.6	0.499	0.03	0.28	0.529
MW12-3	24/03/2020	WTN 115141	2020b	***15.42***	0.0005	-	16.5	1.0654	0.0246	-	1.09

Table A7: Nutrients

Sample Location	Sample Date	Field Sample ID	Lab ID	Nitrate-N	Nitrite-N	Nitrogen-Dissolved (as N)	Nitrogen-Total (as N)	Organic Nitrogen-Total (as N)	Ammonia-Total (as N)	Dissolved Kjeldahl Nitrogen	Total Kjeldahl Nitrogen
			Units	mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L
Guidelines		**GCDWQ MAC Exceedances**		**10**	**1**	**-**	**-**	**-**	**-**	**-**	**-**
		Schedule 3.2 Drinking Water		*10*	*1*	-	-	-	-	-	-
MW12-3	25/06/2020	WTN 115141	2020c	***14.4***	0.01	-	14.4	-	0.05	-	0.05
MW12-3	21/09/2020	WTN 115141	2020d	***12.2***	0.01	-	12.3	0.084	0.05	-	0.134
MW12-3	28/01/2021	WTN 115141	2020e	***18.5***	0.01	-	18.7	-	0.05	-	0.05
MW12-3	03/03/2021	WTN 115141	2021	***18.9***	<0.010	18.9	19.3	0.406	<0.050	<0.050	0.406
MW13-4	28/11/2013	WTN 108347	2013	0.252	0.0331	-	0.495	-	0.039	-	0.211
MW13-4	24/09/2014	WTN 108347	2014	0.438	<0.010	-	0.479	-	0.0076	-	0.04
MW13-4	07/03/2018	WTN 108347	2018	1.73	<0.0010	-	1.78	-	<0.0050	-	<0.18
MW13-4	11/12/2019	WTN 108347	2019b	2.18	<0.010	-	2.22	-	0.0436	-	0.044
MW13-4	27/02/2020	WTN 108347	2020a	2.8	<0.010	-	3.52	0.653	0.063	0.067	0.716
MW13-4	24/03/2020	WTN 108347	2020b	2.83	0.0005	-	2.97	0.1072	0.0398	-	0.147
MW13-4	25/06/2020	WTN 108347	2020c	3.11	0.01	-	3.11	-	0.05	-	0.05
MW13-4	21/09/2020	WTN 108347	2020d	3.25	0.01	-	3.37	0.069	0.05	-	0.119
MW13-4	16/12/2020	WTN 108347	2020e	3.63	0.01	-	3.69	-	0.051	-	0.05
MW13-4	03/03/2021	WTN 108347	2021	4.17	<0.010	4.22	4.3	0.13	<0.050	0.053	0.13

Notes:

Guidelines - Health Canada, September 2020, Guidelines for Canadian Drinking Water Quality (GCDWQ), Summary Table.

Yellow highlight - Value exceeds the Maximum Acceptable Concentration (MAC).

Red highlight - Value exceeds the BC Reg. 196/2017

APPENDIX B

Photograph Log

Photograph B1 (LEFT): Looking north at MW12-1.

Photograph B2 (RIGHT): Looking down and northeast at MW12-2.

Waterline

Photograph B3 (LEFT): Looking west at MW12-3.

Photograph B4 (RIGHT): Looking down and west at MW13-4.

Waterline

Photograph B5 (LEFT): Section of damaged PVC casing removed from MW12-3.
Photograph B6 (RIGHT): Looking down and south at MW12-3 after the well was repaired and the surface seal replaced.

APPENDIX C

Analytical Results (Laboratory Reports)

CERTIFICATE OF ANALYSIS

REPORTED TO	Waterline Resources Inc. - Nanaimo 2430 Jingle Pot Road Nanaimo, BC V9R 6W2		
ATTENTION	Simon Wing	**WORK ORDER**	0030004
PO NUMBER		**RECEIVED / TEMP**	2020-02-29 11:54 / 6°C
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35
PROJECT INFO	Cowichan Valley RD	**COC NUMBER**	B84786

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at tmaxwell@caro.ca

Authorized By:

Taylor Maxwell
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Analyzed	Qualifier
3241200227004 (0030004-01) | Matrix: Water | Sampled: 2020-02-27 16:50					FILT, PRES
Anions					
Chloride	**31.2**	0.10	mg/L	2020-03-03	
Fluoride	< 0.10	0.10	mg/L	2020-03-03	
Nitrate (as N)	**71.0**	0.010	mg/L	2020-03-03	HT1
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-03	HT1
Sulfate	**76.0**	1.0	mg/L	2020-03-03	
Calculated Parameters					
Hardness, Total (as CaCO3)	**397**	0.500	mg/L	N/A	
Nitrate+Nitrite (as N)	**71.0**	0.100	mg/L	N/A	
Nitrogen, Total	**72.0**	0.100	mg/L	N/A	
Nitrogen, Total Dissolved	**71.2**	0.100	mg/L	N/A	
Nitrogen, Organic	**0.925**	0.0500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	**0.00095**	0.00010	mg/L	2020-03-05	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-05	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Barium, dissolved	**0.0246**	0.0050	mg/L	2020-03-05	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Boron, dissolved	**0.0783**	0.0050	mg/L	2020-03-05	
Cadmium, dissolved	**0.000189**	0.000010	mg/L	2020-03-05	
Calcium, dissolved	**90.5**	0.20	mg/L	2020-03-05	
Chromium, dissolved	**0.00101**	0.00050	mg/L	2020-03-05	
Cobalt, dissolved	**0.00515**	0.00010	mg/L	2020-03-05	
Copper, dissolved	**0.0324**	0.00040	mg/L	2020-03-05	
Iron, dissolved	**0.082**	0.010	mg/L	2020-03-05	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Magnesium, dissolved	**41.5**	0.010	mg/L	2020-03-05	
Manganese, dissolved	**0.00101**	0.00020	mg/L	2020-03-05	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-04	
Molybdenum, dissolved	**0.00019**	0.00010	mg/L	2020-03-05	
Nickel, dissolved	**0.0733**	0.00040	mg/L	2020-03-05	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-05	
Potassium, dissolved	**1.13**	0.10	mg/L	2020-03-05	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Silicon, dissolved	**15.0**	1.0	mg/L	2020-03-05	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-05	
Sodium, dissolved	**16.4**	0.10	mg/L	2020-03-05	
Strontium, dissolved	**0.420**	0.0010	mg/L	2020-03-05	
Sulfur, dissolved	**27.9**	3.0	mg/L	2020-03-05	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Analyzed	Qualifier
3241200227004 (0030004-01) | Matrix: Water | Sampled: 2020-02-27 16:50, Continued					FILT, PRES
Dissolved Metals, Continued					
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-05	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-05	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-05	
Uranium, dissolved	**0.000079**	0.000020	mg/L	2020-03-05	
Vanadium, dissolved	**0.0012**	0.0010	mg/L	2020-03-05	
Zinc, dissolved	**0.0045**	0.0040	mg/L	2020-03-05	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
General Parameters					
Alkalinity, Total (as CaCO3)	**82.0**	1.0	mg/L	2020-03-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Alkalinity, Bicarbonate (as CaCO3)	**82.0**	1.0	mg/L	2020-03-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Ammonia, Total (as N)	**0.059**	0.050	mg/L	2020-03-03	
Carbon, Total Organic	**1.36**	0.50	mg/L	2020-03-03	
Carbon, Dissolved Organic	**1.18**	0.50	mg/L	2020-03-03	
Conductivity (EC)	**946**	2.0	µS/cm	2020-03-04	
Nitrogen, Total Kjeldahl	**0.984**	0.050	mg/L	2020-03-05	
Nitrogen, Dissolved Kjeldahl	**0.266**	0.050	mg/L	2020-03-05	
pH	**7.38**	0.10	pH units	2020-03-04	HT2
Solids, Total Dissolved	**666**	15	mg/L	2020-03-03	
Turbidity	**1430**	0.10	NTU	2020-03-03	HT1
Miscellaneous Subcontracted Parameters					
Refer to Appendix	**0.00**		-	2020-03-03	
3241200227004-2 (0030004-02) | Matrix: Water | Sampled: 2020-02-27 16:50					
Miscellaneous Subcontracted Parameters					
Refer to Appendix	**0.00**		-	2020-03-03	
3241200227002 (0030004-03) | Matrix: Water | Sampled: 2020-02-27 15:15					FILT, PRES
Anions					
Chloride	**45.2**	0.10	mg/L	2020-03-03	
Fluoride	**0.11**	0.10	mg/L	2020-03-03	
Nitrate (as N)	**14.1**	0.010	mg/L	2020-03-03	HT1
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-03	HT1
Sulfate	**40.5**	1.0	mg/L	2020-03-03	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Analyzed	Qualifier
3241200227002 (0030004-03) | Matrix: Water | Sampled: 2020-02-27 15:15, Continued					FILT, PRES
Anions, Continued					
Calculated Parameters					
Hardness, Total (as CaCO3)	**247**	0.500	mg/L	N/A	
Nitrate+Nitrite (as N)	**14.1**	0.100	mg/L	N/A	
Nitrogen, Total	**14.6**	0.100	mg/L	N/A	
Nitrogen, Total Dissolved	**14.4**	0.100	mg/L	N/A	
Nitrogen, Organic	**0.499**	0.0500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	**0.00111**	0.00010	mg/L	2020-03-05	
Aluminum, dissolved	**0.0347**	0.0050	mg/L	2020-03-05	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Barium, dissolved	**0.0238**	0.0050	mg/L	2020-03-05	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Boron, dissolved	**0.0175**	0.0050	mg/L	2020-03-05	
Cadmium, dissolved	**0.000119**	0.000010	mg/L	2020-03-05	
Calcium, dissolved	**53.2**	0.20	mg/L	2020-03-05	
Chromium, dissolved	**0.00187**	0.00050	mg/L	2020-03-05	
Cobalt, dissolved	**0.00074**	0.00010	mg/L	2020-03-05	
Copper, dissolved	**0.00457**	0.00040	mg/L	2020-03-05	
Iron, dissolved	**0.040**	0.010	mg/L	2020-03-05	
Lead, dissolved	**0.00021**	0.00020	mg/L	2020-03-05	
Magnesium, dissolved	**27.5**	0.010	mg/L	2020-03-05	
Manganese, dissolved	**0.0382**	0.00020	mg/L	2020-03-05	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-04	
Molybdenum, dissolved	**0.00026**	0.00010	mg/L	2020-03-05	
Nickel, dissolved	**0.00160**	0.00040	mg/L	2020-03-05	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-05	
Potassium, dissolved	**0.98**	0.10	mg/L	2020-03-05	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Silicon, dissolved	**14.8**	1.0	mg/L	2020-03-05	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-05	
Sodium, dissolved	**11.6**	0.10	mg/L	2020-03-05	
Strontium, dissolved	**0.234**	0.0010	mg/L	2020-03-05	
Sulfur, dissolved	**13.8**	3.0	mg/L	2020-03-05	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-05	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Tin, dissolved	**0.00024**	0.00020	mg/L	2020-03-05	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-05	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-05	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Analyzed	Qualifier
3241200227002 (0030004-03) | Matrix: Water | Sampled: 2020-02-27 15:15, Continued					FILT, PRES
Dissolved Metals, Continued					
Uranium, dissolved	**0.000232**	0.000020	mg/L	2020-03-05	
Vanadium, dissolved	**0.0019**	0.0010	mg/L	2020-03-05	
Zinc, dissolved	**0.0080**	0.0040	mg/L	2020-03-05	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
General Parameters					
Alkalinity, Total (as CaCO3)	**131**	1.0	mg/L	2020-03-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Alkalinity, Bicarbonate (as CaCO3)	**131**	1.0	mg/L	2020-03-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Ammonia, Total (as N)	**0.030**	0.050	mg/L	2020-03-03	
Carbon, Total Organic	**3.01**	0.50	mg/L	2020-03-03	
Carbon, Dissolved Organic	**2.68**	0.50	mg/L	2020-03-03	
Conductivity (EC)	**559**	2.0	µS/cm	2020-03-04	
Nitrogen, Total Kjeldahl	**0.529**	0.050	mg/L	2020-03-05	
Nitrogen, Dissolved Kjeldahl	**0.280**	0.050	mg/L	2020-03-05	
pH	**7.54**	0.10	pH units	2020-03-04	HT2
Solids, Total Dissolved	**341**	15	mg/L	2020-03-03	
Turbidity	**125**	0.10	NTU	2020-03-03	HT1
Miscellaneous Subcontracted Parameters					
Refer to Appendix	**0.00**		-	2020-03-03	
3241200227002-2 (0030004-04) | Matrix: Water | Sampled: 2020-02-27 15:15					
Miscellaneous Subcontracted Parameters					
Refer to Appendix	**0.00**		-	2020-03-03	
3241200227001 (0030004-05) | Matrix: Water | Sampled: 2020-02-27 17:30					FILT, PRES
Anions					
Chloride	**8.42**	0.10	mg/L	2020-03-03	
Fluoride	< 0.10	0.10	mg/L	2020-03-03	
Nitrate (as N)	**2.80**	0.010	mg/L	2020-03-03	HT1
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-03	HT1
Sulfate	**3.5**	1.0	mg/L	2020-03-03	
Calculated Parameters					
Hardness, Total (as CaCO3)	**106**	0.500	mg/L	N/A	
Nitrate+Nitrite (as N)	**2.80**	0.0100	mg/L	N/A	
Nitrogen, Total	**3.52**	0.0500	mg/L	N/A	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Analyzed	Qualifier
3241200227001 (0030004-05) | Matrix: Water | Sampled: 2020-02-27 17:30, Continued					FILT, PRES
Calculated Parameters, Continued					
Nitrogen, Total Dissolved	**2.87**	0.0500	mg/L	N/A	
Nitrogen, Organic	**0.653**	0.0500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	**0.00062**	0.00010	mg/L	2020-03-05	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-05	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Barium, dissolved	**0.0167**	0.0050	mg/L	2020-03-05	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Boron, dissolved	**0.0139**	0.0050	mg/L	2020-03-05	
Cadmium, dissolved	**0.000052**	0.000010	mg/L	2020-03-05	
Calcium, dissolved	**23.9**	0.20	mg/L	2020-03-05	
Chromium, dissolved	**0.00179**	0.00050	mg/L	2020-03-05	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Copper, dissolved	**0.00586**	0.00040	mg/L	2020-03-05	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-05	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Magnesium, dissolved	**11.3**	0.010	mg/L	2020-03-05	
Manganese, dissolved	**0.00120**	0.00020	mg/L	2020-03-05	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-04	
Molybdenum, dissolved	**0.00021**	0.00010	mg/L	2020-03-05	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-03-05	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-05	
Potassium, dissolved	**0.54**	0.10	mg/L	2020-03-05	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Silicon, dissolved	**13.5**	1.0	mg/L	2020-03-05	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-05	
Sodium, dissolved	**7.30**	0.10	mg/L	2020-03-05	
Strontium, dissolved	**0.0993**	0.0010	mg/L	2020-03-05	
Sulfur, dissolved	< 3.0	3.0	mg/L	2020-03-05	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-05	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Tin, dissolved	**0.00063**	0.00020	mg/L	2020-03-05	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-05	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-05	
Uranium, dissolved	**0.000075**	0.000020	mg/L	2020-03-05	
Vanadium, dissolved	**0.0019**	0.0010	mg/L	2020-03-05	
Zinc, dissolved	**0.0126**	0.0040	mg/L	2020-03-05	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Analyzed	Qualifier
3241200227001 (0030004-05) | Matrix: Water | Sampled: 2020-02-27 17:30, Continued					FILT, PRES
General Parameters					
Alkalinity, Total (as CaCO3)	**111**	1.0	mg/L	2020-03-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Alkalinity, Bicarbonate (as CaCO3)	**111**	1.0	mg/L	2020-03-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Ammonia, Total (as N)	**0.063**	0.050	mg/L	2020-03-03	
Carbon, Total Organic	**0.89**	0.50	mg/L	2020-03-03	
Carbon, Dissolved Organic	< 0.50	0.50	mg/L	2020-03-03	
Conductivity (EC)	**239**	2.0	µS/cm	2020-03-04	
Nitrogen, Total Kjeldahl	**0.716**	0.050	mg/L	2020-03-05	
Nitrogen, Dissolved Kjeldahl	**0.067**	0.050	mg/L	2020-03-05	
pH	**7.57**	0.10	pH units	2020-03-04	HT2
Solids, Total Dissolved	**155**	15	mg/L	2020-03-03	
Turbidity	**445**	0.10	NTU	2020-03-03	HT1
Miscellaneous Subcontracted Parameters					
Refer to Appendix	**0.00**		-	2020-03-03	
3241200227001-2 (0030004-06) | Matrix: Water | Sampled: 2020-02-27 17:30					
Miscellaneous Subcontracted Parameters					
Refer to Appendix	**0.00**		-	2020-03-03	
3241200227003 (0030004-07) | Matrix: Water | Sampled: 2020-02-27 14:10					FILT, PRES
Anions					
Chloride	**17.3**	0.10	mg/L	2020-03-03	
Fluoride	< 0.10	0.10	mg/L	2020-03-03	
Nitrate (as N)	**11.8**	0.010	mg/L	2020-03-03	HT1
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-03	HT1
Sulfate	**7.2**	1.0	mg/L	2020-03-03	
Calculated Parameters					
Hardness, Total (as CaCO3)	**167**	0.500	mg/L	N/A	
Nitrate+Nitrite (as N)	**11.8**	0.100	mg/L	N/A	
Nitrogen, Total	**11.9**	0.100	mg/L	N/A	
Nitrogen, Total Dissolved	**11.8**	0.100	mg/L	N/A	
Nitrogen, Organic	**0.111**	0.0500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	**0.00086**	0.00010	mg/L	2020-03-05	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-05	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Analyzed	Qualifier
3241200227003 (0030004-07) | Matrix: Water | Sampled: 2020-02-27 14:10, Continued					FILT, PRES
Dissolved Metals, Continued					
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Barium, dissolved	**0.0156**	0.0050	mg/L	2020-03-05	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Boron, dissolved	**0.0147**	0.0050	mg/L	2020-03-05	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-05	
Calcium, dissolved	**33.9**	0.20	mg/L	2020-03-05	
Chromium, dissolved	**0.00254**	0.00050	mg/L	2020-03-05	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Copper, dissolved	**0.00386**	0.00040	mg/L	2020-03-05	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-05	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Magnesium, dissolved	**19.9**	0.010	mg/L	2020-03-05	
Manganese, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-04	
Molybdenum, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-03-05	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-05	
Potassium, dissolved	**0.85**	0.10	mg/L	2020-03-05	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Silicon, dissolved	**14.0**	1.0	mg/L	2020-03-05	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-05	
Sodium, dissolved	**9.62**	0.10	mg/L	2020-03-05	
Strontium, dissolved	**0.143**	0.0010	mg/L	2020-03-05	
Sulfur, dissolved	< 3.0	3.0	mg/L	2020-03-05	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-05	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-05	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-05	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-05	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-05	
Uranium, dissolved	**0.000173**	0.000020	mg/L	2020-03-05	
Vanadium, dissolved	**0.0020**	0.0010	mg/L	2020-03-05	
Zinc, dissolved	**0.0080**	0.0040	mg/L	2020-03-05	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-05	
General Parameters					
Alkalinity, Total (as CaCO3)	**131**	1.0	mg/L	2020-03-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Alkalinity, Bicarbonate (as CaCO3)	**131**	1.0	mg/L	2020-03-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Analyzed	Qualifier
3241200227003 (0030004-07) | Matrix: Water | Sampled: 2020-02-27 14:10, Continued					FILT, PRES
General Parameters, Continued					
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-04	
Ammonia, Total (as N)	**0.025**	0.050	mg/L	2020-03-03	
Carbon, Total Organic	**0.72**	0.50	mg/L	2020-03-03	
Carbon, Dissolved Organic	< 0.50	0.50	mg/L	2020-03-03	
Conductivity (EC)	**378**	2.0	µS/cm	2020-03-04	
Nitrogen, Total Kjeldahl	**0.136**	0.050	mg/L	2020-03-05	
Nitrogen, Dissolved Kjeldahl	**0.057**	0.050	mg/L	2020-03-05	
pH	**7.62**	0.10	pH units	2020-03-04	HT2
Solids, Total Dissolved	**258**	15	mg/L	2020-03-03	
Turbidity	**217**	0.10	NTU	2020-03-03	HT1
Miscellaneous Subcontracted Parameters					
Refer to Appendix	**0.00**		-	2020-03-03	
3241200227003-2 (0030004-08) | Matrix: Water | Sampled: 2020-02-27 14:10					
Miscellaneous Subcontracted Parameters					
Refer to Appendix	**0.00**		-	2020-03-03	

Sample Qualifiers:

FILT	The sample has been filtered for DKN in the laboratory. Results may not reflect conditions at the time of sampling.
HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
PRES	Sample has been preserved for DKN in the laboratory and the holding time has been extended.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
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Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	Kelowna
Ammonia, Total in Water	SM 4500-NH3 G* (2017)	Automated Colorimetry (Phenate)	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	Kelowna
Carbon, Dissolved Organic in Water	SM 5310 B (2017)	Combustion, Infrared CO2 Detection	Kelowna
Carbon, Total Organic in Water	SM 5310 B (2017)	Combustion, Infrared CO2 Detection	Kelowna
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	Kelowna
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Nitrogen, Dissolved Kjeldahl in Water	SM 4500-Norg D* (2017)	Block Digestion and Flow Injection Analysis	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2017)	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	SM 4500-H+ B (2017)	Electrometry	Kelowna
Solids, Total Dissolved in Water	SM 2540 C* (2017)	Gravimetry (Dried at 103-105C)	Kelowna
Turbidity in Water	SM 2130 B (2017)	Nephelometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, ph > 7 = basic
µS/cm	Microsiemens per centimetre
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager:tmaxwell@caro.ca

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B0C0166										
Blank (B0C0166-BLK1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B0C0166-BLK2)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B0C0166-BLK3)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B0C0166-BS1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Chloride	16.1	0.10	mg/L	16.0		100	90-110			
Fluoride	3.94	0.10	mg/L	4.00		99	88-108			
Nitrate (as N)	4.00	0.010	mg/L	4.00		100	90-110			
Nitrite (as N)	2.00	0.010	mg/L	2.00		100	85-115			
Sulfate	16.0	1.0	mg/L	16.0		100	90-110			
LCS (B0C0166-BS2)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Chloride	16.0	0.10	mg/L	16.0		100	90-110			
Fluoride	4.01	0.10	mg/L	4.00		100	88-108			
Nitrate (as N)	4.00	0.010	mg/L	4.00		100	90-110			
Nitrite (as N)	2.00	0.010	mg/L	2.00		100	85-115			
Sulfate	16.0	1.0	mg/L	16.0		100	90-110			
LCS (B0C0166-BS3)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Chloride	16.1	0.10	mg/L	16.0		100	90-110			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B0C0166, Continued										
LCS (B0C0166-BS3), Continued				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Fluoride	3.90	0.10	mg/L	4.00		97	88-108			
Nitrate (as N)	3.98	0.010	mg/L	4.00		99	90-110			
Nitrite (as N)	2.01	0.010	mg/L	2.00		100	85-115			
Sulfate	16.0	1.0	mg/L	16.0		100	90-110			
Dissolved Metals, Batch B0C0363										
Blank (B0C0363-BLK1)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Mercury, dissolved	< 0.000010	0.000010	mg/L							
Duplicate (B0C0363-DUP1)				**Source: 0030004-01**	Prepared: 2020-03-04, Analyzed: 2020-03-04					
Mercury, dissolved	< 0.000010	0.000010	mg/L		< 0.000010				20	
Matrix Spike (B0C0363-MS1)				**Source: 0030004-03**	Prepared: 2020-03-04, Analyzed: 2020-03-04					
Mercury, dissolved	0.000252	0.000010	mg/L	0.000250	< 0.000010	101	70-130			
Reference (B0C0363-SRM1)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Mercury, dissolved	0.00491	0.000010	mg/L	0.00489		100	80-120			
Dissolved Metals, Batch B0C0400										
Blank (B0C0400-BLK1)				Prepared: 2020-03-05, Analyzed: 2020-03-05						
Lithium, dissolved	< 0.00010	0.00010	mg/L							
Aluminum, dissolved	< 0.0050	0.0050	mg/L							
Antimony, dissolved	< 0.00020	0.00020	mg/L							
Arsenic, dissolved	< 0.00050	0.00050	mg/L							
Barium, dissolved	< 0.0050	0.0050	mg/L							
Beryllium, dissolved	< 0.00010	0.00010	mg/L							
Bismuth, dissolved	< 0.00010	0.00010	mg/L							
Boron, dissolved	< 0.0050	0.0050	mg/L							
Cadmium, dissolved	< 0.000010	0.000010	mg/L							
Calcium, dissolved	< 0.20	0.20	mg/L							
Chromium, dissolved	< 0.00050	0.00050	mg/L							
Cobalt, dissolved	< 0.00010	0.00010	mg/L							
Copper, dissolved	< 0.00040	0.00040	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.00020	0.00020	mg/L							
Magnesium, dissolved	< 0.010	0.010	mg/L							
Manganese, dissolved	< 0.00020	0.00020	mg/L							
Molybdenum, dissolved	< 0.00010	0.00010	mg/L							
Nickel, dissolved	< 0.00040	0.00040	mg/L							
Phosphorus, dissolved	< 0.050	0.050	mg/L							
Potassium, dissolved	< 0.10	0.10	mg/L							
Selenium, dissolved	< 0.00050	0.00050	mg/L							
Silicon, dissolved	< 1.0	1.0	mg/L							
Silver, dissolved	< 0.000050	0.000050	mg/L							
Sodium, dissolved	< 0.10	0.10	mg/L							
Strontium, dissolved	< 0.0010	0.0010	mg/L							
Sulfur, dissolved	< 3.0	3.0	mg/L							
Tellurium, dissolved	< 0.00050	0.00050	mg/L							
Thallium, dissolved	< 0.000020	0.000020	mg/L							
Thorium, dissolved	< 0.00010	0.00010	mg/L							
Tin, dissolved	< 0.00020	0.00020	mg/L							
Titanium, dissolved	< 0.0050	0.0050	mg/L							
Tungsten, dissolved	< 0.0010	0.0010	mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C0400, Continued										
Blank (B0C0400-BLK1), Continued				Prepared: 2020-03-05, Analyzed: 2020-03-05						
Uranium, dissolved	< 0.000020	0.000020	mg/L							
Vanadium, dissolved	< 0.0010	0.0010	mg/L							
Zinc, dissolved	< 0.0040	0.0040	mg/L							
Zirconium, dissolved	< 0.00010	0.00010	mg/L							
LCS (B0C0400-BS1)				Prepared: 2020-03-05, Analyzed: 2020-03-05						
Lithium, dissolved	0.0195	0.00010	mg/L	0.0200		98	80-120			
Aluminum, dissolved	0.0199	0.0050	mg/L	0.0199		100	80-120			
Antimony, dissolved	0.0189	0.00020	mg/L	0.0200		95	80-120			
Arsenic, dissolved	0.0188	0.00050	mg/L	0.0200		94	80-120			
Barium, dissolved	0.0183	0.0050	mg/L	0.0198		93	80-120			
Beryllium, dissolved	0.0207	0.00010	mg/L	0.0198		104	80-120			
Bismuth, dissolved	0.0204	0.00010	mg/L	0.0200		102	80-120			
Boron, dissolved	0.0199	0.0050	mg/L	0.0200		99	80-120			
Cadmium, dissolved	0.0188	0.000010	mg/L	0.0199		95	80-120			
Calcium, dissolved	2.10	0.20	mg/L	2.02		104	80-120			
Chromium, dissolved	0.0193	0.00050	mg/L	0.0198		97	80-120			
Cobalt, dissolved	0.0193	0.00010	mg/L	0.0199		97	80-120			
Copper, dissolved	0.0200	0.00040	mg/L	0.0200		100	80-120			
Iron, dissolved	1.96	0.010	mg/L	2.02		97	80-120			
Lead, dissolved	0.0195	0.00020	mg/L	0.0199		98	80-120			
Magnesium, dissolved	1.94	0.010	mg/L	2.02		96	80-120			
Manganese, dissolved	0.0188	0.00020	mg/L	0.0199		94	80-120			
Molybdenum, dissolved	0.0188	0.00010	mg/L	0.0200		94	80-120			
Nickel, dissolved	0.0195	0.00040	mg/L	0.0200		98	80-120			
Phosphorus, dissolved	2.00	0.050	mg/L	2.00		100	80-120			
Potassium, dissolved	1.81	0.10	mg/L	2.02		89	80-120			
Selenium, dissolved	0.0198	0.00050	mg/L	0.0200		99	80-120			
Silicon, dissolved	2.1	1.0	mg/L	2.00		107	80-120			
Silver, dissolved	0.0186	0.000050	mg/L	0.0200		93	80-120			
Sodium, dissolved	2.04	0.10	mg/L	2.02		101	80-120			
Strontium, dissolved	0.0186	0.0010	mg/L	0.0200		93	80-120			
Sulfur, dissolved	4.8	3.0	mg/L	5.00		95	80-120			
Tellurium, dissolved	0.0189	0.00050	mg/L	0.0200		94	80-120			
Thallium, dissolved	0.0201	0.000020	mg/L	0.0199		101	80-120			
Thorium, dissolved	0.0197	0.00010	mg/L	0.0200		99	80-120			
Tin, dissolved	0.0208	0.00020	mg/L	0.0200		104	80-120			
Titanium, dissolved	0.0200	0.0050	mg/L	0.0200		100	80-120			
Tungsten, dissolved	0.0196	0.0010	mg/L	0.0200		98	80-120			
Uranium, dissolved	0.0202	0.000020	mg/L	0.0200		101	80-120			
Vanadium, dissolved	0.0191	0.0010	mg/L	0.0200		95	80-120			
Zinc, dissolved	0.0208	0.0040	mg/L	0.0200		104	80-120			
Zirconium, dissolved	0.0190	0.00010	mg/L	0.0200		95	80-120			
Reference (B0C0400-SRM1)				Prepared: 2020-03-05, Analyzed: 2020-03-05						
Lithium, dissolved	0.102	0.00010	mg/L	0.100		102	77-127			
Aluminum, dissolved	0.213	0.0050	mg/L	0.235		91	79-114			
Antimony, dissolved	0.0440	0.00020	mg/L	0.0431		102	89-123			
Arsenic, dissolved	0.435	0.00050	mg/L	0.423		103	87-113			
Barium, dissolved	2.88	0.0050	mg/L	3.30		87	85-114			
Beryllium, dissolved	0.222	0.00010	mg/L	0.209		106	79-122			
Boron, dissolved	1.55	0.0050	mg/L	1.65		94	79-117			
Cadmium, dissolved	0.212	0.000010	mg/L	0.221		96	89-112			
Calcium, dissolved	7.41	0.20	mg/L	7.72		96	85-120			
Chromium, dissolved	0.433	0.00050	mg/L	0.434		100	87-113			
Cobalt, dissolved	0.125	0.00010	mg/L	0.124		101	90-117			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C0400, Continued										
Reference (B0C0400-SRM1), Continued				Prepared: 2020-03-05, Analyzed: 2020-03-05						
Copper, dissolved	0.838	0.00040	mg/L	0.815		103	90-115			
Iron, dissolved	1.29	0.010	mg/L	1.27		102	86-112			
Lead, dissolved	0.111	0.00020	mg/L	0.110		101	90-113			
Magnesium, dissolved	6.70	0.010	mg/L	6.59		102	84-116			
Manganese, dissolved	0.324	0.00020	mg/L	0.342		95	85-113			
Molybdenum, dissolved	0.399	0.00010	mg/L	0.404		99	87-112			
Nickel, dissolved	0.847	0.00040	mg/L	0.835		101	90-114			
Phosphorus, dissolved	0.485	0.050	mg/L	0.499		97	74-119			
Potassium, dissolved	2.69	0.10	mg/L	2.88		93	78-119			
Selenium, dissolved	0.0339	0.00050	mg/L	0.0324		105	89-123			
Sodium, dissolved	18.0	0.10	mg/L	18.0		100	81-117			
Strontium, dissolved	0.876	0.0010	mg/L	0.935		94	82-111			
Thallium, dissolved	0.0400	0.000020	mg/L	0.0385		104	90-113			
Uranium, dissolved	0.242	0.000020	mg/L	0.258		94	87-113			
Vanadium, dissolved	0.849	0.0010	mg/L	0.873		97	85-110			
Zinc, dissolved	0.898	0.0040	mg/L	0.848		106	88-114			
General Parameters, Batch B0B2331										
Blank (B0B2331-BLK1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Carbon, Dissolved Organic	< 0.50	0.50	mg/L							
Blank (B0B2331-BLK2)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Carbon, Dissolved Organic	< 0.50	0.50	mg/L							
LCS (B0B2331-BS1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Carbon, Total Organic	9.50	0.50	mg/L	10.0		95	78-116			
Carbon, Dissolved Organic	9.50	0.50	mg/L	10.0		95	78-116			
LCS (B0B2331-BS2)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Carbon, Total Organic	9.34	0.50	mg/L	10.0		93	78-116			
Carbon, Dissolved Organic	9.34	0.50	mg/L	10.0		93	78-116			
Duplicate (B0B2331-DUP2)		**Source: 0030004-01**		Prepared: 2020-03-03, Analyzed: 2020-03-03						
Carbon, Total Organic	1.15	0.50	mg/L		1.36				16	
Carbon, Dissolved Organic	1.14	0.50	mg/L		1.18				15	
Matrix Spike (B0B2331-MS2)		**Source: 0030004-01**		Prepared: 2020-03-03, Analyzed: 2020-03-03						
Carbon, Total Organic	10.1	0.50	mg/L	10.0	1.36	87	70-130			
Carbon, Dissolved Organic	9.53	0.50	mg/L	10.0	1.18	84	70-130			
General Parameters, Batch B0C0161										
Blank (B0C0161-BLK1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Solids, Total Dissolved	< 15	15	mg/L							
LCS (B0C0161-BS1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Solids, Total Dissolved	231	15	mg/L	240		96	85-115			
General Parameters, Batch B0C0171										
Blank (B0C0171-BLK1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Ammonia, Total (as N)	< 0.020	0.020	mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0C0171, Continued										
LCS (B0C0171-BS1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Ammonia, Total (as N)	1.01	0.020	mg/L	1.00		101	90-115			
General Parameters, Batch B0C0221										
Blank (B0C0221-BLK1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Turbidity	< 0.10	0.10	NTU							
LCS (B0C0221-BS1)				Prepared: 2020-03-03, Analyzed: 2020-03-03						
Turbidity	38.6	0.10	NTU	40.0		96	90-110			
Duplicate (B0C0221-DUP1)		**Source: 0030004-03**		Prepared: 2020-03-03, Analyzed: 2020-03-03						
Turbidity	125	0.10	NTU		125			< 1	15	
General Parameters, Batch B0C0270										
Blank (B0C0270-BLK1)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Conductivity (EC)	< 2.0	2.0	µS/cm							
Blank (B0C0270-BLK2)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Conductivity (EC)	< 2.0	2.0	µS/cm							
Blank (B0C0270-BLK3)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Conductivity (EC)	< 2.0	2.0	µS/cm							
LCS (B0C0270-BS1)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Alkalinity, Total (as CaCO3)	108	1.0	mg/L	100		108	80-120			
LCS (B0C0270-BS2)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Alkalinity, Total (as CaCO3)	111	1.0	mg/L	100		111	80-120			
LCS (B0C0270-BS3)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Alkalinity, Total (as CaCO3)	108	1.0	mg/L	100		108	80-120			
LCS (B0C0270-BS4)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Conductivity (EC)	1420	2.0	µS/cm	1410		101	95-104			
LCS (B0C0270-BS5)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Conductivity (EC)	1400	2.0	µS/cm	1410		99	95-104			
LCS (B0C0270-BS6)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
Conductivity (EC)	1390	2.0	µS/cm	1410		99	95-104			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	0030004
PROJECT	3241-20-001	**REPORTED**	2020-04-22 17:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0C0270, Continued										
Reference (B0C0270-SRM1)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
pH	6.96	0.10	pH units	7.01		99	98-102			
Reference (B0C0270-SRM2)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
pH	6.95	0.10	pH units	7.01		99	98-102			
Reference (B0C0270-SRM3)				Prepared: 2020-03-04, Analyzed: 2020-03-04						
pH	6.96	0.10	pH units	7.01		99	98-102			
General Parameters, Batch B0C0350										
Blank (B0C0350-BLK1)				Prepared: 2020-03-04, Analyzed: 2020-03-05						
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L							
Blank (B0C0350-BLK2)				Prepared: 2020-03-04, Analyzed: 2020-03-05						
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L							
LCS (B0C0350-BS1)				Prepared: 2020-03-04, Analyzed: 2020-03-05						
Nitrogen, Total Kjeldahl	1.02	0.050	mg/L	1.00		102	85-115			
LCS (B0C0350-BS2)				Prepared: 2020-03-04, Analyzed: 2020-03-05						
Nitrogen, Total Kjeldahl	0.986	0.050	mg/L	1.00		99	85-115			

ISOTOPE TRACER TECHNOLOGIES INC

File Number: **200028**

#	Sample ID	Sample #	$\delta^{18}O$	$\delta^{15}N$	$\delta^{18}O$	Aver	Stdv	$\delta^{2}H$	Aver	Stdv
			NO_3	NO_3	H_2O	VSMOW		H_2O	VSMOW	
1	0030004-01	61946	x	x	x	-11.51	0.08	x	-80.1	0.6
2	0030004-02									
3	0030004-03	61947	x	x	x	-11.31	0.02	x	-79.6	0.1
4	0030004-04									
5	0030004-05	61948	x	x	x	-11.68	0.02	x	-81.3	0.1
6	0030004-06									
7	0030004-07	61949	x	x	x	-11.92	0.02	x	-83.0	0.1
8	0030004-08									

Note: sample -01 and -02 are the same, -03 and -04 are the same, -05 and -06 are the same, -07 and -08 are the same.

Standards used for H/O analysis: IT2-12C, IT2-13B, IT2-00A

Recieved: 2020-03-03

Client: Caro Analytical Services
Address: #102 3677 Highway 97N
Kelowna, BC
V1X 5C3
Tel: 250 765 9646
Fax:
Attn.: Monika Sajdak
E-mail: sublet@caro.ca
E-mail: msajdak@caro.ca

Sample Size	Concentration	
1 x 1L plastic bottle		
1 x 1L plastic bottle		
1 x 1L plastic bottle		
1 x 1L plastic bottle		

Client: Caro Analytical Services
Address: #102 3677 Highway 97N
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File Number: **200028**

#	Sample ID	Sample #	$\delta^{18}O$	$\delta^{15}N$	Result	Repeat	$\delta^{18}O$	Aver	Stdv	$\delta^{2}H$	Aver	Stdv
			NO_3	NO_3	VSMOW		H_2O	VSMOW		H_2O	VSMOW	
1	0030004-01	61946	x	x	3.6	3.2	x	-11.51	0.08	x	-80.1	0.6
2	0030004-02											
3	0030004-03	61947	x	x	11.6	11.6	x	-11.31	0.02	x	-79.6	0.1
4	0030004-04											
5	0030004-05	61948	x	x	5.9	6.3	x	-11.68	0.02	x	-81.3	0.1
6	0030004-06											
7	0030004-07	61949	x	x	9.9	9.7	x	-11.92	0.02	x	-83.0	0.1
8	0030004-08											

Note: sample -01 and -02 are the same, -03 and -04 are the same, -05 and -06 are the same, -07 and -08 are the same.

Standards used for H/O analysis: IT2-12C, IT2-13B, IT2-00A

CERTIFICATE OF ANALYSIS

REPORTED TO	Waterline Resources Inc. - Nanaimo 2430 Jingle Pot Road Nanaimo, BC V9R 6W2		
ATTENTION	Simon Wing	**WORK ORDER**	21C0880
PO NUMBER		**RECEIVED / TEMP**	2021-03-05 12:00 / 3°C
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50
PROJECT INFO	Cowichan Valley RD	**COC NUMBER**	B103317

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at tmaxwell@caro.ca

Authorized By:

Taylor Maxwell
Junior Account Manager

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Analyzed	Qualifier
3241210303 001 (21C0880-01) | Matrix: Water | Sampled: 2021-03-03 00:30					
Anions					
Chloride	**54.8**	0.10	mg/L	2021-03-06	
Fluoride	< 0.10	0.10	mg/L	2021-03-06	
Nitrate (as N)	**18.9**	0.010	mg/L	2021-03-06	
Nitrite (as N)	< 0.010	0.010	mg/L	2021-03-06	
Sulfate	**37.2**	1.0	mg/L	2021-03-06	
Calculated Parameters					
Hardness, Total (as CaCO3)	**284**	0.500	mg/L	N/A	
Nitrate+Nitrite (as N)	**18.9**	0.100	mg/L	N/A	
Nitrogen, Total	**19.3**	0.100	mg/L	N/A	
Nitrogen, Total Dissolved	**18.9**	0.100	mg/L	N/A	
Nitrogen, Organic	**0.406**	0.0500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	**0.00142**	0.00010	mg/L	2021-03-07	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2021-03-07	
Antimony, dissolved	**0.00123**	0.00020	mg/L	2021-03-07	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Barium, dissolved	**0.0336**	0.0050	mg/L	2021-03-07	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Boron, dissolved	< 0.0500	0.0500	mg/L	2021-03-07	
Cadmium, dissolved	**0.000374**	0.000010	mg/L	2021-03-07	
Calcium, dissolved	**61.5**	0.20	mg/L	2021-03-07	
Chromium, dissolved	**0.00186**	0.00050	mg/L	2021-03-07	
Cobalt, dissolved	**0.00016**	0.00010	mg/L	2021-03-07	
Copper, dissolved	**0.0129**	0.00040	mg/L	2021-03-07	
Iron, dissolved	**0.023**	0.010	mg/L	2021-03-07	
Lead, dissolved	**0.00029**	0.00020	mg/L	2021-03-07	
Magnesium, dissolved	**31.6**	0.010	mg/L	2021-03-07	
Manganese, dissolved	**0.00824**	0.00020	mg/L	2021-03-07	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2021-03-06	
Molybdenum, dissolved	**0.00029**	0.00010	mg/L	2021-03-07	
Nickel, dissolved	**0.00166**	0.00040	mg/L	2021-03-07	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2021-03-07	
Potassium, dissolved	**1.20**	0.10	mg/L	2021-03-07	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Silicon, dissolved	**14.5**	1.0	mg/L	2021-03-07	
Silver, dissolved	< 0.000050	0.000050	mg/L	2021-03-07	
Sodium, dissolved	**12.2**	0.10	mg/L	2021-03-07	
Strontium, dissolved	**0.305**	0.0010	mg/L	2021-03-07	
Sulfur, dissolved	**14.2**	3.0	mg/L	2021-03-07	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2021-03-07	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Analyzed	Qualifier
3241210303 001 (21C0880-01) | Matrix: Water | Sampled: 2021-03-03 00:30, Continued					
Dissolved Metals, Continued					
Thorium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Tin, dissolved	< 0.00020	0.00020	mg/L	2021-03-07	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2021-03-07	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2021-03-07	
Uranium, dissolved	**0.000326**	0.000020	mg/L	2021-03-07	
Vanadium, dissolved	**0.0014**	0.0010	mg/L	2021-03-07	
Zinc, dissolved	**0.0333**	0.0040	mg/L	2021-03-07	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
General Parameters					
Alkalinity, Total (as CaCO3)	**150**	1.0	mg/L	2021-03-09	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Alkalinity, Bicarbonate (as CaCO3)	**150**	1.0	mg/L	2021-03-09	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2021-03-06	
Carbon, Total Organic	**1.63**	0.50	mg/L	2021-03-10	
Carbon, Dissolved Organic	**1.59**	0.50	mg/L	2021-03-10	
Conductivity (EC)	**718**	2.0	µS/cm	2021-03-09	
Nitrogen, Total Kjeldahl	**0.406**	0.050	mg/L	2021-03-10	
Nitrogen, Dissolved Kjeldahl	< 0.050	0.050	mg/L	2021-03-10	
pH	**7.47**	0.10	pH units	2021-03-09	HT2
Solids, Total Dissolved	**406**	15	mg/L	2021-03-11	HT1
Turbidity	**23.8**	0.10	NTU	2021-03-06	
3241210303 002 (21C0880-02) | Matrix: Water | Sampled: 2021-03-03 00:30					
Anions					
Chloride	**7.46**	0.10	mg/L	2021-03-06	
Fluoride	< 0.10	0.10	mg/L	2021-03-06	
Nitrate (as N)	**4.17**	0.010	mg/L	2021-03-06	
Nitrite (as N)	< 0.010	0.010	mg/L	2021-03-06	
Sulfate	**3.3**	1.0	mg/L	2021-03-06	
Calculated Parameters					
Hardness, Total (as CaCO3)	**101**	0.500	mg/L	N/A	
Nitrate+Nitrite (as N)	**4.17**	0.0100	mg/L	N/A	
Nitrogen, Total	**4.30**	0.0500	mg/L	N/A	
Nitrogen, Total Dissolved	**4.22**	0.0500	mg/L	N/A	
Nitrogen, Organic	**0.130**	0.0500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	**0.00066**	0.00010	mg/L	2021-03-07	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2021-03-07	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Analyzed	Qualifier
3241210303 002 (21C0880-02) | Matrix: Water | Sampled: 2021-03-03 00:30, Continued					
Dissolved Metals, Continued					
Antimony, dissolved	< 0.00020	0.00020	mg/L	2021-03-07	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Barium, dissolved	**0.0074**	0.0050	mg/L	2021-03-07	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Boron, dissolved	< 0.0500	0.0500	mg/L	2021-03-07	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2021-03-07	
Calcium, dissolved	**21.4**	0.20	mg/L	2021-03-07	
Chromium, dissolved	**0.00055**	0.00050	mg/L	2021-03-07	
Cobalt, dissolved	**0.00011**	0.00010	mg/L	2021-03-07	
Copper, dissolved	**0.00100**	0.00040	mg/L	2021-03-07	
Iron, dissolved	< 0.010	0.010	mg/L	2021-03-07	
Lead, dissolved	< 0.00020	0.00020	mg/L	2021-03-07	
Magnesium, dissolved	**11.5**	0.010	mg/L	2021-03-07	
Manganese, dissolved	**0.0261**	0.00020	mg/L	2021-03-07	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2021-03-06	
Molybdenum, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2021-03-07	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2021-03-07	
Potassium, dissolved	**0.64**	0.10	mg/L	2021-03-07	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Silicon, dissolved	**12.5**	1.0	mg/L	2021-03-07	
Silver, dissolved	< 0.000050	0.000050	mg/L	2021-03-07	
Sodium, dissolved	**7.38**	0.10	mg/L	2021-03-07	
Strontium, dissolved	**0.0994**	0.0010	mg/L	2021-03-07	
Sulfur, dissolved	< 3.0	3.0	mg/L	2021-03-07	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2021-03-07	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Tin, dissolved	< 0.00020	0.00020	mg/L	2021-03-07	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2021-03-07	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2021-03-07	
Uranium, dissolved	**0.000037**	0.000020	mg/L	2021-03-07	
Vanadium, dissolved	**0.0018**	0.0010	mg/L	2021-03-07	
Zinc, dissolved	**0.107**	0.0040	mg/L	2021-03-07	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
General Parameters					
Alkalinity, Total (as CaCO3)	**100**	1.0	mg/L	2021-03-09	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Alkalinity, Bicarbonate (as CaCO3)	**100**	1.0	mg/L	2021-03-09	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Analyzed	Qualifier
3241210303 002 (21C0880-02) | Matrix: Water | Sampled: 2021-03-03 00:30, Continued					
General Parameters, Continued					
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2021-03-06	
Carbon, Total Organic	**0.57**	0.50	mg/L	2021-03-10	
Carbon, Dissolved Organic	**1.20**	0.50	mg/L	2021-03-10	
Conductivity (EC)	**256**	2.0	µS/cm	2021-03-09	
Nitrogen, Total Kjeldahl	**0.130**	0.050	mg/L	2021-03-10	
Nitrogen, Dissolved Kjeldahl	**0.053**	0.050	mg/L	2021-03-10	
pH	**7.65**	0.10	pH units	2021-03-09	HT2
Solids, Total Dissolved	**156**	15	mg/L	2021-03-11	HT1
Turbidity	**3.15**	0.10	NTU	2021-03-06	
3241210303 003 (21C0880-03) | Matrix: Water | Sampled: 2021-03-03 00:30					
Anions					
Chloride	**23.5**	0.10	mg/L	2021-03-06	
Fluoride	< 0.10	0.10	mg/L	2021-03-06	
Nitrate (as N)	**10.4**	0.010	mg/L	2021-03-06	
Nitrite (as N)	**0.095**	0.010	mg/L	2021-03-06	
Sulfate	**6.0**	1.0	mg/L	2021-03-06	
Calculated Parameters					
Hardness, Total (as CaCO3)	**180**	0.500	mg/L	N/A	
Nitrate+Nitrite (as N)	**10.5**	0.100	mg/L	N/A	
Nitrogen, Total	**10.8**	0.100	mg/L	N/A	
Nitrogen, Total Dissolved	**10.7**	0.100	mg/L	N/A	
Nitrogen, Organic	**0.327**	0.0500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	**0.00095**	0.00010	mg/L	2021-03-07	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2021-03-07	
Antimony, dissolved	**0.00026**	0.00020	mg/L	2021-03-07	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Barium, dissolved	**0.0179**	0.0050	mg/L	2021-03-07	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Boron, dissolved	< 0.0500	0.0500	mg/L	2021-03-07	
Cadmium, dissolved	**0.000150**	0.000010	mg/L	2021-03-07	
Calcium, dissolved	**36.4**	0.20	mg/L	2021-03-07	
Chromium, dissolved	**0.00245**	0.00050	mg/L	2021-03-07	
Cobalt, dissolved	**0.00018**	0.00010	mg/L	2021-03-07	
Copper, dissolved	**0.00570**	0.00040	mg/L	2021-03-07	
Iron, dissolved	< 0.010	0.010	mg/L	2021-03-07	
Lead, dissolved	**0.00034**	0.00020	mg/L	2021-03-07	
Magnesium, dissolved	**21.6**	0.010	mg/L	2021-03-07	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Analyzed	Qualifier
3241210303 003 (21C0880-03) | Matrix: Water | Sampled: 2021-03-03 00:30, Continued					
Dissolved Metals, Continued					
Manganese, dissolved	**0.00349**	0.00020	mg/L	2021-03-07	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2021-03-06	
Molybdenum, dissolved	**0.00011**	0.00010	mg/L	2021-03-07	
Nickel, dissolved	**0.00083**	0.00040	mg/L	2021-03-07	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2021-03-07	
Potassium, dissolved	**1.06**	0.10	mg/L	2021-03-07	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Silicon, dissolved	**14.1**	1.0	mg/L	2021-03-07	
Silver, dissolved	**0.000398**	0.000050	mg/L	2021-03-07	
Sodium, dissolved	**10.1**	0.10	mg/L	2021-03-07	
Strontium, dissolved	**0.164**	0.0010	mg/L	2021-03-07	
Sulfur, dissolved	**3.7**	3.0	mg/L	2021-03-07	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2021-03-07	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Tin, dissolved	**0.00027**	0.00020	mg/L	2021-03-07	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2021-03-07	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2021-03-07	
Uranium, dissolved	**0.000175**	0.000020	mg/L	2021-03-07	
Vanadium, dissolved	**0.0021**	0.0010	mg/L	2021-03-07	
Zinc, dissolved	**0.0240**	0.0040	mg/L	2021-03-07	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
General Parameters					
Alkalinity, Total (as CaCO3)	**136**	1.0	mg/L	2021-03-09	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Alkalinity, Bicarbonate (as CaCO3)	**136**	1.0	mg/L	2021-03-09	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2021-03-06	
Carbon, Total Organic	**5.63**	0.50	mg/L	2021-03-10	
Carbon, Dissolved Organic	**14.4**	0.50	mg/L	2021-03-10	
Conductivity (EC)	**419**	2.0	µS/cm	2021-03-09	
Nitrogen, Total Kjeldahl	**0.327**	0.050	mg/L	2021-03-10	
Nitrogen, Dissolved Kjeldahl	**0.219**	0.050	mg/L	2021-03-10	
pH	**7.65**	0.10	pH units	2021-03-09	HT2
Solids, Total Dissolved	**242**	15	mg/L	2021-03-11	HT1
Turbidity	**51.0**	0.10	NTU	2021-03-06	
3241210303 004 (21C0880-04) | Matrix: Water | Sampled: 2021-03-03 00:30					
Anions					
Chloride	**33.4**	0.10	mg/L	2021-03-06	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Analyzed	Qualifier
3241210303 004 (21C0880-04) | Matrix: Water | Sampled: 2021-03-03 00:30, Continued					
Anions, Continued					
Fluoride	< 0.10	0.10	mg/L	2021-03-06	
Nitrate (as N)	**37.3**	0.010	mg/L	2021-03-06	
Nitrite (as N)	**0.022**	0.010	mg/L	2021-03-06	
Sulfate	**35.7**	1.0	mg/L	2021-03-06	
Calculated Parameters					
Hardness, Total (as CaCO3)	**275**	0.500	mg/L	N/A	
Nitrate+Nitrite (as N)	**37.4**	0.100	mg/L	N/A	
Nitrogen, Total	**37.4**	0.100	mg/L	N/A	
Nitrogen, Total Dissolved	**37.4**	0.100	mg/L	N/A	
Nitrogen, Organic	**0.0790**	0.0500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	**0.00089**	0.00010	mg/L	2021-03-07	
Aluminum, dissolved	**0.0058**	0.0050	mg/L	2021-03-07	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2021-03-07	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Barium, dissolved	**0.0234**	0.0050	mg/L	2021-03-07	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
Boron, dissolved	**0.0881**	0.0500	mg/L	2021-03-07	
Cadmium, dissolved	**0.000163**	0.000010	mg/L	2021-03-07	
Calcium, dissolved	**62.0**	0.20	mg/L	2021-03-07	
Chromium, dissolved	**0.00068**	0.00050	mg/L	2021-03-07	
Cobalt, dissolved	**0.00455**	0.00010	mg/L	2021-03-07	
Copper, dissolved	**0.0302**	0.00040	mg/L	2021-03-07	
Iron, dissolved	**0.078**	0.010	mg/L	2021-03-07	
Lead, dissolved	< 0.00020	0.00020	mg/L	2021-03-07	
Magnesium, dissolved	**29.1**	0.010	mg/L	2021-03-07	
Manganese, dissolved	**0.00176**	0.00020	mg/L	2021-03-07	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2021-03-06	
Molybdenum, dissolved	**0.00015**	0.00010	mg/L	2021-03-07	
Nickel, dissolved	**0.0406**	0.00040	mg/L	2021-03-07	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2021-03-07	
Potassium, dissolved	**1.16**	0.10	mg/L	2021-03-07	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Silicon, dissolved	**14.6**	1.0	mg/L	2021-03-07	
Silver, dissolved	< 0.000050	0.000050	mg/L	2021-03-07	
Sodium, dissolved	**14.3**	0.10	mg/L	2021-03-07	
Strontium, dissolved	**0.316**	0.0010	mg/L	2021-03-07	
Sulfur, dissolved	**15.4**	3.0	mg/L	2021-03-07	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2021-03-07	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2021-03-07	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	

TEST RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Analyzed	Qualifier
3241210303 004 (21C0880-04) | Matrix: Water | Sampled: 2021-03-03 00:30, Continued					
Dissolved Metals, Continued					
Tin, dissolved	< 0.00020	0.00020	mg/L	2021-03-07	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2021-03-07	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2021-03-07	
Uranium, dissolved	**0.000118**	0.000020	mg/L	2021-03-07	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2021-03-07	
Zinc, dissolved	**0.0078**	0.0040	mg/L	2021-03-07	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2021-03-07	
General Parameters					
Alkalinity, Total (as CaCO3)	**90.4**	1.0	mg/L	2021-03-09	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Alkalinity, Bicarbonate (as CaCO3)	**90.4**	1.0	mg/L	2021-03-09	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2021-03-09	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2021-03-06	
Carbon, Total Organic	**0.98**	0.50	mg/L	2021-03-10	
Carbon, Dissolved Organic	**1.31**	0.50	mg/L	2021-03-10	
Conductivity (EC)	**658**	2.0	µS/cm	2021-03-09	
Nitrogen, Total Kjeldahl	**0.079**	0.050	mg/L	2021-03-10	
Nitrogen, Dissolved Kjeldahl	< 0.050	0.050	mg/L	2021-03-10	
pH	**7.49**	0.10	pH units	2021-03-09	HT2
Solids, Total Dissolved	**442**	15	mg/L	2021-03-11	HT1
Turbidity	**78.6**	0.10	NTU	2021-03-06	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	✓	Kelowna
Ammonia, Total in Water	SM 4500-NH3 G* (2017)	Automated Colorimetry (Phenate)	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Carbon, Dissolved Organic in Water	SM 5310 B (2017)	Combustion, Infrared CO2 Detection	✓	Kelowna
Carbon, Total Organic in Water	SM 5310 B (2017)	Combustion, Infrared CO2 Detection	✓	Kelowna
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	✓	Kelowna
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	✓	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
Nitrogen, Dissolved Kjeldahl in Water	SM 4500-Norg D* (2017)	Block Digestion and Flow Injection Analysis	✓	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2017)	Block Digestion and Flow Injection Analysis	✓	Kelowna
pH in Water	SM 4500-H+ B (2017)	Electrometry	✓	Kelowna
Solids, Total Dissolved in Water	SM 2540 C* (2017)	Gravimetry (Dried at 103-105C)	✓	Kelowna
Turbidity in Water	SM 2130 B (2017)	Nephelometry	✓	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, ph > 7 = basic
µS/cm	Microsiemens per centimetre
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued or once samples expire, whichever comes first. Longer hold is possible if agreed to in writing.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager:tmaxwell@caro.ca

Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline (s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B1C0614										
Blank (B1C0614-BLK1)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B1C0614-BLK2)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B1C0614-BLK3)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B1C0614-BS1)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Chloride	16.2	0.10	mg/L	16.0		101	90-110			
Fluoride	4.04	0.10	mg/L	4.00		101	88-108			
Nitrate (as N)	4.09	0.010	mg/L	4.00		102	90-110			
Nitrite (as N)	2.06	0.010	mg/L	2.00		103	85-115			
Sulfate	16.2	1.0	mg/L	16.0		101	90-110			
LCS (B1C0614-BS2)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Chloride	16.0	0.10	mg/L	16.0		100	90-110			
Fluoride	4.03	0.10	mg/L	4.00		101	88-108			
Nitrate (as N)	4.06	0.010	mg/L	4.00		102	90-110			
Nitrite (as N)	2.01	0.010	mg/L	2.00		101	85-115			
Sulfate	16.0	1.0	mg/L	16.0		100	90-110			
LCS (B1C0614-BS3)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Chloride	16.2	0.10	mg/L	16.0		101	90-110			
Fluoride	4.07	0.10	mg/L	4.00		102	88-108			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B1C0614, Continued										
LCS (B1C0614-BS3), Continued				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Nitrate (as N)	4.10	0.010	mg/L	4.00		103	90-110			
Nitrite (as N)	2.01	0.010	mg/L	2.00		100	85-115			
Sulfate	16.2	1.0	mg/L	16.0		101	90-110			
Dissolved Metals, Batch B1C0627										
Blank (B1C0627-BLK1)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Mercury, dissolved	< 0.000010	0.000010	mg/L							
Reference (B1C0627-SRM1)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Mercury, dissolved	0.00653	0.000010	mg/L	0.00581		112	70-130			
Dissolved Metals, Batch B1C0642										
Blank (B1C0642-BLK1)				Prepared: 2021-03-07, Analyzed: 2021-03-07						
Lithium, dissolved	< 0.00010	0.00010	mg/L							
Aluminum, dissolved	< 0.0050	0.0050	mg/L							
Antimony, dissolved	< 0.00020	0.00020	mg/L							
Arsenic, dissolved	< 0.00050	0.00050	mg/L							
Barium, dissolved	< 0.0050	0.0050	mg/L							
Beryllium, dissolved	< 0.00010	0.00010	mg/L							
Bismuth, dissolved	< 0.00010	0.00010	mg/L							
Boron, dissolved	< 0.0500	0.0500	mg/L							
Cadmium, dissolved	< 0.000010	0.000010	mg/L							
Calcium, dissolved	< 0.20	0.20	mg/L							
Chromium, dissolved	< 0.00050	0.00050	mg/L							
Cobalt, dissolved	< 0.00010	0.00010	mg/L							
Copper, dissolved	< 0.00040	0.00040	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.00020	0.00020	mg/L							
Magnesium, dissolved	< 0.010	0.010	mg/L							
Manganese, dissolved	< 0.00020	0.00020	mg/L							
Molybdenum, dissolved	< 0.00010	0.00010	mg/L							
Nickel, dissolved	< 0.00040	0.00040	mg/L							
Phosphorus, dissolved	< 0.050	0.050	mg/L							
Potassium, dissolved	< 0.10	0.10	mg/L							
Selenium, dissolved	< 0.00050	0.00050	mg/L							
Silicon, dissolved	< 1.0	1.0	mg/L							
Silver, dissolved	< 0.000050	0.000050	mg/L							
Sodium, dissolved	< 0.10	0.10	mg/L							
Strontium, dissolved	< 0.0010	0.0010	mg/L							
Sulfur, dissolved	< 3.0	3.0	mg/L							
Tellurium, dissolved	< 0.00050	0.00050	mg/L							
Thallium, dissolved	< 0.000020	0.000020	mg/L							
Thorium, dissolved	< 0.00010	0.00010	mg/L							
Tin, dissolved	< 0.00020	0.00020	mg/L							
Titanium, dissolved	< 0.0050	0.0050	mg/L							
Tungsten, dissolved	< 0.0010	0.0010	mg/L							
Uranium, dissolved	< 0.000020	0.000020	mg/L							
Vanadium, dissolved	< 0.0010	0.0010	mg/L							
Zinc, dissolved	< 0.0040	0.0040	mg/L							
Zirconium, dissolved	< 0.00010	0.00010	mg/L							
LCS (B1C0642-BS1)				Prepared: 2021-03-07, Analyzed: 2021-03-07						
Lithium, dissolved	0.0212	0.00010	mg/L	0.0200		106	80-120			
Aluminum, dissolved	0.0223	0.0050	mg/L	0.0199		112	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B1C0642, Continued										
LCS (B1C0642-BS1), Continued				Prepared: 2021-03-07, Analyzed: 2021-03-07						
Antimony, dissolved	0.0194	0.00020	mg/L	0.0200		97	80-120			
Arsenic, dissolved	0.0210	0.00050	mg/L	0.0200		105	80-120			
Barium, dissolved	0.0202	0.0050	mg/L	0.0198		102	80-120			
Beryllium, dissolved	0.0213	0.00010	mg/L	0.0198		107	80-120			
Bismuth, dissolved	0.0215	0.00010	mg/L	0.0200		107	80-120			
Boron, dissolved	< 0.0500	0.0500	mg/L	0.0200		103	80-120			
Cadmium, dissolved	0.0211	0.000010	mg/L	0.0199		106	80-120			
Calcium, dissolved	1.88	0.20	mg/L	2.02		93	80-120			
Chromium, dissolved	0.0215	0.00050	mg/L	0.0198		108	80-120			
Cobalt, dissolved	0.0215	0.00010	mg/L	0.0199		108	80-120			
Copper, dissolved	0.0223	0.00040	mg/L	0.0200		111	80-120			
Lead, dissolved	0.0202	0.00020	mg/L	0.0199		102	80-120			
Magnesium, dissolved	2.08	0.010	mg/L	2.02		103	80-120			
Manganese, dissolved	0.0199	0.00020	mg/L	0.0199		100	80-120			
Molybdenum, dissolved	0.0211	0.00010	mg/L	0.0200		106	80-120			
Nickel, dissolved	0.0217	0.00040	mg/L	0.0200		108	80-120			
Phosphorus, dissolved	2.18	0.050	mg/L	2.00		109	80-120			
Potassium, dissolved	2.02	0.10	mg/L	2.02		100	80-120			
Selenium, dissolved	0.0162	0.00050	mg/L	0.0200		81	80-120			
Silicon, dissolved	1.9	1.0	mg/L	2.00		96	80-120			
Silver, dissolved	0.0163	0.000050	mg/L	0.0200		81	80-120			
Sodium, dissolved	2.07	0.10	mg/L	2.02		103	80-120			
Strontium, dissolved	0.0208	0.0010	mg/L	0.0200		104	80-120			
Sulfur, dissolved	5.1	3.0	mg/L	5.00		101	80-120			
Tellurium, dissolved	0.0191	0.00050	mg/L	0.0200		96	80-120			
Thallium, dissolved	0.0211	0.000020	mg/L	0.0199		106	80-120			
Thorium, dissolved	0.0188	0.00010	mg/L	0.0200		94	80-120			
Tin, dissolved	0.0210	0.00020	mg/L	0.0200		105	80-120			
Titanium, dissolved	0.0226	0.0050	mg/L	0.0200		113	80-120			
Tungsten, dissolved	0.0198	0.0010	mg/L	0.0200		99	80-120			
Uranium, dissolved	0.0197	0.000020	mg/L	0.0200		99	80-120			
Vanadium, dissolved	0.0234	0.0010	mg/L	0.0200		117	80-120			
Zinc, dissolved	0.0218	0.0040	mg/L	0.0200		109	80-120			
Zirconium, dissolved	0.0218	0.00010	mg/L	0.0200		109	80-120			
Reference (B1C0642-SRM1)				Prepared: 2021-03-07, Analyzed: 2021-03-07						
Lithium, dissolved	0.107	0.00010	mg/L	0.100		107	70-130			
Aluminum, dissolved	0.221	0.0050	mg/L	0.235		94	70-130			
Antimony, dissolved	0.0524	0.00020	mg/L	0.0431		122	70-130			
Arsenic, dissolved	0.467	0.00050	mg/L	0.423		110	70-130			
Barium, dissolved	3.37	0.0050	mg/L	3.30		102	70-130			
Beryllium, dissolved	0.217	0.00010	mg/L	0.209		104	70-130			
Boron, dissolved	1.66	0.0500	mg/L	1.65		101	70-130			
Cadmium, dissolved	0.228	0.000010	mg/L	0.221		103	70-130			
Calcium, dissolved	7.38	0.20	mg/L	7.72		96	70-130			
Chromium, dissolved	0.455	0.00050	mg/L	0.434		105	70-130			
Cobalt, dissolved	0.134	0.00010	mg/L	0.124		108	70-130			
Copper, dissolved	0.863	0.00040	mg/L	0.815		106	70-130			
Iron, dissolved	1.29	0.010	mg/L	1.27		102	70-130			
Lead, dissolved	0.113	0.00020	mg/L	0.110		103	70-130			
Magnesium, dissolved	6.72	0.010	mg/L	6.59		102	70-130			
Manganese, dissolved	0.330	0.00020	mg/L	0.342		97	70-130			
Molybdenum, dissolved	0.455	0.00010	mg/L	0.404		113	70-130			
Nickel, dissolved	0.894	0.00040	mg/L	0.835		107	70-130			
Phosphorus, dissolved	0.504	0.050	mg/L	0.499		101	70-130			
Potassium, dissolved	2.93	0.10	mg/L	2.88		102	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B1C0642, Continued										
Reference (B1C0642-SRM1), Continued				Prepared: 2021-03-07, Analyzed: 2021-03-07						
Selenium, dissolved	0.0327	0.00050	mg/L	0.0324		101	70-130			
Sodium, dissolved	17.5	0.10	mg/L	18.0		97	70-130			
Strontium, dissolved	0.961	0.0010	mg/L	0.935		103	70-130			
Thallium, dissolved	0.0409	0.000020	mg/L	0.0385		106	70-130			
Uranium, dissolved	0.251	0.000020	mg/L	0.258		97	70-130			
Vanadium, dissolved	0.903	0.0010	mg/L	0.873		103	70-130			
Zinc, dissolved	0.936	0.0040	mg/L	0.848		110	70-130			
General Parameters, Batch B1C0594										
Blank (B1C0594-BLK1)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
Blank (B1C0594-BLK2)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
Blank (B1C0594-BLK3)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
LCS (B1C0594-BS1)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Ammonia, Total (as N)	0.950	0.050	mg/L	1.00		95	90-115			
LCS (B1C0594-BS2)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Ammonia, Total (as N)	0.960	0.050	mg/L	1.00		96	90-115			
LCS (B1C0594-BS3)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Ammonia, Total (as N)	0.972	0.050	mg/L	1.00		97	90-115			
Duplicate (B1C0594-DUP3)		**Source: 21C0880-01**		Prepared: 2021-03-06, Analyzed: 2021-03-06						
Ammonia, Total (as N)	< 0.050	0.050	mg/L		< 0.050				15	
Matrix Spike (B1C0594-MS3)		**Source: 21C0880-01**		Prepared: 2021-03-06, Analyzed: 2021-03-06						
Ammonia, Total (as N)	0.262	0.050	mg/L	0.250	< 0.050	100	75-125			
General Parameters, Batch B1C0615										
Blank (B1C0615-BLK1)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Turbidity	< 0.10	0.10	NTU							
Blank (B1C0615-BLK2)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Turbidity	< 0.10	0.10	NTU							
LCS (B1C0615-BS1)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Turbidity	38.2	0.10	NTU	40.0		96	90-110			
LCS (B1C0615-BS2)				Prepared: 2021-03-06, Analyzed: 2021-03-06						
Turbidity	38.6	0.10	NTU	40.0		96	90-110			
General Parameters, Batch B1C0682										
Blank (B1C0682-BLK1)				Prepared: 2021-03-10, Analyzed: 2021-03-10						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Carbon, Dissolved Organic	< 0.50	0.50	mg/L							
Blank (B1C0682-BLK2)				Prepared: 2021-03-10, Analyzed: 2021-03-10						
Carbon, Total Organic	< 0.50	0.50	mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B1C0682, Continued										
Blank (B1C0682-BLK2), Continued				Prepared: 2021-03-10, Analyzed: 2021-03-10						
Carbon, Dissolved Organic	< 0.50	0.50	mg/L							
LCS (B1C0682-BS1)				Prepared: 2021-03-10, Analyzed: 2021-03-10						
Carbon, Total Organic	10.1	0.50	mg/L	10.0		101	78-116			
Carbon, Dissolved Organic	10.1	0.50	mg/L	10.0		101	78-116			
LCS (B1C0682-BS2)				Prepared: 2021-03-10, Analyzed: 2021-03-10						
Carbon, Total Organic	9.83	0.50	mg/L	10.0		98	78-116			
Carbon, Dissolved Organic	9.83	0.50	mg/L	10.0		98	78-116			
Duplicate (B1C0682-DUP1)		**Source: 21C0880-01**		Prepared: 2021-03-10, Analyzed: 2021-03-10						
Carbon, Total Organic	1.63	0.50	mg/L		1.63				16	
Carbon, Dissolved Organic	1.39	0.50	mg/L		1.59				15	
Matrix Spike (B1C0682-MS1)		**Source: 21C0880-01**		Prepared: 2021-03-10, Analyzed: 2021-03-10						
Carbon, Total Organic	12.4	0.50	mg/L	10.0	1.63	108	70-130			
Carbon, Dissolved Organic	11.2	0.50	mg/L	10.0	1.59	96	70-130			
General Parameters, Batch B1C0800										
Blank (B1C0800-BLK1)				Prepared: 2021-03-09, Analyzed: 2021-03-09						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Conductivity (EC)	< 2.0	2.0	µS/cm							
Blank (B1C0800-BLK2)				Prepared: 2021-03-09, Analyzed: 2021-03-09						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Conductivity (EC)	< 2.0	2.0	µS/cm							
LCS (B1C0800-BS1)				Prepared: 2021-03-09, Analyzed: 2021-03-09						
Alkalinity, Total (as CaCO3)	104	1.0	mg/L	100		104	80-120			
LCS (B1C0800-BS2)				Prepared: 2021-03-09, Analyzed: 2021-03-09						
Alkalinity, Total (as CaCO3)	106	1.0	mg/L	100		106	80-120			
LCS (B1C0800-BS3)				Prepared: 2021-03-09, Analyzed: 2021-03-09						
Conductivity (EC)	1470	2.0	µS/cm	1410		104	95-104			
LCS (B1C0800-BS4)				Prepared: 2021-03-09, Analyzed: 2021-03-09						
Conductivity (EC)	1470	2.0	µS/cm	1410		104	95-104			
Reference (B1C0800-SRM1)				Prepared: 2021-03-09, Analyzed: 2021-03-09						
pH	6.98	0.10	pH units	7.01		100	98-102			
Reference (B1C0800-SRM2)				Prepared: 2021-03-09, Analyzed: 2021-03-09						
pH	6.97	0.10	pH units	7.01		99	98-102			
General Parameters, Batch B1C0848										

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Waterline Resources Inc. - Nanaimo	**WORK ORDER**	21C0880
PROJECT	3241-20-001	**REPORTED**	2021-03-17 16:50

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B1C0848, Continued										
Blank (B1C0848-BLK1)				Prepared: 2021-03-09, Analyzed: 2021-03-10						
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L							
Blank (B1C0848-BLK2)				Prepared: 2021-03-09, Analyzed: 2021-03-10						
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L							
LCS (B1C0848-BS1)				Prepared: 2021-03-09, Analyzed: 2021-03-10						
Nitrogen, Total Kjeldahl	1.09	0.050	mg/L	1.00		109	85-115			
LCS (B1C0848-BS2)				Prepared: 2021-03-09, Analyzed: 2021-03-10						
Nitrogen, Total Kjeldahl	1.09	0.050	mg/L	1.00		109	85-115			
General Parameters, Batch B1C0857										
Blank (B1C0857-BLK1)				Prepared: 2021-03-11, Analyzed: 2021-03-11						
Solids, Total Dissolved	< 15	15	mg/L							
Blank (B1C0857-BLK2)				Prepared: 2021-03-11, Analyzed: 2021-03-11						
Solids, Total Dissolved	< 15	15	mg/L							
LCS (B1C0857-BS1)				Prepared: 2021-03-11, Analyzed: 2021-03-11						
Solids, Total Dissolved	237	15	mg/L	240		99	85-115			
LCS (B1C0857-BS2)				Prepared: 2021-03-11, Analyzed: 2021-03-11						
Solids, Total Dissolved	225	15	mg/L	240		94	85-115			